

Evergreen Resources Management 2 Righter Parkway, Suite 200 Wilmington, DE 19803

July 29, 2016

Mr. David Brown Pennsylvania Department of Environmental Protection 2 East Main Street Norristown, Pennsylvania 19401

RE: Philadelphia Refinery Remediation Program
Groundwater Remediation Status Report, First Half 2016

Dear Mr. Brown:

Enclosed for your review is a semi-annual summary report for Operation & Maintenance (O&M) work completed at the Philadelphia Energy Solutions Refining & Marketing, LLC (PES) Philadelphia Refinery Complex and the Sunoco Logistics Belmont Terminal between January 1 and June 30, 2016. Detailed information regarding O&M activity is included in the attached tables and figures for the Philadelphia Refinery Complex as prepared by Stantec Consulting Services Inc. (Stantec). Figure 1 is a site location map showing the facility location with respect to the surrounding area, and Figure 2 is a site plan which identifies remediation system areas. This letter summarizes the information detailed in the tables plus additional activities under the Site Wide Approach such as investigations of the various Areas of Interest (AOIs).

In compliance with the 2003 Consent Order and Agreement (CO&A) entered into between Sunoco Inc., (R&M) (Sunoco) and the Pennsylvania Department of Environmental Protection (PADEP) for the Philadelphia Refinery Complex located at 3144 Passyunk Avenue in Philadelphia, Pennsylvania, Sunoco has conducted site characterization activities for all 11 AOIs. This facility has since been entered into the Pennsylvania One Cleanup Program. On November 30, 2011, Sunoco submitted a "Work Plan for Site Wide Approach under the One Cleanup Program" (Site Wide Approach) to the PADEP and the United States Environmental Protection Agency (USEPA). The Site Wide Approach clarifies the technical approach beyond the CO&A and provides an anticipated schedule for future Act 2 submissions with respect to the Philadelphia Refinery Complex remediation program. Effective December 30, 2013, Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC (Evergreen) assumed Sunoco/Atlantic's legacy remediation liabilities with respect to the Philadelphia Refinery will be managed moving forward by Evergreen. Status and anticipated dates of forthcoming Remedial Investigation Report (RIR) submittals will be updated in the semi-annual Groundwater Remediation Status Reports. This particular status report will include an updated schedule for submittals under Act 2 within each AOI section.

On September 8, 2012, Sunoco conveyed the Philadelphia Refinery to PES. As part of that transaction, Sunoco retained responsibility for remediation activities for environmental conditions existing at the time of the transfer. Accordingly, Evergreen will continue to submit the required documentation and implement the required remedial obligations. Moving forward, Evergreen will submit a report with the O&M summary, Act 2 submittal updates, figures, and tables on an annual basis coinciding with the annual groundwater gauging and monitoring. On the

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alternating six month interval, Evergreen will submit an abbreviated letter report detailing the O&M summary without figures and limited tables.

AOI 1 – Belmont Terminal / No. 1 Tank Farm / No. 2 Tank Farm

Consent Order / Characterization Status

Sunoco submitted to the PADEP and the USEPA a Site Characterization Report (SCR) for AOI 1 dated June 30, 2005. Based on comments received by the PADEP with regard to the AOI 1 SCR, Sunoco prepared and submitted to the PADEP a revised SCR for AOI 1 dated July 17, 2006. The recommendations in the AOI 1 report were to supplement the existing remediation system along the northwestern portion of the Belmont Terminal and southeastern portion of the No. 2 Tank Farm. Sunoco has implemented these actions as detailed in previous quarterly reports. In addition, Sunoco provided the PADEP a Remedial Action Plan (RAP) for AOI 1 in January 2008. As a result of the 26th Street North recovery system study and the S-50 Area (26th Street South) investigation, an addendum to the RAP was considered necessary. In December 2008, a RAP Addendum for AOI 1 was submitted to address the 26th Street North recovery system data analysis and the 26th Street South investigation and subsequent remedial actions. Evergreen intends to submit a revised RIR for AOI 1 in August 2016.

Belmont Terminal - Operation During the First Half of 2016

On August 30, 2012, the Frontage Road system was turned off and will remain offline unless there are significant increases in light non-aqueous phase liquid (LNAPL) in the recovery wells. The recovery wells were gauged on February 9 and May 9, 2016, and no product was detected.

The Loading Rack system consists of six dual-phase pumping systems (RW-4, RW-21, RW-22, RW-23, RW-24, and RW-25). Each recovery well contains separate pumps controlled by density floats and conductivity probes to pump groundwater and LNAPL. Recovered groundwater is discharged to an onsite process sewer. Product thicknesses are checked weekly, and pumps are turned on/off as needed based on recoverable product accumulations in each recovery well. The recovered LNAPL is stored in a 5,000-gallon holding tank, the contents of which are recycled by the refinery on an as needed basis.

The Loading Rack system was operational for the reporting period with the following exceptions:

- On January 8, the flow meter was clogged.
- RW-21 and RW-25 were not operational for the reporting period.

A total of 2,938,579 gallons of groundwater and 307 gallons of LNAPL was recovered by the Loading Rack system during the first half of 2016. Recovery totals and details of minor maintenance can be found in **Appendix 1**.

Shunk Street Sewer Ventilation System and Biofilter – Operation During the First Half of 2016

The biofilter was operational for the reporting period. System data for the first half of 2016 can be found in **Appendix 1**.

<u>26th Street Sewer Area – System Performance and Operation During the First Half of 2016</u>

26th Street North:

Sunoco conducted a performance assessment of the 26th Street North recovery system to better determine the effectiveness of remediation in this area. In general, reporting of only groundwater and LNAPL recovery provides

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limited indication of system performance, and should be supplemented with measurements related to maintaining water-table drawdown and inducing a hydraulic gradient towards collection points. It was concluded in the AOI 1 RAP Addendum that the extent of LNAPL had not changed significantly, but had decreased over time, indicating stability of LNAPL along the 26th Street North area.

The 26th Street Sewer Area system was modified during the second half of 2015 to increase the overall effectiveness of the system. All of the four-inch diameter recovery wells (S-180, S-181, S-182, S-183, S-184, S-185, S-186, S-187, S-188, S-189, S-190, S-191 and S-192) were replaced with six-inch diameter recovery wells.

Within each well, a QED Environmental Systems Model AP-4+T AutoPump was installed to recover groundwater and LNAPL. Each recovery well contains a two-inch diameter lateral discharge line that connects to a four-inch high density polyethylene (HDPE) trunk line, which transfers the total fluids to an onsite process sewer. The pumps utilize compressed air, which is supplied by a Kaeser rotary screw air compressor. A one-inch diameter air line runs to each recovery well and is reduced to a 3/8-inch diameter line in each well vault at the pneumatic pumps.

The 26th Street Sewer Area system was started on October 12, 2015. The system was operational for the reporting period with the following exceptions:

- Due to maintenance on the manifolds, the system remained off until January 5.
- On March 2, all of the pumps were removed for semi-annual maintenance.
- The system was shut off from March 25 to March 28 due to a pump fire near 129 Tank.
- On June 13, the system was shut down for repairs on S-185.
- The compressor was inoperable on June 22 and June 27.

A total of 5,996,578 gallons of total fluids were recovered by this system during the first half of 2016. System performance data for the 26th Street Sewer Area system can be found in **Appendix 1**.

26th Street South:

A comprehensive groundwater investigation was conducted in the S-50 area. This data and proposed remedial action was included in the AOI 1 RAP Addendum. To minimize the migration of soluble phase contaminants, a biologically active aerobic barrier utilizing oxygen injection was recommended for the area. A thirty-point oxygen injection system was installed in 2009.

Due to the presence of LNAPL within the capture zone, the 26th Street South oxygen injection system was shut off on August 22, 2014. The system remained off for the first half of 2016. The conceptualization of a recovery system will be evaluated in the AOI 1 Cleanup Plan.

26th Street and Packer Avenue Sewer Biofilter System – Operation During the First Half of 2016

The 26th Street and Packer Avenue Sewers Biofilter system was taken offline on September 30, 2015 for upgrades. Upgrades to the biofilter included replacing the compost beds, repairing the duct work, and replacing or repairing the fans. They system was restarted on June 6, 2016, and remains operational during the final stages of startup which is expected to be completed in the third quarter of 2016.

AOI 2 - Point Breeze Processing Area

Consent Order / Characterization Status

The AOI 2 SCR/RIR was submitted to the PADEP and the USEPA on September 29, 2010. A revised RIR will be completed by the end of 2016.

Pollock Street West End System- Operation During the First Half of 2016

During October 2011, heavier than usual quantities of oil were observed within the Pollock Street sewer outfall. As a result, Sunoco completed the expansion of the existing vertical recovery well remediation system in the vicinity of the Pollock Street sewer outfall in February 2012. The system, referred to as the Pollock Street West End system, consists of a total of ten 4-inch diameter recovery wells on the east side of River Road and twenty 6-inch diameter recovery wells on the west side of River Road. Product thicknesses are checked bi-weekly, and pumps are turned on/off as needed based on recoverable product accumulations in each well. Groundwater and LNAPL are removed from select recovery wells using pneumatic submersible pumps. All liquids are processed through an oil/water separator. Water is discharged to a refinery process sewer (S-10 Sump), and LNAPL is recovered in a series of two 550-gallon tanks and then recycled by the refinery. A report describing the details of the investigation and remediation performed in response to the oil observed in the Pollock Street sewer outfall was submitted to the PADEP and the USEPA on June 29, 2012.

The Pollock Street West End system was operational for the reporting period with the following exceptions:

- On January 4, the system was down on holding tank full alarm.
- RW-105, RW-122, and RW-124 were shut off March 31 for annual maintenance to the discharge lines and manifolds.
- The system was down on high oil/water separator alarm on April 18; the floats were cleaned, and the system was restarted.
- On May 23, the flow meter was inoperable.
- The system was shut down from May 31 to June 1 to repair the transfer pumps.

A total of 1,637,200 gallons of groundwater and 741 gallons of LNAPL was recovered by the Pollock Street West End system during the first half of 2016. Operational and performance data can be found in **Appendix 1**.

Pollock Street Vertical Well System – Operation During the First Half of 2016

The Pollock Street Vertical Well system consists of RW-101, RW-102, and RW-103. All other vertical wells were previously turned off or incorporated into the Pollock Street West End system. On April 4, 2013 the vertical recovery wells were turned off for main discharge line cleaning and the installation of a new pump at horizontal well HW-1. Subsequently, HW-1 maintained adequate drawdown; therefore, the Pollock Street Vertical Well system was no longer needed. The recovery equipment was removed from RW-101, RW-102, and RW-103 on August 2, 2013.

Pollock Street Horizontal Well System - Operation During the First Half of 2016

The Pollock Street Horizontal Well system consists of HW-1, HW-2, and HW-3. HW-1 was installed in July 2004 along the north side of the Pollock Street sewer from approximately RW-103 to approximately 100 feet west of RW-101. HW-2 and HW-3 were installed from approximately RW-103 to the intersection of Pollock Street and 16th Street in the first quarter of 2006. Groundwater and LNAPL from HW-1 and HW-2 discharges directly into a benzene NESHAP controlled sewer whereas groundwater and LNAPL from HW-3 discharges directly into an onsite

Philadelphia Refinery Remediation Program Groundwater Remediation Status Report, First Half 2016 Page 5

process sewer.

The horizontal wells were operational for the reporting period with the following exceptions:

- HW-3 and HW-2 remained off until January 8 and February 10, respectively, when the pumps were reinstalled, and the systems were restarted.
- On March 14 and 21, the HW-2 pump was inoperable.
- The flow meter for HW-2 was clogged on March 28.
- The HW-2 pump was removed on April 4, repaired, and reinstalled on April 8.
- On January 11 and January 13, HW-3 was inoperable. The pump was removed for repairs and restarted on January 15.

Totalizers were installed in HW-1 and HW-2 on May 25, 2013 and July 6, 2015, respective. The estimated flow rate for HW-3 for the second half of 2015 is 15.38 gallons per minute (gpm).

A total of 8,529,739 gallons of total fluids were recovered by the Pollock Street Horizontal Well Recovery system this reporting period. Details of minor maintenance and system recovery totals for the first half of 2016 can be found in **Appendix 1**.

Pollock Street Sewer Outfall - Operation During the First Half of 2016

The Pollock Street Sewer outfall is checked by PES personnel and all findings are recorded. This practice will continue and any identified LNAPL will be handled with spill control equipment to minimize or prevent releases to the Schuylkill River. Evergreen has continued to maintain boom and sorbent sweeps around the tide gate area. Outfall cleaning, including the changing of sorbents and removal of any fugitive LNAPL from the outfall, occurs a minimum of twice per week. The skimmer discharges to a refinery process sewer (S-13 Sump).

The outfall skimmer remained off for the first half of 2016 due to the lack of recoverable oil in the outfall.

<u>Short Pier – Operation During the First Half of 2016</u>

There was no evidence of LNAPL migration to the Schuylkill River during the reporting period. Unless evidence of LNAPL migration to the river occurs, the system will remain offline.

Passyunk Avenue Sewer

The Passyunk Avenue Sewer CSO is checked by PES personnel once per shift at low tide and findings are recorded. LNAPL was not observed at the Schuylkill River outfall during the first half of 2016.

AOI 3 – Impoundment Area

There are no groundwater or LNAPL recovery systems active in this area. The AOI 3 SCR/RIR was submitted to the PADEP and the USEPA on September 27, 2010. The SCR/RIR stated that given the limited occurrence and mobility of LNAPL observed in RW-2, the recovery system will remain offline. The disposition of remediation systems in AOI 3 will be revisited in the Cleanup Plan. A revised RIR for AOI 3 will be completed by the end of 2016.

AOI 4 - No. 4 Tank Farm Area

Consent Order / Characterization Status

AOI 1 and AOI 4 were identified by Sunoco as the first areas of the refinery to be investigated in accordance with the Phase II Corrective Action Schedule included in the Current Conditions Report (CCR). Sunoco submitted a SCR to the PADEP and the USEPA for AOI 4 on August 24, 2006. A repackaged SCR/RIR was submitted to the agencies on October 16, 2013. A "Disapproval of Remedial Investigation Report" was received from the PADEP on January 16, 2014. A revised RIR will be completed by the end of 2016.

Penrose Avenue Remediation System – Operation During the First Half of 2016

Following characterization of AOI 4, Sunoco recommended the installation of a hydraulic control system on the southern border of AOI 4. This system is permitted for discharge by the Philadelphia Water Department (PWD) and Philadelphia Air Management Services (AMS). Installation of the remediation system was completed in December 2012. Following minor modifications to the system to facilitate water discharge monitoring in accordance with the PWD groundwater discharge permit, the system was started on March 20, 2013.

The system was operational for the reporting period with the following exceptions:

- The flow meter was inoperable on January 21.
- RW-701, RW-702, RW-703, and RW-704 were removed for semi-annual maintenance on January 29.
- On February 3, February 8, February 17, March 22, April 19, April 26 and May 3, the flow meter was inoperable.
- The system was not operational on May 18 for necessary maintenance.

A total of 2,180,350 gallons of groundwater and 116 gallons of LNAPL was recovered by the Penrose Avenue Remediation system during the reporting period. Details of minor maintenance as well as groundwater and LNAPL recovery totals for the first half of 2016 can be found in **Appendix 1**.

S-30 and S-36 LNAPL Recovery Systems - Operation During the First Half of 2016

Due to the absence of recoverable product in the recovery wells, S-30, S-34, S-35, and S-36 remain offline. The disposition of the S-30 recovery system will be revisited in the Cleanup Plan.

AOI 5 - Girard Point South Tank Field

Consent Order / Characterization Status

In accordance with the Site Wide Approach, a repackaged Site Characterization Report/Remedial Investigation Report/Cleanup Plan (SCR/RIR/Cleanup Plan) was submitted to the PADEP and the USEPA on December 13, 2011. Sunoco received a Remedial Investigation Report/Cleanup Plan Disapproval from the PADEP on March 15, 2012. A revised RIR will be completed in 2016.

<u>9 Berth – Operation During the First Half of 2016</u>

The system was taken offline in January 2009 and remains offline due to limited presence of LNAPL.

AOI 6 - Girard Point Chemicals Processing Area

Consent Order / Characterization Status

AOI 6 was identified by Sunoco as the third area of the refinery to be investigated in accordance with the Phase II Corrective Action Schedule included in the CCR. A SCR for AOI 6 was submitted to the PADEP and the USEPA on September 29, 2006. A repackaged SCR/RIR was submitted to the agencies on September 3, 2013. A "Disapproval of Remedial Investigation Report/Disapproval of Site Characterization Report" was received on November 27, 2013. A revised RIR will be completed by the end of 2016.

27 Pump House – Operation During the First Half of 2016

The 27 Pump House Total Fluids Recovery system was turned off September 20, 2010 due to absence of recoverable product. Passive remediation began on October 10, 2010 with the installation of absorbent socks in wells B-124, B-132, B-137, B-139, B-142, B-143, and B-147. Based on limited recoverable LNAPL in the proximal wells, passive remediation was discontinued on January 26, 2015.

AOI 7 – Girard Point Fuels Processing Area

Consent Order / Characterization Status

In accordance with the Site Wide Approach, a repackaged AOI 7 SCR/RIR was submitted to the PADEP and the USEPA on February 29, 2012. A RIR Addendum was submitted to the agencies on September 19, 2013. On December 18, 2013, Sunoco received comments on the RIR Addendum from the PADEP. These comments will be addressed in the revised RIR expected to be completed by the end of 2016.

No. 3 Separator / Bulkhead Area – Operation During the First Half of 2016

On July 12, 2011, Sunoco reported a hydrocarbon sheen on the Schuylkill River to the National Response Center. The sheen was directly adjacent to the Girard Point No. 3 Separator. In response to the sheen on the river, Sunoco investigated the source of hydrocarbons to the river through the installation of monitoring wells and exploratory excavation around a process sewer junction box associated with the 137 Crude Unit and the No. 3 Separator. The monitoring wells demonstrated measurable oil on the water table, and the exploratory excavation revealed integrity issues with the junction box. The junction box and associated bulkhead penetration were sealed with concrete.

Construction of a ten recovery well hydraulic control system was completed on August 23, 2012. Groundwater and LNAPL are extracted using pneumatic submersible pumps, and total fluids pass through an oil/water separator. Water is discharged to an onsite process sewer, and LNAPL is recovered in a 1,100-gallon holding tank and recycled by the refinery.

The system was operational for the first half of 2016 with the following exception:

• On January 14, all ten pumps were removed for semi-annual maintenance. The system was down on high oil/water separator alarm on May 2.

A total of 1,556,600 gallons of groundwater and 1,854 gallons of LNAPL was recovered by the system during the first half of 2016. System operation details and performance data for the No. 3 Separator system can be found in **Appendix 1**.

AOI 8 - Point Breeze North Yard

Consent Order / Characterization Status

A SCR was submitted to the PADEP on September 30, 2008. A repackaged SCR/RIR incorporating the PADEP's comments on AOI 8 was submitted to the PADEP and the USEPA on January 31, 2012. Comments from the PADEP on the SCR/RIR were received by email on July 7, 2012. A revised RIR will be completed in 2017 based on the abovementioned PADEP comments.

PGW Border Recovery System – Operation During the First Half of 2016

The PGW Total Fluids Recovery system is offline. The system is being evaluated for upgrades in 2016.

<u> Jackson Street Sewer Area – Operation During the First Half of 2016</u>

The Jackson Street Sewer Total Fluids Recovery system is offline. Due to limited LNAPL presence in the area, the system will remain off unless there are significant increases in LNAPL in the proximal wells. The Jackson Street combined sewer overflow outfall ("CSO") is checked once per shift by PES refinery personnel for a sheen or the presence of LNAPL. There has been no evidence of sheening to the Schuylkill River throughout the first half of 2016.

Jackson Street Sewer Water Curtain – Operation During the First Half of 2016

The Jackson Street Sewer Water Curtain was operational during the first half of 2016. Due to reliability issues, the flow meter for the water curtain was taken out of service in December 2009. Water flow rate is irrelevant to system operation. System data for the first half of 2016 is included in **Appendix 1**.

Sunoco agreed at the July 30, 2009 meeting to sample the air in the sewer onsite and offsite following notification from the PADEP of a neighborhood (28th and McKean Streets) complaint. No complaints regarding sewer odors were received during the first half of 2016.

North Yard Bulkhead Area and No. 3 Tank Farm Separator – Operation During the First Half of 2016

The system was taken offline due to limited LNAPL presence in the area. The system will remain off unless there are significant increases in LNAPL in the proximal wells.

AOI 9 - Schuylkill River Tank Farm

There are no groundwater or LNAPL recovery systems operational in AOI 9. A SCR was submitted to the PADEP and the USEPA on October 30, 2009. A revised RIR was submitted to the agencies in December 2015. The RIR was denied and an RIR Addendum to address the deficiencies will be submitted in 2017.

AOI 10 - West Yard

There are no groundwater or LNAPL recovery systems operational in AOI 10. A SCR/RIR was submitted to the PADEP and the USEPA on June 29, 2011. Approval of the RIR was received from the PADEP on January 6, 2012. An ecological assessment was conducted in 2015 and 2016 and an Ecological Risk Assessment Report submitted in June 2016.

AOI 11 – Deep Aquifer

The SCR/RIR was submitted to the PADEP and the USEPA on September 12, 2011. Sunoco received comments to the report by email on December 9, 2011. The Final Report was submitted to the agencies on June 21, 2013. Sunoco received a "Disapproval of Final Report" from the PADEP dated September 26, 2013.

Groundwater Monitoring

The current monitoring program consists of quarterly groundwater and LNAPL gauging of select wells, annual groundwater and LNAPL gauging of site-wide wells, and annual groundwater sampling of select perimeter monitoring wells. During the first, third, and fourth quarters, select wells are gauged to monitor LNAPL thickness and determine hydraulic effects of targeted recovery systems. The site-wide annual well gauging event is typically conducted during the second quarter of each year with results used to identify the presence of LNAPL and determine groundwater flow patterns.

Liquid level measurements collected during the first quarter of 2016 are provided in **Table 1**. The second quarter 2016 site-wide annual gauging liquid level measurements are provided in **Table 2** of this report. The second quarter 2016 groundwater gauging data was used to generate a product thickness map (**Figure 3**) and site-wide groundwater contour maps. **Figure 4** presents groundwater contour elevations for the shallow and intermediate monitoring wells, and a deep groundwater elevation map is included as **Figure 5**.

The purpose of the annual groundwater sampling event is to evaluate concentration trends at the perimeter of the Philadelphia Refinery Complex. The annual groundwater sampling program consists of sampling select wells throughout the Point Breeze Refinery and Girard Point Refinery. The annual perimeter groundwater sampling event was conducted in conjunction with annual site-wide gauging in May 2016.

The annual perimeter groundwater samples are analyzed pursuant to Pennsylvania's Land Recycling Program for leaded and unleaded gasoline and No. 2, 4, 5, and 6 fuel oils. These parameters include benzene, cumene (isopropylbenzene), 1,2-dichloroethane (EDC), ethylbenzene, methyl tert butyl ether (MTBE), toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and total xylenes by EPA SW846 Method 8260B; 1,2-dibromoethane (EDB) by EPA SW 846 Method 8011; anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluorene, naphthalene, phenanthrene, and pyrene by EPA SW846 Method 8270D; dissolved lead by EPA SW846 Method 6010C. A summary of the annual perimeter sampling event conducted in May 2016 is provided in **Table 3**. A summary of the historical perimeter groundwater sampling analytical data is provided in **Table 4**. The laboratory analytical reports for the 2016 annual perimeter groundwater sampling event are included electronically in **Appendix 2**.

Please contact me at (302) 477-1305 or TLDOERR@evergreenresmgt.com with any questions or comments.

Best Regards,

Evergreen Resources Management Operations

Tiffanial. Doerr, PG Project Manager Philadelphia Refinery Remediation Program Groundwater Remediation Status Report, First Half 2016 Page 10

Enclosures: Figure 1 – Site Location Map

Figure 2 – Site Plan

Figure 3 – Apparent LNAPL Thickness Map, May 2016

Figure 4 – Water-Table Groundwater Elevation Map, May 2016 Figure 5 – Lower Aquifer Groundwater Elevation Map, May 2016

Table 1 – First Quarter 2016 Gauging Data
Table 2 – Second Quarter 2016 Gauging Data

Table 3 – May 2016 Perimeter Groundwater Sampling Analytical Results Table 4 – Historical Perimeter Groundwater Sampling Analytical Results

Appendix 1 – Remediation System Recovery Data

Appendix 2 – Laboratory Analytical Data Reports (electronic)

cc: Mr. Paul Gotthold

United States Environmental Protection Agency 1650 Arch Street Philadelphia, Pennsylvania 19103

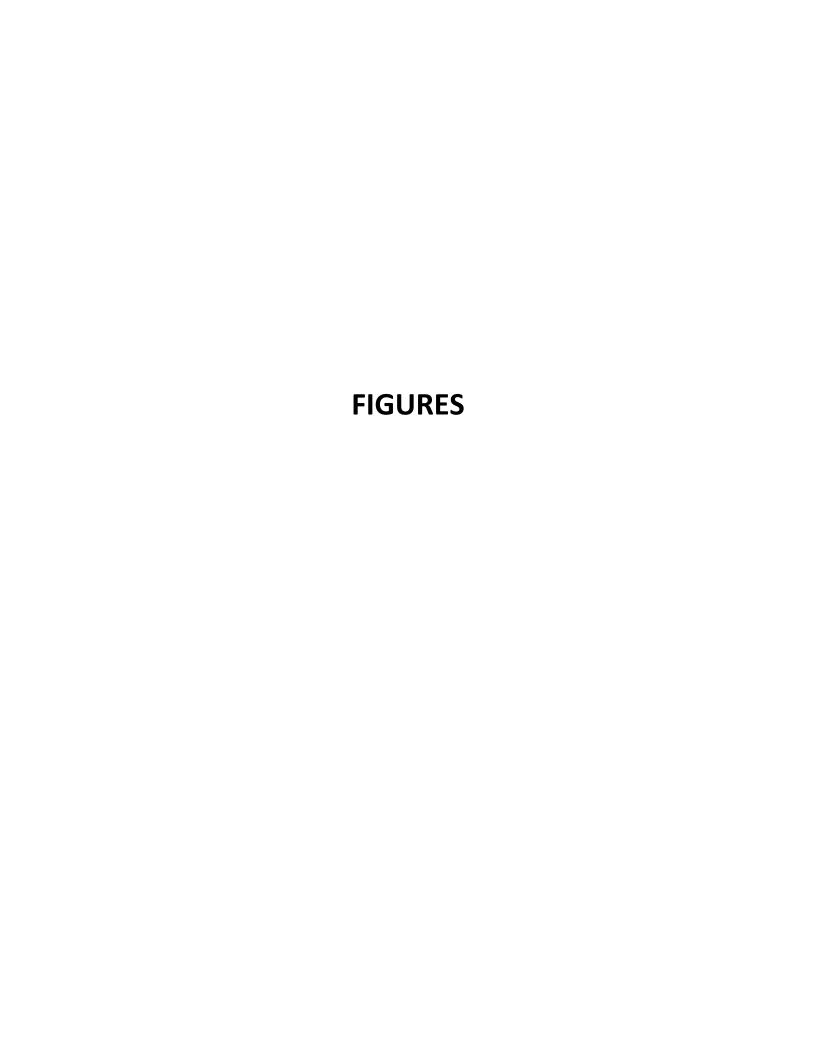
Mr. Nicholas Maliha, PE Philadelphia Water Department 1101 Market Street, ARA Mark, 4th Floor Philadelphia, Pennsylvania 19107

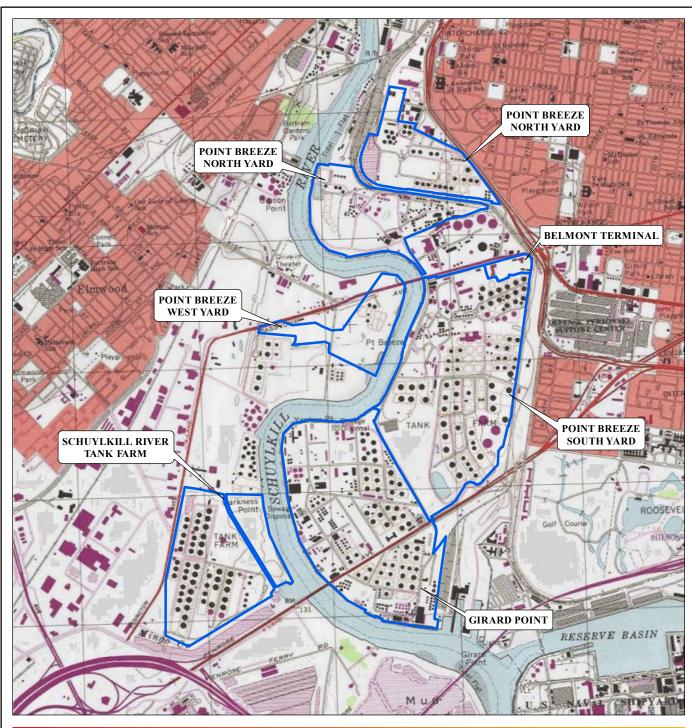
Mr. Charles D. Barksdale, Jr. PE PES Refining & Marketing, LLC 3144 Passyunk Avenue Philadelphia, Pennsylvania 19145

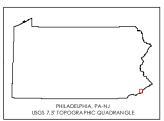
Ms. Jennifer Menges Stantec Consulting Services Inc. 1060 Andrew Drive, Suite 140 West Chester, Pennsylvania 19380

File: Philadelphia Refinery Remediation Program

Groundwater Remediation Status Report, First Half 2016







Notes
1. Coordinate System: NAD 1983 State Plane Pennsylvania South FIPS 3702 Feet

2. Source: Stantec, USG:

3. Service Layer Credits: Copyright: 2013 National Geographic Society, i-cubed

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Project Location City of Philadelphia, Pennsylvania

Prepared by GWC on 7/11/2016 Technical Review by ADK on 7/15/2016 Independent Review by JLM on 7/28/2016

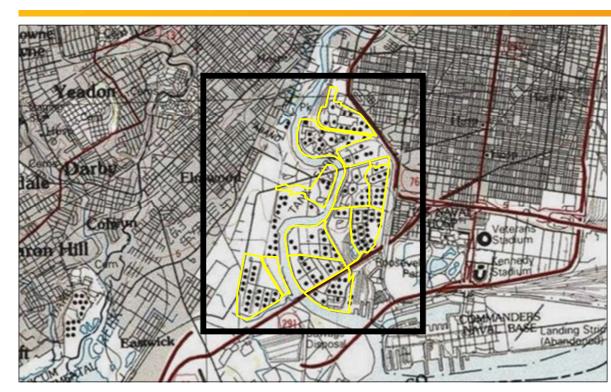
Client/Project EVERGREEN RESOURCES MANAGEMENT OPERATIONS PHILADELPHIA REFINERY COMPLEX 31 44 PASSYUNK AVENUE PHILADELPHIA, PA 19145

Figure No.

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SITE LOCATION MAP





Notes
1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec 3. Aerial & Topo Source: Copyright:© 2013 National Geographic Society, i-cubed Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

- WATER TABLE MONITORING WELL
- RECOVERY WELL LOWER AQUIFER MONITORING WELL INJECTION WELL
- DAMAGED MONITORING WELL
- DESTROYED MONITORING WELL ▲ UNABLE TO LOCATE WELL
- STAFF GAUGE PIEZOMETER
- POLLOCK STREET HORIZONTAL WELL --- SEWER LINE

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REMEDIATION SYSTEMS DESIGNATED AS CURRENTLY ACTIVE REMEDIATION SYSTEMS DESIGNATED AS INACTIVE AREA OF INTEREST (AOI)

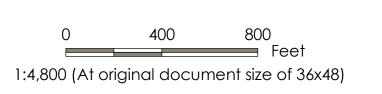


Figure No.

SITE PLAN

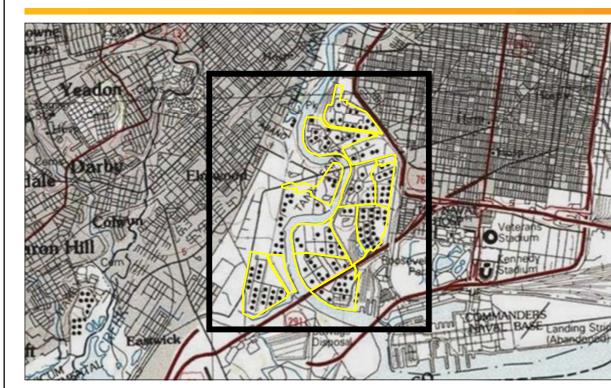
Client/Project EVERGREEN RESOURCES MANAGEMENT OPERATIONS PHILADELPHIA REFINERY COMPLEX 3144 PASSYUNK AVENUE PHILADELPHIA, PA 19145

Project Location City of Philadelphia, Pennsylvania 213402429
Prepared by GWC on 7/11/2016
Technical Review by ADK on 7/15/2016
Independent Review by JLM on 7/28/2016









Notes
 Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
 Sources: Stantec
 Callouts denote product thickness measured in feet using an interface probe.
 Dataset shows only wells that were gauged in May 2016.
 Aerial & Topo Copyright:© 2013 National Geographic Society, i-cubed Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

POLLOCK STREET HORIZONTAL WELL --- SEWER LINE

REMEDIATION SYSTEMS DESIGNATED AS CURRENTLY ACTIVE

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REMEDIATION SYSTEMS DESIGNATED AS INACTIVE AREA OF INTEREST (AOI)

0.01 APPARENT LIGHT NON-AQUEOUS PHASE LIQUID THICKNESS (FEET)

1:4,800 (At original document size of 36x48)

Figure No.

APPARENT LNAPL THICKNESS MAP **MAY 2016**

Client/Project EVERGREEN RESOURCES MANAGEMENT OPERATIONS PHILADELPHIA REFINERY COMPLEX 3144 PASSYUNK AVENUE

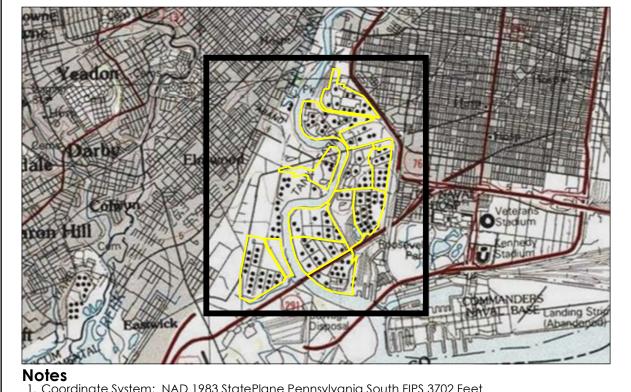
PHILADELPHIA, PA 19145 Project Location

213402429
Prepared by GWC on 7/11/2016
Technical Review by ADK on 7/14/2016
Independent Review by ANP on 7/14/2016 City of Philadelphia, Pennsylvania









1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)

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2. Sources: Stantec

basin between elevations -10 and -11 feet NAVD 88. As such, true water-table conditions in the AOI 9 area are unclear and contours (dashed) are presented as interpreted by Stantec at the time of well gauging.

6. Gauging conducted under pumping conditions.

7. Contour Interval = 1 foot

Sources: Startlec
 Callouts denote corrected groundwater elevation in feet. Depth to groundwater was measured in each well to the nearest one-hundredth of a foot using an interface probe.
 Groundwater elevation data was interpolated using block kriging with a linear variogram model in Surfer.
 Water-levels in the aquifer(s) beneath AOI 9 are influenced by and reflective of year-round pumping from the Mingo Creek Flood Control Basin. The City of Philadelphia Water Department controls the water elevation in that

AREA OF INTEREST (AOI) 2.04 GROUNDWATER ELEVATION (FEET NAVD 88)

— GROUNDWATER ELEVATION CONTOUR (FEET NAVD 88)

---- AOI 9 WATER-LEVEL ELEVATION (1 FOOT INTERVAL)

RECOVERY WELL

PIEZOMETER

--- SEWER LINE

DAMAGED MONITORING WELL

DESTROYED MONITORING WELL

POLLOCK STREET HORIZONTAL WELL

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■ UNABLE TO LOCATE WELL

NM NOT MEASURED OR GROUNDWATER ELEVATION NOT CALCULATED DUE TO LACK OF SURVEYED REFERENCE ELEVATION

WP-9 WELLS NOT USED FOR GROUNDWATER CONTOURING (FEET NAVD 88)

1:4,800 (At original document size of 36x48)

Figure No.

Project Location

City of Philadelphia, Pennsylvania

WATER-TABLE GROUNDWATER ELEVATION MAP

MAY 2016 Client/Project EVERGREEN RESOURCES MANAGEMENT OPERATIONS PHILADELPHIA REFINERY COMPLEX

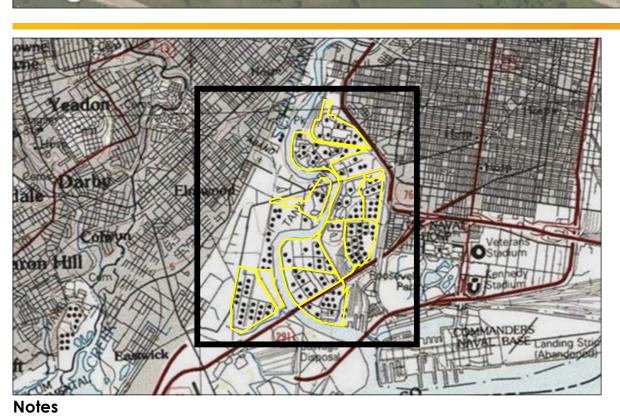
3144 PASSYUNK AVENUE PHILADELPHIA, PA 19145





213402429





6. Contour Interval = 1 foot
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Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)

2. Sources: Stantec

Callouts denote corrected groundwater elevation in feet. Depth to groundwater was measured in each well to the nearest one-hundredth of a foot using an interface probe.
 Groundwater elevation data was interpolated using block kriging with a linear variogram model in Surfer.
 Determination of whether wells in AOI 9 are screened across the water table or in the lower aquifer are ongoing. Lower aquifer contours are not shown in this AOI.

DESTROYED MONITORING WELL

— GROUNDWATER ELEVATION CONTOUR (FEET NAVD 88) POLLOCK STREET HORIZONTAL WELL

--- SEWER LINE

AREA OF INTEREST (AOI) -5.74 GROUNDWATER ELEVATION (FEET NAVD 88)

NM NOT MEASURED OR GROUNDWATER ELEVATION NOT CALCULATED DUE TO LACK OF SURVEYED REFERENCE ELEVATION

WELL NOT USED FOR GROUNDWATER CONTOURING (FEET NAVD 88)

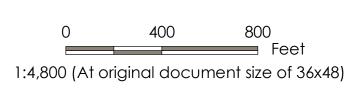


Figure No.

LOWER AQUIFER **GROUNDWATER ELEVATION MAP MAY 2016**

Client/Project EVERGREEN RESOURCES MANAGEMENT OPERATIONS PHILADELPHIA REFINERY COMPLEX 3144 PASSYUNK AVENUE PHILADELPHIA, PA 19145

Project Location 213402429
Prepared by GWC on 7/11/2016
Technical Review by ADK on 7/14/2016
Independent Review by JKD on 7/18/2016 City of Philadelphia, Pennsylvania





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AOI	Well ID	Date	Depth to LNAPL (ff btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 1	S-127	2/9/2016		16.44		0.66	Shallow	No	Static	
AOI 1	S-162	2/9/2016	17.25	17.26	0.01	0.81	Shallow	No	Static	
AOI 1	S-164	2/9/2016		15.66		1.04	Shallow	No	Static	
AOI 1	S-179	2/9/2016		20.69		3.84	Intermediate	Yes	Static	
AOI 1	S-180	2/9/2016	23.54	23.55	0.01	-1.34	Intermediate	Yes	Pumping	
AOI 1	S-181	2/9/2016	23.64	23.64	<0.01	-0.77	Intermediate	Yes	Pumping	
AOI 1	S-182	2/9/2016	22.79	22.79	<0.01	0.22	Intermediate	Yes	Pumping	
AOI 1	S-183	2/9/2016		23.51		-0.03	Intermediate	Yes	Pumping	
AOI 1	S-184	2/9/2016		16.19		7.29	Intermediate	Yes	Pumping	
AOI 1	S-185	2/9/2016		21.21		2.67	Intermediate	Yes	Pumping	
AOI 1	S-186	2/9/2016		24.20		0.16	Intermediate	Yes	Pumping	
AOI 1	S-187	2/9/2016	22.99	22.99	<0.01	1.53	Intermediate	Yes	Pumping	
AOI 1	S-188	2/9/2016		24.69		0.13	Intermediate	Yes	Pumping	
AOI 1	S-189	2/9/2016	26.21	26.21	<0.01	-0.41	Intermediate	Yes	Pumping	
AOI 1	S-190	2/9/2016		25.39		0.18		Yes		
	S-170	2/9/2016		25.05		0.78	Intermediate		Pumping	
AOI 1							Intermediate	Yes	Pumping	
AOI 1	S-192	2/9/2016		25.81		0.21	Intermediate	Yes	Pumping	
AOI 1	S-193	2/9/2016		24.37		3.73	Intermediate	Yes	Static	
AOI 1	S-194	2/9/2016		27.15		3.89	Shallow	No	Static	
AOI 1	S-196	2/9/2016		45.74		4.31	Shallow	No	Static	
AOI 1	S-197	2/9/2016		45.57		4.21	Shallow	No	Static	
AOI 1	S-198	2/9/2016	25.41	26.61	1.20	3.67	Intermediate	No	Static	
AOI 1	S-199	2/9/2016	25.09	26.37	1.28	3.83	Intermediate	No	Static	
AOI 1	S-200	2/9/2016		25.27		3.79	Intermediate	No	Static	
AOI 1	S-201	2/9/2016	24.01	25.22	1.21	3.68	Intermediate	No	Static	
AOI 1	S-202	2/9/2016		28.02		4.59	Intermediate	No	Static	
AOI 1	S-203	2/9/2016	27.98	28.90	0.92	3.89	Intermediate	No	Static	
AOI 1	S-205	2/9/2016	18.02	19.39	1.37	9.95	Intermediate	No	Static	
AOI 1	S-206	2/9/2016		26.90		4.88	Intermediate	No	Static	
AOI 1	S-207	2/9/2016		13.19		14.01	Intermediate	No	Static	
AOI 1	S-208	2/9/2016		19.33		1.53	Intermediate	No	Static	
AOI 1	S-209	2/9/2016		26.04		0.94	Intermediate	No	Static	
AOI 1	S-210	2/9/2016		23.90		-0.21	Intermediate	No	Static	
AOI 1	S-211	2/9/2016		14.15		1.10	Intermediate	No	Static	
AOI 1	S-212	2/9/2016		17.47		0.90	Intermediate	No	Static	
AOI 1	S-213	2/9/2016		14.68		0.53	Intermediate	No	Static	
AOI 1	S-214	2/9/2016		19.21		0.63	Intermediate	No	Static	
AOI 1	S-215	2/9/2016		26.61		7.76	Intermediate	No	Static	
AOI 1	S-226	2/9/2016	_	21.89	-	0.19	Intermediate	No	Static	
AOI 1	S-227	2/9/2016		22.55		-0.76	Intermediate	No	Static	
AOI 1	S-228	2/9/2016		21.86		-0.68	Intermediate	No	Static	
AOI 1	S-230	2/9/2016		18.32		1.87	Intermediate	No	Static	
AOI 1	S-231	2/9/2016		20.04		-0.10	Intermediate	No	Static	
AOI 1	S-232	2/9/2016		20.60		-0.29	Intermediate	No	Static	
AOI 1	S-255	2/9/2016		22.14		-0.23	Intermediate	No	Static	
AOI 1	S-256	2/9/2016		21.90		-0.49	Intermediate	No	Static	
AOI 1	S-257	2/9/2016		23.59		-0.32	Intermediate	No	Static	
AOI 1	S-258	2/9/2016	_	23.91		-1.11	Intermediate	No	Static	
AOI 1	S-259	2/9/2016		24.42		-1.86	Intermediate	No	Static	
AOI 1	S-260	2/9/2016	_	22.68		-0.98	Intermediate	No	Static	
AOI 1	S-261	2/9/2016		22.86		4.55	Intermediate	No	Static	
	S-262	2/9/2016				0.84				
AOI 1				18.60			Intermediate	No	Static	
AOI 1	S-263	2/9/2016		16.14		0.64	Intermediate	No	Static	
AOI 1	S-264D	2/9/2016		25.98		0.65	Deep	No	Static	

AOI	Well ID	Date	Depth to LNAPL (ff btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 1	S-265	2/9/2016	14.40	14.41	0.01	16.78	Intermediate	Yes	Static	
AOI 1	S-267	2/9/2016		18.82		14.05	Intermediate	Yes	Static	
AOI 1	S-268	2/9/2016		27.13		4.32	Intermediate	Yes	Static	
AOI 1	S-269	2/9/2016		19.81		2.75	Intermediate	No	Static	
AOI 1	S-270	2/9/2016		21.19		1.94	Intermediate	No	Static	
AOI 1	S-271	2/9/2016		24.93		3.55	Intermediate	No	Static	
AOI 1	S-272	2/9/2016		24.44		3.92	Intermediate	No	Static	
AOI 1	S-273	2/9/2016		24.09		3.66	Intermediate	No	Static	
AOI 1	S-274	2/9/2016	23.89	23.90	0.01	3.48	Intermediate	No	Static	
AOI 1	S-275	2/9/2016		23.09		3.48			Static	
-							Intermediate	No		
AOI 1	S-276	2/9/2016	23.39	23.39	<0.01	3.21	Intermediate	No	Static	
AOI 1	S-277	2/9/2016	23.23	23.80	0.57	2.35	Intermediate	No	Static	
AOI 1	S-312	2/9/2016		5.27		12.61	Shallow/Intermediate	No	Static	
AOI 1	S-388D	2/9/2016		25.34		0.85	Deep	No	Static	
AOI 1	S-389D	2/9/2016		25.18		1.12	Deep	No	Static	
AOI 1	S-390D	2/9/2016		25.41		1.07	Deep	No	Static	
AOI 1	S-391D	2/9/2016	NM	NM	NM	NM	Deep	No	Static	WELL IS DESTROYED
AOI 1	S-392D	2/9/2016		19.22		0.75	Deep	No	Static	
AOI 1	S-396	2/9/2016		24.94		1.25	Intermediate	No	Static	
AOI 1	S-397	2/9/2016	-	25.57		1.03	Intermediate	No	Static	
AOI 1	S-398	2/9/2016		24.75		0.81	Intermediate	No	Static	
AOI 1	S-399	2/9/2016	_	19.41		0.75	Intermediate	No	Static	
AOI 1	S-400	2/9/2016	NM	NM	NM	NM	Deep	No	Static	WELL IS DESTROYED
AOI 1	S-401	2/9/2016		26.19		2.20	Intermediate	No	Static	
AOI 1	S-402	2/9/2016	29.03	29.11	0.08	4.40	Not Classified	No	Static	
AOI 1	S-403	2/9/2016		23.55		3.27	Not Classified	No	Static	
AOI 1	S-404	2/9/2016	11.52	11.57	0.05	16.98	Not Classified	No	Static	LNAPL IS VERY VISCOUS
AOI 1	S-405	2/9/2016	22.50	22.50	<0.01	3.64	Not Classified	No	Static	EIVITEIS VERT VISCOUS
AOI 1	S-417	2/9/2016	26.86	27.41	0.55	5.29	Not Classified	Yes	Static	
-		2/9/2016								MELL CASING PROVEN AT CRADE
AOI 1	S-418			17.47		-0.11	Not Classified	No	Static	WELL CASING BROKEN AT GRADE
AOI 1	S-419	2/9/2016		15.08		0.94	NA	No	Static	
AOI 2	C-HEADER	2/10/2016		8.93		11.68	Shallow/Intermediate	No	Static	
AOI 2		2/10/2016		30.03		5.05	Shallow	No	Static	
AOI 2	PZ-100	2/10/2016		18.04		0.03	Shallow	No	Static	
AOI 2	PZ-101	2/10/2016		10.02		7.15	Shallow	No	Static	
AOI 2	River1	2/10/2016	-	12.60	-	NA	NA	No	Static	AT 0945
AOI 2	River3	2/10/2016		11.77		NA	NA	No	Static	
AOI 2	RW-100	2/10/2016	19.36	19.80	0.44	1.31	Shallow	Yes	Static	
AOI 2	RW-101	2/10/2016	18.41	18.93	0.52	1.30	Shallow	Yes	Static	
AOI 2	RW-102	2/10/2016	15.86	15.87	0.01	1.61	Shallow	Yes	Static	
AOI 2	RW-103	2/10/2016	17.77	18.48	0.71	2.15	Shallow	Yes	Static	
AOI 2	RW-104	2/10/2016		9.88		-0.92	Shallow	Yes	Static	
AOI 2	RW-105	2/10/2016	14.41	14.41	<0.01	-5.72	Shallow	Yes	Pumping	
AOI 2	RW-106	2/10/2016		8.74		0.56	Shallow	Yes	Static	
AOI 2	RW-107	2/10/2016		9.63		0.92	Shallow	Yes	Static	
AOI 2	RW-108	2/10/2016		7.66		2.24	Shallow	Yes	Static	
AOI 2	RW-109	2/10/2016	7.95	8.03	0.08	1.90	Shallow	Yes	Static	
AOI 2	RW-113	2/10/2016		9.84		0.39	Shallow	Yes	Static	
AOI 2	RW-114	2/10/2016		12.81		0.20	Shallow	Yes	Static	
AOI 2	RW-115	2/10/2016		9.72		0.48	Shallow	Yes	Static	
AOI 2	RW-116	2/10/2016		10.20		0.61	Shallow	Yes	Static	
AOI 2	RW-117	2/10/2016	9.35	9.36	0.01	0.43	Shallow	Yes	Static	
AOI 2	RW-118	2/10/2016	11.31	11.31	<0.01	0.52	Shallow	Yes	Static	
AOI 2	RW-119	2/10/2016		12.26		0.59	Shallow	Yes	Static	
AUI Z	1744-113	2/10/2016		12.20		0.37	31 IUIIUW	162	JIUIC	

AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 2	RW-120	2/10/2016	12.92	13.70	0.78	0.55	Shallow	Yes	Static	
AOI 2	RW-121	2/10/2016		14.70		0.60	Shallow/Intermediate	Yes	Static	
AOI 2	RW-122	2/10/2016		20.80		-10.56	Shallow	Yes	Pumping	
AOI 2	RW-123	2/10/2016		9.72		0.25	Shallow	Yes	Static	
AOI 2	RW-124	2/10/2016		22.05		-12.89	Shallow	Yes	Pumping	
AOI 2	RW-125	2/10/2016		12.55		1.72	Shallow	Yes	Static	
AOI 2	RW-126	2/10/2016	8.80	8.81	0.01	0.43	Shallow	Yes	Static	
AOI 2	RW-127	2/10/2016		13.39		0.51	Shallow	Yes	Static	
AOI 2	RW-128	2/10/2016	8.21	8.22	0.01	0.22	Shallow	Yes	Static	
AOI 2	RW-129	2/10/2016	8.89	8.89	<0.01	0.95	Shallow	Yes	Static	
AOI 2	RW-600	2/10/2016		3.74		5.31	Shallow/Intermediate	Yes	Static	
AOI 2	RW-601	2/10/2016		9.17		2.51	Shallow/Intermediate	Yes	Static	
AOI 2	S-48	2/10/2016	19.75	20.00	0.25	1.47	Shallow/Intermediate	No	Static	
AOI 2	S-53	2/10/2016	18.19	18.71	0.52	3.42	Shallow	No	Static	
AOI 2	S-54	2/10/2016	21.69	22.01	0.32	1.22	Intermediate	No	Static	
AOI 2	S-61	2/10/2016	16.41	16.70	0.29	1.85	Shallow/Intermediate	No	Static	
AOI 2	S-62	2/10/2016	-	19.90		1.48	Intermediate	No	Static	
AOI 2	S-63	2/10/2016	20.38	20.38	<0.01	0.90	Shallow	No	Static	
AOI 2	S-64	2/10/2016		8.10		2.46	Shallow/Intermediate	No	Static	
AOI 2	S-65	2/10/2016	9.67	9.68	0.01	0.95	Shallow/Intermediate	No	Static	
AOI 2	S-71	2/10/2016		20.42		3.62	Shallow/Intermediate	No	Static	
AOI 2	S-72	2/10/2016	-	26.41	-	4.65	Intermediate	No	Static	
AOI 2	S-72D	2/10/2016		32.28		2.23	Deep	No	Static	
AOI 2	S-91	2/10/2016	18.81	18.82	0.01	4.32	Intermediate	No	Static	LNAPL IS VERY VISCOUS
AOI 2	S-92	2/10/2016	10.14	10.19	0.05	9.92	Intermediate	No	Static	
AOI 2	S-93	2/10/2016		16.94	-	1.31	Intermediate	Yes	Static	
AOI 2	S-105	2/10/2016		10.38		2.15	Shallow	No	Static	
AOI 2	S-107	2/10/2016	9.19	9.20	0.01	3.12	Shallow/Intermediate	No	Static	
AOI 2	S-108	2/10/2016		5.65		5.07	Shallow/Intermediate	No	Static	
AOI 2	S-110	2/10/2016		15.12		10.55	Shallow/Intermediate	No	Static	
AOI 2	S-130	2/10/2016	18.97	18.98	0.01	3.51	Shallow/Intermediate	No	Static	
AOI 2	S-131	2/10/2016	15.05	15.06	0.01	3.71	Shallow	No	Static	WELL IS BROKEN AT GRADE - CONCRETE AND VAULT TORN OUT
AOI 2	S-132	2/10/2016	_	18.43		2.60	Shallow/Intermediate	No	Static	
AOI 2	S-133	2/10/2016		18.57		3.45	Shallow/Intermediate	No	Static	
AOI 2	S-134	2/10/2016	_	20.26		1.77	Shallow/Intermediate	No	Static	
AOI 2	S-135	2/10/2016	20.79	21.77	0.98	2.27	Shallow	No	Static	
AOI 2	S-136	2/10/2016		17.81		2.78	Shallow/Intermediate	No	Static	
AOI 2	S-136			17.70		2.76			Static	
		2/10/2016					Shallow/Intermediate	No		
AOI 2	S-139	2/10/2016		19.56		1.90	Shallow/Intermediate	No	Static	WELL CASING IS DROVEN OFF AT THE TOO
AOI 2	S-140	2/10/2016		19.81		2.22	Shallow/Intermediate	No	Static	WELL CASING IS BROKEN OFF AT THE TOP
AOI 2	S-141	2/10/2016	20.68	20.93	0.25	1.21	Shallow/Intermediate	No	Static	
AOI 2	S-142	2/10/2016	21.07	21.10	0.03	-1.23	Shallow	No	Static	
AOI 2	S-143	2/10/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	WELL IS BLOCKED AT 9.80 FT BTOC
AOI 2	S-150	2/10/2016		17.37		3.46	Shallow/Intermediate	No	Static	
AOI 2	S-152	2/10/2016		6.59	-	3.90	Shallow/Intermediate	No	Static	
AOI 2	S-153	2/10/2016		8.10		1.71	Shallow/Intermediate	No	Static	
AOI 2	S-154	2/10/2016		11.15		-0.53	Shallow/Intermediate	No	Static	
AOI 2	S-156	2/10/2016	18.06	18.36	0.30	2.74	Shallow	No	Static	
AOI 2	S-157	2/10/2016	16.29	19.40	3.11	3.22	Shallow/Intermediate	No	Static	
AOI 2	S-159	2/10/2016	16.97	16.98	0.01	1.90	Shallow/Intermediate	No	Static	
AOI 2	S-165	2/10/2016		16.86		1.25	Shallow/Intermediate	No	Static	
AOI 2	S-166	2/10/2016		16.40		1.83	Shallow/Intermediate	No	Static	
AOI 2	S-174	2/10/2016	10.31	11.71	1.40	9.12	Shallow	No	Static	
AOI 2	S-175	2/10/2016	17.21	17.22	0.01	2.82	Shallow	No	Static	
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AOI	Well ID	Date	Depth to LNAPL (ft bloc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 2	S-177	2/10/2016		18.20		1.36	Shallow/Intermediate	No	Static	
AOI 2	S-178	2/10/2016		12.81		6.73	Shallow/Intermediate	No	Static	
AOI 2	S-246A	2/10/2016		10.05		1.71	Shallow/Intermediate	No	Static	
AOI 2	S-247	2/10/2016		10.51		1.58	Shallow/Intermediate	No	Static	
AOI 2	S-248	2/10/2016		9.27		1.53	Shallow/Intermediate	No	Static	
AOI 2	S-249	2/10/2016		10.76		1.85	Shallow/Intermediate	No	Static	
AOI 2	S-251	2/10/2016		18.30		0.97	Shallow/Intermediate	Yes	Static	
AOI 2	S-252	2/10/2016	_	18.36		0.93	Shallow/Intermediate	Yes	Static	
AOI 2	S-253	2/10/2016		19.15		1.68	Shallow/Intermediate	Yes	Static	
-	S-254					1.38				
AOI 2		2/10/2016		19.50			Shallow/Intermediate	Yes	Static	WELL CASING IS BROKEN AT ORARE
AOI 2	S-292	2/10/2016		18.88		9.89	Shallow/Intermediate	No	Static	WELL CASING IS BROKEN AT GRADE
AOI 2	S-294	2/10/2016	-	29.79		4.68	Intermediate	No	Static	
AOI 2	S-294D	2/10/2016		31.91		2.77	Deep	No	Static	
AOI 2	S-295	2/10/2016		23.92		8.82	Shallow/Intermediate	No	Static	
AOI 2	S-297	2/10/2016	25.50	25.61	0.11	4.49	Shallow/Intermediate	No	Static	
AOI 2	S-298	2/10/2016	14.55	14.61	0.06	12.43	Shallow/Intermediate	No	Static	
AOI 2	S-299	2/10/2016		20.66		3.34	Shallow/Intermediate	No	Static	
AOI 2	S-300	2/10/2016		20.21		5.07	Shallow/Intermediate	No	Static	
AOI 2	S-301	2/10/2016		16.00		4.41	Shallow/Intermediate	No	Static	
AOI 2	S-302	2/10/2016	21.83	22.16	0.33	2.08	Intermediate	No	Static	
AOI 2	S-302D	2/10/2016		24.63		-0.03	Deep	No	Static	
AOI 2	S-303	2/10/2016		20.39		2.20	Shallow/Intermediate	No	Static	
AOI 2	S-304	2/10/2016	11.74	11.74	<0.01	10.45	Shallow/Intermediate	No	Static	
AOI 2	S-305	2/10/2016		18.65		1.08	Intermediate	No	Static	
AOI 2	S-305D	2/10/2016		19.89		0.59	Deep	No	Static	
AOI 2	S-306			21.76		0.71			Static	
-		2/10/2016					Intermediate	No		
AOI 2	S-307	2/10/2016		16.55		2.02	Shallow/Intermediate	No	Static	
AOI 2	S-308	2/10/2016		24.06		4.05	Shallow/Intermediate	No	Static	
AOI 2	S-309	2/10/2016		18.10		1.63	Shallow/Intermediate	No	Static	
AOI 2	S-310	2/10/2016	-	8.89		8.51	Shallow/Intermediate	No	Static	WELL CASING IS DAMAGED
AOI 2	S-311	2/10/2016	25.01	25.02	0.01	1.17	Intermediate	No	Static	
AOI 2	S-313	2/10/2016	-	19.19	-	1.71	Shallow	Yes	Static	
AOI 2	S-314	2/10/2016		19.26		1.44	Shallow	Yes	Static	
AOI 2	S-315	2/10/2016	19.35	19.80	0.45	1.06	Shallow	Yes	Static	
AOI 2	S-316	2/10/2016		18.13		2.77	Shallow	Yes	Static	
AOI 2	S-317	2/10/2016		18.60		1.59	Shallow	Yes	Static	
AOI 2	S-318	2/10/2016	-	22.31		1.44	Shallow/Intermediate	No	Static	
AOI 2	S-328	2/10/2016		19.01		2.96	Shallow/Intermediate	No	Static	
AOI 2	S-333	2/10/2016		11.98		1.75	Shallow/Intermediate	No	Static	
AOI 2	S-335	2/10/2016	_	11.15		-1.05	Shallow/Intermediate	No	Static	WELL CASING IS BROKEN AT GRADE
AOI 2	S-336	2/10/2016		9.60		1.92	Shallow/Intermediate	No	Static	
AOI 2	S-337	2/10/2016		11.02		1.19	Shallow/Intermediate	No	Static	
AOI 2	S-338	2/10/2016	12.74	12.89	0.15	2.77	Shallow/Intermediate	No	Static	
AOI 2	S-346	2/10/2016	18.10	18.79	0.69	1.25	Shallow/Intermediate	No	Static	
AOI 2	S-347	2/10/2016	17.74	18.41	0.67	1.26	Shallow/Intermediate	No	Static	
AOI 2	S-348	2/10/2016	14.43	17.18	2.75	4.82	Shallow/Intermediate	No	Static	
AOI 2	S-349	2/10/2016	14.68	14.81	0.13	3.92	Shallow/Intermediate	No	Static	
AOI 2	S-350	2/10/2016		26.97		4.51	Shallow/Intermediate	No	Static	
-						4.75				
AOI 2	S-351	2/10/2016		30.49			Shallow/Intermediate	No	Static	
AOI 2	S-354	2/10/2016		24.20		3.83	Shallow/Intermediate	No	Static	
AOI 2	S-355	2/10/2016	26.79	26.90	0.11	4.01	Shallow/Intermediate	No	Static	
AOI 2	S-357	2/10/2016	20.18	20.74	0.56	7.82	Shallow/Intermediate	No	Static	
AOI 2	S-359	2/10/2016		17.83		2.45	Shallow/Intermediate	No	Static	
AOI 2	S-360	2/10/2016	22.59	22.59	<0.01	1.22	Shallow/Intermediate	No	Static	

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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 2	S-361	2/10/2016		23.83		2.54	Shallow/Intermediate	No	Static	
AOI 2	S-362	2/10/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	WELL IS BLOCKED AT 4,13 FT BTOC
AOI 2	S-363	2/10/2016		24.81		1.05	Shallow/Intermediate	No	Static	
AOI 2	S-406	2/10/2016		10.24		1.96	Shallow/Intermediate	No	Static	
AOI 2	S-420	2/10/2016		6.15		3.11	Shallow	No	Static	
AOI 2	SD-1	2/10/2016		6.98		12.52	Shallow	No	Static	
AOI 3	RW-2	2/8/2016	11.43	11.92	0.49	-0.24	Intermediate	Yes	Static	
AOI 4	RW-700	2/8/2016		20.30		-2.29	Intermediate	Yes	Pumping	
AOI 4	RW-701	2/8/2016		19.55		-1.28	Intermediate	Yes	Pumping	
AOI 4	RW-702	2/8/2016		31.55		-10.60	Intermediate	Yes	Pumping	
AOI 4	RW-703	2/8/2016		29.00		-8.38	Intermediate	Yes	Pumping	
AOI 4	RW-704	2/8/2016		21.70		-1.47	Intermediate	Yes	Pumping	
AOI 4	RW-705	2/8/2016		14.65		1.27	Intermediate	Yes	Static	
		2/8/2016				-3.51				
AOI 4	RW-706			19.40			Intermediate	Yes	Pumping	
AOI 4	RW-707	2/8/2016		15.48		0.81	Intermediate	Yes	Static	
AOI 4	RW-708	2/8/2016		17.95		-2.46	Intermediate	Yes	Pumping	
AOI 4	RW-709	2/8/2016	-	14.46		0.84	Intermediate	Yes	Static	
AOI 4	RW-710	2/8/2016	-	15.27		0.61	Intermediate	Yes	Static	
AOI 4	RW-711	2/8/2016	-	14.59	-	0.90	Intermediate	Yes	Static	
AOI 4	RW-712	2/8/2016		14.68		0.88	Intermediate	Yes	Static	
AOI 4	RW-713	2/8/2016		14.11		0.91	Intermediate	Yes	Static	
AOI 4	RW-714	2/8/2016		14.24		0.97	Intermediate	Yes	Static	
AOI 4	RW-715	2/8/2016	-	14.41	-	0.96	Intermediate	Yes	Static	
AOI 4	RW-716	2/8/2016	-	14.53	-	1.02	Intermediate	Yes	Static	
AOI 4	RW-717	2/8/2016		14.55		1.06	Intermediate	Yes	Static	
AOI 4	S-30	2/8/2016	21.12	28.98	7.86	0.97	Intermediate	Yes	Static	
AOI 5	RWBH-1	2/8/2016	1.93	1.94	0.01	3.40	Shallow	Yes	Static	
AOI 5	RWBH-2	2/8/2016	2.30	3.42	1.12	1.72	Shallow	Yes	Static	
AOI 6	B-124	2/8/2016	4.61	6.74	2.13	3.96	Shallow	Yes	Static	
AOI 6	B-133	2/8/2016	4.63	4.64	0.01	2.70	Shallow	Yes	Static	
AOI 6	B-134	2/8/2016		5.01		1.51	Shallow	Yes	Static	
AOI 6	B-136	2/8/2016	4.08	4.11	0.03	5.07	Shallow	Yes	Static	
AOI 6	B-137	2/8/2016	3.75	4.29	0.54	4.91	Shallow	Yes	Static	
AOI 6	B-138	2/8/2016		3.93		5.40	Shallow	Yes	Static	
AOI 6	B-139	2/8/2016	NM	NM	NM	NM	Shallow	Yes	Static	WELL IS DESTROYED
AOI 6	B-140	2/8/2016	NM	NM	NM	NM	Shallow	Yes	Static	WELL IS DESTROYED
AOI 6	B-142	2/8/2016	6.62	7.60	0.98	2.99	Shallow	Yes	Static	
AOI 6	B-143	2/8/2016	4.41	5.09	0.68	4.48	Shallow	Yes	Static	
AOI 6	B-147	2/8/2016	5.34	5.40	0.06	3.55	Shallow	Yes	Static	
AOI 6	SUMP-1	2/8/2016	5.12	5.25	0.13	5.56	Shallow	Yes	Static	
AOI 7	RW-801	2/8/2016		19.05		-12.78	Shallow	Yes	Pumping	
AOI 7	RW-802	2/8/2016	-	21.20		-15.50	Shallow	Yes	Pumping	
AOI 7	RW-803	2/8/2016		21.15		-15.37	Shallow	Yes	Pumping	
AOI 7	RW-804	2/8/2016		20.80		-15.02	Shallow	Yes	Pumping	
AOI 7	RW-805	2/8/2016		18.15		-12.40	Shallow	Yes	Pumping	
AOI 7	RW-806	2/8/2016	_	20.20		-14.79	Shallow	Yes	Pumping	
AOI 7	RW-807	2/8/2016		20.70		-13.86	Shallow	Yes	Pumping	
AOI 7	RW-808	2/8/2016		18.80		-12.72	Shallow	Yes	Pumping	
AOI 7	RW-809	2/8/2016		19.90		-13.35	Shallow	Yes	Pumping	
AOI 7	RW-810	2/8/2016		17.10		-10.66				
							Shallow	Yes	Pumping	
AOI 8	RW-200	2/11/2016	22.90	5.85	0.41	6.17	Intermediate	Yes	Static	
AOI 8	RW-201	2/11/2016	22.90	23.31	0.41	9.03	Intermediate	Yes	Static	
AOI 8	RW-202	2/11/2016		20.74		8.77	Intermediate	Yes	Static	
AOI 8	RW-203	2/11/2016	22.73	22.85	0.12	8.36	Intermediate	Yes	Static	

AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 8	RW-204	2/11/2016	МИ	NM	NM	NM	Intermediate	Yes	Static	
AOI 8	RW-205	2/11/2016	19.10	21.85	2.75	10.33	Intermediate	Yes	Static	
AOI 8	RW-206	2/11/2016	21.24	23.21	1.97	9.48	Intermediate	Yes	Static	
AOI 8	RW-300	2/11/2016	15.20	15.42	0.22	6.40	Intermediate	Yes	Static	
AOI 8	RW-301	2/11/2016	12.25	12.25	<0.01	NA	Intermediate	Yes	Static	
AOI 8	RW-302	2/11/2016		13.51		10.58	Intermediate	Yes	Static	
AOI 8	RW-303	2/11/2016		14.30		10.68	Intermediate	Yes	Static	
AOI 8	RW-304	2/11/2016		15.13		10.15	Intermediate	Yes	Static	
AOI 8	RW-305	2/11/2016	-	15.09		10.18	Intermediate	Yes	Static	
AOI 8	RW-306	2/11/2016	13.08	13.09	0.01	10.50	Intermediate	Yes	Static	
AOI 8	RW-307	2/11/2016		14.76		8.50	Intermediate	Yes	Static	
AOI 8	RW-308	2/11/2016		16.75		8.86	Intermediate	Yes	Static	
AOI 8	RW-309	2/11/2016		15.71		9.52	Intermediate	Yes	Static	
AOI 8	RW-500	2/11/2016		2.75		4.81	Intermediate	Yes	Static	
AOI 8	RW-501	2/11/2016		6.72		3.07	Intermediate	Yes	Static	
AOI 8	RW-502	2/11/2016	9.07	9.48	0.41	3.36	Intermediate	Yes	Static	
BELMONT	MW-26	2/9/2016	22.78	24.18	1.40	3.66	Shallow	No	Static	
BELMONT	MW-27	2/9/2016	24.66	25.80	1.14	3.76	Shallow	No	Static	
BELMONT	MW-28	2/9/2016		24.62		4.16	Intermediate	No	Static	
BELMONT	MW-29	2/9/2016	24.75	24.93	0.18	4.16	Intermediate	No	Static	
BELMONT	MW-30	2/9/2016		24.44		7.26	Shallow	No	Static	
BELMONT	MW-31	2/9/2016	-	25.82		4.74	Shallow	No	Static	
BELMONT	MW-32	2/9/2016		25.36		3.78	Intermediate	No	Static	
BELMONT	MW-33	2/9/2016		27.31		2.68	Shallow	No	Static	
BELMONT	MW-35	2/9/2016		27.10		3.55	Intermediate	No	Static	
BELMONT	MW-36	2/9/2016	-	28.42		4.15	Intermediate	No	Static	
BELMONT	MW-37	2/9/2016	-	27.86	-	4.06	Intermediate	No	Static	
BELMONT	MW-38	2/9/2016	-	23.65	-	3.97	Intermediate	No	Static	
BELMONT	MW-39	2/9/2016		23.59		3.96	Intermediate	No	Static	
BELMONT	MW-40	2/9/2016	23.95	24.26	0.31	3.87	Intermediate	No	Static	
BELMONT	MW-41	2/9/2016		23.55		3.80	Intermediate	No	Static	
BELMONT	MW-43	2/9/2016		26.35		4.26	Intermediate	No	Static	
BELMONT	MW-44	2/9/2016	25.79	25.79	<0.01	3.52	Intermediate	No	Static	
BELMONT	OW-2	2/9/2016	-	27.47	-	4.20	Shallow	No	Static	
BELMONT	OW-12	2/9/2016		26.07		4.15	Shallow	No	Static	
BELMONT	OW-13	2/9/2016		28.04		4.16	Shallow	No	Static	
BELMONT	OW-14	2/9/2016		28.02		4.19	Shallow	No	Static	
BELMONT	OW-16	2/9/2016	27.34	27.35	0.01	4.04	Shallow	No	Static	
BELMONT	OW-17	2/9/2016	-	26.31		3.68	Shallow	No	Static	
BELMONT	OW-18	2/9/2016		27.36		3.48	Intermediate	No	Static	
BELMONT	OW-19	2/9/2016	NM	NM	NM	NM	Intermediate	No	Static	NOT ACCESSIBLE - VEHICLE PARKED ON TOP OF WELL
BELMONT	OW-20	2/9/2016		27.78		4.09	Shallow	No	Static	
BELMONT	PZ-400	2/9/2016		24.37		3.73	Shallow	No	Static	
BELMONT	RW-1	2/9/2016		25.68		3.87	Intermediate	Yes	Static	
			28.03		0.57					
BELMONT	RW-4	2/9/2016	28.03	28.60	0.57	2.29	Intermediate	Yes	Pumping	
BELMONT	RW-6	2/9/2016		26.85		4.21	Intermediate	Yes	Static	
BELMONT	RW-7	2/9/2016		24.28		3.93	Intermediate	Yes	Static	
BELMONT	RW-15	2/9/2016		27.02		3.03	Intermediate	Yes	Static	
BELMONT	RW-21	2/9/2016		25.02		3.84	Shallow	Yes	Static	
BELMONT	RW-22	2/9/2016		23.20		3.83	Shallow	Yes	Static	
BELMONT	RW-23	2/9/2016	27.50	27.94	0.44	-0.48	Intermediate	Yes	Pumping	
BELMONT	RW-24	2/9/2016	26.05	26.30	0.25	1.06	Intermediate	Yes	Pumping	
BELMONT	RW-25	2/9/2016	26.02	26.70	0.68	3.97	Intermediate	Yes	Static	
BELMONT	RW-26	2/9/2016		22.71		6.50	Intermediate	Yes	Static	
	_		_	_				_	_	

AOI	Well ID	Date	Depth to LNAPL (ff btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
BELMONT	RW-27	2/9/2016		26.17		3.54	Intermediate	Yes	Static	
BELMONT	RW-28	2/9/2016		24.41		5.33	Intermediate	Yes	Static	
BELMONT	RW-29	2/9/2016		25.90		3.54	Intermediate	Yes	Static	
BELMONT	RW-30	2/9/2016		25.77		3.62	Intermediate	Yes	Static	
BELMONT	RW-31	2/9/2016		25.68		3.70	Intermediate	Yes	Static	
BELMONT	RW-32	2/9/2016		18.10		10.95	Intermediate	Yes	Static	
BELMONT	RW-400	2/9/2016		28.08		0.11	Intermediate	Yes	Static	
BELMONT	S-74	2/9/2016		25.94		-13.59	Shallow	No	Static	
BELMONT	S-75	2/9/2016		27.44		3.79	Shallow	No	Static	
BELMONT	S-76	2/9/2016	27.10	27.95	0.85	3.76	Shallow	No	Static	
BELMONT	S-330	2/9/2016		25.74		4.11	Intermediate	No	Static	
BELMONT	S-331	2/9/2016		27.25		4.03	Intermediate	No	Static	
BELMONT	S-332	2/9/2016		26.21		4.04	Intermediate	No	Static	
BELMONT	S-393D	2/9/2016		29.42		2.64	Deep	No	Static	
BELMONT	S-394	2/9/2016		29.69		2.43	Deep	No	Static	
BELMONT	S-395	2/9/2016		27.85		4.37	Shallow	No	Static	
BELMONT	TW-3	2/9/2016		28.04		4.07	Shallow	No	Static	
BELMONT	TW-5	2/9/2016		27.75		4.32	Shallow	No	Static	
BELMONT	TW-8	2/9/2016		26.19		3.95	Shallow	No	Static	
BELMONT	TW-9	2/9/2016		27.80		4.30	Shallow	No	Static	
BELMONT	TW-10	2/9/2016	26.34	26.34	<0.01	3.89	Shallow	No	Static	
BELMONT	TW-11	2/9/2016		28.25		4.15	Shallow	No	Static	

Groundwater remediation systems identified on the site plan (Figure 2) as active were pumping at the time of the gauging event For product thicknesses < 0.01 ft, the corrected groundwater elevation was calculated using 0.01 foot.

LNAPL = Light non-aqueous phase liquid

ft = Feet

ft btoc = Feet below top of casing

NAVD 88 = North American Vertical Datum of 1988
--- = LNAPL not present

NM = Field reading not measured and/or corrected groundwater elevation not calculated due to lack of surveyed reference elevation

NA = Not Accessible, Not Applicable, or Not Available

Not Classified = Well classification not available



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 1	ARCO-1	5/9/2016		26.87		0.08	Intermediate	No	Static	
AOI 1	ARCO-1D	5/9/2016		26.70		0.36	Deep	No	Static	
AOI 1	ARCO-2	5/9/2016		26.01		-0.01	Intermediate	No	Static	
AOI 1	ARCO-3	5/9/2016		24.64		-0.33	Intermediate	No	Static	
AOI 1	PZ-401	5/9/2016		20.94		2.79	Shallow	No	Static	
AOI 1	PZ-402	5/9/2016	20.89	21.35	0.46	2.41	Shallow	No	Static	
AOI 1	PZ-403	5/9/2016	23.61	23.62	0.01	0.80	Shallow	No	Static	VERY THICK PRODUCT
AOI 1	PZ-404	5/9/2016	26.55	26.79	0.24	-0.58	Shallow	No	Static	VENTINICKTROBUCT
	RW-110		20.55		0.24					
AOI 1		5/9/2016		16.80		0.87	Shallow	Yes	Static	
AOI 1	RW-111	5/9/2016		16.91		0.81	Shallow	Yes	Static	
AOI 1	RW-112	5/9/2016		16.86		0.75	Shallow	Yes	Static	
AOI 1	RW-401	5/9/2016	21.90	22.22	0.32	2.81	Intermediate	Yes	Static	
AOI 1	RW-402	5/9/2016	23.66	23.66	<0.01	-1.94	Intermediate	Yes	Pumping	
AOI 1	RW-403	5/9/2016		22.05		2.08	Intermediate	Yes	Static	
AOI 1	RW-404	5/9/2016	22.90	22.90	<0.01	0.85	Intermediate	Yes	Static	
AOI 1	RW-405	5/9/2016	24.75	24.90	0.15	-0.66	Intermediate	Yes	Static	
AOI 1	RW-406	5/9/2016	24.16	24.59	0.43	4.35	Intermediate	Yes	Static	
AOI 1	S-41	5/9/2016	-	25.84		-0.09	Intermediate	No	Static	
AOI 1	S-42I	5/10/2016		25.28		-1.72	Intermediate	No	Static	
AOI 1	S-43	5/9/2016		23.97		-0.75	Intermediate	No	Static	
AOI 1	S-44	5/10/2016		25.36		-2.02	Intermediate	No	Static	
AOI 1	S-45	5/9/2016		23.34		-1.77	Intermediate	No	Static	
AOI 1	S-46	5/9/2016		21.69		0.87	Intermediate	No	Static	
AOI 1	S-46D	5/9/2016		14.53		1.18	Deep	No	Static	
AOI 1	S-47I	5/9/2016		21.31		0.90	Intermediate	No	Static	
AOI 1	S-50	5/9/2016		22.61		-0.13	Shallow	No	Static	
AOI 1	S-51	5/9/2016		22.38		0.16	Shallow	No	Static	
AOI 1	S-52	5/12/2016		22.84		0.70	Intermediate	No	Static	
AOI 1	S-77	5/9/2016	10.02	10.74	0.72	20.64	Shallow	No	Static	
AOI 1	S-77P	5/9/2016		29.01		4.03	Shallow	No	Static	
AOI 1	S-78	5/9/2016		26.31		4.62	Intermediate	No	Static	
AOI 1	S-79	5/12/2016	23.68	24.02	0.34	7.24	Intermediate	No	Static	
AOI 1	S-79P	5/9/2016		26.90		3.52	Shallow	No	Static	
AOI 1	S-80	5/9/2016		28.51		3.62	Shallow	No	Static	
AOI 1	S-80D	5/9/2016		29.84		1.90	Deep	No	Static	
AOI 1	S-81	5/9/2016	NM	NM	NM	NM	Shallow	No	Static	DESTROYED
AOI 1	S-82	5/9/2016	23.80	23.94	0.14	3.46	Shallow	No	Static	
AOI 1	S-83	5/9/2016	20.83	21.28	0.45	2.41	Shallow	No	Static	
AOI 1	S-84P	5/9/2016		19.56		3.70	Shallow	No	Static	
AOI 1	S-85	5/9/2016		24.28		0.85	Shallow	No	Static	
AOI 1	S-86	5/9/2016	26.60	26.61	0.01	0.45	Intermediate	No	Static	
AOI 1	S-87I	5/9/2016	-	24.80		1.07	Intermediate	No	Static	
AOI 1	S-88	5/9/2016		25.29		-1.19	Intermediate	No	Static	
AOI 1	S-88A	5/9/2016		24.02		-0.21	Shallow	No	Static	CASING BROKEN AT GRADE
AOI 1	S-89	5/9/2016	26.58	26.59	0.01	-0.59	Intermediate	No	Static	
AOI 1	S-95	5/9/2016		22.40		0.59	Intermediate	No	Static	
AOI 1	S-98	5/9/2016		23.59		5.21	Intermediate	No	Static	
AOI 1	S-99	5/9/2016		25.11		0.29	Intermediate	No	Static	
AOI 1	S-100	5/9/2016	23.71	24.52	0.81	3.07	Intermediate	No	Static	
AOI 1	S-100	5/9/2016	23.71	47.39		1.73	Intermediate	No	Static	
										COVERED
AOI 1	S-116	5/9/2016	NM	NM 17.05	NM	NM 1.14	Shallow	No	Static	COVERED
AOI 1	S-117	5/9/2016		17.25		1.16	Shallow	No	Static	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 1	S-118	5/9/2016		17.49		0.41	Shallow	No	Static	
AOI 1	S-125	5/9/2016	23.33	23.43	0.10	2.64	Shallow	No	Static	
AOI 1	S-126	5/9/2016	11.82	12.01	0.19	16.63	Shallow	No	Static	VERY THICK PRODUCT
AOI 1	S-127	5/9/2016		16.29		0.81	Shallow	No	Static	
AOI 1	S-162	5/9/2016		16.92		1.14	Shallow	No	Static	
AOI 1	S-164	5/9/2016		15.67		1.03	Shallow	No	Static	
AOI 1	S-179	5/9/2016		21.23		3.30	Intermediate	Yes	Static	
AOI 1	S-180	5/9/2016	23.56	23.57	0.01	-1.36	Intermediate	Yes	Pumping	
AOI 1	S-181	5/9/2016	23.66	23.66	<0.01	-0.79	Intermediate	Yes	Pumping	
AOI 1	S-182	5/9/2016		22.77		0.23	Intermediate	Yes	Pumping	
AOI 1	S-183	5/9/2016	23.47	23.47	<0.01	0.02	Intermediate	Yes	Pumping	
AOI 1	S-184	5/9/2016		19.59		3.89	Intermediate	Yes	Pumping	
AOI 1	S-185	5/9/2016		21.20		2.68	Intermediate	Yes	Pumping	
-	S-186			24.21						
AOL1	S-187	5/9/2016				0.15 1.55	Intermediate	Yes	Pumping Pumping	
AOL1	S-187 S-188	5/9/2016		22.96		0.12	Intermediate	Yes	Pumping	
AOI 1		5/9/2016		24.70			Intermediate	Yes		
AOI 1	S-189	5/9/2016		26.20		-0.41	Intermediate	Yes	Pumping	
AOI 1	S-190	5/9/2016		25.41		0.16	Intermediate	Yes	Pumping	
AOI 1	S-191	5/9/2016		25.07		0.76	Intermediate	Yes	Pumping	
AOI 1	S-192	5/9/2016	-	25.83		0.19	Intermediate	Yes	Pumping	
AOI 1	S-193	5/9/2016		24.41		3.69	Intermediate	Yes	Static	
AOI 1	S-194	5/9/2016		26.94		4.10	Shallow	No	Static	
AOI 1	S-196	5/9/2016	-	45.80		4.25	Shallow	No	Static	
AOI 1	S-197	5/9/2016	-	45.62		4.16	Shallow	No	Static	
AOI 1	S-198	5/9/2016	25.50	26.79	1.29	3.56	Intermediate	No	Static	
AOI 1	S-199	5/9/2016	25.24	26.65	1.41	3.66	Intermediate	No	Static	
AOI 1	S-200	5/9/2016		25.49		3.57	Intermediate	No	Static	
AOI 1	S-201	5/9/2016	24.20	24.63	0.43	3.65	Intermediate	No	Static	
AOI 1	S-202	5/9/2016		28.39		4.22	Intermediate	No	Static	
AOI 1	S-203	5/9/2016	28.25	29.12	0.87	3.63	Intermediate	No	Static	
AOI 1	S-205	5/9/2016	18.30	19.44	1.14	9.70	Intermediate	No	Static	
AOI 1	S-206	5/9/2016		27.34		4.44	Intermediate	No	Static	
AOI 1	S-207	5/9/2016		13.77		13.43	Intermediate	No	Static	
AOI 1	S-208	5/9/2016		19.41		1.45	Intermediate	No	Static	
AOI 1	S-209	5/9/2016		26.12		0.86	Intermediate	No	Static	
AOI 1	S-210	5/9/2016		23.96		-0.27	Intermediate	No	Static	
AOI 1	S-211	5/9/2016		14.10		1.15	Intermediate	No	Static	
AOI 1	S-212	5/9/2016		17.52		0.85	Intermediate	No	Static	
AOI 1	S-213	5/9/2016		14.57		0.64	Intermediate	No	Static	
AOI 1	S-214	5/9/2016		19.21		0.63	Intermediate	No	Static	
AOI 1	S-215	5/9/2016		26.69		7.68	Intermediate	No	Static	
AOI 1	S-226	5/9/2016		21.95		0.13	Intermediate	No	Static	
AOI 1	S-227	5/9/2016		22.43		-0.64	Intermediate	No	Static	
AOI 1	S-228	5/9/2016	_	21.77		-0.59	Intermediate	No	Static	
AOI 1	S-230	5/9/2016		16.60		3.59	Intermediate	No	Static	
AOI 1	S-231	5/9/2016		20.23		-0.29	Intermediate	No	Static	
AOI 1	S-232	5/9/2016		20.23		-0.29	Intermediate	No	Static	
	S-255	5/9/2016				1.62				
AOL1				20.29			Intermediate	No	Static	
AOL1	S-256	5/9/2016		21.57		-0.16	Intermediate	No	Static	
AOI 1	S-257	5/9/2016		23.32		-0.05	Intermediate	No	Static	
AOI 1	S-258	5/9/2016		23.61		-0.81	Intermediate	No	Static	
AOI 1	S-259	5/9/2016		24.45		-1.89	Intermediate	No	Static	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 1	S-260	5/9/2016	NM	NM	NM	NM	Intermediate	No	Static	DRY AT 19.94
AOI 1	S-261	5/9/2016		24.39		3.02	Intermediate	No	Static	
AOI 1	S-262	5/9/2016		18.74		0.70	Intermediate	No	Static	
AOI 1	S-263	5/9/2016		16.29		0.49	Intermediate	No	Static	
AOI 1	S-264D	5/10/2016		26.11		0.52	Deep	No	Static	
AOI 1	S-265	5/9/2016	14.66	14.66	<0.01	16.53	Intermediate	Yes	Static	
AOI 1	S-267	5/9/2016		18.10		14.77	Intermediate	Yes	Static	
AOI 1	S-268	5/9/2016		27.18		4.27	Intermediate	Yes	Static	
AOI 1	S-269	5/9/2016		20.35		2.21	Intermediate	No	Static	
AOI 1	S-270	5/9/2016		21.56		1.57	Intermediate	No	Static	
AOI 1	S-271	5/9/2016		25.01		3.47	Intermediate	No	Static	
AOI 1	S-272	5/9/2016		24.26		4.10	Intermediate	No	Static	
AOI 1	S-273	5/9/2016		24.20		3.55	Intermediate	No	Static	
AOL1	S-274	5/9/2016	23.90	23.95	0.05	3.46	Intermediate	No	Static	
AOI 1	S-275	5/9/2016		23.29		3.28	Intermediate	No	Static	
AOI 1	S-276	5/9/2016	23.54	23.90	0.36	2.98	Intermediate	No	Static	
AOI 1	S-277	5/9/2016	23.18	23.75	0.57	2.40	Intermediate	No	Static	
AOI 1	S-312	5/9/2016		5.35		12.53	Shallow/Intermediate	No	Static	
AOI 1	S-388D	5/9/2016		25.35		0.84	Deep	No	Static	
AOI 1	S-389D	5/9/2016		25.22		1.08	Deep	No	Static	
AOI 1	S-390D	5/9/2016		25.41		1.07	Deep	No	Static	
AOI 1	S-391D	5/9/2016	NM	NM	NM	NM	Deep	No	Static	DESTROYED
AOI 1	S-392D	5/9/2016		19.23		0.74	Deep	No	Static	
AOI 1	S-396	5/9/2016		25.01		1.18	Intermediate	No	Static	
AOI 1	S-397	5/9/2016	-	25.56		1.04	Intermediate	No	Static	
AOI 1	S-398	5/9/2016		24.75		0.81	Intermediate	No	Static	
AOI 1	S-399	5/9/2016		19.44		0.72	Intermediate	No	Static	
AOI 1	S-400	5/9/2016	ММ	NM	NM	NM	Deep	No	Static	DESTROYED
AOI 1	S-401	5/9/2016		26.02		2.37	Intermediate	No	Static	
AOI 1	S-402	5/9/2016	29.28	29.30	0.02	4.17	Not Classified	No	Static	
AOI 1	S-403	5/9/2016		23.93		2.89	Not Classified	No	Static	
AOI 1	S-404	5/9/2016	11.54	11.59	0.05	16.96	Not Classified	No	Static	PRODUCT VERY THICK
AOI 1	S-405	5/9/2016		22.79		3.34	Not Classified	No	Static	PAD AND MANHOLE ARE DESTROYED
AOI 1	S-417	5/9/2016		27.17		5.11	Not Classified	Yes	Static	WELL IS MARKED 409 INSIDE CAP
AOI 1	S-418	5/9/2016		14.29		3.07	Not Classified	No	Static	CASING BROKE AT GRADE
AOI 1	S-419	5/9/2016		15.11		0.91	NA	No	Static	
AOI 2	C-HEADER	5/10/2016		6.57		14.04	Shallow/Intermediate	No	Static	
AOI 2	PGW-MW-8\$	5/10/2016		30.39		4.69	Shallow	No	Static	
AOI 2	PZ-100	5/10/2016	_	16.65		1.42	Shallow	No	Static	
AOI 2	PZ-101	5/10/2016		6.75		10.42	Shallow	No	Static	
AOI 2	River1	5/10/2016		11.10	NA	NA	NA NA	No	Static	AT 0910
AOI 2	River3	5/10/2016		10.93	NA NA	NA NA	NA NA	No	Static	
AOI 2	RW-100	5/10/2016	19.28	19.63	0.35	1.40	Shallow	Yes	Static	
	RW-100	5/10/2016			0.56					
AOI 2			17.56	18.12		2.14	Shallow	Yes	Static	
AOI 2	RW-102	5/10/2016	15.26	15.27	0.01	2.21	Shallow	Yes	Static	
AOI 2	RW-103	5/10/2016	17.03	17.15	0.12	2.97	Shallow	Yes	Static	
AOI 2	RW-104	5/10/2016		7.68		1.28	Shallow	Yes	Static	
AOI 2	RW-105	5/10/2016		14.45		-5.77	Shallow	Yes	Pumping	
AOI 2	RW-106	5/10/2016	10.20	10.21	0.01	-0.90	Shallow	Yes	Static	
AOI 2	RW-107	5/10/2016		9.25		1.30	Shallow	Yes	Static	
AOI 2	RW-108	5/10/2016		7.69		2.21	Shallow	Yes	Static	
AOI 2	RW-109	5/10/2016	8.14	8.23	0.09	1.70	Shallow	Yes	Static	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 2	RW-113	5/10/2016	11.18	11.18	<0.01	-0.94	Shallow	Yes	Static	
AOI 2	RW-114	5/10/2016	14.25	14.25	<0.01	-1.23	Shallow	Yes	Static	
AOI 2	RW-115	5/10/2016		11.29		-1.09	Shallow	Yes	Static	
AOI 2	RW-116	5/10/2016		11.79		-0.98	Shallow	Yes	Static	
AOI 2	RW-117	5/10/2016	10.46	10.48	0.02	-0.68	Shallow	Yes	Static	
AOI 2	RW-118	5/10/2016	12.61	12.61	<0.01	-0.78	Shallow	Yes	Static	
AOI 2	RW-119	5/10/2016	13.84	13.97	0.13	-1.01	Shallow	Yes	Static	
AOI 2	RW-120	5/10/2016		17.16		-3.58	Shallow	Yes	Pumping	
AOI 2	RW-121	5/10/2016		16.47		-1.17	Shallow/Intermediate	Yes	Static	
AOI 2	RW-122	5/10/2016		10.88		-0.64	Shallow	Yes	Pumping	PUMP WAS HUNG UP ON ARRIVAL
AOI 2	RW-123	5/10/2016	_	10.60		-0.63	Shallow	Yes	Static	
AOI 2	RW-124	5/10/2016		18.54		-9.38	Shallow	Yes	Pumping	
AOI 2	RW-125	5/10/2016		12.23		2.04	Shallow	Yes	Static	
AOI 2	RW-126	5/10/2016	9.45	9.46	0.01	-0.22	Shallow	Yes	Static	
AOI 2	RW-127	5/10/2016	7.45	19.19		-5.29	Shallow	Yes	Pumping	
AOI 2	RW-128	5/10/2016	8.29	8.44	0.15	0.12	Shallow	Yes	Static	
AOI 2	RW-129	5/10/2016	8.71	8.82	0.11	1.11	Shallow	Yes	Static	
AOI 2	RW-600	5/10/2016		4.84		4.21	Shallow/Intermediate	Yes	Static	
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AOI 2	RW-601	5/10/2016	10.75	9.06	0.00	2.62	Shallow/Intermediate	Yes	Static	
AOI 2	S-48	5/10/2016	19.75	19.97	0.22	1.48	Shallow/Intermediate	No	Static	
AOI 2	S-53	5/10/2016	18.97	19.24	0.27	2.67	Shallow	No	Static	
AOI 2	S-54	5/10/2016	21.66	21.94	0.28	1.26	Intermediate	No	Static	
AOI 2	S-61	5/10/2016	16.60	16.84	0.24	1.67	Shallow/Intermediate	No	Static	
AOI 2	S-63	5/10/2016	-	20.73		0.54	Shallow	No	Static	
AOI 2	S-64	5/10/2016		8.91		1.65	Shallow/Intermediate	No	Static	
AOI 2	S-65	5/10/2016	8.68	8.71	0.03	1.93	Shallow/Intermediate	No	Static	
AOI 2	S-71	5/10/2016		20.22		3.82	Shallow/Intermediate	No	Static	
AOI 2	S-72	5/10/2016		26.82		4.24	Intermediate	No	Static	
AOI 2	S-72D	5/10/2016		32.24		2.27	Deep	No	Static	
AOI 2	S-91	5/10/2016	20.44	20.45	0.01	2.69	Intermediate	No	Static	
AOI 2	S-92	5/10/2016	10.79	10.83	0.04	9.27	Intermediate	No	Static	
AOI 2	S-93	5/10/2016		17.31		0.94	Intermediate	Yes	Static	
AOI 2	S-105	5/10/2016		10.12		2.41	Shallow	No	Static	WELL HIT, CASING BENT, CONCRETE PAD DAMAGED
AOI 2	S-107	5/10/2016	9.15	9.16	0.01	3.16	Shallow/Intermediate	No	Static	
AOI 2	S-108	5/10/2016		6.11		4.61	Shallow/Intermediate	No	Static	
AOI 2	S-110	5/10/2016		15.24		10.43	Shallow/Intermediate	No	Static	
AOI 2	S-130	5/10/2016		19.40		3.08	Shallow/Intermediate	No	Static	
AOI 2	S-131	5/10/2016		16.13		2.63	Shallow	No	Static	PAD NEEDS TO BE REPLACED
AOI 2	S-132	5/10/2016		18.86		2.17	Shallow/Intermediate	No	Static	
AOI 2	S-133	5/10/2016		19.57		2.45	Shallow/Intermediate	No	Static	
AOI 2	S-134	5/10/2016		20.35		1.68	Shallow/Intermediate	No	Static	
AOI 2	S-135	5/10/2016	22.11	23.30	1.19	0.92	Shallow	No	Static	
AOI 2	S-136	5/10/2016		18.51		2.08	Shallow/Intermediate	No	Static	
AOI 2	S-137	5/10/2016	-	17.88		2.16	Shallow/Intermediate	No	Static	PAD NEEDS TO BE REPLACED
AOI 2	S-139	5/10/2016		18.92		2.54	Shallow/Intermediate	No	Static	
AOI 2	S-140	5/10/2016		19.13		2.90	Shallow/Intermediate	No	Static	
AOI 2	S-141	5/10/2016	19.88	20.21	0.33	2.00	Shallow/Intermediate	No	Static	
AOI 2	S-142	5/10/2016	19.38	19.50	0.12	0.45	Shallow	No	Static	
AOI 2	S-143	5/10/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	BLOCKED AT 9.85 FEET
AOI 2	S-150	5/10/2016		17.26		3.57	Shallow/Intermediate	No	Static	
AOI 2	S-152	5/10/2016		7.24		3.25	Shallow/Intermediate	No	Static	
AOI 2	S-153	5/10/2016		7.57		2.24	Shallow/Intermediate	No	Static	
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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 2	S-154	5/10/2016		10.45		0.17	Shallow/Intermediate	No	Static	
AOI 2	S-156	5/10/2016	18.66	18.79	0.13	2.16	Shallow	No	Static	
AOI 2	S-157	5/10/2016		17.52		2.42	Shallow/Intermediate	No	Static	
AOI 2	S-159	5/10/2016	16.61	16.61	<0.01	2.27	Shallow/Intermediate	No	Static	
AOI 2	S-165	5/10/2016		16.76		1.35	Shallow/Intermediate	No	Static	
AOI 2	S-166	5/10/2016		16.13		2.10	Shallow/Intermediate	No	Static	
AOI 2	S-174	5/10/2016	10.53	12.40	1.87	8.83	Shallow	No	Static	
AOI 2	S-175	5/10/2016	17.78	18.79	1.01	2.12	Shallow	No	Static	
AOI 2	S-177	5/12/2016		18.00		1.56	Shallow/Intermediate	No	Static	
AOI 2	S-178	5/10/2016		18.11		1.43	Shallow/Intermediate	No	Static	
AOI 2	S-246A	5/10/2016		9.91		1.85	Shallow/Intermediate	No	Static	
AOI 2	S-247	5/10/2016		10.91		1.18	Shallow/Intermediate	No	Static	
AOI 2	S-248	5/10/2016		9.75		1.05	Shallow/Intermediate	No	Static	
AOI 2	S-249	5/10/2016		11.04		1.57	Shallow/Intermediate	No	Static	
AOI 2	S-251	5/10/2016		18.34		0.93	Shallow/Intermediate	Yes	Static	
AOI 2	S-252	5/10/2016		18.57		0.72	Shallow/Intermediate	Yes	Static	
AOI 2	S-253	5/10/2016		18.58		2.25	Shallow/Intermediate	Yes	Static	
	S-254					1.79				
AOI 2		5/10/2016		19.09			Shallow/Intermediate	Yes	Static	DDV 47 10 50
AOI 2	S-292	5/10/2016	NM	NM	NM	NM	Shallow/Intermediate	No		DRY AT 19.50
AOI 2	S-294	5/10/2016		29.87		4.60	Intermediate	No	Static	
AOI 2	S-294D	5/10/2016		32.01		2.67	Deep	No	Static	
AOI 2	S-295	5/10/2016		23.81		8.93	Shallow/Intermediate	No	Static	
AOI 2	S-297	5/10/2016	23.69	24.01	0.32	6.26	Shallow/Intermediate	No	Static	WELL BROKE AT GRADE
AOI 2	S-298	5/10/2016	14.80	15.11	0.31	12.12	Shallow/Intermediate	No	Static	
AOI 2	S-299	5/10/2016		20.45		3.55	Shallow/Intermediate	No	Static	
AOI 2	S-300	5/10/2016		20.41		4.87	Shallow/Intermediate	No	Static	
AOI 2	S-301	5/10/2016		16.94		3.47	Shallow/Intermediate	No	Static	
AOI 2	S-302	5/10/2016	21.44	21.75	0.31	2.47	Intermediate	No	Static	
AOI 2	S-302D	5/10/2016		23.98		0.62	Deep	No	Static	
AOI 2	S-303	5/10/2016		19.70		2.89	Shallow/Intermediate	No	Static	
AOI 2	S-304	5/10/2016	14.20	14.20	<0.01	7.99	Shallow/Intermediate	No	Static	
AOI 2	S-305	5/10/2016		18.58		1.15	Intermediate	No	Static	
AOI 2	S-305D	5/10/2016		19.82		0.66	Deep	No	Static	
AOI 2	S-306	5/10/2016		22.82		-0.35	Intermediate	No	Static	
AOI 2	S-307	5/10/2016		16.29		2.28	Shallow/Intermediate	No	Static	
AOI 2	S-308	5/12/2016		24.17		3.94	Shallow/Intermediate	No	Static	
AOI 2	S-309	5/10/2016		17.66		2.07	Shallow/Intermediate	No	Static	
AOI 2	S-310	5/10/2016		8.39		9.01	Shallow/Intermediate	No	Static	CASING BENT
AOI 2	S-311	5/10/2016	25.00	25.11	0.11	1.16	Intermediate	No	Static	
AOI 2	S-313	5/10/2016		18.61		2.29	Shallow	Yes	Static	
AOI 2	S-314	5/10/2016		18.78		1.92	Shallow	Yes	Static	
AOI 2	S-315	5/10/2016		24.20		-3.73	Shallow	Yes	Pumping	
AOI 2	S-316	5/10/2016	-	15.74		5.16	Shallow	Yes	Static	
AOI 2	S-317	5/10/2016	-	18.15	-	2.04	Shallow	Yes	Static	
AOI 2	S-318	5/10/2016		21.90		1.85	Shallow/Intermediate	No	Static	
AOI 2	S-328	5/10/2016		18.66		3.31	Shallow/Intermediate	No	Static	
AOI 2	S-333	5/10/2016		12.32		1.41	Shallow/Intermediate	No	Static	
AOI 2	S-335	5/10/2016		10.01		0.09	Shallow/Intermediate	No	Static	
AOI 2	S-336	5/10/2016		9.10		2.42	Shallow/Intermediate	No	Static	
AOI 2	S-337	5/10/2016		10.31		1.90	Shallow/Intermediate	No	Static	
AOI 2	S-338	5/10/2016	12.54	12.73	0.19	2.96	Shallow/Intermediate	No	Static	
AOI 2	S-346	5/10/2016		18.09		1.40	Shallow/Intermediate	No	Static	
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	AOI	Well ID	Date	LNAPL	Water	LNAPL Thickness	Groundwater Elevation	Well Classification	Well		Comments
	AOI 2	S-347	5/10/2016	17.78	18.44	0.66	1.22	Shallow/Intermediate	No	Static	
March 1900	AOI 2	S-348	5/10/2016	13.53	17.25	3.72	5.60	Shallow/Intermediate	No	Static	PRODUCT THICKNESS IS CORRECT
March Marc	AOI 2	S-349	5/10/2016	14.89	15.00	0.11	3.71	Shallow/Intermediate	No	Static	
	AOI 2	S-350	5/10/2016		27.16		4.32	Shallow/Intermediate	No	Static	
ACC	AOI 2	S-351	5/10/2016		30.81		4.43	Shallow/Intermediate	No	Static	
ACI 1.587 1992	AOI 2	S-354	5/10/2016		24.66		3.37	Shallow/Intermediate	No	Static	
ACT S.	AOI 2	S-355	5/10/2016	27.10	27.12	0.02	3.72	Shallow/Intermediate	No	Static	
ACT S.	AOI 2	S-357	5/10/2016	20.62	21.30	0.68	7.36	Shallow/Intermediate	No	Static	
AC S S S S S S S S S	-							Shallow/Intermediate			
ACC S. 3.00	-			22.50		<0.01					VERY LIGHT FILM OF PRODUCT
ACI S.	-										
ACI 2 - 5.86	-										RIOCKED AT 4.15
ACC S-66 S10/2016 C	-										BLOCKED AT 4.13
ACI S S S S S S S S S											
ACI SD. S10-2016 7.38 12.19 Shatlow No Stock								•			
ACI BF-88 SP/7016 C											
AC 8 79 8 7720 6 1.54 2.55 Stotiow No Stotic	-										
ACI SP-900 SP/2016 9.72 0.51 Intermediate Pole No. State Section S	-										
ACI BF 99 S7/2016 10.45 0.51 Shallow Intermedicite No. 3 late	AOI 3		5/9/2016		1.54		5.95		No	Static	
ACI AOI 3	BF-90D	5/9/2016		9.92		-0.15	Intermediate/Deep	No	Static		
ACI BF-104 SP/2016	AOI 3	BF-99	5/9/2016		10.45		0.51	Shallow/Intermediate	No	Static	
ACI ACI ACI BF-105 S/9/2016 11.80 0.61 Shollow/Intermedictle No Stotic	AOI 3	BF-100	5/9/2016		11.80		0.56	Shallow/Intermediate	No	Static	
ACI	AOI 3	BF-104	5/9/2016		5.25		6.49	Shallow/Intermediate	No	Static	
ACI SP-107 S/P/2016	AOI 3	BF-105	5/9/2016	-	11.30		0.61	Shallow/Intermediate	No	Static	
ACI Rev September Sept	AOI 3	BF-106	5/9/2016		13.43		0.19	Shallow/Intermediate	No	Static	
ACI Service AOI 3	BF-107	5/9/2016		11.81		0.55	Shallow/Intermediate	No	Static		
ACI3 S-1 S-19/2016 C	AOI 3	BF-108	5/9/2016		11.04		-0.06	Deep	No	Static	
ACI 3 5-2 5/9/2016 N.M. N.M. N.M. N.M. N.M. Shallow N.O. Static	AOI 3	RW-2	5/9/2016	11.37	11.82	0.45	-0.17	Intermediate	Yes	Static	
ACI 3	AOI 3	S-1	5/9/2016		4.59		4.16	Shallow	No	Static	
ACI 3 5-5 5/9/2016 2.91 2.91 Shallow No Static	AOI 3	S-2	5/9/2016	NM	NM	NM	NM	Shallow	No	Static	WELL IN ACCESSIBLE IN HIGH WEEDS
ACI S-8 S-97/2016 7.43 -1.01 Deep No Static	AOI 3	S-3	5/9/2016		7.37		3.43	Shallow	No	Static	
AOI 3 S-9 S/9/2016 3.03 3.55 Shallow No Static	AOI 3	S-5	5/9/2016		2.91		2.91	Shallow	No	Static	
AOI 3 S-10 S/9/2016 A.6.1 1.46 Shallow/Intermediate No Static	AOI 3	S-8	5/9/2016		7.43		-1.01	Deep	No	Static	
AOI 3 S-10 S/9/2016 A.61 1.46 Shallow/Intermediate No Static	AOI 3	S-9	5/9/2016		3.03		3.55	Shallow	No	Static	
AOI 3 S-11 5/9/2016 2.87 3.51 Shallow No Stdic AOI 3 S-12 5/9/2016 5.11 1.12 Shallow/Intermediate No Stdic AOI 3 S-13 5/9/2016 7.49 -1.13 Deep No Stdic AOI 3 S-14 5/9/2016 2.57 3.17 Shallow/Intermediate No Stdic AOI 3 S-16 5/9/2016 22.54 1.14 Shallow/Intermediate No Stdic AOI 3 S-17 5/9/2016 15.68 1.17 Shallow/Intermediate No Stdic AOI 3 S-18 5/9/2016 3.84 19.65 Shallow/Intermediate No Stdic AOI 3 S-29 5/9/2016 19.16 1.10 Shallow/Intermediate No Stdic		S-10									
AOI 3 S-12 \$/9/2016 5.11 1.12 Shallow/Intermediate No Static AOI 3 S-13 \$/9/2016 7.49 -1.13 Deep No Static AOI 3 S-14 \$/9/2016 2.57 3.17 Shallow/Intermediate No Static AOI 3 S-16 \$/9/2016 22.54 1.14 Shallow/Intermediate No Static AOI 3 S-17 \$/9/2016 15.68 1.17 Shallow/Intermediate No Static AOI 3 S-18 \$/9/2016 3.84 19.65 Shallow/Intermediate No Static AOI 3 S-19 \$/9/2016 NM NM NM NM NM NM Shallow/Intermediate No Static AOI 3 S-21 \$/9/2016 15.90 15.90 <0.01	-										
AOI 3 S-13 5/9/2016 7.49 -1.13 Deep No Static AOI 3 S-14 5/9/2016 22.57 3.17 Shallow No Static AOI 3 S-16 5/9/2016 15.68 1.17 Shallow/Intermediate No Static AOI 3 S-18 5/9/2016 3.84 19.65 Shallow/Intermediate No Static AOI 3 S-19 5/9/2016 19.16 11.10 Shallow/Intermediate No Static AOI 3 S-20 5/9/2016 19.16 11.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <0.01											
AOI 3 S-14 5/9/2016 22.54 1.14 Shallow No Static AOI 3 S-16 5/9/2016 22.54 1.14 Shallow/Intermediate No Static AOI 3 S-17 5/9/2016 15.68 1.17 Shallow/Intermediate No Static AOI 3 S-18 5/9/2016 3.84 19.65 Shallow No Static AOI 3 S-19 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-20 5/9/2016 19.16 1.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <0.01 6.84 Shallow No Static AOI 3 S-22 5/9/2016 19.65 0.99 Deep No Static AOI 3 S-23 5/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 19.95 1.15 Shallow/Intermediate No Static AOI 3 S-26 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-26 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-26 5/9/2016 NM NM NM NM NM Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 NM NM NM NM NM NM Intermediate No Static AOI 3 S-60 5/9/2016 NM NM NM NM NM NM Intermediate No Static											
AOI 3 S-16 S/9/2016 15.68 1.14 Shallow/Intermediate No Static AOI 3 S-17 S/9/2016 15.68 1.17 Shallow/Intermediate No Static AOI 3 S-18 S/9/2016 3.84 19.65 Shallow No Static AOI 3 S-19 S/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-20 S/9/2016 19.16 1.10 Shallow/Intermediate No Static AOI 3 S-21 S/9/2016 15.90 15.90 <0.01 6.84 Shallow No Static AOI 3 S-22 S/9/2016 19.65 0.99 Deep No Static AOI 3 S-23 S/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 S/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 S/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-26 S/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 S/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 S/9/2016 NM NM NM NM NM NM Intermediate No Static	-							•			
AOI 3 S-17 5/9/2016 15.68 11.17 Shallow/Intermediate No Static AOI 3 S-18 5/9/2016 3.84 19.65 Shallow No Static AOI 3 S-19 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-20 5/9/2016 19.16 11.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <	-										
AOI 3 S-18 5/9/2016 3.84 19.65 Shallow No Static AOI 3 S-19 5/9/2016 NM NM NM NM Shallow No Static AOI 3 S-20 5/9/2016 19.16 1.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <	-							•			
AOI 3 S-19 5/9/2016 NM NM NM NM NM NM Shallow No Static AOI 3 S-20 5/9/2016 19.16 1.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <0.01 6.84 Shallow No Static AOI 3 S-22 5/9/2016 19.65 0.99 Deep No Static AOI 3 S-23 5/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 5/9/2016 NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-59 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 NM NM NM NM NM Intermediate No Static AOI 3 S-60 5/9/2016 NM NM NM NM NM Intermediate No Static	-										
AOI 3 S-20 5/9/2016 19.16 1.10 Shallow/Intermediate No Static AOI 3 S-21 5/9/2016 15.90 15.90 <-0.01 6.84 Shallow No Static AOI 3 S-22 5/9/2016 19.650.99 Deep No Static AOI 3 S-23 5/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-25 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 NM NM NM NM NM Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM NM Intermediate No Static	-										NOCKED AT LOGGET
AOI 3 S-21 5/9/2016 15.90 15.90 <0.01 6.84 Shallow No Static AOI 3 S-22 5/9/2016 19.65 0.99 Deep No Static AOI 3 S-23 5/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-25 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM NM Intermediate No Static	-										BLOCKED AT 1.38 FEET
AOI 3 S-22 5/9/2016 19.65	-										
AOI 3 S-23 5/9/2016 19.12 1.16 Intermediate No Static AOI 3 S-24 5/9/2016 NM NM NM NM NM Shallow No Static AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-59 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM NM Intermediate No Static	-			15.90		<0.01					
AOI 3 S-24 5/9/2016 NM NM NM NM NM NM Shallow No Static BLOCKED AT 1.39 FEET AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-59 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM NM Intermediate No Static					19.65		-0.99	Deep	No	Static	
AOI 3 S-25 5/9/2016 10.96 1.15 Shallow/Intermediate No Static AOI 3 S-59 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM Intermediate No Static	AOI 3	S-23	5/9/2016		19.12		1.16	Intermediate	No	Static	
AOI 3 S-59 5/9/2016 9.44 9.45 0.01 3.04 Shallow/Intermediate No Static AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM Intermediate No Static	AOI 3	S-24	5/9/2016	NM	NM	ММ	NM	Shallow	No	Static	BLOCKED AT 1.39 FEET
AOI 3 S-60 5/9/2016 11.46 12.00 0.54 0.68 Shallow/Intermediate No Static AOI 3 S-66 5/9/2016 NM NM NM NM Intermediate No Static 26.03 DRY	AOI 3	S-25	5/9/2016		10.96		1.15	Shallow/Intermediate	No	Static	
AOI 3 S-66 5/9/2016 NM NM NM NM Intermediate No Static 26.03 DRY	AOI 3	S-59	5/9/2016	9.44	9.45	0.01	3.04	Shallow/Intermediate	No	Static	
	AOI 3	S-60	5/9/2016	11.46	12.00	0.54	0.68	Shallow/Intermediate	No	Static	
AOI 3 S-69 5/9/2016 NM NM NM NM Shallow/Intermediate No Static BLOCKED AT 1.09 FEET	AOI 3	S-66	5/9/2016	NM	NM	NM	NM	Intermediate	No	Static	26.03 DRY
	AOI 3	S-69	5/9/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	BLOCKED AT 1.09 FEET



AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 3	S-69D	5/9/2016		11.60		-0.25	Deep	No	Static	
AOI 3	S-113	5/9/2016	11.88	12.68	0.80	0.64	Shallow/Intermediate	No	Static	
AOI 3	S-280	5/9/2016		24.24		2.28	Intermediate	No	Static	
AOI 3	S-280D	5/9/2016		25.68		0.20	Deep	No	Static	
AOI 3	S-281	5/9/2016	NM	NM	NM	NM	Intermediate	No	Static	NOT ACCESSIBLE, INSIDE LOCKD FENCE
AOI 3	S-283	5/9/2016		11.09		0.05	Intermediate	No	Static	
AOI 3	S-284	5/9/2016		4.91		4.60	Shallow/Intermediate	No	Static	
AOI 3	S-284D	5/9/2016		11.83		0.29	Deep	No	Static	
AOI 3	S-285	5/9/2016	13.85	14.05	0.20	1.34	Shallow/Intermediate	No	Static	
AOI 3	S-288	5/9/2016		10.82		8.27	Shallow/Intermediate	No	Static	
AOI 3	S-290	5/9/2016		10.21		1.48	Shallow/Intermediate	No	Static	
AOI 3	S-291	5/9/2016		7.85		4.14	Shallow	No	Static	
AOI 3	S-382	5/9/2016	16.18	18.07	1.89	3.88	Shallow	No	Static	
-		-								WELL DAMAGED, CONVERT TO FLUSH MOUNT
AOI 3	S-383 S-384	5/9/2016 5/9/2016	NM	NM 16.09	NM	NM 0.42	Shallow	No No	Static Static	THEE DAWNGED. CONVERT TO FLOOR MOUNT
-										
AOI 3	S-385	5/9/2016		12.10		0.81	Shallow	No	Static	
AOI 3	S-386	5/9/2016		13.06		0.69	Shallow	No	Static	
AOI 3	S-387	5/9/2016		4.26		2.85	Shallow	No	Static	
AOI 3	S-407	5/9/2016		13.37		0.64	NA	No	Static	
AOI 3	S-409	5/9/2016		2.65		19.64	NA	No	Static	
AOI 3	S-410	5/9/2016	12.34	12.72	0.38	9.90	NA	No	Static	
AOI 3	S-411	5/9/2016		24.22		0.83	NA	No	Static	
AOI 3	S-412	5/9/2016		12.64		0.47	NA	No	Static	
AOI 3	S-413	5/9/2016		17.35		0.56	NA	No	Static	
AOI 3	S-414	5/9/2016		22.13		0.40	NA	No	Static	
AOI 4	MW-1	5/10/2016		15.48		0.90	Shallow	No	Static	
AOI 4	MW-4	5/10/2016	NM	NM	NM	NM	Shallow	No	Static	WELL COVERED IN LARGE SOIL PILE-DESTROYED
AOI 4	RW-700	5/10/2016		20.30		-2.29	Intermediate	Yes	Pumping	
AOI 4	RW-701	5/10/2016		19.60		-1.33	Intermediate	Yes	Pumping	
AOI 4	RW-702	5/10/2016		31.55		-10.60	Intermediate	Yes	Pumping	
AOI 4	RW-703	5/10/2016		29.00		-8.38	Intermediate	Yes	Pumping	
AOI 4	RW-704	5/10/2016		21.70		-1.47	Intermediate	Yes	Pumping	
AOI 4	RW-705	5/10/2016		14.58		1.34	Intermediate	Yes	Static	
AOI 4	RW-706	5/10/2016		19.40		-3.51	Intermediate	Yes	Pumping	
AOI 4	RW-707	5/10/2016		15.52		0.77	Intermediate	Yes	Static	
AOI 4	RW-708	5/10/2016		17.05		-1.56	Intermediate	Yes	Pumping	
AOI 4	RW-709	5/10/2016		14.49		0.81	Intermediate	Yes	Static	
AOI 4	RW-710	5/10/2016		15.32		0.56	Intermediate	Yes	Static	
AOI 4	RW-711	5/10/2016		14.61		0.88	Intermediate	Yes	Static	
AOI 4	RW-712	5/10/2016		14.73		0.83	Intermediate	Yes	Static	
AOI 4	RW-713	5/10/2016		14.16		0.86	Intermediate	Yes	Static	
AOI 4	RW-714	5/10/2016		14.30		0.91	Intermediate	Yes	Static	
AOI 4	RW-715	5/10/2016		14.49		0.88	Intermediate	Yes	Static	
AOI 4	RW-716	5/10/2016		14.60		0.95	Intermediate	Yes	Static	
AOI 4	RW-717	5/10/2016		14.61		1.00	Intermediate	Yes	Static	
AOI 4	S-26	5/10/2016		19.75		1.01	Intermediate	No	Static	
AOI 4	S-27	5/10/2016	NM	NM	NM	NM	Intermediate	No	Static	UNABLE TO LOCATE
AOI 4	S-28	5/10/2016	NM	NM	NM	NM	Shallow	No	Static	DRY OR BLOCK AT 18.80
AOI 4	S-29	5/10/2016	20.55	23.10	2.55	2.41	Intermediate	No	Static	
AOI 4	S-30	5/10/2016	21.22	28.91	7.69	0.90	Intermediate	Yes	Static	
AOI 4	S-31	5/10/2016	NM	NM	NM	NM	Shallow	No		DRY OR BLOCK AT 14.07
AOI 4	S-32	5/10/2016	23.05	23.07	0.02	1.15	Shallow	No	Static	
		,								



No. Part P											
	AOI	Well ID	Date	LNAPL	Water	LNAPL Thickness	Groundwater Elevation	Well Classification	Well		Comments
	AOI 4	S-34	5/10/2016	-	19.65		1.24	Shallow	No	Static	
1.58 1.58 1.59	AOI 4	S-35	5/10/2016		20.29		0.65	Shallow	No	Static	
AC A A A A A A A A A	AOI 4	S-36	5/10/2016		23.51		0.72	Shallow	No	Static	
AGE See Sec	AOI 4	S-38	5/10/2016		18.02		0.93	Shallow	No	Static	
Month Mont	AOI 4	S-39	5/10/2016		21.82		1.06	Intermediate	No	Static	
Column C	AOI 4	S-40	5/10/2016	NM	NM	NM	NM	Shallow	No	Static	FLOODED AROUND WELL
Act	AOI 4	S-56			13.81		1.19	Shallow	No	Static	
Acc											
Accordance Acc											
Act											
ACI 3 10 10 10 10 10 10 10											COVERED
Act											- Contract
Acid S-106 S-1020 S-1040 S-168 S-129 S-20 S-1010 No Solid S-1179 S-1020 S-10											
ACI S.119 S.100216 C. S.254 C. O.46 Intermediate No State											
ACI 4 5-190 5180216 — 24.66 — 0.42 5.00 10-00 10											
AO14											
ACI S-121											
ACI S-122 S10/2016 21.77 0.84 Intermediate No Stotic											
AOI								Intermediate	No	Static	
Acid S-124 S10/2016 C-2.36 C-2.39 O.33 O.83 Intermediate No Static	AOI 4							Intermediate	No	Static	
ACI S-216 S-10/2016 14.81 0.95 Intermediate No State	AOI 4	S-123	5/10/2016		21.29		0.84	Intermediate	No	Static	
Acid S-218 S1/0/2016 24.64 1.10 Intermediate No Static	AOI 4	S-124	5/10/2016	22.36	22.39	0.03	0.83	Intermediate	No	Static	
ACI	AOI 4	S-216	5/10/2016		14.81		0.95	Intermediate	No	Static	
ACI	AOI 4	S-218	5/10/2016		24.64		1.10	Intermediate	No	Static	
ACI	AOI 4	S-218D	5/10/2016	-	24.48		NA	NA	No	Static	
ACI	AOI 4	S-219	5/10/2016		22.07		1.02	Intermediate	No	Static	
AOI4 \$-222 \$10/2016 — 15.18 — 1.11 Intermediate No \$title AOI4 \$-223 \$10/2016 — 14.94 — 0.94 Intermediate No \$tatic AOI4 \$-223 \$10/2016 — 15.12 — 0.91 Intermediate No \$tatic AOI4 \$-223 \$10/2016 — 16.26 — -1.27 Intermediate No \$tatic AOI4 \$-233 \$10/2016 — 16.26 — 0.44 Intermediate No \$tatic AOI4 \$-233 \$10/2016 — 20.99 — 0.44 Intermediate No \$tatic AOI4 \$-234 \$10/2016 — 20.43 0.09 0.70 Intermediate No \$tatic AOI4 \$-234 \$10/2016 — 22.34 1.41 0.63 Intermediate No \$tatic AOI4 \$-239	AOI 4	S-220	5/10/2016	19.69	20.14	0.45	1.05	Intermediate	No	Static	
ACI S-223 S10/2016 14.94 0.94 Intermediate No Static	AOI 4	S-221	5/10/2016	22.05	23.18	1.13	0.75	Intermediate	No	Static	
ACI	AOI 4	S-222	5/10/2016		15.18		1.11	Intermediate	No	Static	
AOI	AOI 4	S-223	5/10/2016		14.94		0.94	Intermediate	No	Static	
AOI	AOI 4	S-224	5/10/2016		15.12		0.91	Intermediate	No	Static	
AOI S-234 S/10/2016 20.59 0.64 Intermediate No Static	AOI 4	S-225	5/10/2016		16.26		-1.27	Intermediate	No	Static	
AOI 4 \$-235 \$/10/2016 \$22.44 \$22.43 \$0.19 \$0.85 Intermediate No \$1dic AOI 4 \$-236 \$/10/2016 \$22.11 \$23.01 \$0.90 \$0.70 Intermediate No \$1dic AOI 4 \$-237 \$/10/2016 \$21.33 \$23.34 \$1.41 \$0.43 Intermediate No \$1dic AOI 4 \$-238 \$/10/2016 \$ \$22.04 \$ \$0.88 Intermediate No \$1dic AOI 4 \$-238 \$/10/2016 \$ \$14.88 \$ \$0.94 Intermediate No \$1dic AOI 4 \$-240 \$/10/2016 \$ \$14.88 \$ \$0.94 Intermediate No \$1dic AOI 4 \$-240 \$/10/2016 \$ \$24.90 \$1.81 \$0.67 Intermediate No \$1dic AOI 4 \$-241 \$/10/2016 \$ \$14.64 \$ \$1.10 Intermediate No \$1dic </td <td>AOI 4</td> <td>S-233</td> <td>5/10/2016</td> <td>20.37</td> <td>21.26</td> <td>0.89</td> <td>3.82</td> <td>Intermediate</td> <td>No</td> <td>Static</td> <td></td>	AOI 4	S-233	5/10/2016	20.37	21.26	0.89	3.82	Intermediate	No	Static	
AOI 4 5:236 5/10/2016 22.11 23.01 0.90 0.70 Intermediate No Static AOI 4 5:237 5/10/2016 21.93 23.34 1.41 0.63 Intermediate No Static AOI 4 5:238 5/10/2016 22.04 0.88 Intermediate No Static AOI 4 5:239 5/10/2016 14.88 0.94 Intermediate No Static AOI 4 5:240 5/10/2016 14.88 0.92 Intermediate No Static AOI 4 5:241 5/10/2016 20.97 0.92 Intermediate No Static AOI 4 5:242 5/10/2016 20.97 0.92 Intermediate No Static AOI 4 5:243 5/10/2016 11.64 11.02 Intermediate No Static	AOI 4	S-234	5/10/2016		20.59		0.64	Intermediate	No	Static	
AOI 4 S-237 S/10/2016 21.93 23.34 1.41 0.63 Intermediate No Static	AOI 4	S-235	5/10/2016	22.24	22.43	0.19	0.85	Intermediate	No	Static	
AOI 4 S-237 S/10/2016 21.93 23.34 1.41 0.63 Intermediate No Static	AOI 4	S-236	5/10/2016	22.11	23.01	0.90	0.70	Intermediate	No	Static	
AOI 4 S-238 5/10/2016 — 22.04 — 0.88 Intermediate No Static AOI 4 S-239 5/10/2016 — 14.88 — 0.94 Intermediate No Static AOI 4 S-240 5/10/2016 22.93 24.13 1.20 0.72 Intermediate No Static AOI 4 S-241 5/10/2016 25.09 26.90 1.81 0.67 Intermediate No Static AOI 4 S-242 5/10/2016 — 20.97 — 0.92 Intermediate No Static AOI 4 S-242 5/10/2016 — 14.64 — 1.10 Intermediate No Static AOI 4 S-243 5/10/2016 — 11.92 — 10.02 Intermediate No Static AOI 4 S-245 5/10/2016 — 21.25 — 0.96 Intermediate No Static AOI 4											
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AOI 4 S-365 5/10/2016 20.30 20.30 <0.01 0.46 Shallow/Intermediate No Static	AOI 4	S-329			20.18		0.74	Intermediate	No	Static	
	AOI 4	S-364	5/10/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	WELL DAMAGED. NEEDS TO BE STRAIGHTENED
AOI 4 S-366 5/10/2016 21.50 0.76 Shallow/Intermediate No Static	AOI 4	S-365	5/10/2016	20.30	20.30	<0.01	0.46	Shallow/Intermediate	No	Static	
	AOI 4	S-366	5/10/2016		21.50		0.76	Shallow/Intermediate	No	Static	



According Comments Comments							., .,	ions, a series of E			
ACT 3389 3100016 16.70 18.60 1.70 1.11 5000-referencedade 180 2005	AOI	Well ID	Date	LNAPL	Water	LNAPL Thickness	Groundwater Elevation	Well Classification	Well		Comments
	AOI 4	S-367	5/10/2016		15.18		0.84	Shallow/Intermediate	No	Static	
ACC 1-575 570,000 1781 1.07 570,000 10	AOI 4	S-368	5/10/2016	16.70	18.40	1.70	1.11	Shallow/Intermediate	No	Static	
ACT S. 1971 V19/2004	AOI 4	S-369	5/10/2016		29.51		-0.09	Shallow/Intermediate	No	Static	
Post S-322	AOI 4	S-370	5/10/2016		11.33		0.73	Shallow/Intermediate	No	Static	
Post S-322	AOI 4	S-371	5/10/2016		19.81		2.24	Shallow/Intermediate	No	Static	
Mod S-399 \$10,02615 NeM NM NM NM NM NM Shallow/intermediate No Shallow Shallow Shallow Shallow No Shallow			1								
Mol. S. 288 \$10,000 D. 20.44 D. 0.88 Shellow/intermedice No. Steel			1	NM		NM					DRY OR BLOCKED AT 15.90
ACT			1								
ACI S-180 S175/061			1					•			
ACI S-3802 ST072016			1								
ACI S-408 S10/2016 14.71 1.17			1								
ACI S-415 S10/2016			1								
ACIS			1								
ACIS A-3 \$1172016 7.01 1.23 \$50clow No \$10cloc			1								
ACIS			1								UNABLE TO LOCATE WELL, MAY BE DESTROYED
ACIS			1								
ACIS			1	4.24		0.04					
ACI S	AOI 5	A-6	5/12/2016		3.98		2.76	Shallow	No	Static	
ACIS	AOI 5	A-7	5/12/2016	4.86	5.50	0.64	1.98	Shallow	No	Static	
ACI S	AOI 5	A-9	5/12/2016		3.16		2.64	Shallow	No	Static	
ACIS A-12 \$/12/2016 4.90 2.67 Shallow No Static	AOI 5	A-10	5/12/2016	-	3.55		4.73	Shallow	No	Static	
AOI 5	AOI 5	A-11	5/12/2016		5.06		2.71	Shallow	No	Static	
AOI 5	AOI 5	A-12	5/12/2016		4.90		2.67	Shallow	No	Static	
AOI 5	AOI 5	A-15	5/12/2016	-	1.18		3.93	Shallow	No	Static	
AOI 5	AOI 5	A-19D	5/12/2016		12.69		-2.05	Deep	No	Static	UNABE TO LOCATE WELL, IT MAY BE COVERED OR DESTROYED
AOI 5	AOI 5	A-21	5/12/2016	2.21	2.22	0.01	5.95	Shallow	No	Static	VERY THICK PRODUCT
ACI 5	AOI 5	A-21D	5/12/2016		16.99		-5.74	Deep	No	Static	
ACI 5	AOI 5	A-22	5/12/2016	_	6.00		1.95	Shallow	No	Static	
AOI 5	AOI 5	A-23	5/12/2016		3.24		3.07	Shallow	No	Static	
ACI 5 A-26 5/12/2016 — 5.03 — 3.62 Shallow No Static ACI 5 A-27 5/12/2016 — 6.42 — 3.59 Shallow No Static ACI 5 A-39 5/12/2016 — 3.10 — 4.58 Shallow No Static ACI 5 A-39 5/12/2016 — 6.99 — 1.64 Shallow No Static ACI 5 A-40 5/12/2016 — 3.80 — 1.83 Shallow No Static ACI 5 A-41 5/12/2016 — 8.36 — 1.65 Shallow No Static ACI 5 A-44 5/12/2016 — 8.36 — 1.65 Shallow No Static ACI 5 A-45 5/12/2016 — 8.24 — 2.58 Shallow No Static ACI 5 A-46 5/12/2016 NM NM NM NM Shallow No Static ACI 5 A-48 5/12/2016 — 8.24 — 2.58 Shallow No Static ACI 5 A-48 5/12/2016 — 8.24 — 2.58 Shallow No Static ACI 5 A-49 5/12/2016 — 4.41 — 2.04 Shallow No Static ACI 5 A-49 5/12/2016 — 4.41 — 2.04 Shallow No Static ACI 5 A-18 5/12/2016 — 4.41 — 2.04 Shallow No Static ACI 5 A-118 5/12/2016 — 4.90 — 2.54 Shallow No Static ACI 5 A-13 5/12/2016 — 4.90 — 2.54 Shallow No Static ACI 5 A-13 5/12/2016 — 4.90 — 2.54 Shallow No Static ACI 5 A-13 5/12/2016 — 7.52 — 1.62 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static ACI 5 A-13 5/12/2016 — 7.56 — 3.20 Shallow No Static	AOI 5	A-24	5/12/2016		2.38		3.15	Shallow	No	Static	
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AOI 5 A-135 5/12/2016 7.56 3.20 Shallow No Static AOI 5 A-136 5/12/2016 6.73 6.74 0.01 1.97 Shallow No Static AOI 5 A-137 5/12/2016 6.79 1.84 Shallow No Static AOI 5 A-139 5/12/2016 NM NM NM NM Shallow No Static AOI 5 A-140 5/12/2016 NM NM NM NM Shallow No Static WELL DAMAGED, CASING BLOCKED AT 3.40 NO Static WELL DAMAGED, CASING LAYING ON GROUND	AOI 5	A-133	5/12/2016		6.76		6.26	Shallow	No	Static	
AOI 5 A-136 5/12/2016 6.73 6.74 0.01 1.97 Shallow No Static AOI 5 A-137 5/12/2016 6.79 1.84 Shallow No Static AOI 5 A-139 5/12/2016 NM NM NM NM NM Shallow No Static AOI 5 A-140 5/12/2016 NM NM NM NM NM Shallow No Static WELL DAMAGED, CASING BLOCKED AT 3.40 NO Static WELL DAMAGED, CASING LAYING ON GROUND	AOI 5	A-134	5/12/2016		7.52		1.62	Shallow	No	Static	
AOI 5 A-137 5/12/2016 6.79 1.84 Shallow No Static AOI 5 A-139 5/12/2016 NM NM NM NM Shallow No Static WELL DAMAGED, CASING BLOCKED AT 3.40 AOI 5 A-140 5/12/2016 NM NM NM NM Shallow No Static WELL DAMAGED, CASING LAYING ON GROUND	AOI 5	A-135	5/12/2016	-	7.56		3.20	Shallow	No	Static	
AOI 5 A-139 5/12/2016 NM NM NM NM Shallow No Static WELL DAMAGED, CASING BLOCKED AT 3.40 AOI 5 A-140 5/12/2016 NM NM NM NM Shallow No Static WELL DAMAGED, CASING BLOCKED AT 3.40	AOI 5	A-136	5/12/2016	6.73	6.74	0.01	1.97	Shallow	No	Static	
AOI 5 A-140 5/12/2016 NM NM NM NM Shallow No Stafic WELL DAMAGED, CASING LAYING ON GROUND	AOI 5	A-137	5/12/2016		6.79		1.84	Shallow	No	Static	
	AOI 5	A-139	5/12/2016	NM	NM	NM	NM	Shallow	No	Static	WELL DAMAGED, CASING BLOCKED AT 3.40
105 110 50000	AOI 5	A-140	5/12/2016	NM	NM	NM	NM	Shallow	No	Static	WELL DAMAGED, CASING LAYING ON GROUND
AUI 5 A-142 3/12/2016 5.62 2.94 Shallow No Static	AOI 5	A-142	5/12/2016	-	5.62		2.94	Shallow	No	Static	
AOI 5 A-143 5/12/2016 8.04 1.46 Shallow No Static	AOI 5	A-143	5/12/2016		8.04		1.46	Shallow	No	Static	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 5	A-148	5/12/2016		2.54		5.47	Shallow	No	Static	
AOI 5	A-149	5/12/2016		3.38		5.11	Shallow	No	Static	
AOI 5	A-150	5/12/2016		5.39		4.25	Shallow	No	Static	
AOI 5	A-151	5/12/2016		4.49		3.00	Shallow	No	Static	
AOI 5	A-152	5/12/2016		3.27		1.58	Shallow	No	Static	
AOI 5	A-155	5/12/2016	5.32	5.33	0.01	3.07	Shallow	No	Static	
AOI 5	A-156	5/12/2016		5.58		3.30	Shallow	No	Static	
AOI 5	A-157	5/12/2016		4.74		3.88	Shallow	No	Static	
AOI 5	A-163	5/12/2016		6.14		4.35	NA	No	Static	
AOI 5	A-164	5/12/2016		5.01		3.90	NA	No	Static	
AOI 5	A-166	5/12/2016		7.95		3.33	Not Classified	No	Static	
AOI 5	A-167	5/12/2016		5.79		3.67	Not Classified	No	Static	
AOI 5	A-168	5/12/2016		6.07		4.62	Not Classified	No	Static	
AOI 5	A-169	5/12/2016		4.56		4.06	Not Classified	No	Static	
AOI 5	A-170	5/12/2016		2.70		1.93	NA NA	No	Static	
AOI 5	A-171	5/12/2016		5.73		1.91	NA NA	No	Static	
AOI 5	A-172	5/12/2016		4.36		1.96	NA NA	No	Static	
AOI 5	A-172	5/12/2016	NM	NM	NM	NM	NA NA	No	Static	NOT ACCESSIBLE, ACCESS BLOCKED UNDER STEEL ROAD PLATE
		5/12/2016						1		NOT ACCESSIBLE, ACCESS BLOCKED UNDER STEEL ROAD FLATE
AOI 5	A-174	+		4.39		3.63	Not Classified	No	Static	
AOI 5	A-175	5/12/2016		4.18		0.55	NA	No	Static	VEDV THOU PRODUCT
AOI 5	A-176	5/12/2016	3.88	4.36	0.48	0.64	NA	No	Static	VERY THICK PRODUCT
AOI 5	A-179	5/12/2016	3.21	5.82	2.61	5.03	NA	No	Static	VERY THICK PRODUCT
AOI 5	A-180	5/12/2016	NM	NM	NM	NM	NA	No	Static	DESTROYED
AOI 5	A-181	5/12/2016		3.45		3.07	NA	No	Static	
AOI 5	A-182	5/12/2016		5.36		1.54	NA	No	Static	
AOI 5	A-183	5/12/2016	4.02	4.95	0.93	4.26	NA	No	Static	VERY THICK PRODUCT
AOI 5	A-184	5/12/2016	6.03	6.04	0.01	NA	NA	No	Static	VERY THICK PRODUCT
AOI 5	A-185	5/12/2016	NM	NM	NM	NM	NA	No	Static	WELL DAMAGED, CASING BLOCKED
AOI 5	A-186	5/12/2016		5.05		3.21	NA	No	Static	
AOI 5	PZ-2	5/12/2016	_	5.04		5.84	Shallow	No	Static	
AOI 5	PZ-3	5/12/2016		7.29		3.24	Shallow	No	Static	
AOI 5	RW-6S	5/12/2016	_	4.80		3.42	Shallow	Yes	Static	
AOI 5	SW-1	5/12/2016	7.31	8.80	1.49	2.32	Shallow	No	Static	
AOI 5	SW-2	5/12/2016		7.10		2.84	Shallow	No	Static	
AOI 5	SW-3	5/12/2016		7.99		1.98	Shallow	No	Static	
AOI 5	SW-4	5/12/2016	5.15	5.16	0.01	2.00	Shallow	No	Static	VERY THICK PRODUCT
AOI 5	SW-5	5/12/2016	5.15	5.16	0.01	5.34	Shallow	No	Static	VERY THICK PRODUCT
AOI 5	SWR-1	5/12/2016		4.79		3.49	Shallow	Yes	Static	
AOI 5	SWR-2	5/12/2016		7.78		2.28	Shallow	Yes	Static	
AOI 5	SWR-3	5/12/2016		7.00		3.61	Shallow	Yes	Static	
AOI 5	WP-8	5/12/2016		5.48		1.51	Shallow	No	Static	
AOI 5	WP-9	5/12/2016		1.93		6.64	Shallow	No	Static	
AOI 5	WP9-8	5/12/2016	4.63	6.48	1.85	3.89	Shallow	No	Static	
AOI 5	WP-14	5/12/2016	-	7.06		2.06	Shallow	No	Static	
AOI 5	WP16-3	5/12/2016		7.62		3.45	Shallow	No	Static	
AOI 5	WP-A	5/12/2016	4.41	4.42	0.01	5.19	Shallow	No	Static	VERY THICK PRODUCT
AOI 5	WP-B	5/12/2016	6.40	6.49	0.09	3.67	Shallow	No	Static	
AOI 5	WP-C	5/12/2016		3.83		2.70	Shallow	No	Static	
AOI 5	WP-D	5/12/2016	_	5.13		3.13	Shallow	No	Static	
AOI 5	WP-E	5/12/2016		4.63		2.72	Shallow	No	Static	
AOI 6	B-39	5/11/2016	1.12	1.58	0.46	4.30	Shallow	No	Static	COULD NOT LOCATE
AOI 6	B-43	5/11/2016		3.90		3.31	Shallow	No	Static	COULD NOT LOCATE
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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 6	B-45	5/11/2016		0.77		4.33	Shallow	No	Static	
AOI 6	B-46	5/11/2016		0.93		7.10	Shallow	No	Static	
AOI 6	B-47	5/12/2016	3.13	3.14	0.01	5.17	Shallow	No	Static	PRODUCT IS VERY VISCOUS
AOI 6	B-48	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	FLOODED TO TOC
AOI 6	B-48D	5/11/2016		11.46		-2.04	Deep	No	Static	
AOI 6	B-92	5/11/2016		5.44		4.79	Shallow	No	Static	
AOI 6	B-94	5/11/2016		6.76		3.59	Shallow	No	Static	
AOI 6	B-95	5/11/2016		3.94		4.93	Shallow	No	Static	
AOI 6	B-115	5/11/2016		2.47		5.03	Shallow	No	Static	
AOI 6	B-116	5/11/2016	5.19	9.46	4.27	-0.69	Shallow	No	Static	
-	B-117	1			4.27					
AOI 6		5/11/2016		7.54		-1.57	Shallow	No	Static	
AOI 6	B-123	5/11/2016		4.51	1.70	6.25	Shallow	No	Static	
AOI 6	B-124	5/11/2016	4.89	6.67	1.78	3.74	Shallow	Yes	Static	
AOI 6	B-125	5/11/2016		4.72		3.79	Shallow	No	Static	
AOI 6	B-126	5/11/2016	-	4.91		3.60	Shallow	No	Static	
AOI 6	B-129	5/11/2016		5.88		2.14	Shallow	No	Static	
AOI 6	B-130	5/11/2016	5.20	5.40	0.20	4.48	Shallow	No	Static	
AOI 6	B-131	5/11/2016	-	4.51		4.21	Shallow	No	Static	
AOI 6	B-132	5/11/2016	4.67	4.68	0.01	2.20	Shallow	No	Static	
AOI 6	B-132D	5/11/2016		16.45		-6.14	Deep	No	Static	
AOI 6	B-133	5/11/2016		4.97		2.36	Shallow	Yes	Static	
AOI 6	B-133D	5/11/2016		10.58		-1.98	Deep	No	Static	
AOI 6	B-134	5/11/2016	-	4.62		1.90	Shallow	Yes	Static	
AOI 6	B-134D	5/11/2016		11.74		-3.62	Deep	No	Static	
AOI 6	B-135	5/11/2016	4.75	4.87	0.12	1.61	Shallow	No	Static	
AOI 6	B-136	5/11/2016	4.96	4.98	0.02	4.19	Shallow	Yes	Static	
AOI 6	B-137	5/11/2016	4.92	5.07	0.15	3.79	Shallow	Yes	Static	
AOI 6	B-138	5/11/2016		4.25		5.08	Shallow	Yes	Static	
AOI 6	B-139	5/11/2016	NM	NM	NM	NM	Shallow	Yes	Static	DESTROYED
AOI 6	B-141	5/11/2016		3.04		5.65	Shallow	No	Static	DAMAGED, BROKEN <1FT ABOVE GROUND SURFACE AT ANGLE
AOI 6	B-142	5/11/2016	6.76	7.75	0.99	2.85	Shallow	Yes	Static	
AOI 6	B-143	5/11/2016	4.72	5.54	0.82	4.15	Shallow	Yes	Static	
AOI 6	B-144	5/11/2016	4.69	4.70	0.01	4.33	Shallow	No	Static	
			4.07				Shallow			
AOI 6	B-145	5/11/2016		4.40		5.41		No	Static	
AOI 6	B-147	5/11/2016	5.67	5.78	0.11	3.22	Shallow	Yes	Static	
AOI 6	B-148	5/11/2016	5.14	6.03	0.89	1.96	Shallow	No	Static	
AOI 6	B-149	5/11/2016	2.70	3.37	0.67	4.95	Shallow	No	Static	
AOI 6	B-150	5/11/2016	2.67	5.98	3.31	4.69	Shallow	No	Static	
AOI 6	B-151	5/11/2016	-	3.55		4.19	Shallow	No	Static	
AOI 6	B-152	5/11/2016		0.84		4.20	Shallow	No	Static	
AOI 6	B-153	5/11/2016		2.40		3.97	Shallow	No	Static	
AOI 6	B-154	5/11/2016		3.28		5.40	Shallow	No	Static	
AOI 6	B-155	5/11/2016		5.23		3.31	Shallow	No	Static	
AOI 6	B-156	5/11/2016		5.52		3.34	Shallow	No	Static	
AOI 6	B-158	5/11/2016		2.86		5.35	Shallow	No	Static	
AOI 6	B-160	5/11/2016	-	4.18		4.35	Shallow	No	Static	
AOI 6	B-161	5/11/2016	4.32	4.38	0.06	3.97	Shallow	No	Static	
AOI 6	B-162	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	FLOODED - NO ACCESS
AOI 6	B-163	5/11/2016		1.51		5.94	Shallow	No	Static	
AOI 6	B-164	5/11/2016		5.07		3.75	Shallow	No	Static	
AOI 6	B-165	5/11/2016		2.82		2.97	Shallow	No	Static	
AOI 6	B-166	5/11/2016		2.78		4.69	Shallow	No	Static	
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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 6	B-167	5/11/2016		3.17		3.56	Shallow	No	Static	
AOI 6	B-168	5/11/2016	_	2.41		4.05	Shallow	No	Static	
AOI 6	B-169	5/11/2016	_	1.89		4.23	Shallow	No	Static	
AOI 6	B-170	5/11/2016	_	1.75		-1.71	Shallow	No	Static	
AOI 6	B-173	5/11/2016		4.62		NA	NA	No	Static	
AOI 6	B-174	5/11/2016		2.85		NA	Not Classified	No	Static	
AOI 6	PZ-132A	5/11/2016		5.95		4.20	Shallow	No	Static	
AOI 6	PZ-135A	5/11/2016	NM	NM	ММ	NM	Shallow	No	Static	WELL DESTROYED, REMOVED FROM GROUND
AOI 6	PZ-135B	5/11/2016	NM	NM	ММ	NM	Shallow	No	Static	WELL DESTROYED, REMOVED FROM GROUND
AOI 6	RW-9	5/11/2016	4.91	5.66	0.75	3.71	Shallow	Yes	Static	
AOI 6	SUMP-1	5/11/2016	5.39	5.52	0.13	5.29	Shallow	Yes	Static	
AOI 6	U-1	5/11/2016	ММ	ММ	NM	NM	Shallow	No	Static	DRY AT 7.46 FT BTOC
AOI 6	U-2	5/11/2016		6.59		2.80	Shallow	No	Static	
AOI 6	U-3	5/11/2016	5.84	7.01	1.17	3.74	Shallow	No	Static	
AOI 6	U-4	5/11/2016		3.81		5.41	Shallow	No	Static	
AOI 6	U-5	5/11/2016		7.52		2.27	Shallow	No	Static	
AOI 6	URS-1	5/11/2016		5.68		4.34	Shallow	No	Static	
AOI 6	URS-2	5/11/2016		3.83		4.06	Shallow	No	Static	
AOI 6	URS-3	5/11/2016		3.99		3.61	Shallow	No	Static	
AOI 6	URS-4	5/11/2016		9.09		0.85	Shallow	No	Static	
AOI 6	URS-5	5/11/2016	5.11	5.11	<0.01	2.84	Shallow	No	Static	
AOI 6	WP9-3	5/11/2016		2.04		4.12	Shallow	No	Static	
AOI 6	WP9-4	5/11/2016		5.07		3.97	Shallow	No	Static	
AOI 6	WPM-2	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	INACCESSIBLE
AOI 6	WPM-3	5/11/2016		3.09		4.94	Shallow	No	Static	
AOI 6	WPM-11	5/11/2016		0.88		5.63	Shallow	No	Static	
AOI 7	C-49	5/12/2016	_	4.97		4.61	Shallow	No	Static	
AOI 7	C-50	5/12/2016	_	7.10		5.67	Shallow	No	Static	
AOI 7	C-50D	5/12/2016		11.48		0.01	Deep	No	Static	
AOI 7	C-51	5/12/2016		4.90		4.36	Shallow	No	Static	
AOI 7	C-52	5/12/2016		5.23		2.40	Shallow	No	Static	
AOI 7	C-53A	5/12/2016		3.64		5.83	Shallow	No	Static	
AOI 7	C-54	5/12/2016		0.92		5.69	Shallow	No	Static	
AOI 7	C-55	5/12/2016		4.73		4.68	Shallow	No	Static	
AOI 7	C-56	5/12/2016		2.53		8.19	Shallow	No	Static	
AOI 7	C-57	5/12/2016		2.69		5.81	Shallow	No	Static	
AOI 7	C-58	5/12/2016		2.01		5.41	Shallow	No	Static	
AOI 7	C-60	5/12/2016		3.61		3.83	Shallow	No	Static	
AOI 7	C-61	5/12/2016	_	3.52		4.41	Shallow	No	Static	
AOI 7	C-62	5/12/2016		4.89		6.51	Shallow	No	Static	
AOI 7	C-63	5/12/2016		6.06		1.35	Shallow	No	Static	
AOI 7	C-64	5/12/2016	8.35	8.43	0.08	-0.22	Shallow	No	Static	
AOI 7	C-65	5/12/2016	4.63	5.04	0.41	6.18	Shallow	No	Static	
AOI 7	C-65D	5/12/2016		2.12		7.50	Deep	No	Static	
AOI 7	C-95	5/9/2016		5.78		6.47	Shallow	No	Static	
AOI 7	C-96	5/12/2016		5.98		6.90	Shallow	No	Static	
AOI 7	C-97	5/12/2016	16.46	18.83	2.37	-6.31	Shallow	No	Static	
AOI 7	C-98	5/12/2016		6.08		4.47	Shallow	No	Static	
AOI 7	C-104	5/12/2016	_	6.68		2.85	Shallow	No	Static	
AOI 7	C-105	5/12/2016	_	3.88		5.29	Shallow	No	Static	
AOI 7	C-106	5/12/2016	8.48	10.93	2.45	2.89	Shallow	No	Static	
AOI 7	C-107	5/12/2016	NM	NM	NM	NM	Shallow	No		WELL IS DESTROYED
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March Marc	AOI	Well ID	Date	LNAPL	Water	LNAPL Thickness	Groundwater Elevation	Well Classification	Well		Comments
C171	AOI 7	C-108	5/12/2016		4.39		3.88	Shallow	No	Static	
	AOI 7	C-109	5/12/2016	_	4.42		5.58	Shallow	No	Static	
	AOI 7	C-110	5/12/2016		5.76		6.82	Shallow	No	Static	
Mathematical Math	AOI 7	C-111	5/12/2016	_	5.55		6.62	Shallow	No	Static	
Math	AOI 7	C-112	5/12/2016		3.12		7.84	Shallow	No	Static	
Month Mont	AOI 7	C-113	5/12/2016		4.58		7.07	Shallow	No	Static	
Math		C-114		_					No		
Math											
Math											
Math											
Mathematical Color											
ACT C-132 S192816 C-1 C-124 C-1 C-124 C-1 C-124 C-1 C-124 C-1 C-124											
ACT C-1340 ST/2006 C											
ACC C. C. SAN C. C. SAN C. C. C. SAN C. C. C. SAN SAN C. SAN SAN C. SAN SAN C. SAN SAN SAN C. SAN SAN C. SAN SAN SAN SAN C. SAN SAN SAN SAN C. SAN SAN SAN SAN SAN C. SAN SAN SAN SAN SAN SAN C. SAN											
Act											
ACT C-137 S192016 130 2.01 Shotow No State Shotow Shoto											
ACC C-188											
ACT C-198											
ACT C-140 S712/2014 S88 2.52 Shollow/Intermediate No State				-						Static	
ACC C - 142	AOI 7			_			4.49	Shallow	No	Static	
ACI C-144 S1/2/2016	AOI 7	C-140	5/12/2016		1.35		6.20	Shallow	No	Static	
ACI C - 1446	AOI 7	C-142	5/12/2016	-	8.83		2.52	Shallow/Intermediate	No	Static	
ACIT C-145 S1/2/2016 II II II II II II II	AOI 7	C-143	5/12/2016	-	9.42		-2.97	Shallow/Intermediate	No	Static	
ACIT C-144 S/12/2016 11.12 11.30 0.18 -4.41 Shollow No Static	AOI 7	C-144D	5/12/2016		13.60		-4.64	Deep	No	Static	
ACI C-147 S/12/2016 T1-25 T1-27 O.02 -4.38 Shotlow No Static	AOI 7	C-145	5/12/2016		5.47		1.45	Shallow	No	Static	
ACIT C-148 \$712/2016 14.03 -4.69 Shallow No Static	AOI 7	C-146	5/12/2016	11.12	11.30	0.18	-4.41	Shallow	No	Static	
ACIT C-150 \$712/2016 13.73 15.75 2.02 -5.86 Shallow No Stotic	AOI 7	C-147	5/12/2016	11.25	11.27	0.02	-4.38	Shallow	No	Static	
ACI C-151 \$1/2/2016 12.52 -4.61 Shallow No Static	AOI 7	C-148	5/12/2016		14.03		-4.69	Shallow	No	Static	
ACIT C-152 5/12/2016 10.56 -1.18 Shallow No Static	AOI 7	C-150	5/12/2016	13.73	15.75	2.02	-5.86	Shallow	No	Static	
ACI C-153 S/12/2016 14.36 14.64 0.28 -6.13 Shallow No Static	AOI 7	C-151	5/12/2016	-	12.52		-4.61	Shallow	No	Static	
ACIT C-154 5/12/2016 12.02 12.02 -0.01 -4.12 Shallow No Static Shallow Shallow No Static Shallow Sha	AOI 7	C-152	5/12/2016		10.56		-1.18	Shallow	No	Static	
AOI 7	AOI 7	C-153	5/12/2016	14.36	14.64	0.28	-6.13	Shallow	No	Static	
AO17 C-157 5/12/2016 3.34 3.24 Shallow No Static	AOI 7	C-154	5/12/2016	12.02	12.02	<0.01	-4.12	Shallow	No	Static	
AOI 7	AOI 7	C-155	5/12/2016		5.94		3.23	Shallow	No	Static	
AOI 7	AOI 7	C-157	5/12/2016		3.34		3.24	Shallow	No	Static	
AOI 7	AOI 7	C-158	5/12/2016	NM	NM	NM	NM	Shallow	No	Static	COULD NOT READ. WELL SEPERATED AT 2.70 FEET
AOI 7	AOI 7	C-159	5/12/2016	_	3.63		3.16	Shallow	No	Static	
AOI 7 C-161 5/12/2016 11.56	AOI 7	C-160	5/12/2016	_	9.90		-3.03	Shallow	No	Static	WELL IS DRY
AOI 7 C-162 5/12/2016 4.30 2.58 Shallow No Static AOI 7 C-163 5/12/2016 4.85 1.98 Shallow No Static AOI 7 C-164 5/12/2016 6.06 2.40 Shallow No Static AOI 7 C-165 5/12/2016 7.05 0.06 Shallow No Static AOI 7 C-166 5/12/2016 12.20 4.39 Shallow No Static AOI 7 C-168 5/12/2016 12.20 4.39 Shallow No Static WELL IS DRY AOI 7 C-168 5/12/2016 12.20 4.39 Shallow No Static WELL IS DRY AOI 7 C-168 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static WELL DAMAGED. NEEDS NEW 8": COUPLING AND RISER AOI 7 River4 5/12/2016 8.82 9.65 NA NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 6.05 NA NA NA NA NA NO Static AOI 7 RW-802 5/12/2016 21.10 15.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.10 15.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.70 14.92 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.70 14.92 Shallow Yes Pumping											
AOI 7 C-163 5/12/2016 4.30 2.58 Shallow No Static AOI 7 C-164 5/12/2016 4.85 1.98 Shallow No Static AOI 7 C-165 5/12/2016 6.06 2.40 Shallow No Static AOI 7 C-166 5/12/2016 7.050.06 Shallow No Static AOI 7 C-167 5/12/2016 12.204.39 Shallow No Static WELL IS DRY AOI 7 C-168 5/12/2016 3.91 4.27 0.36 3.45 Shallow No Static WELL IS DRY AOI 7 C-169 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static AOI 7 River4 5/12/2016 6.05 NA NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 C-164 5/12/2016 4.85 1.98 Shallow No Static AOI 7 C-165 5/12/2016 6.06 2.40 Shallow No Static AOI 7 C-166 5/12/2016 7.050.06 Shallow No Static WELL IS DRY AOI 7 C-167 5/12/2016 12.204.39 Shallow No Static WELL IS DRY AOI 7 C-168 5/12/2016 3.91 4.27 0.36 3.45 Shallow No Static WELL IS DRY AOI 7 C-169 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static AOI 7 River4 5/12/2016 6.05 NA NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping			-								
AOI 7 C-165 5/12/2016 6.06 2.40 Shallow No Static AOI 7 C-166 5/12/2016 7.05 0.06 Shallow No Static WELL IS DRY AOI 7 C-167 5/12/2016 12.20 4.39 Shallow No Static WELL IS DRY AOI 7 C-168 5/12/2016 3.91 4.27 0.36 3.45 Shallow No Static WELL IS DRY AOI 7 C-169 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static AOI 7 River4 5/12/2016 6.05 NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 < 15.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.70 14.92 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.70 14.92 Shallow Yes Pumping			-								
AOI 7 C-166 5/12/2016 7.05											
AOI 7 C-167 5/12/2016 12.20											WELL IS DRY
AOI 7 C-168 5/12/2016 3.91 4.27 0.36 3.45 Shallow No Static WELL DAMAGED. NEEDS NEW 8": COUPLING AND RISER AOI 7 C-169 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static AOI 7 River4 5/12/2016 6.05 NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-802 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 C-169 5/12/2016 8.82 9.65 0.83 -1.96 Shallow No Static AOI 7 River4 5/12/2016 6.05 NA NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-802 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping			<u> </u>								
AOI 7 River4 5/12/2016 6.05 NA NA NA NO Static AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-802 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											YVELL DAWAGED, NEEDS NEW 8 : COUPLING AND KISEK
AOI 7 RW-801 5/12/2016 19.00 19.00 <0.01 -12.72 Shallow Yes Pumping AOI 7 RW-802 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 RW-802 5/12/2016 21.1015.40 Shallow Yes Pumping AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 RW-803 5/12/2016 21.1015.32 Shallow Yes Pumping AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 RW-804 5/12/2016 20.7014.92 Shallow Yes Pumping											
AOI 7 RW-805 5/12/2016 17.3011.55 Shallow Yes Pumping			-			-				Pumping	
	AOI 7	RW-805	5/12/2016		17.30		-11.55	Shallow	Yes	Pumping	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 7	RW-806	5/12/2016		20.20		-14.79	Shallow	Yes	Pumping	
AOI 7	RW-807	5/12/2016		18.90	-	-12.06	Shallow	Yes	Pumping	
AOI 7	RW-808	5/12/2016		18.80		-12.72	Shallow	Yes	Pumping	
AOI 7	RW-809	5/12/2016		20.10		-13.55	Shallow	Yes	Pumping	
AOI 7	RW-810	5/12/2016	16.30	16.30	<0.01	-9.85	Shallow	Yes	Pumping	
AOI 7	WP14-2	5/12/2016		9.95		-2.04	Shallow	No	Static	WELL IS DRY
AOI 8	N-1	5/11/2016		12.30		9.97	Shallow	No	Static	
AOI 8	N-2	5/11/2016		18.17		8.16	Shallow	No	Static	
AOI 8	N-3	5/11/2016		15.45		11.21	Shallow	No	Static	
AOI 8	N-4	5/11/2016		17.90		8.46	Deep	No	Static	
		1								
AOI 8	N-5	5/11/2016		9.43		16.53	Shallow	No	Static	
AOI 8	N-6	5/11/2016		12.27		18.78	Shallow	No	Static	
AOI 8	N-8	5/11/2016		26.13		11.48	Shallow	No	Static	
AOI 8	N-9	5/11/2016		32.27		3.63	Deep	No	Static	
AOI 8	N-10	5/11/2016		4.41		15.55	Shallow	No	Static	
AOI 8	N-11	5/11/2016		18.36		11.38	Intermediate	No	Static	
AOI 8	N-12	5/11/2016	NM	NM	NM	NM	Intermediate	No	Static	BLOCKED AT 2.10 FEET
AOI 8	N-13	5/11/2016		12.77		14.00	Deep	No	Static	
AOI 8	N-14	5/11/2016 21.70 5/11/2016 29.50					Intermediate	No	Static	
AOI 8	N-15	5/11/2016		20.89		8.46	Intermediate	No	Static	
AOI 8	N-16	5/11/2016		23.16		9.82	Intermediate	No	Static	
AOI 8	N-17	5/11/2016		21.72		12.70	Intermediate	No	Static	
AOI 8	N-18	5/11/2016		21.70		11.20	Intermediate	No	Static	
AOI 8	N-19	5/11/2016		29.50		3.28	Deep	No	Static	
AOI 8	N-20	5/11/2016		17.48		10.91	Shallow	No	Static	
AOI 8	N-21	5/11/2016		22.10		5.91	Deep	No	Static	
AOI 8	N-23	5/11/2016	NM	NM	NM	NM	Intermediate	No	Static	WELL IS LOST, COULD NOT LOCATE
AOI 8	N-24	5/11/2016		9.18		8.55	Shallow	No	Static	
AOI 8	N-25	5/11/2016	3.33	4.02	0.69	15.41	Shallow	No	Static	
AOI 8	N-26	5/11/2016		5.41		15.62	Shallow	No	Static	WELL IS DAMAGED, NEEDS 2" COUPLING AND NEW RISER
AOI 8	N-29	5/11/2016		26.41		10.03	Shallow	No	Static	
AOI 8	N-30	5/11/2016		33.23		3.07	Deep	No	Static	
AOI 8	N-34	5/11/2016	4.15	4.16	0.01	6.81	Intermediate	No	Static	
		1	4.15		0.01					
AOI 8	N-37	5/11/2016		12.57		5.65	Shallow	No	Static	
AOI 8	N-38	5/11/2016		6.89		3.20	Shallow	No	Static	
AOI 8	N-38D	5/11/2016		10.09		0.34	Deep	No	Static	
AOI 8	N-42	5/11/2016	7.70	7.71	0.01	7.20	Shallow	No	Static	252720452
AOI 8	N-44D	5/11/2016	NM	NM	NM	NM	Deep	No	Static	DESTROYED
AOI 8	N-47	5/11/2016	19.86	20.51	0.65	11.98	Intermediate	No	Static	
AOI 8	N-48	5/11/2016	21.81	22.06	0.25	9.42	Intermediate	No	Static	
AOI 8	N-49	5/11/2016	24.50	26.17	1.67	9.03	Intermediate	No	Static	
AOI 8	N-51	5/11/2016	23.56	23.89	0.33	8.26	Intermediate	No	Static	
AOI 8	N-55	5/11/2016		5.68		4.58	Shallow	No	Static	
AOI 8	N-56	5/11/2016	-	9.07		4.30	Shallow	No	Static	
AOI 8	N-57	5/11/2016		6.33		4.58	Shallow	No	Static	
AOI 8	N-58	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	BLOCKED AT 4.60
AOI 8	N-59	5/11/2016	5.20	5.21	0.01	1.75	Shallow	No	Static	VERY THICK PRODUCT
AOI 8	N-61	5/11/2016	4.26	4.27	0.01	4.65	Shallow	No	Static	PRODUCT VERY THICK
AOI 8	N-64	5/11/2016	_	4.81		3.97	Shallow	No	Static	
AOI 8	N-66						Shallow	No	Static	DESTROYED
AOI 8	N-67							No	Static	
AOI 8	N-68	5/11/2016	9.34	9.48	0.14	14.87	Shallow	No	Static	
, 1010	71 00	5, . 1, 2010	7.04	7.70	0.14	14.07	311011044	110	STUTE	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 8	N-69	5/11/2016		15.21		7.99	Intermediate	No	Static	
AOI 8	N-70	5/11/2016		14.88		7.29	Intermediate	No	Static	
AOI 8	N-72	5/11/2016		9.29		3.38	Shallow	No	Static	
AOI 8	N-73	5/11/2016		7.55		1.35	Intermediate	No	Static	
AOI 8	N-74	5/11/2016		6.50		1.38	Shallow	No	Static	
AOI 8	N-75	5/11/2016	5.52	5.53	0.01	2.67	Intermediate	No	Static	PRODUCT VERY THICK
AOI 8	N-76	5/11/2016	20.40	25.88	5.48	9.47	Intermediate	Yes	Static	
AOI 8	N-77	5/11/2016		6.32		12.29	Shallow	No	Static	
AOI 8	N-79	5/11/2016		11.46		10.41	Intermediate	No	Static	
AOI 8	N-82	5/11/2016	23.06	23.34	0.28	10.41	Shallow	No	Static	
		1	23.06		0.26					
AOI 8	N-83	5/11/2016		15.55		5.90	Intermediate	No	Static	
AOI 8	N-84	5/11/2016		14.61		11.27	Shallow	No	Static	
AOI 8	N-85	5/11/2016		13.94		11.35	Shallow	No	Static	
AOI 8	N-86	5/11/2016		15.11		10.73	Intermediate	No	Static	
AOI 8	N-87	5/11/2016	-	15.53		10.73	Shallow	No	Static	
AOI 8	N-89	5/11/2016		14.36		9.05	Intermediate	No	Static	
AOI 8	N-90	5/11/2016		15.10		10.61	Shallow	No	Static	
AOI 8	N-91	5/11/2016		1.80		19.10	Shallow	No	Static	CASING DAMAGED. NEEDS 4" COUPLING AND NEW RISER
AOI 8	N-92	5/11/2016		7.53		13.33	Shallow	No	Static	
AOI 8	N-93	5/11/2016		14.94		10.15	Shallow	No	Static	
AOI 8	N-94	5/11/2016		5.61		14.75	Shallow	No	Static	
AOI 8	N-97	5/11/2016		13.84		9.12	NA	No	Static	
AOI 8	N-98	5/11/2016		23.62		10.91	Intermediate	No	Static	
AOI 8	N-99	5/11/2016		18.58		9.68	Intermediate	No	Static	
AOI 8	N-100	5/11/2016		17.72		9.29	Intermediate	No	Static	
AOI 8	N-101	5/11/2016		16.15		11.00	Intermediate	No	Static	
AOI 8	N-102	5/11/2016	22.25	22.88	0.63	10.92	Intermediate	No	Static	PRODUCT IS VERY VISCOUS
AOI 8	N-103	5/11/2016		17.40		11.93	Intermediate	No	Static	LOOKS LIKE CASING HAS BEEN CUT DOWN
AOI 8	N-104	5/11/2016		16.82		10.82	Intermediate	No	Static	
AOI 8	N-105	5/11/2016		17.41		10.70	Intermediate	No	Static	
AOI 8	N-106	5/11/2016		7.74		15.29	Intermediate	No	Static	
AOI 8	N-107	+	15.32	15.43	0.11	11.04	Intermediate	No	Static	
		5/11/2016								
AOI 8	N-108	5/11/2016	10.35	10.86	0.51	12.01	Intermediate	No	Static	
8 IOA	N-109	5/11/2016		12.29		6.13	Intermediate	No	Static	
AOI 8	N-111	5/11/2016		6.74		4.02	Intermediate	No	Static	
AOI 8	N-112	5/11/2016	10.01	10.36	0.35	5.68	Intermediate	No	Static	
AOI 8	N-113	5/11/2016	8.55	10.51	1.96	5.44	Intermediate	No	Static	
AOI 8	N-114	5/11/2016		8.65		5.72	Intermediate	No	Static	
AOI 8	N-115	5/11/2016	7.77	7.97	0.20	7.54	Intermediate	No	Static	
AOI 8	N-116	5/11/2016	5.78	7.20	1.42	5.35	Intermediate	No	Static	
AOI 8	N-118	5/11/2016		14.48		8.70	Intermediate	No	Static	
AOI 8	N-119	5/11/2016	NM	NM	ММ	NM	Intermediate	No	Static	LOST/DESTROYED. UNDER SOIL PILE
AOI 8	N-121	5/11/2016	NM	NM	NM	NM	Intermediate	No	Static	LOST/DESTROYED. UNDER SOIL PILE
AOI 8	N-122	5/11/2016	-	10.49		6.56	Intermediate	No	Static	
AOI 8	N-126	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	DESTROYED
AOI 8	N-127	5/11/2016	24.26	24.40	0.14	9.17	Intermediate	No	Static	
AOI 8	N-128	5/11/2016	NM	NM	NM	NM	Intermediate	No	Static	DESTROYED
AOI 8	N-129	5/11/2016	19.16	19.66	0.50	9.69	Intermediate	No	Static	
AOI 8	N-130	5/11/2016	20.38	20.72	0.34	11.14	Intermediate	No	Static	
AOI 8	N-132	1					Shallow	No		BROKE AT GRADE
AOI 8								No		BLOCKED AT 4.35
-		+				1	Shallow			
AOI 8	N-137	5/11/2016	17.34	17.38	0.04	8.24	Intermediate	No	Static	CHANGED OUT WICK



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 8	N-138	5/11/2016	27.00	27.13	0.13	8.27	Intermediate	No	Static	CHANGED OUT WICK
AOI 8	N-139	5/11/2016	26.78	26.94	0.16	8.18	Intermediate	No	Static	CHANGED OUT WICK
AOI 8	N-140	5/11/2016	_	17.15		9.59	Shallow	No	Static	
AOI 8	N-141	5/11/2016		13.94		10.45	Shallow	No	Static	
AOI 8	N-142	5/11/2016	26.49	26.49	<0.01	8.08	Shallow	No	Static	
AOI 8	N-143	5/11/2016	_	22.72		10.30	Shallow	No	Static	
AOI 8	N-144	5/11/2016	_	25.88		8.40	Shallow	No	Static	
AOI 8	N-145	5/11/2016	_	17.93		8.06	Shallow	No	Static	
AOI 8	N-146	5/11/2016	17.55	18.00	0.45	8.72	Shallow	No	Static	
AOI 8	N-503	5/11/2016	8.85	9.30	0.45	3.51	Shallow	No	Static	
AOI 8	N-504	5/11/2016		9.19		3.12	Intermediate	No	Static	
AOI 8	PZ-201	5/11/2016	22.04	22.34	0.30	10.21	Intermediate	No	Static	
AOI 8	PZ-202	5/11/2016	22.14	22.25	0.11	11.24	Intermediate	No	Static	
AOI 8	PZ-203	5/11/2016		20.18		13.93	Intermediate	No	Static	
AOI 8	PZ-204	5/11/2016	20.70	22.26	1.56	8.03	Intermediate	No	Static	PRODUCT VERY THICK
AOI 8	PZ-300	5/11/2016		17.38		9.39	Intermediate	No	Static	
AOI 8	PZ-501	5/11/2016		4.63		4.37	Shallow	No	Static	
AOI 8	PZ-502	5/11/2016	3.20	3.21	0.01	4.72	Intermediate	No	Static	PRODUCT VERY THICK
AOI 8	PZ-503	5/11/2016		4.11		4.58	Shallow	No	Static	
AOI 8	PZ-504	5/11/2016		3.09		4.54	Shallow	No	Static	
AOI 8	PZ-505	5/11/2016		3.90		4.56	Shallow	No	Static	
AOI 8	PZ-506	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	DESTROYED OR COVERED
AOI 8	PZ-507	5/11/2016		9.00		3.68	Shallow	No	Static	
AOI 8	River2	5/11/2016		8.56	NA	NA	NA	No	Static	
AOI 8	RW-200	5/11/2016		5.89		6.13	Intermediate	Yes	Static	
AOI 8	RW-201	5/11/2016	22.90	23.15	0.25	9.06	Intermediate	Yes	Static	
AOI 8	RW-202	5/11/2016	_	20.48		9.03	Intermediate	Yes	Static	
AOI 8	RW-203	5/11/2016	22.53	22.60	0.07	8.56	Intermediate	Yes	Static	
AOI 8	RW-204	5/11/2016	19.21	20.97	1.76	9.18	Intermediate	Yes	Static	
AOI 8	RW-205	5/11/2016	19.19	21.82	2.63	10.25	Intermediate	Yes	Static	
AOI 8	RW-206	5/11/2016	21.29	22.86	1.57	9.48	Intermediate	Yes	Static	
AOI 8	RW-300	5/11/2016	15.25	15.47	0.22	6.35	Intermediate	Yes	Static	
AOI 8	RW-301	5/11/2016		12.27		10.14	Intermediate	Yes	Static	
AOI 8	RW-302	5/11/2016		13.52		10.57	Intermediate	Yes	Static	
AOI 8	RW-303	5/11/2016		14.25		10.73	Intermediate	Yes	Static	
AOI 8	RW-304	5/11/2016		15.04		10.24	Intermediate	Yes	Static	
AOI 8	RW-305	5/11/2016		15.04		10.23	Intermediate	Yes	Static	
AOI 8	RW-306	5/11/2016	13.10	13.12	0.02	10.48	Intermediate	Yes	Static	
AOI 8	RW-307	5/11/2016		14.81		8.45	Intermediate	Yes	Static	
AOI 8	RW-308	5/11/2016		16.80		8.81	Intermediate	Yes	Static	
AOI 8	RW-309	5/11/2016		15.72		9.51	Intermediate	Yes	Static	
AOI 8	RW-500	5/11/2016		2.89		4.67	Intermediate	Yes	Static	
AOI 8	RW-501	5/11/2016		5.99		3.80	Intermediate	Yes	Static	
AOI 8	RW-502	5/11/2016	8.46	8.72	0.26	3.99	Intermediate	Yes	Static	
AOI 9	MW-1SRTF	5/12/2016	3.05	3.61	0.56	4.38	Shallow/Intermediate	No	Static	
AOI 9	MW-2SRTF	5/12/2016		3.26		4.07	Shallow/Intermediate	No	Static	
AOI 9	MW-3SRTF	5/12/2016		2.87		4.12	Shallow/Intermediate	No	Static	
AOI 9	RW-A	5/12/2016		2.15		-4.02	Shallow/Intermediate	Yes	Static	
AOI 9	RW-B	5/12/2016	3.33	3.33	<0.01	4.08	Shallow/Intermediate	Yes	Static	
AOI 9	RW-B5	5/12/2016		3.70		4.14	Shallow/Intermediate	Yes	Static	
AOI 9	S-74D1SRTF	5/12/2016		21.06		-8.32	Deep	No.	Static	
AOI 9	S-74D2SRTF	5/12/2016		17.08		-4.00	Deep	No	Static	
AUIY	J-74DZ3KIF	J/ 12/2016		17.00		-4.00	neeh	INU	JIUIC	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ff NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 9	S-74SRTF	5/12/2016		8.27		6.27	Shallow/Intermediate	No	Static	
AOI 9	S-75SRTF	5/12/2016		8.04		3.49	Shallow/Intermediate	No	Static	
AOI 9	S-76DSRTF	5/12/2016		16.79		-8.16	Deep	No	Static	
AOI 9	S-76SRTF	5/12/2016		5.82		1.14	Shallow/Intermediate	No	Static	
AOI 9	S-77SRTF	5/12/2016		12.24		-7.89	Shallow/Interm/Deep	No	Static	
AOI 9	S-78SRTF	5/12/2016		9.86		-8.36	Shallow/Interm/Deep	No	Static	
AOI 9	S-79SRTF	5/12/2016		7.19		-5.35	Shallow/Interm/Deep	No	Static	
AOI 9	S-80SRTF	5/12/2016		3.23		-0.66	Shallow/Interm/Deep	No	Static	
AOI 9	S-81SRTF	5/12/2016		9.79		-8.33	Shallow/Interm/Deep	No	Static	
AOI 9	S-82SRTF	5/12/2016	NM	NM	NM	NM	Shallow/Interm/Deep	No	Static	FLOODED - NO ACCESS
AOI 9	S-83SRTF	5/12/2016		2.33		0.05	Shallow/Interm/Deep	No	Static	
AOI 9	S-105SRTF	5/12/2016		4.94		-2.99	Shallow/Intermediate	No	Static	
AOI 9	S-106DSRTF	5/12/2016		18.59		-9.13	Deep	No	Static	
AOI 9	S-106SRTF	5/12/2016		5.85		4.17	Shallow/Intermediate	No	Static	
AOI 9	S-108SRTF	5/12/2016		4.06		0.25	Shallow/Intermediate	No	Static	
AOI 9	S-1083RTF	5/12/2016		2.35		0.23	Shallow/Intermediate	No	Static	
AOI 9	S-110DSRTF	5/12/2016		11.97		-8.88	NA	No	Static	
_							Shallow/Interm/Deep			
AOI 9	S-110SRTF	5/12/2016		6.51		-3.02		No	Static	
AOI 9	S-111SRTF	5/12/2016		8.37		-7.59	Shallow/Interm/Deep	No	Static	
AOI 9	S-112SRTF	5/12/2016		10.11		-8.60	Shallow/Interm/Deep	No	Static	
AOI 9	S-113SRTF	5/12/2016		11.67		-8.65	Shallow/Interm/Deep	No	Static	
AOI 9	S-114SRTF	5/12/2016		10.73		-8.57	Shallow/Interm/Deep	No	Static	
AOI 9	S-115DSRTF	5/12/2016	-	11.12		-8.42	NA	No	Static	
AOI 9	S-115SRTF	5/12/2016		11.50		-8.75	Shallow/Interm/Deep	No	Static	
AOI 9	S-116SRTF	5/12/2016		9.71		-8.84	Shallow/Interm/Deep	No	Static	
AOI 9	S-117SRTF	5/12/2016		8.44		-5.57	Shallow/Intermediate	No	Static	
AOI 9	S-118DSRTF	5/12/2016		12.15		-8.89	NA	No	Static	
AOI 9	S-118SRTF	5/12/2016		10.75		-7.12	Shallow/Intermediate	No	Static	
AOI 9	S-119SRTF	5/12/2016		3.62		-1.27	Shallow/Intermediate	No	Static	
AOI 9	S-120DSRTF	5/12/2016		21.38		-9.01	Deep	No	Static	
AOI 9	S-120SRTF	5/12/2016		9.18		2.89	Shallow/Intermediate	No	Static	
AOI 9	S-121SRTF	5/12/2016		8.17		-7.16	Shallow/Intermediate	No	Static	
AOI 9	S-122SRTF	5/12/2016	9.10	9.11	0.01	-6.68	Shallow/Interm/Deep	No	Static	
AOI 9	S-123SRTF	5/12/2016		10.77		-8.35	Shallow/Interm/Deep	No	Static	HAD TO DIG OUT DIRT AND ROCKS
AOI 9	S-124SRTF	5/12/2016		7.19		0.69	Shallow/Interm/Deep	No	Static	
AOI 9	S-125SRTF	5/12/2016	-	5.65		1.53	Shallow/Interm/Deep	No	Static	
AOI 9	S-126SRTF	5/12/2016	-	7.49		4.34	Shallow/Interm/Deep	No	Static	
AOI 9	S-127SRTF	5/12/2016	-	8.42		3.71	Shallow/Interm/Deep	No	Static	
AOI 9	S-128SRTF	5/12/2016		10.33		2.98	Shallow/Interm/Deep	No	Static	
AOI 9	S-129SRTF	5/12/2016	NM	NM	NM	NM	Shallow/Interm/Deep	No	Static	NO ACCESS
AOI 9	S-130SRTF	5/12/2016		9.02		2.39	Shallow/Interm/Deep	No	Static	
AOI 9	S-131SRTF	5/12/2016	-	4.18		4.63	Shallow/Interm/Deep	No	Static	
AOI 9	S-132SRTF	5/12/2016		6.90		1.80	Shallow/Interm/Deep	No	Static	
AOI 9	S-133SRTF	5/12/2016		3.42		1.26	Shallow/Interm/Deep	No	Static	
AOI 9	S-134SRTF	5/12/2016		7.45		2.89	Shallow/Interm/Deep	No	Static	
AOI 9	S-135SRTF	5/12/2016		10.70		-7.72	NA	No	Static	
AOI 9	S-136SRTF	5/12/2016		4.96		0.32	NA	No	Static	
AOI 9	WPA-1	5/12/2016		5.86		-3.13	Shallow/Intermediate	No	Static	
AOI 9	WPA-2	5/12/2016		6.06		-3.37	Shallow/Intermediate	No	Static	
AOI 9	WPA-3	5/12/2016		6.76		-3.51	Shallow/Intermediate	No	Static	
AOI 9	WPA-5	5/12/2016	NM	NM	NM	NM	Shallow/Intermediate	No	Static	ВОПОМ АТ 7.50 FT ВТОС
AOI 9	WPB-2	5/12/2016		7.24		4.06	Shallow/Intermediate	No	Static	
		.,, 20.0			l			1	2.3.10	



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AOI	Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
AOI 9	WPB-3	5/12/2016	NM	NM	NM	NM	Shallow	No	Static	COULD NOT LOCATE
AOI 9	WPB-4	5/12/2016		4.03		4.01	Shallow/Intermediate	No	Static	
AOI 9	WPB-5	5/12/2016		8.57		3.75	Shallow/Intermediate	No	Static	
AOI 10	W-1	5/16/2016	8.75	8.75	<0.01	0.86	Shallow	No	Static	
AOI 10	W-1D	5/16/2016		10.10		0.63	Intermediate	No	Static	
AOI 10	W-2	5/16/2016		14.46		4.99	Shallow	No	Static	
AOI 10	W-4	5/16/2016	ММ	NM	NM	NM	Shallow	No	Static	NOT ACCESSIBLE, AREA AROUND WELL IS FLOODED
AOI 10	W-5	5/16/2016	_	2.69		5.04	Shallow	No	Static	
AOI 10	W-6	5/16/2016	NM	NM	ММ	NM	Shallow	No	Static	WELL IS LOST, IT MAY BE UNDER A LARGE FALLEN TREE
AOI 10	W-8	5/16/2016	3.11	3.12	0.01	5.33	Shallow	No	Static	VERY VISCOUS PRODUCT. IT WAS HARD TO GET A GOOD READING.
AOI 10	W-9	5/16/2016		10.46		-1.17	Intermediate	No	Static	
AOI 10	W-10	5/16/2016	3.61	3.61	<0.01	3.96	Shallow	No	Static	
AOI 10	W-11	5/16/2016	_	4.42		3.64	Shallow	No	Static	
AOI 10	W-12	5/16/2016		3.32		3.78	Shallow	No	Static	
AOI 10	W-13	5/16/2016		8.66		-2.01	Intermediate	No	Static	
AOI 10	W-14	5/16/2016		2.87		4.39	Shallow	No	Static	
AOI 10	W-15	5/16/2016		2.41		6.37	Shallow	No	Static	
AOI 10	W-16	5/16/2016		2.52		4.12	Shallow	No	Static	
AOI 10	W-17	5/16/2016		3.35		3.87	Shallow	No	Static	
AOI 10	W-18	5/16/2016		3.50		4.62	Shallow	No	Static	WELL IS DRY
AOI 10	W-19	5/16/2016		11.65		-1.59	Intermediate	No	Static	
AOI 10	W-20	5/16/2016		3.97		6.14	Shallow	No	Static	
AOI 10	W-22	5/16/2016		1.28		5.16	Shallow	No	Static	
AOI 10	W-23	5/16/2016		2.45		5.10	Shallow	No	Static	
AOI 10	W-24	5/16/2016	NM	NM	NM	NM	Shallow	No	Static	NO ACCESS. AREA AROUND WELL IS FLOODED
AOI 10	W-25	5/16/2016		5.96		4.19	Shallow	No	Static	
AOI 10	W-26	5/16/2016	_	12.88		-2.90	Intermediate	No	Static	
AOI 10	W-27	5/16/2016	_	12.83		-1.97	Shallow	No	Static	
AOI 10	W-28	5/16/2016		3.53		5.08	Shallow	No	Static	
AOI 10	W-29	5/16/2016		6.71	5.96 4.19 2.882.90 2.831.9 3.53 5.08		Shallow	No	Static	
AOI 10	W-30	5/16/2016		3.62		5.03	Shallow	No	Static	
AOI 10	W-31	5/16/2016	3.68	3.69	0.01	4.59	Shallow	No	Static	
AOI 10	W-32	5/16/2016	9.89	10.15	0.26	4.93	Shallow	No	Static	
AOI 10	W-32D	5/16/2016		15.50		-0.80	Intermediate	No	Static	
AOI 10	W-33	5/16/2016		11.75		5.32	Shallow	No	Static	
AOI 10	W-34	5/16/2016		7.84		6.30	Shallow	No	Static	
BELMONT	MW-26	5/9/2016	22.80	24.18	1.38	3.64	Shallow	No	Static	
BELMONT	MW-27	5/9/2016	24.80	25.75	0.95	3.66	Shallow	No	Static	
BELMONT	MW-28	5/9/2016		24.93		3.85	Intermediate	No	Static	
BELMONT	MW-29	5/9/2016	NM	NM	NM	NM	Intermediate	No	Static	
BELMONT	MW-30	5/9/2016		27.20		4.50	Shallow	No	Static	
BELMONT	MW-31	5/9/2016		25.79		4.77	Shallow	No	Static	
BELMONT	MW-32	5/9/2016		25.35		3.79	Intermediate	No	Static	
BELMONT	MW-33	5/9/2016	_	24.53		5.46	Shallow	No	Static	
BELMONT	MW-35	5/9/2016	_	27.09		3.56	Intermediate	No	Static	
BELMONT	MW-36	5/9/2016		28.41		4.16	Intermediate	No	Static	
BELMONT	MW-37	5/9/2016		27.41		4.51	Intermediate	No	Static	
BELMONT	MW-38	5/9/2016		23.68		3.94	Intermediate	No	Static	
BELMONT	MW-39	5/9/2016		23.62		3.93	Intermediate	No	Static	
BELMONT	MW-40	5/9/2016	24.01	24.33	0.32	3.81	Intermediate	No	Static	
BELMONT	MW-41	5/9/2016	24.01	23.63	0.02	3.72	Intermediate	No	Static	
		1								
BELMONT	MW-43	5/9/2016		26.67		3.94	Intermediate	No	Static	



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AOI	Well ID	Date	Depth to LNAPL (ff btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
BELMONT	MW-44	5/9/2016		25.70		3.60	Intermediate	No	Static	
BELMONT	OW-12	5/9/2016		26.00		4.22	Shallow	No	Static	
BELMONT	OW-13	5/9/2016		28.03		4.17	Shallow	No	Static	
BELMONT	OW-14	5/9/2016		28.08		4.13	Shallow	No	Static	
BELMONT	OW-16	5/9/2016		27.32		4.06	Shallow	No	Static	
BELMONT	OW-17	5/9/2016		26.36		3.63	Shallow	No	Static	
BELMONT	OW-18	5/9/2016		26.52		4.32	Intermediate	No	Static	
BELMONT	OW-19	5/9/2016		26.27		4.73	Intermediate	No	Static	
BELMONT	OW-20	5/9/2016		27.78		4.09	Shallow	No	Static	
BELMONT	PZ-400	5/9/2016		24.42		3.68	Shallow	No	Static	
BELMONT	RW-1	5/9/2016		25.67		3.88	Intermediate	Yes	Static	
BELMONT	RW-4	5/9/2016	27.93	30.10	2.17	2.04	Intermediate	Yes	Static	
-										
BELMONT	RW-6	5/9/2016		26.90		4.16	Intermediate	Yes	Static	
BELMONT	RW-7	5/9/2016		24.22		3.99	Intermediate	Yes	Static	
BELMONT	RW-15	5/9/2016		27.01		3.04	Intermediate	Yes	Static	
BELMONT	RW-21	5/9/2016		24.97		3.89	Shallow	Yes	Static	
BELMONT	RW-22	5/9/2016		23.15		3.88	Shallow	Yes	Static	
BELMONT	RW-23	5/9/2016	26.50	26.90	0.40	0.53	Intermediate	Yes	Static	
BELMONT	RW-24	5/9/2016	26.10	29.43	3.33	0.29	Intermediate	Yes	Static	
BELMONT	RW-25	5/9/2016	26.08	26.75	0.67	3.91	Intermediate	Yes	Static	
BELMONT	RW-26	5/9/2016		25.53		3.68	Intermediate	Yes	Static	
BELMONT	RW-27	5/9/2016		26.29		3.42	Intermediate	Yes	Static	
BELMONT	RW-28	5/9/2016		24.64		5.10	Intermediate	Yes	Static	
BELMONT	RW-29	5/9/2016		25.96		3.48	Intermediate	Yes	Static	
BELMONT	RW-30	5/9/2016		25.85		3.54	Intermediate	Yes	Static	
BELMONT	RW-31	5/9/2016		25.73		3.65	Intermediate	Yes	Static	
BELMONT	RW-32	5/9/2016		17.01		12.04	Intermediate	Yes	Static	
BELMONT	RW-400	5/9/2016		27.36		0.83	Intermediate	Yes	Static	
BELMONT	S-74	5/9/2016		25.99		-13.64	Shallow	No	Static	
BELMONT	S-75	5/9/2016	-	27.52		3.71	Shallow	No	Static	
BELMONT	S-76	5/9/2016	27.04	28.07	1.03	3.78	Shallow	No	Static	
BELMONT	S-330	5/9/2016		25.80		4.05	Intermediate	No	Static	
BELMONT	S-332	5/9/2016		25.91		4.34	Intermediate	No	Static	
BELMONT	S-331	5/9/2016		27.49		3.79	Intermediate	No	Static	
BELMONT	S-393D	5/9/2016		29.50		2.56	Deep	No	Static	
BELMONT	S-394	5/9/2016		29.76		2.36	Deep	No	Static	
BELMONT	S-395	5/9/2016		27.83		4.39	Shallow	No	Static	
BELMONT	TW-3	5/9/2016		28.03		4.08	Shallow	No	Static	
BELMONT	TW-5	5/9/2016		27.52		4.55	Shallow	No	Static	
BELMONT	TW-8	5/9/2016		26.20		3.94	Shallow	No	Static	
BELMONT	TW-9	5/9/2016		27.85		4.25	Shallow	No	Static	
BELMONT	TW-10	5/9/2016	26.43	26.43	<0.01	3.80	Shallow	No	Static	
BELMONT	TW-11	5/9/2016	20.45	28.29		4.11	Shallow	No	Static	
PGW	PGW-MW-5	5/11/2016		27.09		7.25	Shallow	No	Static	
-	PGW-MW-6	5/11/2016								
PGW				5.99		NA 4 94	Shallow	No	Static	WICK IN WELL
	PGW-MW-7	5/11/2016	15.98	16.00	0.02	6.96	Shallow	No	Static	WICK IN WELL
PGW	PGW-MW-8	5/11/2016		24.53		5.72	Shallow	No	Static	VEDV HOLT CHEEN
PGW	PGW-MW-9	5/11/2016		25.49		6.95	Shallow	No	Static	VERY LIGHT SHEEN
PGW		5/11/2016		6.00		NA	Shallow	No	Static	WICK IN WELL
PGW		5/11/2016		4.91		8.18	Shallow	No	Static	
PGW		5/11/2016	20.63	23.10	2.47	11.63	Shallow	No	Static	
PGW	PGW-MW-42	5/11/2016		16.68		16.48	Shallow	No	Static	



AOI	Well ID	Date	Depth to LNAPL (ff btoc)	Depth to Water (ft btoc)	Thickness	Corrected Groundwater Elevation (ft NAVD 88)	Well Classification	Recovery Well Yes or No	Static or Pumping	Comments
PGW	PGW-MW-44	5/11/2016		21.30		10.90	Shallow	No	Static	
PGW	PGW-MW-45	5/11/2016	23.43	23.43	<0.01	10.12	Shallow	No	Static	
PGW	PGW-RW-3	5/11/2016	NM	NM	NM	NM	Shallow	No	Static	no access, shed locked

Notes:

Groundwater monitoring was performed under static conditions except where indicated.

For product thicknesses <0.01 ft, the corrected groundwater elevation was calculated using 0.01 foot.

LNAPL = Light non-aqueous phase liquid

ft = Feet

ft btac = Feet below top of casing

NAVD 88 = North American Vertical Datum of 1988

--- = LNAPL not present

NM = Field reading not measured and/or corrected groundwater elevation not calculated due to lack of surveyed reference elevation

NA = Not Accessible, Not Applicable, or Not Available

Not Classified = Well classification not available



Table 3
May 2016 Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
	S-41	10-May-16		ND (5)	ND (5)	ND (5)	ND (5)	ND	6	28	2	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-43	10-May-16		11	7	3	7	28	5	56	1	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	4	2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S 44	11-May-16		310	14	ND (5)	19	343	120	14	1	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	0.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-44	11-May-16	Field Duplicate	310	14	ND (5)	17	341	120	14	1	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	0.7	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-50	10-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
AOI 1	S-51	10-May-16		ND (5)	ND (5)	ND (5)	ND (5)	ND	32	28	0.6	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-193	18-May-16		240	5	9	38	292	10	16	1	19	11	ND (0.5)	0.029	ND (0.1)	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.82 J
	S-196	16-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	0.013 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	S-231	10-May-16		29	15	11	18	73	4	29	4	10	16	ND (1)	ND (0.029)	ND (0.5)	0.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-232	10-May-16		2	ND (1)	ND (1)	ND (1)	2	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-268	18-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	RW-108	11-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.030)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-72	11-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	9	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	3	3	2	4	1	1	2	3	1	ND (1.0)
AOI 2	S-154	11-May-16		2	1	ND (1)	7	10	34	5	0.6	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	0.9	0.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-249	11-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-351	12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.030)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-1	12-May-16		ND (1)	1	ND (1)	ND (1)	1	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
AOI 3	S-3	12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-25	12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-280	20-May-16		16000	26 J	ND (25)	ND (25)	16026	ND (25)	ND (25)	ND (0.1)	ND (25)	ND (25)	ND (25)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	S-38	18-May-16		180	96	79	83	438	ND (0.5)	13	26	17	7	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	S-39	12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-40	19-May-16		18	4	1	1	24	ND (0.5)	16	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.2 J	1	2	0.4 J	0.5 J	0.2 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
AOI 4	S-120	18-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	S-122	12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
	S-222	18-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	S-223	19-May-16		2200	330	440	1500	4470	ND (10)	16 J	87	490	170	ND (10)	ND (0.0097)	ND (0.1)	0.8	0.2 J	ND (0.1)	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	A-133	19-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.9	ND (0.1)	ND (0.1)	1	ND (0.1)	0.2 J	0.4 J	0.2 J	0.2 J	ND (0.13)
AOI 5		19-May-16	Field Duplicate	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	1	ND (0.1)	ND (0.1)	1	ND (0.1)	0.2 J	0.3 J	0.2 J	0.2 J	ND (0.13)
	A-137	19-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	1	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	0.3 J	0.2 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	WP-14	20-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	0.4 J	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.7	0.5	0.6	1	0.3 J	0.6	0.7	0.7	0.6	0.31 J
AOI 6	B-43	23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	4	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	3	0.9	ND (0.1)	7	0.7	2	2	2	1	ND (0.13)
	B-95	23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.4 J	ND (0.1)	ND (0.1)	0.7	ND (0.1)	0.2 J	0.3 J	0.2 J	0.2 J	ND (0.13)
	C-104	24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.1 J	6	0.3 J	2	0.5 J	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
AOI 7	C-127	24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	5	4	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	3	0.3 J	0.7	0.4 J	0.1 J	0.1 J	ND (0.1)	0.6	ND (0.13)
See notes on last p	C-129	24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)



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May 2016 Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
	N-1	23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-2	23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.4 J	0.6	0.1 J	1	0.2 J	0.4 J	0.5 J	0.5 J	0.4 J	ND (0.13)
	N-3	27-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0095)	0.9	0.3 J	0.7	1	0.5	0.7	0.9	8.0	0.6	1.6
	N-8	24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-37	26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-57	26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	56	ND	ND (0.5)	0.7 J	ND (0.1)	1 J	ND (0.5)		ND (0.0097)	0.3 J	ND (0.1)	0.1 J	0.3 J	ND (0.1)	0.2 J	0.4 J	0.3 J	0.5 J	0.23 J
AOI 8	N-64	26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0094)	0.3 J	4	2	0.6	1	0.3 J	0.2 J	0.2 J	0.1 J	0.14 J
	N-74	27-May-16		26	ND (0.5)	ND (0.5)	ND (0.5)	26	ND (0.5)	0.6 J	1	ND (0.5)	ND (0.5)		ND (0.0096)	ND (0.1)	3	0.5 J	0.5 J	0.6	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-85	26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0093)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-98	24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	N-99 N-100	26-May-16 23-May-16		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.1) ND (0.1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)		ND (0.0093) ND (0.0096)	ND (0.1)	ND (0.1) ND (0.1)	ND (0.1)	ND (0.1) ND (0.1)	ND (0.13) ND (0.13)					
	14-100	26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	1 J	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.5 J	3	ND (0.1)	0.9	0.5 J	0.3 J	0.3 J	0.2 J	0.2 J	ND (0.13)
	N-111	26-May-16	Field Duplicate	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	2 J	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0096)	0.3 J	3	ND (0.1)	0.8	0.4 J	0.2 J	0.3 J	0.2 J	0.3 J	ND (0.13)
	MW-30	16-May-16	Tiola Bapiloato	61	2	ND (0.5)	2	65	ND (0.5)	1 J	14	1 J	ND (0.5)	ND (0.5)	0.022 J	48	6	34	57	2	21	30	56	28	ND (0.13)
	MW-37	16-May-16		130000	1100	ND (100)	ND (100)	131100	ND (100)	ND (100)	10	ND (100)	ND (100)	ND (100)	0.024 J	ND (0.1)	0.7	0.8	0.2 J	0.2 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
BELMONT	S-74	16-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.13)
	TW-8	16-May-16		500	0.9 J	560	89	1149.9	4	150	6000	530	52	2	ND (0.0097)	9	56	67	18	15	7	5	6	3	ND (0.13)

Notes:

15.2 Concentration was detected.

ND (0.03) Analyte was not detected at a concentration greater than the laboratory reporting limit.

Indicates an estimated value.

μg/L Micrograms per liter



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Table 4
Historical Perimeter Groundwater Sampling Analytical Results
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				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC.)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
		19-Oct-04 13-Nov-09		70 3	5.5	ND (1.8)	ND (3.2)	75.5 10	490 56	63 120	ND (3.6) ND (1)	- ND (0.5)	- 0.7 J	ND (1.5) ND (0.5)	ND (0.0020) ND (0.0098)	ND (0.14) ND (0.057)	ND (10)	ND (10)	ND (10) ND (0.095)	-	-	-	-	-	ND (5.0) 0.22 J
		11-Nov-10 22-Nov-11	1	14	3 2	2	3	22 10	23 25	41 110	ND (1) ND (0.95)	ND (0.5) 0.5 J	ND (0.5) 0.5 J	ND (0.5)	ND (0.0095) ND (0.0097)	ND (1)	2 J 5.8	1 J 1.4	ND (1) ND (0.095)	-	-	-	-	-	0.20 J 0.22 J
	S-41	19-Jul-12		19	3	1 J	3	26	13	35	ND (0.09)	ND (1)	ND (1)	ND (1)	ND (0.0097)	ND (0.09)	2	8.0	ND (0.09)	0.1 J	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	0.22 J
		2-Apr-13 23-May-14		1.3 J 2.2	1.1 J 1.5	3.1	0.65 J 2.6	6.15	17.4 9.6	101 47.7	ND (0.10) ND (0.10)	ND (4.0) ND (2.0)	ND (4.0) 0.36 J	ND (2.0) ND (1.0) J	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	1.79 1.45	1.33 0.868	ND (0.10) ND (0.10)	ND (0.10) 0.117	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (3.0)
		8-Dec-14 18-May-15		0.93	2.1	1.6 0.9 J	1.3	11.9	6.5 5	91.0 20	ND (0.10)	ND (2.0) ND (0.5)	0.23 J ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) ND (0.1)	2.21	1.77	ND (0.10) ND (0.1)	0.192 0.1 J	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	2.2 J 0.50 J
		10-May-16		ND (5)	ND (5)	ND (5)	ND (5)	ND	6	28	2	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	ND (0.5)	ND (1.0)						
		1-Jan-93 Di 1-Jan-94 Di	M	12000 17000	190 1700	1300 250 J	1000 1680	14490 20630	-	-	-	-	-	-	-	ND ND (10)	-	-	-	-	ND ND (10)	ND ND (10)	ND (10)	-	-
		28-Dec-95 1-Jan-96 Di	M	12000 2100	1200 110	170 120	860 110	14230 2440	-	-	-	-	-	-	-	ND ND (1)	-	-	-	-	ND ND (1)	ND ND (1)	ND (1)	-	-
		19-Nov-97		13000 6700	210 94 J	1200	1000	15410	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		12-Nov-98 2-Dec-99		3600	94 J ND (100)	720 ND (100)	250	7984 3850		-	-	-		-	-	ND (1) ND (1)	-	-		-	ND (1) ND (1)	ND (1)	ND (1) ND (1)	-	
		16-Nov-00 14-Nov-01		990 6100	ND (100) ND (500)	ND (100) ND (500)	ND (200) ND (1000)	990 6100		-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (2) ND (2)	ND (3) ND (3)	-	-
		12-Nov-02		5500	170	790	460	6920	-	-	-	-	-	-	-	ND (15)	-	-	-	-	ND (13)	ND (10)	ND (14)	-	-
	S-43	13-Nov-03 19-Oct-04		3600 720	130 31	836 150	489 90	5055 991	18.8 ND (4.4)	39	50	-		11	ND (0.020)	ND (2.0) ND (0.14)	ND (10)	ND (10)	ND (10)	-	ND (2.0)	ND (2.0)	ND (2.0)	-	ND (5.0)
	3-45	30-Nov-06 5-Dec-07		890 15	32 1.0	48 3.0	34 3.0	1004 22	7.0	13 2.0 J	9.0 1.0 J	-	-	ND (1.0) ND (0.5)	ND (0.0099) ND (0.0096)	1.0 J ND (1.0)	ND (1.0) ND (1.0)	2.0 J ND (1.0)	3.0 J ND (1.0)	-	-	-	-	-	0.2 J 0.40 J
		7-Nov-08		140	15	30	20	205	4	32	6	8	5	ND (0.5)	ND (0.0098)	ND (1)	-	ND (1)	ND (1)	-	-	-	-	-	7.7
		17-Nov-09 11-Nov-10		860 850	59 91	200 410	210 340	1329 1691	6 9	40 76	61 110	140 210	71 93	ND (0.5) ND (1)	ND (0.0098) ND (0.0096)	0.19 ND (10)	- ND (10)	0.64 ND (10)	0.44 ND (10)	-	-				0.37 J 0.29 J
		22-Nov-11 19-Jul-12	+	29 260	36	19 190	16 110	67 596	ND (0.5)	4 30	16 51	11 75	2 J 38	ND (0.5)	ND (0.0099) ND (0.0097)	0.95 0.4 J	2.2	1.9	1.1 0.5	- 0.1 J	0.3 J	0.3 J	0.5 J	0.2 J	2.6 8.7
		2-Apr-13		371	52.7	222	78.9	724.6	2.7	31.7	28.2	74.5	44.5	ND (2.5)	ND (0.020)	ND (0.10)	0.668	0.330	ND (0.10)	ND (1)					
		27-May-14 12-Dec-14		44.3 36.6	7.4 15.2	13.7 33.0	9.5 20.9		4.5 4.4	55.4 69.2	1.66 7.52	2.9 6.6	1.8 J 5.2	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	1.14 3.27	0.370 1.56	ND (0.10) 0.122	ND (0.10) ND (0.10)					
		18-May-15 10-May-16		50 11	21 7	52 3	34 7	157 28	5	68 56	29	19 ND (2)	14 ND (2)	ND (0.5) ND (1)	ND (0.0097) ND (0.029)	0.4 J ND (0.5)	5 4	5	0.6 ND (0.5)	0.2 J ND (0.5)	0.3 J ND (0.5)	0.3 J ND (0.5)	0.5 J ND (0.5)	0.3 J ND (0.5)	0.11 J ND (1.0)
		18-Oct-04 18-Nov-09		1700 1100	37 27	16 7	28	1722	19	51	ND (10) ND (1)	- 0.8 J	- 4	ND (5.0) ND (0.5)	0.058 ND (0.0097)	ND (0.16) ND (40)	ND (11)	ND (11)	ND (11) ND (0.099)	- (0.0)	- (4.4)	-	-	-	ND (5.0)
		11-Nov-10		660	20	10	38 20	1172 710	260	30	ND (1)	ND (5)	ND (5)	ND (0.3)	ND (0.0096)	ND (1)	2 J	2.5 1 J	ND (1)	-	-	-	-		0.14 J 0.25 J
		21-Nov-11 20-Jul-12	+	850 590	20 13	14 5	24 12	908 620	180 180	38 23	ND (1.1)	ND (5) ND (3)	6 J ND (3)	ND (5) ND (3)	ND (0.0096) ND (0.0096)	ND (0.089) 0.2 J	3.4	0.95	ND (0.11) 0.3 J	0.3 J	- ND (0.09)	- ND (0.09)	- ND (0.09)	- ND (0.09)	0.17 J 0.38 J
AOI 1	S-44	3-Apr-13 27-May-14		450 575	14.3 22.5	7.8 9.1	16.5 28.6	488.6		53.3 44.8	ND (0.10) ND (0.10)	37.1 0.68 J	1.8 J 2.4	ND (4.0)	ND (0.020) ND (0.020)	ND (0.10)	1.33	0.611	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	
		15-Dec-14		260	11.6	3.6	17.2		134	23.0	ND (0.10)	0.45 J	2.3	ND (1.0)	ND (0.020)	ND (0.10)	1.47	0.956	ND (0.10)	ND (0.10)	ND (0.10) .	J ND (0.10)	ND (0.10)	ND (0.10)	ND (3.0)
		18-May-15 11-May-16	+	340 310	16 14	5 ND (5)	20 19	381 343	110 120	34 14	3	0.6 J ND (10)	2 ND (10)	ND (0.5) ND (5)	ND (0.0097) ND (0.029)	0.2 J ND (0.5)	4 2	4 0.6	0.3 J ND (0.5)	0.6 ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	0.26 J ND (1.0)
		11-May-16	Field Duplicate		14	ND (5)	17	341	120	14	1	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	0.7	ND (0.5)						
		1-Jan-85 D	м	23000	ND	5400	23000	51400	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	-
		1-Jan-86 Di 1-Jan-88 Di		24000 24000	ND ND	2300 ND	1520 ND	27820 24000	-	-	-	-	-	-	-	ND ND	-	-	-	-	ND ND	ND ND	ND ND	-	-
		1-Jan-94 Di 28-Dec-95	М	290 17000	20 J 1600	160 J 98 J	40 J 3000	510 21698	-	-	-	-	-	-	-	ND (10) ND	-	-	-	-	ND (10) ND	ND (10)	ND (10) ND	-	-
		1-Jan-96 Di	м	14	ND (0.3)	ND (0.4)	ND (0.6)	14	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		19-Nov-97 12-Nov-98		21000 18000	210 57 J	1300 570	2200 980	24710 19607				-		-		ND (1) ND (1)		-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)		-
		2-Dec-99 16-Nov-00		28000 47000	ND (1000) ND (100)	ND (1000) 240	ND (2000) 370	28000 47610	- 590	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (2)	ND (1) ND (3)	-	-
	S-50	27-Nov-01 30-Nov-06		53000 42000	1400 94 J	9 720	1300	55709 43444	5200 99 J	- ND (50)	- 170 J	-	-	- ND (50)	- ND (0.0098)	ND (2) ND (1.0)	- 1.0 J	- 1.0 J	- ND (1.0)	-	ND (2)	ND (2)	ND (3)	-	- 0.15 J
	3-30	4-Dec-07		31000	86	420	370	31876	-	35 J	93 J	-	-	ND (25)	ND (0.0098)	ND (1.0)	ND (1.0)	1.0 J	ND (1.0)	-					0.14 J
		10-Nov-08 19-Nov-09		16000 4700	160	400 75	1400 22	17960 4807	390 45	36 J 10 J	110 J 37 J	260 42	90 J 17 J	ND (25) ND (5)	ND (0.0096) ND (0.0097)	ND (1) 0.18 J	-	1 J 0.66	ND (1) ND (0.098)	-	-	-	-	-	0.073 J ND (0.050
		11-Nov-10		7600 190	12	34	11 0.5 J	7657 192.5	39	7 J	13	8 J ND (0.5)	5 J 0.5 J	ND (5) ND (0.5)	ND (0.0097)	ND (1)	ND (1)	ND (1) 0.083 J	ND (1) ND (0.095)	-	-	-	-	-	0.083 J
		21-Nov-11 24-Jul-12		130	2	ND (0.5)	2	134	ND (0.5)	2 2 J	1	1 J	0.9 J	ND (0.5)	ND (0.0097) ND (0.0098)	ND (0.076) ND (0.09)	0.20 J 0.2 J	0.3 J	ND (0.09)						
		3-Apr-13 20-May-14		0.46 J 509	ND (1.0) 2.2 J	ND (1.0) 13.5	0.29 J 1.2 J	0.75	ND (1.0) ND (5.0)	ND (2.0) 4.2 J	ND (0.11) 2.46	ND (2.0) 1.2 J	ND (2.0) 3.1 J	ND (1.0) ND (5.0)	ND (0.020) ND (0.020)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	
		15-Dec-14 18-May-15		2390	9.8	19.7	ND (5.0)	-	5.7	6.1 9 J	4.53	ND (10)	3.9 J	ND (5.0)	ND (0.020)	ND (0.10)	ND (0.10) 0.1 J	ND (0.10) 0.1 J	ND (0.10)	ND (0.10)	ND (0.10) .	ND (0.10)	ND (0.10)	ND (0.10)	ND (3.0)
		10-May-16		2000 ND (1)	8 ND (1)	34 ND (1)	ND (3) ND (1)	ND	ND (1)	ND (2)	16 ND (0.5)	ND (3) ND (2)	5 J ND (2)	ND (3) ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	ND (0.1)	
		19-Apr-05 5-Dec-07		590 120	ND (100) 10	ND (100) 5.0 J	190 9.0	780 144.0	1900	ND (100) 60	15 ND (5.0)	-	_	ND (100) ND (3.0)	ND (0.029) 0.034	ND (10) ND (10)	ND (10) 22 J	10 24 J	ND (10) ND (10)	-	-	-		-	ND (1) 0.32 J
		10-Nov-08 17-Nov-09		5000 250	32	160	38	5230 268	41 120	14 J 61	22 J	14 J 5	14 J	ND (5) ND (0.5)	ND (0.0096) ND (0.0097)	ND (0.9)	-	ND (0.9)	ND (0.9) ND (60)	-	-	-	-	-	ND (0.050 0.93 J
		11-Nov-10		140	5	3	3	151	51	55	1 J	ND (0.5)	0.6 J	ND (0.5)	ND (0.0098)	ND (1)	3 J	2 J	ND (1)						0.98 J
	S-51	23-Nov-11 2-Apr-13	+	12 4.1	ND (0.5) 3.3	ND (0.5) 1.4 J	ND (0.5) 4.4	12 13.2	ND (0.5) 33.6	ND (0.5) 74.7	ND (0.96) ND (0.10)	ND (0.5) ND (5.0)	ND (0.5) ND (5.0)	ND (0.5) ND (2.5)	ND (0.0096) ND (0.020)	0.52 ND (0.10)	0.19 J 2.50	0.55 1.47	0.71	- ND (0.10)	0.41 J ND (1)				
		23-May-14		9.9	2.6 J 2.7	ND (5.0) 2.6	2.3 J	-	36.0 20.7	62.5 51.4	ND (0.10) ND (0.10)	ND (10)	ND (10)	ND (5.0) J	ND (0.020)	ND (0.10)	1.51	0.775	0.212	ND (0.10)	ND (0.10)	ND (0.10) 0.155	0.130	ND (0.10)	
		12-Dec-14 19-May-15		5	3	1	4	13	39	79	ND (0.1)	0.26 J ND (0.5)	ND (2.0) ND (0.5)	ND (0.5)		0.210 ND (0.1)	1.62	1.10	ND (0.1)	0.183 0.1 J	0.203 ND (0.1)	ND (0.1)	ND (0.1)		0.099 J
]	10-May-16		ND (5)	ND (5)	ND (5)	ND (5)	ND	32	28	0.6	ND (10)	ND (10)	ND (5)	ND (0.029)	ND (0.5)	2	1	ND (0.5)	ND (1.0)					



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC.)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	
ea of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	µg/L	μg/L	µg/L	μg/L	μģ
		19-Oct-04		57 230	5.3 ND (50)	ND (5.0) ND (50)	ND (10) ND (50)	62.3 230	960 1200	30 ND (50)	34 ND (10)	-	-	ND (5.0) ND (50)	ND (0.020) ND (0.029)	ND (0.16) ND (10)	ND (11) ND (10)	ND (11) ND (10)	ND (11) ND (10)	-	-	-	-	-	ND ND
		19-Apr-05 7-Nov-05		72	ND (30)	ND (30)	11	83	1390	33	ND (10)			ND (30)	ND (0.029)	ND (0.01)	1.5	0.8	0.2			-		-	ND
	S-52	25-Jul-12		1 J 1.3	2 1.5	ND (1) 0.24 J	ND (1) 0.72 J	3.76	420 316	12 15.4	ND (0.1)	ND (1) ND (2.0)	ND (1)	ND (1) ND (1.0)	ND (0.0098)	ND (0.1)	2 0.697	0.1 J ND (0.11)	0.2 J ND (0.11)	0.2 J ND (0.11)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.4
		3-Apr-13 20-May-14		1.3 ND (2.5)	1.5 ND (5.0)	0.24 J ND (2.5)	0./2 J ND (5.0)	3./6	194	15.4	ND (0.11) ND (0.10)	ND (2.0) ND (10)	ND (2.0) ND (10)	ND (1.0) ND (5.0)	ND (0.020) ND (0.020)	ND (0.11) ND (0.10)	1.06	0.123	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11)	ND
		9-Dec-14		0.26 J	0.40 J	ND (1.0)	0.30 J	-	133	7.3	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	1.09	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)) 1.
	S-82	8-Nov-05 5-Dec-06	<u> </u>	19900 D 22.0	91 6.0	248 5.0	850 1.0 J	34 J	3100 D 81.0	24.0	205 ND (1.0)	-		489 ND (1.0)	ND (0.02) ND (0.0099)	0.4 3.0 J	13.4 8.0	17 10.0	1.9	-	0.7	ND (0.3)	0.3	ND (0.3)	1
	1	14-Dec-07	<u> </u>	5.0	2.0	1.0	ND (0.5)	8.0		13	ND (1.0)			ND (0.5)	ND (0.0095)	5.0 J	2.0 J	3.0 J	6.0			-			
	1	7-Nov-08	1	29	8	2	3	42	70	29 27	ND (1)	ND (0.5)	0.5 J	ND (0.5)	ND (0.0097)	6	5.3	11	7	3 J	3 J	2 J	3 J	2 J	3
	1	24-Feb-09 26-Jun-09	1	30 29	8	4	27 6	42	69 92	27 48	ND (1)	13 0.8 J	9 1 J	ND (0.5) ND (0.5)	ND (0.0096) ND (0.010)	ND (9.0) 0.40	5.3	11 5.1	ND (16) ND (0.90)	3.7 1.2	2.3 0.25	2.2 0.20	3.4 0.20	ND (6.0) 0.40	+
	1	8-Sep-09		35	24	6	28	93	77	42	7	7	7	ND (0.5)	ND (0.0099)	ND (1)	3 J	3 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	
	S-88	20-Nov-09		12 17	4	3	3	22	47	16 29	ND (2)	2 J 0.5 J	2 J	ND (1)	ND (0.0097)	1.8 J	3.1 J 2.7 J	3.2	1.6 J 1.8 J	0.98 J	0.45 0.54	0.89	1.3	1.9 J	
		8-Mar-10 5-May-10		8	3	ND (1)	1 J	31 12	100 170	15	ND (1) ND (2)	0.5 J ND (1)	ND (1)	ND (0.5) ND (1)	ND (0.0097) ND (0.018)	2.5 360	160	2.4 240	350	0.70 J 83	90	0.83 160	250	ND (2.3) 330	- :
		22-Jul-10		19	8	2	6	35	100	38	ND (1)	0.9 J	0.8 J	ND (0.5)	ND (0.0097)	ND (9.7)	9.2	11	13	3.8	ND (2.8)	4.3	9.1	ND (20)	0
		19-Jul-12		11	7.1	0.8 J ND (5.0)	4.4.1	19.8	340 186	27 42.1	ND (0.09) ND (0.10)	ND (0.5) ND (10)	ND (0.5)	ND (0.5) ND (5.0)	ND (0.0097) ND (0.020)	0.5 4.06	3 4.71	4.39	0.8 3.77	0.7	0.2 J 2.37	0.2 J 2.00	0.3 J 2.29	0.1 J 1.00	N
		28-May-14 12-Dec-14		11.8	5.1	1.1	4.1		422	34.6	ND (0.10)	0.28 J	ND (2.0)	ND (1.0)	ND (0.020)	0.164	2.13	1.73	0.350	0.366	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)) :
		12-Oct-04		150	25	6.2	25	206.2	ND (5.0)	72	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	N
		6-Nov-08 23-Feb-09		46 55	14 20	ND (3)	14 20	74 99	36 19	30 65	ND (5) ND (1)	ND (3) ND (0.5)	ND (3)	ND (3) ND (0.5)	ND (0.0098) ND (0.0097)	ND (1) ND (0.15)	5.4	4 J 3.7	1 J ND (0.095)	ND (1) 0.69	ND (1) 0.062	ND (1) 0.072	ND (1) 0.076	ND (1) ND (0.15))
		29-Jun-09		34	31	7	31	-	25	99	ND (1)	ND (0.5)	2 J	ND (0.5)	ND (0.0077)	- ND (0.13)	- 3.4	-	- ND (0.093)	- 0.69	0.062	- 0.072	- 0.076	- 10.13)	+
		9-Sep-09		24	22	5	26	77	19	87	ND (2)	ND (1)	2 J	ND (1)	ND (0.0099)	ND (1)	3 J	4 J	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	
	S-99	20-Nov-09 9-Mar-10		22 22	25 16	6 J	26 18	79 60	21	90 60	ND (10)	ND (5)	ND (5)	ND (5)	ND (0.0097)	ND (0.057)	5.0	3.3	0.18 J	0.69 ND (0.72)	0.030 J	0.024 J	0.017 J	ND (0.057))
		6-May-10		30	23	5 J	27	85	8 J	82	ND (10)	ND (5)	ND (5)	ND (5)	ND (0.018)	0.092 J	4.4	3.8	0.41	0.72	0.054	0.033 J	0.042	ND (0.057))
		21-Jul-10		17	22	5	33	77	10	89	ND (1)	0.7 J	2 J	ND (0.5)	ND (0.0098)	0.17 J	4.6	4.1	0.50	0.87	0.097	0.066	0.089	ND (0.057))
		10-Jul-12 3-Jun-14		5 1.9	22	4.9	28 31.5	- 60	3.2	77 77.2	ND (0.10)	1 J 0.83 J	2 J 1.5 J	ND (0.5)	ND (0.0097)	0.3 J ND (0.10)	1.78	1.48	0.9	0.9	0.2 J ND (0.10)	0.1 J ND (0.10)	0.2 J ND (0.10)	ND (0.10)) :
		9-Dec-14		4.0	28.0	4.9	28.4	-	2.6	77.6	ND (0.10)	0.72 J	1.2 J	ND (2.0)	ND (0.020)	0.155	1.89	1.75 B	0.370 B	0.352	0.136 B	ND (0.10)	0.136	ND (0.10)) :
AOI 1		12-Oct-04		1100	7.5	16	68	1191.5	ND (5.0)	13	74	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	NI
		6-Nov-08 23-Feb-09		85 260	16 10	6 23	23 16	130 309	0.5 J ND (3)	38 29	2 J 12 J	3 4 J	2 J 5 J	ND (0.5) ND (3)	ND (0.010) ND (0.0096)	ND (10) ND (1.5)	13	37 J	15 J 4.2	11 J 2.4	ND (10) 0.90	ND (10) ND (0.60)	ND (10) 0.57	ND (10) ND (0.60)	0
		29-Jun-09		330	4	3	3	-	ND (0.5)	24	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.010)	- (114)		-		-		-		-	C
		9-Sep-09 20-Nov-09		420 490	6	5 ND (3)	5 3 J	436 500	0.6 J ND (3)	33 23	3 J ND (5)	1 J ND (3)	1 J ND (3)	ND (0.5) ND (3)	ND (0.0098) ND (0.0098)	1 J ND (0.057)	7	5 0.51	5 J 0.31 J	3 J 0.17	1 J 0.025 J	ND (1) 0.019 J	ND (1) 0.020 J	ND (1)) (
	S-101	9-Mar-10		270	7	2	5	284	ND (0.5)	26	1 J	0.9 J	0.8 J	ND (0.5)	ND (0.0097)	0.065 J	1.6	0.57	0.31 J	0.17	0.025 J	0.019 J	0.020 3	0.083 J) (
		6-May-10		260	6	ND (3)	4 J	270	ND (3)	21	ND (5)	ND (3)	ND (3)	ND (3)	ND (0.018)	ND (0.057)	1.4	0.61	0.23 J	0.13	0.028 J	0.028 J	0.026 J	0.069 J	(
		21-Jul-10 10-Jul-12		350 24	8	4 0.9 J	9	371 32.9	ND (0.5) ND (0.5)	37 25	3 J 0.5	2 ND (0.5)	2 J ND (0.5)	ND (0.5) ND (0.5)	ND (0.0099) ND (0.0099)	0.13 J 0.2 J	4.7	2.3	0.88	0.65	0.10 0.1 J	0.046 ND (0.1)	0.054 0.1 J	ND (0.060) ND (0.1)) (
		4-Jun-14		27.8	14.0	1.5	16.3	-	ND (1.0)	39.7	ND (0.10)	0.44 J	0.89 J	ND (1.0)	ND (0.020)	ND (0.10)	4.60	2.19	0.325	0.578	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)) NI
		11-Dec-14 17-Mar-04		20.2	6.4 ND (5)	1.6 51	12.0	289	ND (1.0)	30.0	ND (0.10)	0.70 J	0.79 J	ND (1.0)	ND (0.037)	0.131	4.84	2.00	0.507	0.594	0.136	ND (0.10)	0.106	ND (0.10)) NI
		7-Nov-05		404	ND (10)	13	28	289 445	ND (10)	28	ND (10)			10	ND (0.02)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)			-	-		NE
		5-Dec-06		140	2.0 J	19.0	31.0	192	ND (0.5)	7.0	3.0 J	-	-	ND (1.0)	ND (0.0098)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	C
		19-Dec-07 6-Nov-08		270 930	4.0	7.0	13	294 1029	5	16 19	2.0 J ND (5)	40	ND (3)	ND (0.5)	ND (0.0095)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1)	- ND (1)	- ND (1)	ND (1)	ND (1)	0
	1	23-Feb-09		760	10	15	71	856	4 J	20	ND (5)	21	3 J	ND (3)	ND (0.0095)	ND (0.040)	0.96	0.050 J	ND (0.095)	ND (0.060)	ND (0.0095)	ND (0.0095)	ND (0.0076)	ND (0.057)	')
		29-Jun-09	1	210	3	4 37	21	238	9	16 17	ND (1)	6 44	1 J	ND (0.5)	ND (0.0099)	- ND (0.9)	-	-	- ND (0.9)	- ND (0.9)	ND (0.0)	- ND (0.9)			0
	1	9-Sep-09 20-Nov-09	†	760 930	11	19	120 81	926 1041	30 9	16	8 ND (5)	25	15 11	ND (1) ND (3)	ND (0.0097) ND (0.0098)	0.066 J	ND (0.9) 0.39	ND (0.9) ND (0.12)	ND (0.9) ND (0.095)	ND (0.9) ND (0.065)	ND (0.9) 0.021 J	0.015 J	ND (0.9) 0.012 J	ND (0.9) ND (0.057)) 0
	S-193	9-Mar-10		500	6	52	130	688	110	16	4 J	17	7	ND (0.5)	ND (0.0096)	ND (0.057)	0.12 J	ND (0.15)	ND (0.095)	ND (0.025)	ND (0.0095)	ND (0.0095)	ND (0.0076)	ND (0.057)) 0
	1	6-May-10 21-Jul-10	 	270	3 J	18 28	63 120	354 501	45 34	9 J 7	6 J 8	12	6 J 16	ND (3) ND (0.5)	ND (0.018) ND (0.0097)	ND (0.058) ND (0.057)	ND (0.35) 0.28 J	ND (0.038) 0.13 J	ND (0.096) ND (0.095)	ND (0.025) 0.060 J	ND (0.0096) ND (0.0095)	ND (0.0096) ND (0.0095)	ND (0.0077) 0.011 J	ND (0.058)) O.
	1	10-Nov-10	1	350 1000	12	28	110	1142	37	20	7	50 28	14 J	ND (0.5)	ND (0.0097)	ND (0.057)	0.28 J ND (1)	0.13 J ND (1)	ND (0.095)	- U.U6U J	- (C.UU95)	- (3,0070) רואו	- U.UII J	- (0.05/)	0.
	1	22-Nov-11		1200	11	100	180	1491	16	11	- 11	40	18	ND (1)	ND (0.0098)	0.30	0.53	0.28	ND (0.096)	-	-	-	-	-	C
		10-Jul-12 4-Apr-13	 	330 640	5 J 8.3	4 J 12.9	38 71.0	377 732.2	15 16.0	16 16.6	0.311	5 J 30.1	5 J 13.4	ND (3)	ND (0.0098) ND (0.020)	ND (0.1) ND (0.11)	0.2 J ND (0.11)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1) ND (0.11)	ND (0.1) ND (0.11)	ND (0.1) ND (0.11)	ND (0.1))
	1	3-Jun-14	1	707	6.3	49.6	89.1	-	12.6	7.4	3.59	35.2	13.4	ND (2.5)	ND (0.020)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)) N
	1	15-Dec-14		1350	10.2	46.9	138	-	35.5	13.5	4.42 J-	50.6	22.1	ND (5.0)	ND (0.020)	R	0.302 J-	0.262 J-	R	ND (0.10)	R	R	R	R	
	1	19-May-15 18-May-16	 	1000 240	8 5	34	140 38	1182 292	15 10	10 16	6	46 19	20	ND (3) ND (0.5)	ND (0.0097) 0.029	ND (0.1) ND (0.1)	0.1 J 0.1 J	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	0.
	6 105	17-Mar-04	†	ND (5)	ND (5)	ND (5)	38 ND (5)	ND ND	-	-	-	-	- !!	- ND (0.3)	0.027	- ND (0.1)	U.I J	- ND (0.1)	- ND (0.1)	- ND (0.1)	- UN (U.1)	- ND (0.1)	- IND (U.1)	- ND [U.1)	+
	S-195	7-Nov-05		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (1)	ND (1)	1		ND (1)	ND (0.02)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)					1	١



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G, H,I)PERYLENE	LEAD, DISSOLVED
area of Interest	Sample Location	Sample Date	Sample Type	µg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	µg/l
		18-Mar-04		ND (5)	ND (5)	ND (5)	ND (5)	ND	- ND (1)	-	-	-	-	- ND (1)	- ND (0.02)	- ND (0.1)	- ND (0.1)	- ND (0.1)	- ND (0.1)	-	-	-	-	-	-
		7-Nov-05 19-Dec-06	+	ND (1) ND (0.5)	ND (1) ND (0.5)	ND (1)	ND (1) ND (0.5)	ND ND	ND (1) ND (0.5)	ND (0.5)	ND (1) ND (1.0)	-	-	ND (1) ND (0.5)	ND (0.02) ND (0.0097)	(01.)	ND (0.1)	(01.)	ND (0.1) ND (1.0)	-	-	-	-	-	ND (1
		19-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	-	ND (0.5)	ND (1.0)	-		ND (0.5)	ND (0.0096)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-		-	-	-	0.066
		6-Nov-08 23-Feb-09		ND (3)	ND (3)	ND (3)	ND (3)	ND	ND (3)	ND (3)	ND (5)	ND (3)	ND (3)	ND (3)	ND (0.0096)	ND (10)	- ND (0.097)	ND (10)	ND (10)	ND (10)	ND (10) ND (0,0097)	ND (10) ND (0.0097)	ND (10)	ND (10)	0.18
		29-Jun-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.010)	-	-	-	- IND (0.077)	-	- IND (0.0077)	-	-	-	0.12
		9-Sep-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	1	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1) 0.10									
		20-Nov-09 9-Mar-10	-	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0096)	0.063 J	ND (0.10)	ND (0.040)	ND (0.10)	ND (0.020)	0.015 J ND (0.0096)	0.029 J ND (0.0096)	0.023 J ND (0.0077)	ND (0.060)) ND (0.0
	S-196	6-May-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.018)	ND (0.12)	ND (0.20)	ND (0.080)	ND (0.20)	ND (0.040)	ND (0.020)	ND (0.020)	ND (0.016)	ND (0.12)	ND (0.
		21-Jul-10 10-Nov-10		ND (0.5) ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1) ND (0.9)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.058)	ND (0.097)	0.047 J	ND (0.097)	0.025 J	ND (0.0097)	ND (0.0097)	ND (0.0077)	ND (0.058)	0.07
		22-Nov-11		ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.9) ND (0.99)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	ND (0.9) 0.19 J	ND (0.9) ND (0.099)	ND (0.9) ND (0.079)	ND (0.9) 0.16 J	-	-				ND (0
		10-Jul-12		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1) ND (0									
		4-Apr-13 4-Jun-14	 	ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND	ND (1.0) ND (1.0)	ND (2.0) ND (1.0)	ND (0.11) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) 0.180	ND (0.11) 0.323	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11)	0.03
		9-Dec-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10) ND (
		19-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)									
		16-May-16 18-Mar-04		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND DN	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	0.013 J	ND (0.1) ND (0									
	S-197	7-Nov-05		ND (1)	ND (1)	ND (1)	ND (1)	ND		ND (1)	ND (1)	-		ND (1)	ND (0.02)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	-		-	-	-	ND
		11-Nov-10 23-Nov-11		9500 ND (0.5)	460 ND (0.5)	86 ND (0.5)	280 ND (0.5)	10326 ND	16 ND (0.5)	14 J ND (0.5)	54 ND (0.96)	110 ND (0.5)	75 ND (0.5)	ND (5)	ND (0.0096) ND (0.0094)	ND (10) 0.28	ND (10)	ND (10) 0.32	ND (10) 0.39	-	-	-	-	-	0.6 ND (0
		2-Apr-13	-	1570	33.7	105		3268.7	ND (5.0)	21.7	30.4	479	200	ND (5.0)	ND (0.0094)	ND (0.11)	0.780	0.834	0.321	ND (0.11) ND					
	S-231	21-May-14		24.3	5.8	26.5	24.0		ND (1.0)	18.7	6.02	41.5	27.4	ND (1.0)	ND (0.020)	ND (0.10)	0.324	ND (0.10) 2.7							
AOI 1		12-Dec-14 18-May-15		232 25	7.4 8	22.5 15	22.3 10	- 58	1.1	14.9	9.51 3	36.4 15	27.2 10	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) 0.4 J	0.230 0.3 J	0.132	ND (0.10) 0.5	ND (0.10) ND (0.1)	ND (0.10) 0.3 J	ND (0.10) 0.2 J	ND (0.10) 0.3 J	ND (0.10) 0.2 J	0.1
		10-May-16		29	15	11	18	73	4	29	4	10	16	ND (1)	ND (0.029)	ND (0.5)	0.6	ND (0.5) ND (
		19-Nov-09 11-Nov-10	1	6800 39	39 6	130	410	7379 50	26 4	21 0.7 J	42 ND (1)	140 1 J	82 1 I	ND (5) ND (0.5)	ND (0.0097) ND (0.0098)	0.2 ND (1)	- ND (1)	0.6 ND (1)	0.39 J ND (1)	-	-	-	-	-	0.13
		21-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (11)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0078)	1.4 J	ND (1.1)	1.5 J	1.9 J	-					ND (0
	S-232	24-Jul-12		4	0.7 J	0.7 J	ND (0.5)	5.4	ND (0.5)	1 J	1	0.6 J	0.6 J	ND (0.5)	ND (0.0099)	0.1 J	0.2 J	0.3 J	0.2 J	ND (0.09)	0.1 J	0.2 J	0.2 J	0.1 J	1.
	5-232	2-Apr-13 20-May-14		30.1 4.7	3.5 0.67 J	5.8	3.8 0.91 J	43.2	0.76 J ND (1.0)	3.0 1.5	0.929	0.83 J 0.23 J	2.0 0.40 J	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (
		9-Dec-14		0.66	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	0.30 J	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	0.122 B	0.120 B	ND (0.10) 2.7					
		18-May-15 10-May-16		2	ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	2	ND (0.5) ND (1)	ND (0.5) ND (2)	0.1 J ND (0.5)	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0097) ND (0.029)	0.1 J ND (0.5)	ND (0.1) ND (0.5)	0.1 J ND (0.5)	0.2 J ND (0.5)	ND (0.1) ND (0.5)	ND (0.1) ND (0.5)	0.1 J ND (0.5)	0.2 J ND (0.5)	ND (0.1) ND (0.5)	0.13 ND (
		19-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	- ND(I)	ND (0.5)	ND (1.0)	ND (2)	- ND (2)	ND (0.5)	ND (0.0096)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	- 14D [0.3]	- 14D (0.3)	-	- IND (0.3)	0.9
		6-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (1)	-	ND (1) 0.1							
		23-Feb-09 29-Jun-09		4 ND (0.5)	0.6 J ND (0.5)	2 ND (0.5)	18 ND (0.5)	24.6	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	3 J ND (1)	12 ND (0.5)	4 ND (0.5)	ND (0.5) ND (0.5)	ND (0.0095) ND (0.010)	ND (0.15)	0.28 J	0.67	ND (0.095)	0.18	ND (0.040)	0.012 J	0.015 J	ND (0.070)	0.3
		9-Sep-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.010)	ND (0.9) 0.1									
		20-Nov-09 9-Mar-10	1	1 ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.057) 0.074 I	ND (0.095)	0.065 J ND (0.060)	0.22 J	0.046 J 0.032 J	0.014 J 0.050	ND (0.0095) 0.066	ND (0.0076) 0.062	ND (0.057)	0.1
		6-May-10	<u>t </u>	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.018)	0.074 J	ND (0.095)	ND (0.10)	0.18 J	0.032 J	ND (0.0095)	ND (0.0095)	0.082 0.0080 J	ND (0.057)) 0.3
	S-268	21-Jul-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND		ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	0.069 J	ND (0.096)	0.054 J	0.14 J	0.031 J	ND (0.0096)	ND (0.0096)	ND (0.0077)	ND (0.057)	0.3
		10-Nov-10 22-Nov-11	+	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.99)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	ND (1) ND (0.079)	ND (1) ND (0.099)	ND (1) ND (0.079)	ND (1) ND (0.099)	-	-	-	-	-	0.06 ND (0
		11-Jul-12		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.1) 0.05									
		4-Apr-13 4-Jun-14	 	ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND	ND (1.0)	ND (2.0) ND (1.0)	ND (0.11) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.11) ND (0.10)	ND (0.11)	ND (0.11)	ND (0.11) ND (0.10)	ND (0.11)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11) ND (0.10)	ND (0.11)	0.1
		9-Dec-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)									
		19-May-15		2	ND (0.5)	ND (0.5)	ND (0.5)	2	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1) ND (0									
		18-May-16 8-Apr-13	+	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND 13.48	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND (0.1)	ND (0.1)	0.1 J	ND (0.1) ND (
	PGW-MW-8S	8-Apr-13		2.4	1.9	0.78 J	8.4	-	2.1	35.8	ND (0.1)	0.94 J	1.5 J	ND (1)	ND (0.02)	6.45	7.17	14.1	16.8	3.57	4.75	3.33	2.89	1.52	ND
	——	29-May-14 10-Dec-09	 	1.3 ND (1)	0.36 J ND (1)	0.53 J ND (1)	1.5 ND (1)	- ND	ND (1.0) ND (1)	7.1 ND (2)	ND (0.10) ND (5)	1.3 J ND (2)	0.61 J ND (2)	ND (1.0) ND (1)	ND (0.020) ND (0.029)	2.62 ND (5)	1.90 ND (5)	0.351 ND (5)	8.01 ND (5)	0.997	2.78	1.45	2.15	0.710	9. ND
	RW-108	11-May-16	<u> </u>	ND (1)	ND (1)	ND (1)	ND (1)	ND		ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.030)	ND (0.5) ND									
		5-Dec-06		ND (0.5)	ND (0.7)	ND (0.8)	ND (0.8)	ND	ND (0.5)	ND (1.0)	ND (1.0)	-	-	ND (1.0)	ND (0.0099)	ND (1.0)	1.0 J	2.0 J	ND (1.0)	-	-	-	-	-	0.1
AOI 2		18-Dec-07 7-Nov-08	+	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	- ND (0.5)	ND (0.5) ND (0.5)	3.0 J ND (1)	- ND (0.5)	- ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0099)	ND (1.0) ND (1)	ND (1.0)	1.0 J	ND (1.0) ND (1)	-	-	-	-	-	0.0 ND (0
	RW-109	8-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.9)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.9)	1 J	ND (0.9)	ND (0.9)	-	-	-	-	-	ND (
		28-Nov-11 4-Apr-13	+	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND ND	ND (0.5)	ND (0.5)	ND (0.97) ND (0.10)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.078)	0.26 J 0.532	0.12 J 0.585	ND (0.097) 0.174	- ND (0.10) ND (
		29-May-14	<u>t </u>	ND (1.0) ND (0.50)	ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	- ND	ND (1.0) ND (1.0)	ND (2.0) ND (1.0)	ND (0.10) ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0) ND (1.0)	ND (0.020)	ND (0.10) ND (0.10)	0.532	0.632	0.174	0.121	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND
		19-May-15	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	0.2 J	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	0.7	0.8	0.2 J	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (C
	RW-600	5-Dec-06 7-Nov-08		ND (0.5) ND (0.5)	ND (0.7) ND (0.5)		ND (0.8) ND (0.5)	ND ND	7.0	2.0 J	ND (1.0) ND (1)	- ND (0.5)	-	ND (1.0)	ND (0.0098) ND (0.0098)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND	ND	ND	-	0.0 ND (0



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
		1-Jan-93 DM		ND	ND	ND	ND	ND	-	-	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	-
		1-Jan-94 DM 1-Jan-95 DM		ND (250)	ND (250)	ND (250)	ND (500)	ND -	-	-	-	-	-	-		ND (10)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	-	-
		1-Jan-96 DM		ND (0.3)	32	110	180 97	322	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		19-Nov-97 12-Nov-98		5 69	22 14	22 ND (10)	12	146 95	-	-	-	-	-	-		ND (1) ND (1)	-	-	-	-	ND (I)	ND (1)	ND (1) ND (3)		-
	S-72	2-Dec-99		ND (20)	ND (20)	ND (20)	ND (40)	ND	-	-	-	-	-	-	-	1	-	-	-	-	ND (1)	ND (2)	ND (3)	-	
		16-Nov-00 14-Nov-01		ND (100) ND (1)	ND (100) 24	ND (100) 35	ND (200) 48	ND 107	ND (100) ND (1)	-	-	-		-		6	-	-	-	-	-	-	-	-	-
		7-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (1)	-	ND (1)	ND (1)	-	-	-	-		ND (0.050)
		8-Nov-10 28-Nov-11		21	1	0.6 J ND (0.5)	12	37.6 10	0.9 J ND (0.5)	68 32	ND (1) ND (10)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5)	ND (0.0097) ND (0.0098)	3 J 15	4 J 7.0	5 J 3.9	6 ND (1.0)	-	-	-	-		0.091 J 3.8
		29-May-14		10.8	0.66 J	ND (1.0)	ND (1.0)	-	0.50 J	7.0	47.7	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	4.43	19.8	24.9	8.38	ND (0.50)	2.31	2.05	3.46	1.35	ND (3.0)
	S-72D	11-May-16 5-Dec-06		ND (1) ND (0.5)	ND (1) ND (0.7)	ND (1) ND (0.8)	ND (1) ND (0.8)	ND ND	ND (1)	9 ND (1.0)	ND (0.5) ND (1.0)	ND (2)	ND (2)	ND (1) ND (1.0)	ND (0.029) ND (0.0097)	3 ND (1.0)	3 ND (1.0)	2 ND (1.0)	4 ND (1.0)	1	1 52	2 36	3 44	1	ND (1.0) 0.16 J
	3-720	1-Jan-93 DM		520	9	27	18	574	- 1.0 3	ND (1.0)	- ND (1.0)			ND (1.0)	ND (0.0097)	55	ND (1.0)	ND (1.0)	ND (1.0)	-	110	59 J	68 J		- U.16 J
		1-Jan-94 DM 28-Dec-95	i	900 430	ND (250) 34	ND (250)	ND (500)	900 479	-	-	-	-	-	-	-	4 J 100	-	-	-	-	55 29	34 15	37 21		-
		1-Jan-96 DM		5.6	ND (0.3)	ND (0.4)	ND (0.6)	5.6	-	-			-	-		77	-	-	-	-	29	15	ND (1)	-	-
		19-Nov-97		840	49 J	61 J	55 J	1005	-	-	-	-	-	-	-	39	-	-	-	-	13	7	7		-
	S-73	12-Nov-98 2-Dec-99		320 400	ND (10) ND (20)	36 110	20 31	376 541	-	-	-	-	-	-		2 14	-	-	-	-	7 23	6 15	5 13		
AOI 2		16-Nov-00		340	ND (10)	20	11	371	ND (10)	-	-	-	-	-	-	9	-	-	-	-	6	4	4	-	-
		14-Nov-01 13-Nov-02		220 98	ND (10)	10	10 7	240 109	ND (10)	-	-	-	-	-		31 6	-	-	-	-	4.7	2.9	3.7	-	-
		12-Nov-03		135	3.9	10.1	12.3	161.3	1.6	-	-	-	-	-		5.2	-	-	-	-	-		-		-
		21-Oct-04 18-Dec-07		100 29	ND (5.0) 12	2.0	14 39	125 82	ND (5.0)	99 5.0	ND (5.0) 3.0 J	-	-	ND (5.0) ND (0.5)	ND (0.020) ND (0.0095)	3.7 J ND (0.9)	56 1.0 J	80 1.0 J	12 ND (0,9)	-	-	-	-	-	ND (5.0) 0.17 J
		18-Nov-09		35	22	8	73	138	47	14	3 J	12	5	ND (0.5)	ND (0.0097)	ND (49)	-	2.9	ND (0.11)	-		-	-		0.084 J
		18-Nov-10 28-Nov-11		44	53 0.8 J	24 ND (0.5)	220	341 8.8	50 26	12	5.8 ND (0.97)	29 0.9 J	9 0.8 J	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0098)	ND (3.3) ND (0.078)	2.2 1.5	1.3 0.46	ND (0.10) ND (0.097)	-	-	-	-	-	ND (0.052) ND (0.080)
	S-154	5-Apr-13		30.9	27.0	12.9	138	208.8	33.2	10.8	1.66	19.8	6.9	ND (1.0)	ND (0.0078)	ND (0.10)	0.707	0.428	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.16 J
		29-May-14 19-May-15		9.6 4	15.5 4	7.8	80.4 20	- 30	42.2 120	7.4	0.830	10.2	3.4 1 J	ND (1.0) ND (0.5)	ND (0.023) ND (0.0096)	ND (0.10) ND (0.1)	0.442	0.309	ND (0.10) ND (0.1)	ND (0.10) 0.1 J	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (3.0) 0.098 J
		11-May-16		2	1	ND (1)	7	10	34	5	0.6	ND (2)	ND (2)	ND (0.3)	ND (0.0098)	ND (0.1)	0.9	0.6	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (1.0)
		18-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	1	ND (0.5)	ND (0.96)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.061 J	ND (0.096)	0.040 J	ND (0.096)	-	-	-	-		ND (0.052)
		28-Nov-11 4-Apr-13		ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND ND	ND (0.5) 0.37 J	ND (0.5) ND (2.0)	ND (1.0) ND (0.10)	ND (0.5) ND (2.0)	ND (0.5) ND (2.0)	ND (0.5) ND (1.0)	ND (0.0098) ND (0.020)	ND (0.080) ND (0.10)	ND (0.10) ND (0.10)	ND (0.080) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.080) 0.19 J
	S-249	29-May-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.025)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	4.3
		19-May-15 11-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5) ND (2)	ND (0.5)	ND (0.0096)	0.1 J ND (0.5)	ND (0.1)	ND (0.1)	0.1 J ND (0.5)	ND (0.1)	ND (0.1)	0.1 J ND (0.5)	0.2 J ND (0.5)	0.2 J ND (0.5)	0.098 J ND (1.0)
		4-Jun-13		4.1	0.73 J	7.4	6.4	-	1.5	27	42.5	8.8	2.1	ND (1)	ND (0.02)	0.158	4	3.35	0.787	1.43	0.142	ND (0.1)	ND (0.1)	ND (0.1)	ND (3)
	S-351	19-May-15 12-May-16		2 ND (1)	ND (0.5) ND (1)	0.6 J ND (1)	0.6 J ND (1)	3.2 ND	ND (0.5) ND (1)	8 ND (2)	1 ND (0.5)	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0095) ND (0.030)	0.3 J ND (0.5)	2 ND (0.5)	3 ND (0.5)	1 ND (0.5)	1 ND (0.5)	0.3 J ND (0.5)	0.1 J ND (0.5)	0.1 J ND (0.5)	ND (0.1) ND (0.5)	0.31 J ND (1.0)
	BF-103R	12-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	1.0	ND (0.5)	ND (1.0)	- (2)	- (2)	ND (0.5)	ND (0.0095)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND	ND	ND	-	0.065 J
		1-Jan-85 DM 1-Jan-86 DM		ND ND	ND ND	ND ND	ND ND	ND ND	-	-	-	-	-	-		ND ND	-	-	-	-	ND ND	ND ND	ND ND	-	-
		1-Jan-88 DM		ND	ND	ND	ND	ND						-		ND					ND (10)	ND (10)	ND (10)		
		1-Jan-93 DM 1-Jan-94 DM		ND ND (50)	ND ND (50)	ND ND (50)	ND (100)	ND	-	-	-	-	-	-	-	ND (10)	-	-	-	-	ND ND (1)	ND ND (1)	ND (1)		-
		28-Dec-95		2.7	ND	ND	0.8 J	3.5	-		-			-	-	ND		-	-		ND (1)	ND (1)	ND (1)		-
		1-Jan-96 DM	l l	ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		19-Nov-97 12-Nov-98		ND (1)	ND (1) ND (1)	ND (1) ND (1)	2 ND (1)	2 ND	-			-		-	-	ND (10) ND (10)		-	-		1.2	1 ND (2)	ND (1) ND (3)	-	-
		2-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-	-	-	-	-	-	-	1	-	-	-	-	ND (10)	ND (20)	ND (30)	-	-
AOI 3	S-1	16-Nov-00 14-Nov-01		ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (2)	ND 3	10 38	-	-	-	-	-		1.4	-	-	-	-	- 1.0 J	- 1.0 J	- 0.88 J		-
	3-1	13-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)					_		1.1 J						1.0 J	- U.00 J		-
		21-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (9.8)	ND (9.8)	ND (9.8)	-	- ND	- ND	- ND		ND (5.0)
		30-Nov-06 11-Dec-07		ND (0.5) ND (0.5)	0.8 J ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	0.8 J ND	ND (0.5) ND (0.5)	ND (1.0) ND (0.5)	2.0 J ND (1.0)	-	-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0095)	1.0 J ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	2.0 J ND (1.0)	-	ND ND	ND ND	ND ND	+	0.44 J 0.63 J
		4-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1)		ND (1)	ND (1)	-	-	-	-		0.067 J
		12-Nov-09 15-Nov-10	 	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.96)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	1.4	0.94	0.78	3.2	-	-	-	-	 -	1.9 0.10 J
		18-Nov-11	<u> </u>	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (9.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	6.9	1.6 J	ND (0.76)	6.1						0.24 J
		4-Apr-13 30-May-14		ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND	ND (1.0) ND (1.0)	ND (2.0) ND (1.0)		ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	0.242 0.118	0.502	ND (0.10) ND (0.10)	0.678	0.282 ND (0.10)	0.233 0.110	0.258 0.150	0.227 0.204	0.260 ND (0.10)	0.52 J 11.6
																									1 116



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G, H, I)P ERYLENE	
a of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	þ
		1-Jan-85 DA	١	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	二
		1-Jan-86 DA 1-Jan-88 DA	1	ND ND	ND ND	ND ND	ND ND	ND ND	-	-	-	-	-	-	-	ND ND		-	-	-	ND ND (10)	ND ND (10)	ND (10)	-	+
		1-Jan-93 DA	i	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND ND	ND	-	
		1-Jan-94 DA	١	2 J	ND (5)	ND (5)	ND (10)	2	-	-		-	-	-	-	ND (10)	-		-	-	ND (1)	ND (1)	ND (1)	-	二
		28-Dec-95		1.3	ND (0.3)	ND	ND (0.6)	1.3	-	-	-	-	-	-	-	ND	-	-	-	-	ND (1)	ND (1) ND (1)	ND (1)		+
		1-Jan-96 DA 19-Nov-97	`	ND (0.3) ND (1)	ND (0.3)	ND (0.4) ND (1)	ND (0.6)	ND ND	-	-	-	-	-	-		ND (1) ND (1)		-	-	-	ND (1) ND (1)	ND (1)	ND (1) ND (1)		+
		12-Nov-98		ND (1)	ND (1)	ND (1)	ND (1)	ND	-	-	_	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)		工
		2-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	2	2	ND (3)	-	4
		16-Nov-00 14-Nov-01	+	ND (1) 52	ND (1) ND (2)	ND (1) ND (2)	ND (2) ND (4)	ND 52	94 ND (2)	+ :	-	-	-	-	-	ND (1)		-	-	-	ND (1) ND (2.0)	ND (1) ND (2.0)	ND (1) ND (2.0)	+-	+
	S-3	13-Nov-02		ND (1)	ND (1)	ND (1)	ND (1)	ND	4	-			-	-	-	ND (2)	-	-	-	-	-		-	-	+
		13-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	4.3				-	-	-	ND (2.0)									Т
		21-Oct-04 30-Nov-06		ND (1.0) ND (0.5)	ND (5.0) ND (0.7)	ND (5.0) ND (0.8)	ND (10) ND (0.8)	ND ND	19 0.7 J	ND (5.0) ND (1.0)	ND (5.0) 4.0 J	-	-	ND (5.0) ND (1.0)	ND (0.020) ND (0.0096)	ND (0.14) ND (1.0)	ND (9.8) ND (1.0)	ND (9.8) 1.0 J	ND (9.8) 2.0 J	-	- ND	- ND	- ND		NI
		11-Dec-07		ND (0.5)	ND (0.7)	ND (0.8)	ND (0.8)	ND	6.0	ND (1.0)	4.0 J ND (1.0)	-	-	ND (1.0)	ND (0.0095)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND	ND	ND	-	
		6-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	7	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (1)	-	ND (1)	ND (1)	-		-			ND
		19-Nov-09 17-Nov-10		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	0.5 J	ND (0.5)	ND (1) ND (1.0)	0.6 J ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	0.16 J 0.11 J	- ND (0.10)	0.13 J 0.092 J	0.35 J 0.13 J	-	-	-	-		+
		21-Nov-11	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	2	ND (0.5)	ND (1.0) ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.11 J ND (0.081)	ND (0.10)	ND (0.081)	ND (0.10)	-	-	-	-		-
		3-Apr-13		3.1	0.46 J	0.65 J	3.0	7.21	2.9	ND (2.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	
		30-May-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	0.53 J	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.025)		ND (0.10)	ND (0.10)		ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)		
		12-May-16 1-Jan-85 DA		ND (1) ND	ND (1) ND	ND (1) ND	ND (1)	ND 5	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5) ND	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5) ND	ND (0.5) ND	ND (0.5) ND	ND (0.5)	Ν
		1-Jan-86 DA	il .	ND	ND	ND	ND	ND	-			-	-	-		ND	-			-	ND	ND	ND		+
		1-Jan-88 DA	١	ND	ND	ND	ND	ND	-	-		-	-	-	-	ND	-		-	-	ND (10)	ND (10)	ND (10)	-	
		1-Jan-93 DA 1-Jan-94 DA	1	ND ND (5)	ND ND (5)	ND ND (5)	ND ND (10)	ND ND	-	-	-	-	-	-	-	ND (10)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	-	+-
		1-Jan-96 DA	i e	ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-			-	-	-		ND (10)	-			-	ND (1)	ND (1)	ND (1)		+
		19-Nov-97		ND (1)	ND (1)	ND (1)	ND (1)	ND	-	-		-	-	-	-	ND (1)	-		-	-	ND (1)	ND (1)	ND (1)	-	
		12-Nov-98 2-Dec-99		ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (2)	ND ND	-	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (10) ND (1)	ND (2) ND (2)	ND (3) ND (3)		+
AOI 3		16-Nov-00	1	ND (1)	ND (1)	ND (1)	ND (2)	ND	140	+ :	-	-	-	-	-	ND (1)		-		-	ND (1)	ND (2)	ND (3)		+
		14-Nov-01		ND (10)	ND (10)	ND (10)	ND (20)	ND	110	-	-				-	ND (1)	-		-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	\top
	S-25	13-Nov-02		ND (1)	ND (1)	ND (1)	ND (1)	ND	2	-					-	ND (2)	-		-	-		-			_
		13-Nov-03 21-Oct-04		ND (1.0) ND (1.0)	ND (1.0) ND (5.0)	ND (1.0) ND (5.0)	ND (1.0) ND (10)	ND ND	61.7 37	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (2.0) ND (0.14)	- ND (9.8)	- ND (9.8)	- ND (9.8)	-	-	-	-		N
		30-Nov-06		ND (0.5)	ND (0.7)	ND (0.8)	ND (0.8)	ND	0.8 J	ND (1.0)	ND (1.0)			ND (1.0)	ND (0.0097)	1.0 J	ND (1.0)	4.0 J	3.0 J	-	ND	ND	ND	-	
		13-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	5.0	ND (0.5)	ND (1.0)	-	-	ND (0.5)	ND (0.0097)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND	ND	ND		
		4-Nov-08 12-Nov-09	+	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	11 2	ND (0.5) ND (0.5)	ND (1) ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0099)	ND (0.9) ND (0.060)		ND (0.9) ND (0.040)	ND (0.9) ND (0.10)	-	-	-	-		NE
		15-Nov-10		3	ND (0.5)	0.7 J	3	6.7 J	12	ND (0.5)	ND (1)	1 J	ND (0.5)	ND (0.5)	ND (0.0097)	0.11 J	ND (0.096)	ND (0.038)	ND (0.096)	-	-	-	-	-	(
		18-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	3	ND (0.5)	ND (0.98)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.078)	ND (0.098)	ND (0.078)	ND (0.098)						NE
		3-Apr-13 30-May-14		1.7 ND (0.50)	0.32 J ND (1.0)	0.49 J ND (1.0)	2.4 ND (1.0)	4.91	1.2 0.49 J	ND (2.0) ND (1.0)	ND (0.10) ND (0.10)	0.54 J ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	_
		12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)		N
		1-Jan-85 DA	1	ND	ND	ND	ND	ND	-	-		-	-	-		ND	-	-	-	-	ND	ND	ND	-	L
		1-Jan-86 DA 1-Jan-88 DA	1	ND ND	ND ND	ND ND	ND ND	ND ND	-	-	-	-		-	-	ND ND		-	-	-	ND ND (10)	ND ND (10)	ND (10)		+
		1-Jan-93 DA	i	ND	ND	ND	ND	ND	-	-		-	-	-	-	ND	-	-	-	-	ND (1)	ND (1)	ND (1)	-	T
		1-Jan-94 DA	١	ND (5)	ND (5)	ND (5)	ND (10)	ND					-	-	-	ND (10)					ND (1)	ND (1)	ND (1)		工
		1-Jan-96 DA 19-Nov-97	\ <u> </u>	ND (0.3) ND (1)	ND (0.3) ND (1)	ND (0.4) ND (1)	ND (0.6) ND (1)	ND ND	-	1	-	-	-	-	-	ND (1) ND (1)		-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	\vdash	+
		12-Nov-98	†	ND (1)	ND (1)	ND (1)	ND (1)	ND	-			-	-	-		ND (1)	-				ND (1)	ND (1)	ND (1)		+
		2-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)		I
	S-66	16-Nov-00 14-Nov-01	1	ND (1) ND (1)	ND (1)	ND (1) ND (1)	ND (2)	ND ND	10	-	-	-	-	-	-	ND (4) ND (1)	-	-	-	-	ND (1) ND (2.0)	ND (1) ND (2.0)	ND (1) ND (2.0)	₩-	+
		14-Nov-01 13-Nov-02	† 	ND (1)	ND (1)	ND (1)	ND (2) ND (1)	ND ND	ND (1)	+ -	-	-	-	-	-	ND (1) ND (2)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	+-	+
		12-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	-	-	-	-	-	-	ND (2.0)		-	-	-	ND	ND	ND		仜
		19-Oct-04	<u> </u>	ND (1.0) DR	ND (5.0) DR	ND (5.0) DR	ND (10) DR	ND DR	ND (5.0) DR	ND (5.0)	ND (5.0)	- DR	- DR	ND (5.0) DR	ND (0.020) DR	ND (0.14) DR	ND (9.8) DR	ND (9.8) DR	ND (9.8) DR	- DR	ND DR	ND DR	ND DR	- DR	١
		15-Nov-10 18-Nov-11	1	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	DR DR	+
	İ	2-Apr-13	<u> </u>	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	工
		29-May-14		ND (0.50)	0.88 J	ND (1.0)	ND (1.0)		ND (1.0)	ND (1.0)		ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)										



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

147 398-20 100					BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G, H,I)PERYLENE	LEAD, DISSOLVED
AG1 AG1 AG1 AG1 AG1 AG1 AG1 AG1	rea of Interest	Sample Location	Sample Date	Sample Type	μg/L	µg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	µg/L	µg/L	μg/L	µg/
A014 14 15 16 16 16 16 16 16 17 18 18 18 18 18 18 18				٨						-	-	-	-	-	-	-		-	-	-	-					+-
AC1 4 187				A .						-	-	-	-	-	-	-		-	-	-	-					+
A01 A02 A03 A03 A04 A05				A .				1	1	-	-	-	-	-				-		-						+ -
AD1 AD1 AD2 AD2 AD3 AD3 AD3 AD3 AD3 AD4 AD4 AD5 AD5 AD5 AD5 AD5 AD5				٨	21	ND (5)	ND (5)			-	-	-		-		-	ND (10)	-	-	-	-	ND (1)	ND (1)	ND (1)		_
ADIA 1400 1400 1400 1400 1400 1400 1400 1400 1500 1										-	-	-	-	-		-		-	-	-	-					+
AGA Part Par		\$-69								-	-	-		-		-		-	-	-	-				+-	+-
ACT Transfer Color			12-Nov-98								-	-		-					-	-	-				-	
Add				+						- 6.8	-	-	-	-		-		-	-	-	-				-	+
Act 1. 1. 1. 1. 1. 1. 1. 1	AOI 3		14-Nov-01							3	-	-		-		-		-	-		-			ND (2.0)	-	-
## Model School S											-	-	-	-		-		-	-	-	-	-				-
## AC44 \$1.40			19-Oct-04	+	ND (1.0)						ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)		- ND (9.9)	ND (9.9)	ND (9.9)	-	-	-	-	+-	ND (
1-12		S-69D	30-Nov-06		ND (0.5)				ND	4.0 J		1.0 J									-	-	-			0.2
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				-									ND (0.5)	ND (0.5)				- 12			-	-	-	<u> </u>		0.06
### 1400 1400 1500		S-112	11-Dec-07		0.8 J					-			-							1.0 J		-				0.1
							(00)	(00)		ND (50)	()	6		()	(00)	(0.000)	ND (5)	7	12	ND (5)	-		-	-	-	ND
ACI4 1-10-18 10 10 10 10 10 10 10		S-280		+						ND (50.0)		ND (0.10)					ND (0.10)	ND (0.10)	0.176	ND (0.10)	ND (0.10)	ND (0.050)	ND (0.050)	ND (0.10)	ND (0.10)	ND ND
A014 A014 March			20-May-16		16000	26 J	ND (25)	ND (25)	16026								ND (0.1)				(01.0)	ND (0.1)	ND (0.1)	ND (0.1)	(01.0)	ND
Add 4 1-36-8 DM				4	1200	ND 1/0	ND	ND 210		-	-	-	-	-	-	-	ND		-	-	-	ND	ND	ND		1
1-3m-72 206				Λ.							-			-		-		-	-	-	-				+-	+-:
A014 A014 A016			1-Jan-93 DA	٨	310	120	60	94		-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	1 -	1
1-36-96 MM				٨						-	-	-				-		-			-				-	-
ACI4 12-Nev 98			1-Jan-96 DM	٨	9.3	5.5	3.9	4.4	23.1		-	-	-	-			ND (1)			-		ND (1)	ND (1)	ND (1)		
1-14 1-			19-Nov-97		1300	720	220			-	-	-	-	-		-		-	-	-	-				-	
1-18				-						-	-	-	-	-		-		-	-	-	-				-	+
1-18 1-18			16-Nov-00		8.5	5.1	2.5	2.5			-	-		-	-	-		-	-	-	-	ND (1)		ND (1)	-	
A04 13-Nov-03 66.6 5.2 23.7 14.2 10.7 No 10.5 N		5-38									-	-	-	-	-	-		-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	+ -
AD14		3-50									-		-					-								+
ACI 4 6-0e-07 28 7.0 19 29 81 6.0 4.0 - NO [0.5] NO [0.0997] NO [1.0] NO [1.0] NO [1.0] - - -					ND (1.0)	ND (5.0)	ND (5.0)					ND (5.0)	-	-							-	-	-	-	-	ND
ACI 4 F-Nov-08										ND (0.5)			-	-							-	-	-	-		0.1 ND (0
ACI4 12-Nov-10					140	21	72	41	274		27				ND (0.5)	ND (0.0097)	ND (1)	-	ND (1)		-	-	-	-	-	ND (
ACI4 18-Nov-11					-		2											- ND (1)			-	-	-			0.
ACI4 3-Apr-13											5											-		-	+-	0.
13-May-15			3-Apr-13		1.9	2.2			38.6	ND (1.0)		1.66				ND (0.020)	(0)	ND (0.10)	(01.0)		(0))
18-May-16 180 96 79 83 438 ND (0.5) 13 26 17 7 ND (0.5) ND (0.0) ND (0.1)	AOI 4			+					391																	0.0
1-Jan-93 DM			18-May-16	<u> </u>	180	96	79	83	438					7			ND (0.1)					ND (0.1)	ND (0.1)	ND (0.1)		ND (
28-Dec-95			1-Jan-93 DA	٨						-	-	-	-	-	-	-		-	-	-	-			ND		+
1-Jon-96 MN				n .						-	-	-	-	-		-		-	-	-	-				 	+
12-Nov-98			1-Jan-96 DA	٨	ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)		
2-Dec-97 ND (1) ND (1) ND (1) ND (1) ND (2) ND ND (1) ND (1) ND (2) ND (3) ND (1)				1			(.)	1.2 (1)		-	-	-	-	-	-	-		-	-	-	-	,	(./			+-
14-Nov-01 ND (1) ND (1) ND (1) ND (2) ND 1.7 ND (1) ND (1			2-Dec-99	+						-	-	-	-	-		-		-	-	-	-				+-	+ :
\$-39 \$-39 \$-39 \$-2-\text{ND}(1) \$\text{ND}(1) \$\text			16-Nov-00		ND (1)	ND (1)		ND (2)	ND	1.7	-	-	-	-	-	-	ND (1)	-	-	-	-			ND (1)		_
\$-39 20-Cct-04				+						ND (1)	-	-	-	-		-		-	-	-	-	-	 -	-	+	+-
29-Nov-06 ND [0.5] ND [0.7] ND [0.8] ND [0.8] ND [0.8] ND [0.8] ND [0.5] ND [1.0] ND [1.0] - ND [1.0] ND [1.0		\$-39	20-Oct-04	<u> </u>	ND (1.0)	ND (5.0)			ND		ND (5.0)				ND (5.0)			ND (10)	ND (10)	ND (10)				<u> </u>		ND
7-Nov-08			29-Nov-06							ND (0.5)		ND (1.0)	-	-							-	ND (2.0)				0.1
13-Nov-09 ND [0.5] ND [0.5			6-Dec-07 7-Nov-08	+					ND ND	ND (0.5)			ND (0.5)	ND (0.5)				ND (1.0)			-	ND -	ND -	ND -	+-	ND (I
18-Nov-11 2 ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.078] ND			13-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (0.059)	-	ND (0.039)	ND (0.098)	-	-	-		1 -	ND (
2-Apr-13				1	ND (0.5)												ND (1)				-	-		-		ND (
19-May-14 ND (0.50) ND (1.0) ND (0.50) ND (1.0) ND (0.50) ND (1.0) - ND (1.0) ND (1.0) ND (1.0) ND (1.0) ND (0.10) ND (0.1				+	ND (1.0)		0.7 3	-	1.7						110 [0.0]		ND (0.078)	110 0.070	110 (0.070)	110 (0.070)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.0 IN (
			19-May-14		ND (0.50)	ND (1.0)	ND (0.50)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	1.
								ND (0.5)	ND	ND (0.5)																



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTLARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYL BENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G, H,I)PERYLENE	LEAD, DISSOLVED
ea of Interest	Sample Location	Sample Date	Sample Type	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	µg/L	μg/L	µg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/
		1-Jan-85 D/	M	2800	ND	1200	6100	10100	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	ᅳ
		1-Jan-86 D/ 1-Jan-88 D/	M .	600 2000	ND ND	210 2900	1520 4100	2330 9000	-	-	-	-	-		-	ND ND	-	-	-	-	ND (10)	ND ND (10)	ND ND (10)	-	-
		1-Jan-93 D/	М	78	6	12	16	112	-	-		-	-	-		ND	-	-	-	-	ND	ND	ND	-	
		1-Jan-94 D/ 28-Dec-95	M	280 150	55 J 23	140 J 29	75 J 51.2	550 253.2	-	-	-	-	-		-	ND (10) ND	-	-	-	-	ND (1)	ND (1) ND (1)	ND (1)	-	
		1-Jan-96 D/	м	12	1.8	3.4	1.9	19.1	-	-		-	-			ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	_
		19-Nov-97 12-Nov-98		350	ND (100)	ND (100)	56 J	406 630	-	-	-	-	-		-	1	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
		2-Dec-99		630 1000	ND (100) ND (100)	ND (100) ND (100)	ND (100) ND (200)	1000		-	-	-	-		-	ND (1) ND (1)	-	-	-	-	2	ND (2) ND (2)	ND (3) ND (3)	-	-
		16-Nov-00		600	ND (100)	ND (100)	ND (200)	600	ND (100)	-	-	-	-	-	-	3	-	-	-	-	ND (13)	ND (10)	ND (14)	-	-
	S-40	14-Nov-01 12-Nov-02		1200 240	76 9	68 7	ND (100) 8	1344 264	1200 ND (5)	-	-	-	-	-	-	4 ND (15)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	-
		13-Nov-03		987	36.9	19.5	20.9	1064.3	ND (5.0)	-	-	-	-	-	-	ND (2.0)	-	-	-	-	-	-	-	-	-
		6-Dec-06 18-Dec-07		220 3.0	9.0 ND (0.5)	8.0 ND (0.5)	5.0 J ND (0.5)	242 J 3.0	ND (0.5)	17.0 1.0 J	ND (1.0) ND (1.0)	-	-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0095)	ND (1.0) ND (0.9)	3.0 J	5.0 J 2.0 J	ND (1.0) ND (0.9)	-	-	-	-	-	0.1
		7-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1)	1.03	ND (1)	ND (1)	-	-				0.1
		13-Nov-09		5	0.5 J 3	0.7 J	ND (0.5)	6.2	ND (0.5)	4	ND (1)	ND (0.5)	0.5 J	ND (0.5)	ND (0.0099)	0.37	- 6	1.6	ND (0.10)	-	-	-	-	-	0.2
		11-Nov-10 28-Nov-11		72 ND (0.5)	2	ND (0.5)	ND (0.5)	78 2	ND (0.5) ND (0.5)	12 0.6 J	ND (1) ND (9.6)	ND (0.5) ND (0.5)	0.7 J ND (0.5)	ND (0.5) ND (0.5)	ND (0.0095) ND (0.0099)	6.0	6.7	12 9.2	2 J ND (0.096)	-	-		-	-	0.07 ND (0
		8-Apr-13		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.1)	ND (2)	ND (2)	ND (1)	ND (0.02)	ND (0.1)	0.135	0.255	ND (0.1)	ND (0.1)		ND (0.1)	ND (0.1)	ND (0.1)	ND
		18-May-15 19-May-16		10 18	2	ND (0.5)	ND (0.5)	12 24	ND (0.5) ND (0.5)	6 16	0.6 ND (0.1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0097)	ND (0.1) 0.2 J	0.4 J	0.6	0.2 J 0.4 J	0.2 J 0.5 J	ND (0.1) 0.2 J	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	0.1 ND (
		20-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	ND
		29-Nov-06		ND (0.5)	ND (0.7)	ND (0.8)	ND (0.8)	ND	ND (0.5)	ND (1.0)	ND (1.0)	-	-	ND (1.0)	ND (0.0097)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	0.1
		14-Dec-07 5-Nov-08		ND (0.5) 0.5 J	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND 0.5 J	ND (0.5)	ND (0.5) ND (0.5)	ND (1.0) ND (1)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.0095) ND (0.0098)	ND (0.9) ND (1)	ND (0.9)	ND (0.9) ND (1)	ND (0.9) ND (1)	-	-	-		-	0.1 ND (0
		13-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.057)	-	ND (0.038)	ND (0.095)	-	-	-	-	-	ND (
	S-120	11-Nov-10 18-Nov-11		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.95)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	ND (1) ND (0.076)	ND (1) ND (0.095)	ND (1) ND (0.076)	ND (1) ND (0.095)	-	-	-	-	-	ND (0
		2-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	1.39	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND
		21-May-14 18-May-15		7.8 ND (0.5)	1.1 ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0096)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (C
		18-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.1)	ND (0.1)	ND (0.1)		ND (0.1)		ND (0.1)	ND (0.1)	ND (0.1)	
		20-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	ND
		29-Nov-06 6-Dec-07		ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	1.0 J ND (0.5)	2.0 J ND (0.5)	3.0 J ND	ND (0.5)	4.0 J ND (0.5)	2.0 J ND (1.0)	-		ND (1.0) ND (0.5)	ND (0.0098) ND (0.0096)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	-	-	-	-	0.1
AOI 4		5-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1)	- (110)	ND (1)	ND (1)	-	-	-	-	-	ND (0
	S-122	13-Nov-09		ND (0.5) ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	DIA	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.059)	- ND (1)	ND (0.039)	ND (0.098)	-	-	-	-	-	ND (0
	3-122	12-Nov-10 18-Nov-11		ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	1 J ND (0.5)	ND (1) ND (0.95)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	ND (1) ND (0.076)	0.10 J	ND (1) ND (0.076)	ND (1) ND (0.095)	-	-		-	-	ND (0
		2-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND
		19-May-14 18-May-15	+	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) 0.2 J	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0
		12-May-16		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.5)	ND (2)	ND (2)	ND (1)	ND (0.029)	ND (0.5)	ND (0.5)	ND (0.5)		ND (0.5)	ND				
		30-Nov-06 6-Dec-07		0.8 J	ND (0.7) 1.0	ND (0.8)	ND (0.8) 0.5 J	0.8 J		ND (1.0)	ND (1.0)	-	-	ND (1.0)	ND (0.0098) ND (0.0098)	ND (1.0)	ND (1.0)	3.0 J	3.0 J	-	-	-	-	-	0.1
		5-Nov-08		3.0	ND (0.5)	ND (0.5) ND (0.5)	ND (0.5)	4.5 J 3.0	ND (0.5)	ND (0.5) ND (0.5)	ND (1.0) ND (1)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098)	ND (1.0) ND (1)	ND (1.0)	ND (1.0) ND (1)	ND (1.0)	-	-		-	-	0.0
		12-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (0.058)	-	ND (0.080)	ND (0.096)	-	-	-	-	-	ND (
	S-222	15-Nov-10 18-Nov-11		15 ND (0.5)	2 ND (0.5)	4 ND (0.5)	16 ND (0.5)	37.0 ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.96) ND (0.95)	4 ND (0.5)	1 J ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0096)	ND (0.058) ND (0.076)	ND (0.096) ND (0.095)	0.044 J ND (0.076)	ND (0.096) ND (0.095)	-	-		-	-	ND (
		3-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	1
		21-May-14 18-May-15		29.7 ND (0.5)	6.8 ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0
		18-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (
		29-Nov-06		4300	2800	930	4400	12430	-	- 33	- 200	-	-	ND (F O)	- ND (0.0004)	- ND (1.0)		- 201	- ND (1.0)	-	-	-	-	-	
		14-Dec-07 5-Nov-08		4700 8100	2000 1700	900 1100	4500 5100	12100 16000	ND (5)	33	380 380	1000	330	ND (5.0) ND (5)	ND (0.0094) ND (0.010)	ND (1.0) ND (1)	2.0 J	2.0 J 1 J	ND (1.0) ND (1)						0.0
		12-Nov-09		3900	460	850	3700	8910	ND (3)	36	330	1000	360	ND (3)	ND (0.0099)	0.47	-	2.3	ND (0.095)	-	-	-	-	-	0.0
		15-Nov-10 18-Nov-11	+	3300 1100	410 110	890 440	3800 1900	8400 3550	ND (3) ND (5)	32 25	170	920 780	360 350	ND (3) ND (5)	ND (0.0097) ND (0.0096)	0.14 J ND (0.077)	3.4	0.86	1.1 ND (0.096)	-	-	-	-	-	0.0°
	S-223	3-Apr-13		5530	337	866	4040	10773	ND (40)	29.3 J	130	1070	351	ND (40)	ND (0.0076)	ND (0.10)	0.625	0.601	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	
	3-220	15-Jan-14	+ -	6280	2030 1020	960 259	3860 1370	<u> </u>	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	
		4-Apr-14 30-May-14	+	2320 1470	1020	396	1300	-	ND (10)	23.0	38.6	812	314	ND (10)	ND (0.020)	ND (0.10)	0.940	0.770	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	6.
		12-Aug-14		4240	294	713	2820	-	- '	-	-	-	-	-	-	-	-	-	-		-	-	-	-	
		6-Jan-15 16-Apr-15	+	11400	5410 190	871 330	3980 1200	-	-	-	-	-	-	-	-	-		-	-	-		-		-	
		19-May-16		2200	330	440	1500	4470	ND (10)	16 J	87	490	170	ND (10)	ND (0.0097)	ND (0.1)	0.8	0.2 J	ND (0.1)	0.1 J	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND
		29-Nov-06 15-Jan-14	+ -	1200 405	1400 127	500 289	2200 697	5300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	5 224	4-Apr-14	+	110	45.0	182	363	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	
	S-224	12-Aug-14		114	35.0	81.9	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1	6-Jan-15	1	255	150	213	457		-	-	-	-				i -		i -	i -	i -	-	i -	-	-	



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	µg/L	μg/L	µg/L	μg/L	µg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	µg/L	μg/L	µg/L	μg/L	µg/L	μg/L
		29-Nov-06 15-Jan-14		12 ND (1.0)	260 ND (1.0)	310 ND (1.0)	1100 0.74 J	1682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4-Apr-14		0.49 J	ND (1.0)	0.79	3.5	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	
AOI 4	S-239	29-May-14 12-Aug-14		ND (0.50) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	0.95 J	0.35 J	ND (1.0)	ND (0.020)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	3.7					
		6-Jan-15 16-Apr-15		ND (0.50) ND (0.5)	0.26 J ND (0.5)	0.51 J ND (0.5)	2.0 ND (0.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		1-Jan-95 DM	N.	WI	WI	WI (0.5)	ND (0.5)	WI	WI	WI	WI	-		WI	WI	WI	WI	WI	WI	-		-		-	WI
		1-Jan-96 DM 1-Jan-97 DM	1	ND (1) ND (1)	ND (1) ND (1)	ND (0.4) ND (1)	ND (0.6) ND (1)	ND ND	-	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1)	-	-
		1-Jan-98 DM		ND (1)	ND (1)	ND (1)	ND (1)	ND		-	-	-	-	-		ND (1)	-		-	-	ND (1)	ND (1)	ND (1)	-	
		1-Jan-99 DM 1-Jan-00 DM		ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND	- 4	-	-	-	-		-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (2)	ND (1)	-	-
		1-Jan-01 DM	N.	ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	-	-	-	-	-	-	2	-	-	-	-	2	2	ND (3)	-	-
	A-17	1-Jan-02 DM 13-Nov-03	1	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND ND	ND (1) ND (1.0)	-	-	-	-	-	-	ND (2) ND (2.0)	-	-	-	-	ND (1) ND (2.0)	ND (1) ND (2.0)	ND (1) ND (2.0)	-	-
		27-Oct-04 6-Dec-06		ND (1.0) ND (0.5)	ND (5.0) ND (0.7)	ND (5.0) ND (0.8)	ND (10) ND (0.8)	ND ND	ND (5.0) ND (0.5)	ND (5.0) ND (1)	ND (5.0) ND (1)	-	-	ND (5.0) ND (1)	ND (0.020) ND (0.0099)	ND (0.14)	ND (10) ND (1)	ND (10) ND (1)	ND (10)	-	-		-	-	ND (5.0) 0.14 J
		6-Dec-07		ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND	ND (0.5)	ND (1) ND (0.5)	ND (1) ND (1.0)	-	-	ND (1) ND (0.5)	ND (0.0099) ND (0.0097)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	-		-	-		0.14 J 0.19 J
		3-Nov-08 17-Nov-10		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	0.7 J ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (1.0)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	ND (1) 0.49	0.73	ND (1) 0.5	ND (1)	-	-	-	-	-	ND (0.050 3.1
		16-Nov-11												WELL DES	TROYED										
		17-Nov-10 16-Nov-11		ND (0.5) ND (0.5)	ND (0.5) 0.5 J	ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5)	3	ND (20) ND (400)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.5)	ND (0.0097)	71 2200	48 760	49 1000	ND (170) ND (4000)	-	-	-	-	-	ND (0.052 4.2
		8-Apr-13		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.1)	ND (2)	ND (2)	ND (1)	ND (0.02)	0.574	ND (0.1)	ND (0.1)	0.959	ND (0.1)	0.173	0.269	ND (0.1)	ND (0.1)	ND (3)
		2-Jun-14 24-Jul-14	 	ND (0.50) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	ND (1.0) ND (1.0)	0.39 J 0.60 J	ND (0.10) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	23.6 0.644	8.11 0.351	9.18 ND (0.10)	1.09	2.58 ND (0.10)	7.36 0.210	11.1 0.192	4.40 0.111	6.58 ND (0.10)	3.4 ND (3.0)
	A-133	21-Oct-14		0.38 J	0.86 J	ND (1.0)	ND (1.0)	-	ND (1.0)	0.49 J	0.125	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	1.19	0.321	0.195	2.09	0.621	1.35	1.18	1.43	0.877	ND (3.0)
		21-May-15 19-May-16		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	0.1 J ND (0.1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0095) ND (0.0097)	0.9	2 ND (0.1)	0.6 ND (0.1)	3	0.5 ND (0.1)	0.8 0.2 J	1 0.4 J	0.5 J 0.2 J	0.7 0.2 J	0.10 J ND (0.13)
		19-May-16	Field Duplicate	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	1	ND (0.1)	ND (0.1)	1	ND (0.1)	0.2 J	0.3 J	0.2 J	0.2 J	ND (0.13)
		1-Jan-95 DM 1-Jan-96 DM		ND (0.3)	ND ND (0.3)	ND ND (0.4)	0.8 J ND (0.6)	0.8 J ND	-	-	-	-	-		-	ND (1)	-	-	-	-	ND ND (1)	ND ND (1)	ND (1)	-	<u> </u>
		1-Jan-97 DM	N .	ND (1)	ND (1)	ND (1)	ND (1)	ND	-	-	-	-	-	-	-	2	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
	A-136	1-Jan-98 DM 1-Jan-99 DM	•	2 ND (20)	ND (1) ND (20)	ND (1) ND (20)	ND (1) ND (20)	ND	-	-	-	-	-		-	ND (1)	-	-	-	-	ND (1)	ND (1) 5	ND (1)	-	-
		3-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	0.6 J	0.6 J	ND (0.5)	7	ND (1)	ND (0.5) 0.48 LSI	ND (0.5)	ND (0.5)	ND (0.0098)	6	- 70.01	7	15	- 1 00 01	- 1 00 61	- 1.07 SL	- 1 50 61	0.900 SI	0.41 J
AOI 5		1-Aug-14 17-Oct-14	1	ND (0.50) SL ND (0.50)	ND (1.0) 3L ND (1.0)	ND (1.0) SL ND (1.0)	1.1 SL 0.76 J	-	ND (1.0) SL ND (1.0)	19.5 SL 8.4	ND (0.11) SL ND (0.10)	0.48 J SL ND (2.0)	ND (2.0) SL ND (2.0)	ND (1.0) SL ND (1.0)	ND (0.020) SI ND (0.020)	1.53 SL 2.01	2.79 SL 3.22	1.24 SL 2.23	7.00 SL 4.22	1.28 SL 1.41	1.39 SL 1.65	0.651	1.52 SL 1.23	0.900 SL 0.459	1.4 J SL 3.4
AOI 5		1-Jan-95 DM 1-Jan-96 DM	N.	ND ND (0.3)	ND ND (0.3)	ND ND (0.4)	ND ND (0.6)	ND ND	-	-	-	-	-	-	-	ND 2	-	-	-	-	ND ND (1)	ND ND (1)	ND ND (1)	-	-
		1-Jan-97 DM		ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND			-	-	-	-	-	2	-		-	-	1 D (1)	ND (1)	2	-	
		1-Jan-98 DM 1-Jan-99 DM		ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND		-	-	-	-	-	-	ND (1)	-		-	-	ND (1)	ND (1)	ND (1) 2	-	-
		1-Jan-00 DM	i i	ND (1)	ND (1)	ND (1)	ND (1)	ND	250	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)	-	-
		1-Jan-01 DM 1-Jan-02 DM	1	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND		-	-	-	-		-	2	-	-	-	-	2 ND (1)	ND (2) ND (1)	ND (3) ND (1)	-	-
		13-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	-	- ND (5.0)	-	-	-	-	ND (2.0)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	-
	A-137	22-Oct-04 4-Dec-06	1	ND (1.0) ND (0.5)	ND (5.0) ND (0.7)	ND (5.0) ND (0.8)	ND (10) ND (0.8)	ND ND	ND (5.0) 1.0 J	ND (5.0) ND (1.0)	ND (5.0) ND (1.0)	-	-	ND (5.0) ND (1.0)	ND (0.020) ND (0.0096)	0.45 J 1.0 J	ND (9.9) ND (1.0)	ND (9.9) 2.0 J	ND (9.9) 3.0 J	-	-	-		-	ND (5.0) 0.25 J
		6-Dec-07 3-Nov-08		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	- 2	ND (0.5) ND (0.5)	ND (1.0) ND (1)	- ND (0.5)	- ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0099)	ND (0.9) ND (1)	ND (0.9)	ND (0.9) ND (1)	ND (0.9) ND (1)	-	-	-	-	-	0.25 J 0.17 J
		17-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	3	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0095)	0.085 J	0.16 J	0.41	0.25 J	-	-	-	-		0.50 J
		16-Nov-11 8-Apr-13		ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND ND	2 0.84 J	ND (0.5) ND (2)	ND (0.97) ND (0.11)	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0097) ND (0.02)	ND (0.078) ND (0.11)	0.17 J ND (0.11)	0.46 ND (0.11)	0.22 J ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	3.8 ND (3)
		2-Jun-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	0.43 J	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	0.245	0.138	ND (0.10)	1.9 J				
		17-Jul-14 15-Oct-14		ND (0.50) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	0.80 J 0.89 J	ND (1.0) ND (1.0)	ND (0.10) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	0.310	0.153	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (3.0) ND (3.0)
		21-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	0.7 J	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0095)	ND (0.1)	0.1 J	0.3 J	0.3 J	ND (0.1)	0.30 J				
		19-May-16 17-Nov-10	<u> </u>	ND (0.5)	ND (0.5) ND (0.5)	ND (0.5)	ND (0.5) 27	43	1 J	7900	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097) ND (0.0097)	0.16 J	ND (0.1)	1.5	0.2 J ND (0.70)	ND (U.1)	ND (0.1)	ND (0.1)	ND (0.1)	- UND (U.1)	0.17 J
	A-138	21-Nov-11 8-Apr-13		4 J 0.76 J	ND (0.5) ND (1)	3 J ND (1)	12 0.33 J	19	ND (0.5)	1700 104	ND (9.6) ND (0.1)	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0096)	2.9 0.152	ND (0.96) ND (0.1)	2.6 0.235	2.2 J 0.174	- ND (0.1)	0.151	- ND (0.1)	0.166	- ND (0.1)	0.21 J ND (3)
		2-Jun-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	1.07	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	2.6 J					
	A-139	21-Oct-14 21-May-15		ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0095)	ND (0.10) ND (0.1) ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	25.7 94.6					
		17-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	0.6 J	ND (0.5)	ND (0.97)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.058)	ND (0.097)	ND (0.039)	ND (0.097)						0.093 J
		16-Nov-11 8-Apr-13		ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) 0.73 J	ND 0.73	ND (0.5) 0.24 J	ND (0.5) ND (2)	ND (0.98) ND (0.11)	ND (0.5) 0.39 J	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0096) ND (0.02)	ND (0.078) ND (0.11)	ND (0.098) ND (0.11)	ND (0.078) ND (0.11)	ND (0.098) ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	- ND (0.11)	ND (0.080 ND (3)
	A-140	2-Jun-14	1	ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.11) ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (3.0) ND (3.0)					
		21-Oct-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)		ND (1.0)	ND (1.0)	ND (0.11)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.11) ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)						



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
		17-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)		ND (0.5)	ND (0.5)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	40	16 J	53	100	-	-	-	-	-	0.45 J
		28-Nov-11 8-Apr-13		ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND ND	ND (0.5) 0.26 J	ND (0.5) ND (2)	ND (9.8) 0.228	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.010) ND (0.02)	ND (4.5) 0.576	1.7 J 0.228	2.3 0.54	7.4 1.17	0.249	0.586	0.463	0.432	0.27	0.34 J ND (3)
	WP-14	2-Jun-14 25-Jul-14		ND (5.0)	ND (10)	ND (10)	ND (10)		ND (10)	ND (10)	ND (0.10)	ND (20)	ND (20)	ND (10)	ND (0.020)	ND (0.10)	4.94	1.65	1.34	0.631	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	2.0 J
AOI 5		9-Oct-14	+	ND (0.50) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	ND (1.0) 0.32 J	ND (1.0) ND (1.0)	1.03 0.154	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	2.78 0.269	1.16 0.297	1.84 0.345	6.16 1.15	1.12 0.264	3.47 0.398	2.18 0.167	2.96 0.210	1.20 ND (0.10)	6.2 ND (3.0)
		21-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	0.2 J	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0095)	0.7	0.1 J	0.5 J	0.8	0.2 J	0.6	0.7	0.7	0.5	0.97 J
		20-May-16 4-Dec-06	1	ND (0.5) ND (0.5)	ND (0.5) ND (0.7)	ND (0.5) ND (0.8)	ND (0.5) ND (0.8)	ND ND	ND (0.5)	ND (0.5) ND (1.0)	0.4 J ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5) ND (1.0)	ND (0.0097) ND (0.0097)	0.7 1.0 J	0.5 4.0 J	0.6 ND (1.0)	7.0	0.3 J	0.6	0.7	0.7	0.6	0.31 J 0.20 J
	WP-A	31-Jul-14		ND (0.50) SL	ND (1.0) SL	ND (1.0) SL	ND (1.0) SL	-	ND (1.0) SL	ND (1.0) SL	ND (0.50) SL	ND (2.0) SL	ND (2.0) SL	ND (1.0) SL	ND (0.020) SL	23.4 SL	2.34 SL	1.83 SL	65.2 SL	6.75 SL	9.79 SL	18.5 SL	18.2 SL	23.8 SL	3.9 SL
	WP-C B-43	6-Dec-07 23-May-16	-	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	2.0 ND (0.5)	2.0 ND	- ND (0.5)	4.0	ND (1.0) ND (0.1)	- ND (0.5)	- ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	3.0 J	4.0 J 0.9	ND (1.0) ND (0.1)	4.0 J 7	0.7	2	2	2	1	2 ND (0.13
	B-45	18-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	-	ND (0.5)	ND (1.0)	-	-	ND (0.5)	ND (0.0097)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND	ND	ND	-	ND (0.047
		4-Nov-08 8-Jun-11		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) 0.5 J	ND 0.5	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.010) ND (0.0099)	ND (1) 0.18 J	-	ND (1) 0.18 J	ND (1)	-	-	-	-	-	ND (0.050
	B-95	23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.4 J	ND (0.1)	ND (0.1)	0.7	ND (0.1)	0.2 J	0.3 J	0.2 J	0.2 J	ND (0.032
		1-Jan-95 DA	٨	ND	ND	ND	ND	ND	-	-					-	ND	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
		1-Jan-96 DA 1-Jan-97 DA	Λ.	ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND 26	-	-	-	-	-	-	-	ND (1) ND (1)		-	-	-	ND (1)	- ND (1)	- ND (1)	-	-
		1-Jan-98 DA	٨	ND (1)	ND (1)	ND (1)	1	1	-	-	-	-			-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		1-Jan-99 DA 1-Jan-00 DA	A .	19 ND (1)	ND (1)	ND (1)	1 ND (1)	20 ND	11	-	-	-	-	-	-	1 ND (1)		-	-	-	ND (1)	ND (1) ND (2)	ND (1) ND (3)	-	-
		1-Jan-01 DA	٨	ND (1)	ND (1)	ND (1)	ND (1)	ND	2	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)	-	-
		1-Jan-02 DA 13-Nov-03	٨	5 4.2	1 ND (1.0)	ND (1) ND (1.0)	2 0.93 J	8 5.13	ND (1) ND (1.0)	-	-	-	-	-	-	ND (2) ND (2.0)	-	-	-	-	ND (1) 0.60 J	ND (1) ND (2.0)	ND (1) ND (2.0)	-	-
	B-131	21-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND		10	ND (5.0)	-	-	ND (5.0)	ND (0.020)	0.35 J	ND (9.8)	ND (9.8)	ND (9.8)	-	- 0.00 3	- IND (2.0)	- IND (2.0)	-	ND (5.0)
AOI 6		4-Dec-06		4.0 J	ND (0.7)	ND (0.8)	ND (0.8)	4	ND (0.5)	11	ND (1.0)			ND (1.0)	ND (0.0098)	2.0 J	2.0 J	1.0 J	8.0	-	-	-	-	-	0.14 J
		18-Dec-07 4-Nov-08	-	ND (0.5) ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5)	9.0	ND (1.0) ND (1)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0098)	ND (1.0) ND (1)	2.0 J	ND (1.0) ND (1)	4.0 J	-	-		-	-	ND (0.050
		9-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	0.5 J	0.5	ND (0.5)	10	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1)	3 J	ND (1)	5	-	-	-	-	-	ND (0.052
		16-Nov-11 8-Apr-13	+	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND 2.65	ND (0.5) ND (1)	5 13	ND (0.96) ND (0.1)	ND (0.5) ND (2)	ND (0.5) ND (2)	ND (0.5) ND (1)	ND (0.0097) ND (0.02)	5.4 0.132	1.08	0.65	19	0.477	0.169	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.080 ND (3)
		2-Jun-14		0.29 J	0.30 J	ND (1.0)	0.56 J		ND (1.0)	12.1	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	0.206	1.74	0.333	2.51	0.747	0.258	ND (0.10)	ND (0.10)	ND (0.10)	1.6 J
		20-May-15 9-Jun-06	+	2 ND (5)	0.9 J ND (5)	ND (0.5) ND (5)	0.6 J ND (5)	3.5	ND (0.5) ND (5)	11	ND (0.1) ND (5)	ND (0.5)	ND (0.5)	ND (0.5) ND (5)	ND (0.0096) ND (0.029)	0.4 J ND (5)	2 ND (5)	0.4 J ND (5)	3 ND (5)	0.7	0.4 J	0.2 J	0.2 J	ND (0.1)	0.13 J
	B-153	4-Jan-13		ND (1.0)	ND (1.0)	ND (1.0)	1.4		ND (1.0)	ND (2.0)	0.466	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	0.192	ND (0.10)	0.213	0.190	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (3.0)
		9-Nov-10 16-Nov-11		ND (0.5) 180	ND (0.5) 250	ND (0.5)	ND (0.5) 130	ND 573	ND (0.5)	ND (0.5)	ND (1) ND (0.96)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (1) 0.35	ND (1) 0.23 J	ND (1)	1 J 0.80	-	-	-	-	-	0.072 J
	B-158	8-Apr-13		ND (1)	ND (1)	ND (1)	ND (1)	ND		ND (2)	ND (0.78)	ND (2)	ND (2)	ND (1)	ND (0.0078)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (3)
		2-Jun-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)		ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	0.126	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	1.7 J
		20-May-15 3-Jun-14	+	ND (0.5) ND (0.50)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND -	ND (0.5) 0.34 J	ND (0.5) 3.4	ND (0.1) ND (0.10)	ND (0.5) 0.23 J	ND (0.5) ND (2.0)	ND (0.5) ND (1.0)	ND (0.0095) ND (0.020)	ND (0.1) 0.134	ND (0.1) 1.67	ND (0.1) 0.223	0.2 J 1.14	ND (0.1) 0.416	ND (0.1) 0.196	ND (0.1) ND (0.10)	ND (0.1) 0.124	ND (0.1) ND (0.10)	0.14 J
	B-165	20-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	0.6 J	6	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.2 J	2	0.1 J	2	0.6	0.2 J	ND (0.1)	0.1 J	ND (0.1)	0.11 J
		5-Dec-06 17-Dec-07		ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND ND	ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (1.0)	-	-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0097)	4.0 J ND (1.0)	1.0 J 2.0 J	2.0 J ND (1.0)	8.0 2.0 J	-	-	-	-	-	0.16 J 0.11 J
	C-51	5-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (1)		ND (1)	2 J	-	-	-	-	-	0.059 J
	-	11-Nov-09 1-Jan-95 DA	A .	ND (0.5) ND	ND (0.5) ND	ND (0.5) ND	ND (0.5)	ND 1.3	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.6 ND		0.65	3.0	-	- ND	- ND	- ND	-	ND (0.050
		1-Jan-96 DA	٨	ND (0.3)	ND (0.3)	3.8	ND (0.6)	3.8	-	-	-	-	-	-	-	4	-	-	-	-	2	ND (1)	ND (1)	-	
		1-Jan-97 DA 1-Jan-98 DA	۸.	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND	-	-	-		-	-	-	6 ND (1)	-	-	-	-	4 ND (1)	2 ND (1)	3 ND (1)	-	
	ŀ	1-Jan-99 DA	Λ.	ND (1)	ND (1)	ND (1)	1	1	-	-			-	-		2					1	ND (1)	ND (1)	-	-
		1-Jan-00 DA	٨	ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	-					-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)	-	
		1-Jan-01 DA 1-Jan-02 DA	Λ.	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND	ND (1) ND (1)	-	-	-	-	-	-	20 ND (2)		-	-	-	17 ND (1)	ND (1)	9 ND (1)	-	-
AOI 7		13-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	-	-	-	-	-	-	ND (2.0)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	-
	C-104	21-Oct-04 5-Dec-06	+	ND (1.0) ND (0.5)	ND (5.0) ND (0.7)	ND (5.0) ND (0.8)	ND (10) ND (0.8)	ND ND	ND (5.0)	ND (5.0) ND (1.0)	ND (5.0) ND (1.0)	-	-	ND (5.0) ND (1.0)	ND (0.020) ND (0.0096)	2.8 J 7.0 J	ND (9.9) 9.0 J	ND (9.9) ND (5.0)	ND (9.9) 15.0 J	-	-	-	-	-	ND (5.0) 0.13 J
		12-Dec-07	<u> </u>	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	0.7 J	ND (1.0)		-	ND (0.5)	ND (0.0095)	13	12	5.0	34	-					0.12 J
		5-Nov-08 11-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	DI	ND (0.5)	0.6 J	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.010)	15 J	-	ND (10)	39 J	-	-	-	-	-	0.51 J
		9-Nov-10	+	ND (3.0) ND (0.5)	ND (3.0) ND (0.5)	ND (3.0) ND (0.5)	ND (3.0) ND (0.5)	ND ND	ND (3.0) ND (0.5)	ND (3.0) 0.5 J	ND (5.0) ND (1)	ND (3.0) ND (0.5)	ND (3.0) ND (0.5)	ND (3.0) ND (0.5)	ND (0.0096) ND (0.0097)	0.20 J ND (1)	- 8	0.14 J ND (1)	1.7 2 J	-	-	-	-	-	0.076 J 0.078 J
		16-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.97)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.17 J	0.24 J	ND (0.078)	1.7	-	-	-	-	-	3.8
		8-Apr-13 3-Jun-14	+	ND (1) ND (0.50)	ND (1) ND (1.0)	ND (1) ND (1.0)	0.62 J ND (1.0)	0.62	ND (1)	ND (2)	ND (0.1) ND (0.10)	ND (2) ND (2.0)	ND (2) ND (2.0)	ND (1) ND (1.0)	ND (0.02)	ND (0.1) 0.202	2.35 ND (0.10)	0.633	0.641	0.364 ND (0.10)	ND (0.1) 0.260	ND (0.1) 0.201	ND (0.1) 0.240	ND (0.1) 0.122	ND (3) 2.3 J
		3-Jun-14 21-May-15	+	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	0.2 J	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0096)	1	7 (0.10)	3	3	1 (0.10)	0.260	0.201	0.240 0.5 J	0.122 0.3 J	2.3 J ND (0.08:
	1 1	24-May-16		ND (0.5)	ND (0.5)	110 (0.0)	ND (0.5)			ND (0.5)	ND (0.1)	ND (0.5)	1			0.1.1		0.3 J		0.5.1	0.1.1	ND (0.1)	ND (0.1)		ND (0.1



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYL BENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
ea of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/
		1-Jan-95 I	DM	ND (0.0)	ND (0.0)	ND ND	ND (0.1)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		1-Jan-96 1-Jan-97	DM	ND (0.3) ND (1)	ND (0.3)	ND (0.4) ND (1)	ND (0.6) ND (1)	ND 1	-		-	-	-		-	ND (1)		-	-	-	ND (1)	ND (1) 3	ND (1)	-	-
		1-Jan-98 1-Jan-99	DM DM	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1)	ND 1	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		1-Jan-99 I	DM	ND (1)	ND (1)	ND (1)	ND (1)	ND	10			-				ND (1)		-		-	ND (1)	ND (2)	ND (3)	-	
		1-Jan-01 I 13-Nov-03	DM	ND (1)	1	2	2	5	8	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (2)	ND (3)	-	-
		21-Oct-04		ND (1) ND (1.0)	ND (1) ND (5.0)	ND (1) ND (5.0)	ND (1) ND (10)	ND ND	16 23	7.1	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (2) ND (0.14)	ND (9.8)	ND (9.8)	ND (9.8)	-	ND (1)	ND (1)	ND (1)	-	ND (5
	C-127	5-Dec-06		ND (0.5)	ND (0.7)	ND (0.8)	ND (0.8)	ND	27.0	5.0	ND (1.0)	-	-	ND (1.0)	ND (0.0096)	3.0 J	8.0	2.0 J	9.0	-	-	-	-	-	0.13
		12-Dec-07 5-Nov-08		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	22 19	3.0	ND (1.0) ND (1)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0098)	1.0 J 3 J	5.0	ND (0.9) ND (1)	4.0 J	-	-	-	-	-	0.1
AOI 7		11-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	10	6.0	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	0.46	-	0.93	3.3	-	-	-	-	-	ND (0
		9-Nov-10 16-Nov-11	+	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	12 10	10	ND (1) ND (0.96)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0095)	ND (1) ND (0.90)	7.9	ND (1) ND (0.75)	2 J 2.5	-	-	-	-	-	0.07 ND (0
		8-Apr-13		ND (1)	ND (1)	ND (1)	0.57 J	0.57	7.5	2.2	ND (0.1)	ND (2)	ND (2)	ND (1)	ND (0.02)	ND (0.1)	1.64	ND (0.1)	0.59	0.285	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND
		3-Jun-14 21-May-15	_	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	0.22 J ND (0.5)	- ND	4.4	3.6	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) 0.2 J	2.15	0.225 0.1 J	0.440	0.281 0.5 J	ND (0.10) 0.1 J	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (C
		24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	5	4	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	3	0.3 J	0.7	0.4 J	0.1 J	0.1 J	ND (0.1)	0.6	ND (
		9-Nov-10 17-Nov-11		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.97)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	ND (1) 0.73	ND (1) ND (0.097)	ND (1) 0.24	ND (1) 0.34 J	-	-	-	-	-	0.08
	C-129	8-Apr-13		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.1)	ND (2)	ND (2)	ND (1)	ND (0.02)	ND (0.1)	ND								
	C-127	3-Jun-14 21-May-15		ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0096)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	0.1
		24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.1)	ND (
		1-Jan-85 I	DM	ND (0.0)	ND (0.0)	ND ND	ND (0.4)	ND	-	-	-	-	-	-		ND (0)		-	-	-	ND	ND	ND	-	
		1-Jan-86 I 1-Jan-88 I	DM	ND (0.3) ND	ND (0.3) ND	ND (0.4) ND	ND (0.6) ND	ND ND	-		-	-	-	-	-	ND (2) ND	-	-	-	-	ND ND	ND ND	ND ND	-	-
			DM	ND (F)	ND (5)	ND (5)	ND (10)	ND	-	-	-	-	-	-	-	ND (10)	-	-	-	-	ND (10)	ND (10)	ND ND	-	
			DM DM	ND (5) ND	ND (5) ND	ND (5) 0.5 J	ND (10) ND	ND 0.5	-	-	-	-	-	-	-	ND (10) ND	-	-	-	-	ND (10) ND	ND (10) ND	ND (10) ND	-	+ -
		4-Jan-96		ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-	-	-	-	-	-	-	2	-	-	-	-	2	2	2	-	
		1-Jan-97 1-Jan-98	DM DM	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND	-	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	-	
		1-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
		15-Nov-00 15-Nov-01	+	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (2) ND (2)	ND ND	ND (1) ND (1)	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (2) ND (2)	ND (3) ND (3)	-	
	N-1	12-Nov-02		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	-	-	-	-	-		ND (2)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
		13-Nov-03 20-Oct-04	_	ND (1.0) ND (1.0)	ND (1.0) ND (5.0)	ND (1.0) ND (5.0)	ND (1.0) ND (10)	ND ND	ND (1.0) ND (5.0)	- ND (5.0)	- ND (5.0)	-	-	- ND (5.0)	- ND (0.020)	ND (2.0) ND (0.14)	- ND (10)	- ND (10)	- ND (10)	-	ND (2.0)	ND (2.0)	ND (2.0)	-	ND
		19-Dec-06		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1.0)	-	-	ND (0.5)	ND (0.0097)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-			-	-	0.
		4-Dec-07 4-Nov-08		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) 0.5 J	ND 0.5 J	- ND (0.5)	ND (0.5) ND (0.5)	ND (1.0) ND (1)	- ND (0.5)	- ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0097)	ND (1.0) ND (0.9)	ND (1.0)	ND (1.0) ND (0.9)	ND (1.0) ND (0.9)	-	-	-	-	-	0.0) DN
		16-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.068 J		0.050 J	ND (0.10)	-			-	-	ND (
		8-Nov-10 17-Nov-11	_	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.96)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0097)	ND (1) 0.10 J	ND (1) ND (0.096)	ND (1) 0.13 J	ND (1) 0.27 J	-	-	-	-	-	ND (
		4-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	0.								
		2-Jun-14 19-May-15		ND (0.50) 0.9 J	ND (1.0) ND (0.5)	ND (1.0) 0.7 J	ND (1.0) 2	3.6	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) 0.2 J	ND (2.0) 0.5 J	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	1. ND (
AOI 8		23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND								
		4-Apr-13 2-Jun-14		ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND	ND (1.0) ND (1.0)	12.3	0.117	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	0.766	0.268	0.394	1.27	0.498	0.807	0.959	1.34	1.43	0.3
	N-2	19-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.7	0.2 J	0.2 J	1	0.3 J	0.6	0.8	0.8	0.9	ND (
	<u> </u>	23-May-16 20-Oct-04		ND (0.5) ND (1.0)	ND (0.5) ND (5.0)	ND (0.5) ND (5.0)	ND (0.5) ND (10)	ND ND	ND (0.5) ND (5.0)	ND (0.5) ND (5.0)	ND (0.1) ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5) ND (5.0)	ND (0.0096) ND (0.020)	0.4 J ND (0.14)	0.6 ND (10)	0.1 J ND (10)	1 ND (10)	0.2 J	0.4 J	0.5 J	0.5 J	0.4 J	ND (
	1	17-Nov-09		ND (1.0) ND (0.5)	ND (5.0) ND (0.5)	ND (5.0) ND (0.5)	ND (10) ND (0.5)	ND ND	ND (5.0) ND (0.5)	ND (5.0) ND (0.5)	ND (5.0) ND (1)	ND (0.5)	ND (0.5)	ND (5.0) ND (0.5)	ND (0.020) ND (0.0098)	0.86	- ND (10)	0.65	2.1						0.1
	1	8-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	10 ND (1.0)	3 J	11	33	-	-	-	-	-	0.2
	N-3	17-Nov-11 4-Apr-13	+	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND (0.5) ND (1.0)	ND ND	ND (0.5) ND (1.0)	ND (0.5) ND (2.0)	ND (4.8)	ND (0.5) ND (2.0)	ND (0.5) ND (2.0)	ND (0.5) ND (1.0)	ND (0.0097) ND (0.020)	ND (1.9)	0.90 J	2.1	1.8 J	-	-	-	-	-	0.1
	1	2-Jun-14		ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	2.23	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	2.69	0.297	0.662	6.08	1.59	2.43	1.53	2.26	0.971	2.4
	1	19-May-15 27-May-16	1	3 ND (0.5)	3 ND (0.5)	0.9 J ND (0.5)	4 ND (0.5)	10.9 ND	ND (0.5) ND (0.5)	0.6 J ND (0.5)	5 1	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0095)	0.9	0.3 J	0.7	13	5 0.5	0.7	0.9	0.8	0.6	1.
		1-Jan-93 I		ND	ND	ND	8	8	-	- (/		- ()	- (/	-	-	ND	-	-	-	-	ND	ND	ND	-	
	1	1-Jan-94 I 1-Jan-95 I	DM DM	ND (250) ND	ND (250) ND	480 ND	ND (500) ND	480 ND	-	-	-	-	-	-	-	ND (10) ND	-	-	-	-	ND (10) ND	ND (10) ND	ND (10) ND	-	
	1	4-Jan-96		ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
	1 .	1-Jan-97 1-Jan-98	DM DM	1 ND (10)	3 ND (10)	4 ND (10)	3 ND (10)	11 ND	-	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	-	-
	N-7	1-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-		-	-	-	-	-	ND (1)		-		-	ND (1)	ND (1)	ND (1)	-	
	1	15-Nov-00 15-Nov-01		ND (1) 28	1.7	ND (1)	ND (2)	1.7	1.2 ND (1)	-	-	-	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (2) ND (2)	ND (3) ND (3)	-	
	1	12-Nov-02		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)							ND (2)					ND (1)	ND (1)	ND (1)		
	1	13-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	-	-	-	-	-	-	ND (2.0)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYL BENZENE	1,3,5-TRIMETHYL BENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	IFAD DISSOLVED
ea of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg
		20-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)		-	-	-	-	-	ND (
		6-Dec-06 4-Dec-07	-	ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND ND	ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (1.0)		-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0098)	ND (10.0) ND (1.0)	ND (10.0) ND (1.0)	ND (10.0) ND (1.0)		-	-		-		0.1-
		4-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (1.0)	IND [1.0]	ND (1.0)	ND (1.0)		-				0.0
		16-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.059)	-	ND (0.039)	ND (0.098)	-	-	-	-	-	ND (0
	N-8	8-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	-		0.0
		17-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.97)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.077)	ND (0.097)	ND (0.077)		- ND (0.10)	- ND (0.10)	- ND (0.10)	-	-	ND (
		5-Apr-13 2-Jun-14		ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND -	ND (1.0) ND (1.0)	ND (2.0) ND (1.0)	ND (0.10) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	
		20-May-15	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.10)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.10)	ND (
		24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.1)	ND								
		1-Jan-85 DA	٨	ND	ND	ND	ND	ND		-	-	-			-	ND		-	-	-	ND	ND	ND	-	
		1-Jan-86 DA 1-Jan-88 DA		ND ND	ND ND	ND ND	ND ND	ND ND	-	-			-	-	-	ND ND	-	-	-	-	ND ND	ND ND	ND ND	-	_
		1-Jan-88 DA	A .	ND ND	ND ND	ND	ND ND	ND	-			\vdash	-	-	-	ND	-	-	-	-	ND ND	11	15		+
		1-Jan-94 DA	<u> </u>	ND (5)	ND (5)	ND (5)	ND (10)	ND	-:-			 	-	-:-		ND (10)	-	-			ND (10)	ND (10)	ND (10)		+
		1-Jan-95 DA	٨	ND	ND	ND	ND	ND		-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	
		4-Jan-96		ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND		-	-	-			-	ND (1)			-		ND (1)	ND (1)	ND (1)	-	I
		1-Jan-97 DA	٨	ND (1)	ND (1)	ND (1)	ND (1)	ND	-	-			-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)		4
		1-Jan-98 DA 1-Dec-99	^	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (2)	ND ND	-	<u> </u>	-	└	-	-	-	ND (1) ND (1)	-	-	-	-	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)		
		15-Nov-00		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)		-	 	-			ND (1)	-	-			ND (1)	ND (1)	ND (3)		+
	N-28	15-Nov-01		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	-	-	-	-	-	-	3	-	-	-	-	3	4	3	-	
		12-Nov-02		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	-	-	-	-		-	ND (2)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	
		13-Nov-03 20-Oct-04	-	ND (1.0) ND (1.0)	ND (1.0) ND (5.0)	ND (1.0) ND (5.0)	ND (1.0) ND (10)	ND DN	ND (1.0)	- ND (5.0)	- ND (5.0)		-	- ND (5.0)	- ND (0.020)	ND (2.0) ND (0.14)	- ND (10)	- ND (10)	- ND (10)	-	ND (2.0)	ND (2.0)	ND (2.0)	-	ND
		19-Dec-06		ND (1.0)	ND (3.0)	ND (0.5)	ND (10)	ND	ND (5.0) ND (0.5)	ND (5.0)	ND (1.0)		-	ND (0.5)	ND (0.020)	ND (1.0)	ND (10)	ND (1.0)	1.0 J				-		0.
		4-Dec-07		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	-	ND (0.5)	ND (1.0)	-	-	ND (0.5)	ND (0.0095)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	0.
AOI 8		3-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0099)	ND (0.9)		ND (0.9)	ND (0.9)			-	-	-	
7.0.0		16-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	0.17 J	-	0.15 J	0.38 J	-	-	-	-	-	0
		8-Nov-10 17-Nov-11		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND DN	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.95)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0098)	0.087 J	ND (1) ND (0.095)	3 J ND (0.076)	4 J ND (0.095)	-	-			-	0
		5-Apr-13	+	ND (0.5)	ND (0.3)	ND (0.3)	ND (0.3)	ND	ND (0.3)	ND (0.3)	ND (0.73)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.020)	ND (0.10)	ND (0.093)	ND (0.076)	ND (0.093)	ND (0.10)					
		1-Jan-85 DA	A .	ND ND	ND ND	ND ND	ND ND	ND	-	-	-	-	-	-	-	62	-	-	-	-	55	49	32	-	1
		1-Jan-86 DA	٨	ND	ND	ND	ND	ND		-	-	-			-	ND	-		-		ND	ND	ND	-	
		1-Jan-88 DA	4	ND	ND	ND	ND	ND	-	-			-	-	-	21	-	-	-	-	28	ND	ND	-	+-
		1-Jan-93 DA 1-Jan-94 DA	A .	ND ND (50)	ND (50)	ND (50)	ND (100)	ND ND	-			\vdash	-	-	-	ND (10)	-	-	-	-	ND 2 J	ND 1 I	ND (10)	-	+
		1-Jan-95 DA	<u> </u>	ND (SO)	ND (30)	ND (30)	0.9 J	0.9				-:-	-		-	ND (10)	-	-	-		ND ND	ND	ND (10)		+
		4-Jan-96		ND (0.3)	ND (0.3)	7.8	ND (0.6)	7.8		-	-	-			-	7		-	-	-	8	6	4	-	
		1-Jan-97 DA	٨	ND (1)	1	ND	2	3		-	-	-	-	-	-	5	-		-	-	8	4	2	-	
		1-Jan-98 DA	<u> </u>	ND (1)	ND (1)	ND (1)	ND (1)	ND	-	 '	 -	 	-	-	-	3	-	-	-	-	4	4	2	-	
		1-Dec-99 15-Nov-00	+	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (2) ND (2)	ND ND	- ND (1)	-	-	-	-	-	-	2 ND (1)	-	-	-	-	2 ND (1)	ND (2)	1 ND (3)	-	
		15-Nov-01	1	ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	-	-	-	-	-	-	4	-	-	-	-	7	5	ND (3)	-	+-
	N-37	12-Nov-02		2	ND (1)	ND (1)	ND (1)	2	ND (1)	-		-	-		-	ND (2)	-	-	-	-	3	3	ND (1)	-	
		14-Nov-03		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)			- 7			-	ND (2.0)		-		-	ND (2.0)	ND (2.0)	ND (2.0)	-	
		19-Oct-04 1-Dec-06	1	ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)		-	ND (5.0)	ND (0.020)	ND (0.14)	ND (9.9)	ND (9.9)	ND (9.9)	-	-	-		-	NE
		5-Dec-07	+	ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND ND	ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (1.0)	-: $-$: $-$: $-$: $-$: $-$: $-$: $-$: $-$: $-$:	-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0095)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	-	-				0
		3-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.9)		ND (0.9)		-					0
		11-Nov-09	İ	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.55	-	ND (0.40)	0.8	-	-				0
		8-Nov-10		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (1)	ND (1)	ND (1)	ND (1)	-	-				ND
		17-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.95)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.076)	0.21 J	ND (0.076)	ND (0.13)	- ND (0.15)	-				
		4-Apr-13 4-Jun-14	+	ND (1.0) ND (0.50)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	ND	0.25 J ND (1.0)	ND (2.0) ND (1.0)	ND (0.10) ND (0.10)	ND (2.0) ND (2.0)	ND (2.0) ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)) 0
		20-May-15	1	ND (0.50)	ND (1.0)	ND (0.5)	ND (1.0)	ND.	ND (1.0)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	0.2 J	ND (0.10)	ND				
	1	26-May-16	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)		ND (0.1)	N				



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	µg/L	µg/L
		1-Jan-85 D/ 1-Jan-86 D/	w l	330 300	ND ND	2100 1300	17100 10900	19530 12500	-	-	-	-	-	-	-	ND 21	-	-	-	-	ND 14	ND 16	ND 16	-	-
		1-Jan-88 D/	М	ND	ND 2	ND	1600	1600	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	-
		1-Jan-93 D/ 1-Jan-94 D/		20 110 J	ND (250)	4 720	567 4140	593 4970	-	-	-	-	-	-	-	ND 5 J	-	-	-	-	ND ND (10)	ND 2 J	ND (10)	-	-
		1-Jan-95 D/ 4-Jan-96	М	89 190	ND 2.8	ND 13	3040 2000	3129 2205.8	-	-	-	-	-	-	-	ND 1	-	-	-	-	ND	ND 2	ND ND (1)	-	-
		1-Jan-97 D/	м	180	2.8 ND (100)	ND (100)	1900	2080	-		-	-	-			2	-	-	-	-	2	2	ND (1)		
		1-Jan-98 D/ 1-Dec-99	М	82 J	ND (100)	ND (100)	1600	1682		-	-	-	-	-	-	8	-	-	-	-	8	12	3	-	-
		15-Nov-00		120 110	ND (100) ND (100)	ND (100) ND (100)	660 440	780 550			-	-	-			13 12	-	-	-	-	10 9	15 14	7		-
	N-57	15-Nov-01 12-Nov-02		75	ND (10) ND (1)	ND (10)	240 203	315 211	ND (10)	-	-	-	-	-	-	3 2	-	-	-	-	2	ND (2)	ND (3) ND (1)	-	-
	N-57	14-Nov-03		6 24.1	1.1	1.1	32.3	58.6	ND (1.0)			-	-			0.63 J	-	-	-		ND (2.0)	0.70 J	0.58 J		-
		19-Oct-04 1-Dec-06		38 ND (0.5)	ND (5.0) ND (0.7)	ND (5.0) ND (0.8)	140 24	178 24	ND (5.0) ND (0.5)	ND (5.0) 2.0 J	ND (5.0) ND (1.0)	-	-	ND (5.0) ND (1.0)	ND (0.020) ND (0.0097)	ND (0.14) 1.0 J	ND (9.8) ND (1.0)	ND (9.8) ND (1.0)	ND (9.8) 1.0 J	-	-	-	-	-	ND (5.0) 0.14 J
		5-Dec-07		ND (0.5)	ND (0.5)	0.5 J	19	19.5 J	-	1.0 J	ND (1.0)	-		ND (0.5)	ND (0.0096)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)						0.21 J
		4-Nov-08 11-Nov-09		ND (0.5) ND (0.5)	0.6 J 0.7 J	0.6 J ND (0.5)	93 230	94.2 J 230.7	ND (0.5) ND (0.5)	3	ND (1) ND (1)	3 8.0	0.5 J 1 J	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0098)	1 J ND (0.20)	-	ND (0.9) ND (0.20)	ND (0.9) ND (0.50)	-	-	-	-	-	0.11 J 0.090 J
		8-Nov-10		0.5 J	1	0.7 J	600	602.2 J	ND (0.5)	4	2 J	13	4	ND (0.5)	ND (0.0099)	ND (1)	1 J	ND (1)	ND (1)	-	-	-	-	-	0.070 J
		17-Nov-11 4-Apr-13		ND (0.5) ND (5.0)	ND (0.5) ND (5.0)	ND (0.5) ND (5.0)	280 384	280 384		1 J ND (10)	ND (4.8) ND (0.10)	3 5.6 J	1 J ND (10)	ND (0.5) ND (5.0)	ND (0.0096) ND (0.020)	ND (0.38) ND (0.10)	ND (0.48) ND (0.10)	ND (0.38) ND (0.10)	ND (0.48) ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	ND (0.080) 0.064 J
		2-Jun-14		ND (0.50)	0.54 J	ND (1.0)	267		ND (1.0)	1.2	ND (0.10)	5.8	2.0	ND (1.0)	ND (0.020)	0.313	ND (0.10)	ND (0.10)	0.357	ND (0.10)	0.180	0.739	0.283	1.34	ND (3.0)
		20-May-15 26-May-16		ND (5) ND (0.5)	ND (5) ND (0.5)	ND (5) ND (0.5)	250 56	250 ND		ND (5) 0.7 J	0.2 J ND (0.1)	ND (5)	ND (5) ND (0.5)	ND (5) ND (0.5)	ND (0.0096) ND (0.0097)	0.3 J	0.4 J ND (0.1)	0.3 J 0.1 J	0.9 0.3 J	0.2 J ND (0.1)	0.6 0.2 J	2 0.4 J	0.3 J	0.5 J	0.30 J 0.23 J
		1-Jan-85 D/		ND	ND	ND	ND	ND	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	-	-
		1-Jan-86 D/ 1-Jan-88 D/	М	6 96	ND ND	ND ND	ND ND	6 96	-			-	-			ND ND		-	-	-	ND ND	ND ND	ND ND		
		1-Jan-93 D/ 1-Jan-94 D/		13 ND (250)	ND ND (250)	ND ND (250)	ND ND (500)	13 ND	-	-	-	-	-	-	-	13 ND (10)	-	-	-	-	ND ND (10)	ND ND (10)	ND ND (10)	-	-
		1-Jan-95 D/		ND (230)	ND	ND	ND	ND				-	-			2 J	-	-	-		2 J	ND	ND		
		11-Jan-96 1-Jan-97 D/		16 7	ND (0.3)	ND (0.4) ND (1)	ND (0.6) ND (1)	16 12	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		1-Jan-98 D/		9	3	ND (1)	6	18	-			-				10	-	-	-		8	7	5		
		1-Dec-99 15-Nov-00		ND (100) ND (1)	ND (100) ND (1)	ND (100) ND (1)	ND (200) ND (2)	ND ND	960	-	-	-	-	-	-	3 ND (1)	-	-	-	-	3 ND (1)	2 ND (2)	1 ND (3)	-	-
	N-60	15-Nov-01		4	1	ND (1)	ND (2)	5	ND (1)	-	-	-	-	-	-	9	-	-	-	-	8	4	3	-	-
AOI 8		12-Nov-02 14-Nov-03		0.99 J	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	0.99	ND (1) ND (1.0)	-	-	-	-	-	-	2 ND (2.0)	-	-	-	-	2 ND (2.0)	2 ND (2.0)	ND (1) ND (2.0)	-	-
		19-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	1.9 J	ND (9.9)	ND (9.9)	ND (9.9)	-	-	-	-	-	ND (5.0)
		1-Dec-06 5-Dec-07		ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND ND	ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (1.0)	-	-	ND (1.0) ND (0.5)	ND (0.0096) ND (0.0096)	9.0 ND (1.0)	2.0 J ND (1.0)	ND (1.0) ND (1.0)	8.0 ND (1.0)	-	-	-	-	-	0.18 J 0.42 J
		4-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5) ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	5	-	ND (1)	4 J	-	-	-	-	-	0.24 J 0.095 J
		11-Nov-09 8-Nov-10		ND (0.5) 0.6 J	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	0.6 J		ND (0.5) ND (0.5)	ND (1) ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0098)	4.0 4 J	1 J	0.56 ND (1)	3.8 3 J	-	-	-	-	-	0.095 J
		17-Nov-11 4-Apr-13		ND (0.5) ND (2.0)	ND (0.5) 0.66 J	ND (0.5) ND (2.0)	ND (0.5) ND (2.0)	ND 0.66		ND (0.5) ND (4.0)	ND (4.8) ND (0.10)	ND (0.5) ND (4.0)	ND (0.5) ND (4.0)	ND (0.5) ND (2.0)	ND (0.0095) ND (0.020)	6.0 ND (0.10)	0.81 J 0.263	0.50 J ND (0.10)	2.2 ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	- ND (0.10)	3.9 0.072 J
		1-Jan-93 D/		ND	ND	ND	ND	ND	-	ND (4.0)	-	- 1410	ND (4.0)	ND (2.0)	-	ND	-	-	-	- IND (0.10)	ND	ND	ND	-	-
		1-Jan-94 D/ 1-Jan-95 D/		ND (250) ND	ND (250) ND	90 J ND	ND (500) ND	90 ND	-	-	-	-	-	-	-	ND (10) ND	-	-	-	-	ND (10) ND	ND (10) ND	ND (10) ND	-	-
		11-Jan-96		ND (0.3)	ND (0.3)	ND (0.4)	ND (0.6)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		1-Jan-97 D/ 1-Jan-98 D/	M I	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1) ND (1)	ND (1) ND (1)	-	-
		1-Dec-99		ND (1)	ND (1)	ND (1)	ND (2)	ND	-	-	-	-	-	-	-	ND (1)	-	-	-	-	ND (1)	ND (1)	ND (1)	-	-
		15-Nov-00 15-Nov-01		ND (1) ND (1)	ND (1) ND (1)	ND (1) ND (1)	ND (2) ND (2)	ND ND			-	-	-			ND (1) 4	-	-	-	-	ND (1)	ND (2)	ND (3) ND (3)		
		12-Nov-02 14-Nov-03		ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND ND	ND (1) ND (1.0)	-	-	-	-	-	-	ND (2) ND (2.0)	-	-	-	-	ND (1) ND (2.0)	ND (1) ND (2.0)	ND (1) ND (2.0)	-	-
	N-64	19-Oct-04		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND		ND (5.0)	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (2.0)	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	ND (5.0)
		1-Dec-06 5-Dec-07		ND (0.5) ND (0.5)	ND (0.7) ND (0.5)	ND (0.8) ND (0.5)	ND (0.8) ND (0.5)	ND ND	ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (1.0)	-	-	ND (1.0) ND (0.5)	ND (0.0097) ND (0.0096)	ND (1.0) ND (1.0)	6.0 ND (1.0)	2.0 J ND (1.0)	2.0 J ND (1.0)	-	-	-	-	-	0.18 J 2.9
		3-Nov-08		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND		ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.9)	-	ND (0.9)	ND (0.9)						18.1
		16-Nov-09 8-Nov-10		ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND		ND (0.5) ND (0.5)	ND (1) ND (0.9)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	0.14 J ND (0.9)	- 2 J	0.85 ND (0.9)	0.96 ND (0.9)	-	-	-	-	-	0.36 J 12.8
		17-Nov-11		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.98)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.12 J	7.6	1.7	0.74	-	-	-	-	-	0.37 J
		5-Apr-13 2-Jun-14	+	ND (1) ND (0.50)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND (1) ND (1.0)	ND -	ND (1) ND (1.0)	ND (2) 0.43 J	ND (0.1) ND (0.10)	0.22 J ND (2.0)	ND (2) ND (2.0)	ND (1) ND (1.0)	ND (0.02) ND (0.020)	ND (0.1) 0.113	3.16 4.92	0.873 1.02	0.177	0.738 1.08	ND (0.1) 0.112	ND (0.1) ND (0.10)	ND (0.1) 0.127	ND (0.1) ND (0.10)	ND (3) 11.8
		20-May-15		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	3	0.8	0.3 J	0.8	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.082)
		26-May-16 7-Feb-08	+	ND (0.5) 25	ND (0.5) ND (1)	ND (0.5) ND (1)	ND (0.5) ND (1)	ND -	ND (0.5) ND (1)	ND (0.5) ND (2)	ND (0.1) ND (5)	ND (0.5)	ND (0.5)	ND (0.5) ND (1)	ND (0.0094) ND (0.029)	0.3 J ND (5)	4 ND (5)	2 ND (5)	0.6 ND (5)	-	0.3 J	0.2 J	0.2 J	0.1 J	0.14 J ND (1)
	N-74	25-Jul-08		4	ND (1)	ND (1)	ND (1)	-	ND (1)	ND (2)	ND (5)	-	-	ND (1)	ND (0.029)	ND (5)	ND (5)	ND (5)	ND (5)	-	-	-	- NB (0.1)	- LID (0.1)	ND (1)
		22-May-15 27-May-16	+	10 26	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	10 26		0.5 J 0.6 J	1	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0096) ND (0.0096)	ND (0.1) ND (0.1)	3	0.5 J	0.4 J 0.5 J	0.6	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	ND (0.1) ND (0.1)	0.085 J ND (0.13)
		19-Oct-04		ND (1.0)	ND (5.0)	ND (5.0)	ND (10)	ND	ND (5.0)	26	ND (5.0)	-	-	ND (5.0)	ND (0.020)	ND (0.14)	ND (10)	ND (10)	ND (10)	-	-	-	-	-	ND (5.0)
	N-85	5-Jun-14 20-May-15	+	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	- ND	0.34 J ND (0.5)	0.30 J ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0095)	ND (0.10) ND (0.1)	ND (0.10) 0.4 J	ND (0.10) 0.2 J	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	1.5 J 0.13 J
		26-May-16		ND (0.5)	ND (0.5)	ND (0.5)			ND (0.5)	ND (0.5)	ND (0.1)		ND (0.5)		ND (0.0093)				ND (0.1)	ND (0.1)				ND (0.1)	



Table 4
Historical Perimeter Groundwater Sampling Analytical Results
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL (DIMETHYL BENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G, H,I)PERYLENE	LEAD, DISSOLVED
rea of Interest	Sample Location	Sample Date	Sample Type	μg/L	µg/L	µg/L	μg/L	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	µg/L	μg/L	µg/L
		5-Apr-13		ND (1)	ND (1)	ND (1)	ND (1)	ND	ND (1)	ND (2)	ND (0.1)	ND (2)	ND (2)	ND (1)	ND (0.02)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
	N-98	4-Jun-14 20-May-15		ND (0.50) ND (0.5)	ND (1.0)	ND (1.0) ND (0.5)	ND (1.0)	0.7	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0)	ND (1.0)	ND (0.020) ND (0.0095)	ND (0.10)	ND (0.10)	ND (0.10)		ND (0.10)	ND (0.10)	ND (0.10) ND (0.1)	ND (0.10)	ND (0.10)	
		24-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1
		17-Nov-09		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	DI	ND (0.5) ND (0.5)	ND (0.5)	ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5)	ND (0.0097)	ND (0.058)	- ND (1)	ND (0.038) ND (1)	ND (0.096)	-	-		-	-	ND (0.0
		10-Nov-10 17-Nov-11	1	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.96)	ND (0.5)	ND (0.5)	ND (0.5) ND (0.5)	ND (0.0097) ND (0.0097)	ND (1) ND (0.076)	ND (0.096)	ND (0,076)	ND (1) ND (0.096)	-	-	-	-	-	ND (0.0
	N-99	5-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)		ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.036
		4-Jun-14 20-May-15	-	ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)	- ND	ND (1.0) ND (0.5)	ND (1.0)	ND (0.10)	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020) ND (0.0095)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	2.7 J
		26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0093)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.
AOI 8		4-Apr-13 2-Jun-14		ND (1.0) ND (0.50)	0.79 J ND (1.0)	ND (1.0) ND (1.0)	ND (1.0) ND (1.0)	0.79	ND (1.0)	ND (2.0) ND (1.0)	ND (0.10)	ND (2.0) ND (2.0)	ND (2.0)	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10) ND (0.10)	ND (0.10) ND (0.10)	ND (0.10)	0.091 ND (3
A016	N-100	19-May-15	1	ND (0.50)	ND (1.0) ND (0.5)	ND (1.0)	ND (1.0)	20	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.10) 0.7	ND (2.0)	ND (2.0)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0097)	ND (0.10) ND (0.1)	0.2 J	0.3 J	0.2 J	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	ND (0.10) ND (0.1)	0.46
		23-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.
		11-Nov-09 10-Nov-10	-	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND ND	2 ND (0.5)	4	ND (1) ND (1)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0097)	5.5 1.1	- 5	8.6	ND (19) 3 J	-	-	-	-	-	ND (0.0
		17-Nov-11	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	0.8 J	4	ND (0.95)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	0.21	4.4	ND (0.55)	ND (2.1)	-		-	-	-	ND (0.0
	N-111	4-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	0.98 J	0.98	0.58 J	6.9	ND (0.10)	0.87 J	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	1.89	0.399	0.177	0.240	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.083
	N-111	2-Jun-14 20-May-15	-	ND (0.50) ND (0.5)	ND (1.0) ND (0.5)	ND (1.0) ND (0.5)	0.73 J ND (0.5)	- ND	0.48 J ND (0.5)	3.2	ND (0.10) ND (0.1)	ND (2.0) ND (0.5)	ND (2.0) ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0096)	0.546 0.1 J	2.17	ND (0.10) 0.2 J	0.973 0.4 J	0.452 0.4 J	0.332 ND (0.1)	0.351 ND (0.1)	0.258 ND (0.1)	0.332 ND (0.1)	1.6 . ND (0.0
		26-May-16		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	1.J	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.5 J	3	ND (0.1)	0.9	0.5 J	0.3 J	0.3 J	0.2 J	0.2 J	ND (0.
		26-May-16	Field Duplicate	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND (0.5)	2 J	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0096)	0.3 J	3	ND (0.1)	0.8	0.4 J	0.2 J	0.3 J	0.2 J	0.3 J	ND (0.
	N-133	4-Jun-14		7100	ND (25)	11.5 J	23.6 J	-	ND (25)	ND (25)	15.8	9.8 J	ND (50)	ND (25)	ND (0.020)	ND (0.10)	0.609	1.27	0.273	0.113	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	5.4
		15-Oct-04 18-Nov-09		490	3.0 5 J	24 24	18 15	535	ND (1.8) ND (3)	6.0 9 J	64 180	- 0.1	- 3 J	7.3 ND (3)	ND (0.020) ND (0.010)	ND (0.14) 48	ND (10)	ND (10) 93	ND (10) 110	-	ND (10)	ND (10)	ND (10)	-	ND (5 0.17
		10-Nov-10		300 22	ND (3)	3 J	ND (3)	344 25	ND (3)	ND (3)	110	8 J ND (3)	ND (3)	ND (3)	ND (0.010) ND (0.0096)	70	13 J	52	90	-	-	-	-	-	0.17
		29-Nov-11		110	0.9 J	3	5	118.9	ND (0.5)	3	89	2	0.7 J	ND (0.5)	ND (0.0098)	ND (70)	11	43	66	-	-	-		-	0.61
	MW-30	12-Jul-12 3-Apr-13		41 36.3	1.3	0.40 J	2.9	49	ND (0.5)	3.2	55 21.9	2 1.8 J	0.6 J ND (2.0)	ND (0.5)	ND (0.0096) ND (0.020)	10 5.41	19 3.48	29 8.55	21 8.61	7 ND (1.0)	2.36	3,76	10 7.02	5 4.11	0.32 ND (
		28-May-14		21.5	3.6	ND (1.0)	3.0	-	ND (1.0)	2.7	6.32	1.5 J	0.41 J	ND (1.0)	ND (0.020)	12.2	1.15	10.4	20.7	0.794	5.38	8.87	16.2	8.02	ND (3
		10-Dec-14 19-May-15	+	16.9 27	3.0	ND (1.0) ND (1)	3.0 5	34	ND (1.0) ND (1)	2.4 3.1	6.55	1.5 J 2 J	0.46 J ND (1)	ND (1.0) ND (1)	ND (0.020) ND (0.0096)	13.7 30	2.34	13.5 17	24.0 32	1.29	6.12	9.84 17	14.3	9.63 16	0.095
		16-May-16	1	61	2	ND (0.5)	2	65	ND (0.5)	1 J	14	1 J	ND (0.5)	ND (0.5)	0.022 J	48	6	34	57	2	21	30	56	28	ND (0.
	MW-32	28-May-14		7.6	0.79 J	34.2	89.1	-	7.5	6.4	12.6	91.0	36.6	ND (1.0)	ND (0.020)	2.89	0.984	3.00	3.84	0.373	1.22	1.71	4.00	1.93	ND (3
	-	10-Dec-14 6-Nov-08	+	7.5 19	0.64 J ND (0.5)	52.6 ND (0.5)	138 0.8 J	19.8	5.8 ND (0.5)	11.3 ND (0.5)	27.8 ND (1)	178 ND (0.5)	72.7 ND (0.5)	ND (1.0) ND (0.5)	ND (0.020) ND (0.0098)	7.18 63	4.31	8.68 49	10.3 79	1.77	5.01	5.49	8.72	7.71	0.097
	MW-33	12-Jul-12		1800	9	22	4 J	1835	ND (3)	ND (3)	ND (1)	ND (3)	ND (3)	ND (3)	ND (0.0096)	6	2 J	5	12	2 J	3 J	5	9	5 J	1.1
	MW-55	30-May-14 10-Dec-14		24.5	0.32 J ND (1.0)	ND (1.0)	0.35 J ND (1.0)	-	ND (1.0)	0.33 J ND (1.0)	1.70 0.111	0.49 J ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	0.400 5.28	0.684	0.262 3.03	0.521 6.33	ND (0.10) 0.424	0.148 2.47	0.321 4.41	0.583 5.58	0.373 4.51	3.2 ND (3
		18-Dec-07	1	15000	300	37	130	15467	- ND (1.0)	97	63 J	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	3.26 ND (1.0)	2.0 J	3.0 J	2.0 J	0.424	- 2.4/	4.41	3.36	4.31	0.051
		7-Nov-08		130000	640	ND (250)	ND (250)	130640	ND (250)	ND (250)	ND (500)	ND (250)	ND (250)	ND (250)	ND (0.0098)	ND (1)	-	2 J	1 J	-		-	-	-	ND (0.0
		18-Nov-09 10-Nov-10	+	79000 29000	800 390	44 J ND (25)	150 31 J	79994 29421	ND (25) ND (25)	120 67 J	ND (50) 3 J	ND (25) ND (25)	ND (25) ND (25)	ND (25) ND (25)	ND (0.0098) ND (0.0095)	ND (0.25) ND (1)	- 1 J	1.6 ND (1)	0.60 J 1 J	-	-	-	-	-	0.052 ND (0.0
		29-Nov-11		130000	1400	32 J	120	131552	ND (25)	62 J	11	ND (25)	ND (25)	ND (25)	ND (0.0099)	ND (0.079)	ND (0.50)	0.55	ND (0.098)	-		-	-	-	ND (0.0
BELMONT	MW-37	17-Jul-12 3-Apr-13		200000 96600	1200 1250	ND (250) ND (250)	ND (250) 70.7 J	201200 97920.7	ND (250) ND (250)	ND (250) ND (500)	10 2.91	ND (250) ND (500)	ND (250) ND (500)	ND (250) ND (250)	ND (0.0099) ND (0.020)	4 ND (0.10)	0.7	8 0.248	7 ND (0.10)	0.7 ND (0.10)	3 ND (0.10)	3 ND (0.10)	4 ND (0.10)	2 ND (0.10)	0.067 ND (
		30-May-14	+	236000	3040	ND (250)	197	7/720./	ND (250)	58.9 J	4.52	ND (500)	ND (500)	ND (250) ND (100)	ND (0.020)	0.173	0.409	0.767	0.485	0.244	0.126	0.140	0.227	0.138	17.
		17-Dec-14		197000	2220	ND (1000)	ND (1000)	-	ND (1000)	ND (1000)	3.60	ND (2000)	ND (2000)	ND (1000)	ND (0.020)	ND (0.10)	0.342	0.351	0.171	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	1.3
		19-May-15 16-May-16	+	90000 130000	1400 1100	ND (50) ND (100)		91491	ND (50) ND (100)	ND (50) ND (100)	6 10	ND (50) ND (100)	ND (50) ND (100)	ND (50) ND (100)	ND (0.0096) 0.024 J	0.3 J ND (0.1)	0.4 J 0.7	0.6	0.6 0.2 J	0.1 J 0.2 J	0.2 J ND (0.1)	0.2 J ND (0.1)	0.3 J ND (0.1)	0.2 J ND (0.1)	ND (0.
		5-Dec-06		2300	63	1300	740	4403	13 J	140	7500			ND (5.0)	ND (0.0097)	88.0	170	320	190						0.16
	MW-43	19-Dec-07	ļ	2600	88 47	2400 1500	1300 900	6388 3417	-	150 130	9700 5100	390	100	ND (25) ND (3)	ND (0.0096) ND (0.0097)	8.0 0.8	65 51	79 54	24 4	- 10	- 0.6	- 0.4 J	- 0.6	0.3 J	ND (0.0
	MW-43	19-Jul-12 30-May-14	1	970 1110	75.9	3200	1710	341/	5.3 J	185	7070	802	200	ND (3) ND (20)	ND (0.0097) ND (0.020)	0.895	50.1	56.0	3.51	10.2	0.622	0.4 J 0.597	0.6	0.660	ND (0.0
		18-Dec-14		681	22.5	63.2	73.7	-	5.2	100	124	14.4	6.7	ND (1.0)	ND (0.020)	0.964	15.9	15.9	1.91	2.20	0.701	0.555	0.960	0.482	ND (3
		15-Oct-04 18-Dec-07	1	ND (1.0) ND (0.5)	ND (5.0) ND (0.5)	ND (5.0) ND (0.5)	ND (10) ND (0.5)	ND ND	ND (5.0)	ND (5.0) ND (0.5)	ND (5.0) ND (1.0)	-	-	ND (5.0) ND (0.5)	ND (0.020) ND (0.0094)	ND (0.14) ND (1.0)	ND (10) ND (1.0)	ND (10) ND (1.0)	ND (10) 3.0 J	-	-	-	-	-	ND (5
		7-Nov-08	<u> </u>	0.8 J	ND (0.5)	3	0.6 J	4.4	0.7 J	1 J	48	9	0.9 J	ND (0.5)	ND (0.0097)	ND (1.0)		1 J	2 J						ND (0.0
		18-Nov-09		94	2	ND (0.5)	ND (0.5)	96	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0098)	ND (0.057)	-	0.066 J	0.46	-	-	-	-	-	ND (0.
		10-Nov-10 29-Nov-11	+	ND (0.5) 0.6 J	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND 0.6	0.5 J ND (0.5)	ND (0.5) ND (0.5)	ND (1) ND (0.99)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.5) ND (0.5)	ND (0.0098) ND (0.0098)	ND (1) 0.75	ND (1) ND (0.099)	ND (1) 0.64	ND (1) 1.3	-	-	-	-	-	ND (0.
	S-74	12-Jul-12		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND	0.6 J	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.0097)	0.1 J	ND (0.1)	0.2 J	1	ND (0.1)	0.2 J	0.2 J	0.3 J	0.1 J	0.1
		3-Apr-13		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND	ND (1.0)	ND (2.0)	1.20	ND (2.0)	ND (2.0)	ND (1.0)	ND (0.020)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND
		27-May-14 8-Dec-14	 	3.0 ND (0.50)	1.2 ND (1.0)	ND (1.0) ND (1.0)	2.4 0.72 J	-	0.69 J 0.37 J	ND (1.0) ND (1.0)	0.580	0.67 J 0.54 J	ND (2.0) 0.34 J	ND (1.0) ND (1.0)	ND (0.020) ND (0.020)	0.191	0.183 ND (0.10)	0.614	0.462	0.110 ND (0.10)	0.130	ND (0.10) 0.167	0.165	ND (0.10) 0.164	ND (3
		19-May-15	1	ND (0.50)	ND (0.5)	ND (0.5)	ND (0.5)	ND	2	ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.020)	0.5	ND (0.10)	0.3 J	1	ND (0.10)	0.141	0.107	0.8	0.104	ND (0
		16-May-16		ND (0.5)	ND (0.5)		ND (0.5)			ND (0.5)	ND (0.1)	ND (0.5)	ND (0.5)		ND (0.0097)	ND (0.1)			ND (0.1)			ND (0.1)	ND (0.1)	ND (0.1)	



Table 4 Historical Perimeter Groundwater Sampling Analytical Results Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

				BENZENE	TOLUENE	ETHYLBENZENE	XYLENES, TOTAL (DIMETHYLBENZENE)	TOTAL BTEX	METHYL TERTIARY BUTYL ETHER	ISOPROPYLBENZENE (CUMENE)	NAPHTHALENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1,2-DICHLOROETHANE (EDC)	1,2-DIBROMOETHANE (EDB)	CHRYSENE	FLUORENE	PHENANTHRENE	PYRENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	LEAD, DISSOLVED
Area of Interest	Sample Location	Sample Date	Sample Type	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
		15-Oct-04		1500	ND (80)	2100	1800	5400	290	210	14000	-	-	ND (74)	ND (0.020)	270	800	1800	740	-	-	-	-	-	ND (5.0)
		5-Dec-06		150	5.0	2100	1700	3955	17	290	13000	-	-	ND (1.0)	ND (0.0099)	580	2100	4300	1700	-	-	-	-	-	0.15 J
		18-Dec-07		660	12 J	1400	870	2942 J	-	190	12000	-	-	ND (10)	ND (0.0094)	240	700	1500	570	-				-	0.15 J
		7-Nov-08		240	ND (5)	1600	790	2630	31	170	13000	1100	140	ND (5)	ND (0.0097)	12	-	96	24	-	-	-	-		ND (0.050)
		18-Nov-09		240	ND (10)	1000	510	1750	ND (10)	230	9100	1200	130	ND (10)	ND (0.0097)	16	-	180	63	-	-	-	-	-	ND (0.050)
		10-Nov-10		84	2	1300	430	1816	8	180	9200	1200	91	ND (1)	ND (0.0097)	14 J	75	120	35 J	-	-	-	-	-	0.20 J
BELMONT	TW-8	29-Nov-11		37	ND (3)	1100	280	1417	8	200	11000	960	78	ND (3)	ND (0.0097)	ND (29)	120	180	68	-	-	-	-	-	0.84 J
		18-Jul-12		80	ND (5)	1900	330	2310 1290	6 J	270	16000	1800	120	ND (5)	ND (0.0098)	26	110	180	59	44	25	18	22	8	0.74 J
		3-Apr-13 27-May-14	 	224	ND (20)	874 1100	192		ND (20)	216	2400 5970	902	52.8	ND (20)	ND (0.020) ND (0.020)	1.92	37.8	43.2	8.63	8.65	2.08	1.39	1.52	0.592	ND (1)
		11-Dec-14	1	39.3 8.4	0.60 J ND (10)	184	136 18.8	-	5.3 ND (10)	346 61.8	3150	1620 269	68.4 15.4 J	ND (1.0) ND (10)	ND (0.020)	0.946 4.43	21.3	16.9 62.1	3.01	4.80 13.7	0.849 6.39	0.552 3.62	0.641 5.02	0.256	ND (3.0) ND (3.0)
		19-May-15		63	ND (3)	670	68	801	4.1	180	7300	880	48	5	ND (0.0096)	5	56	57	17.0	12	4	3.02	3.02	1.55	0.089 J
		16-May-16	f	500	0.9 1	560	89	1149.9	4	150	6000	530	52	2	ND (0.0077)	9	56	67	18	15	7	5	6	3	ND (0.13)

Concentration was detected.
Indicates concentration not detected above the method detection limit or laboratory reporting limit (in parentheses, if applicable).
Indicates the analyte is detected in the associated blank as well as in the sample.
Indicates an identified compound in an analysis that has been diluted. This flag alers the data user to any differences between the concentrations reported in the two analyses.
Date missing from original field records. Date of completion estimated. If only month and year are available, the default will be the first day of the month.
Indicates an estimated value abovie the method detection limit but below the laboratory reporting limit or limit of quantitation.
Indicates an estimated value that is biased low.
Sample was collected below LNAPL

Micrograms per liter Not analyzed μg/L



APPENDIX 1 Remediation System Recovery Data

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC Groundwater and LNAPL Recovery Systems Operational Data AOI 1: Belmont Terminal

First and Second Quarters 2016

Date	Total Flow (gallons)	Period Total Flow (gallons)	Average Flow Rate (gpm)	LNAPL Recovered in Period (gallons)	Total LNAPL Recovered (gallons)
8-Jan-16	86,634,554	5,087	0.32	0	251,017
13-Jan-16	86,716,844	82,290	11.43	0	251,017
21-Jan-16	86,861,699	144,855	12.57	0	251,017
25-Jan-16	86,937,265	75,566	13.12	0	251,017
4-Feb-16	87,117,422	180,157	12.51	0	251,017
9-Feb-16	87,204,767	87,345	12.13	0	251,017
18-Feb-16	87,353,450	148,683	11.47	0	251,017
24-Feb-16	87,450,897	97,447	11.28	0	251,017
29-Feb-16	87,537,489	86,592	12.03	68.1	251,086
10-Mar-16	87,694,865	157,376	10.93	39.9	251,125
17-Mar-16	87,805,297	110,432	10.96	0	251,125
25-Mar-16	87,936,254	130,957	11.37	0	251,125
30-Mar-16	88,022,588	86,334	11.99	27.4	251,153
5-Apr-16	88,128,186	105,598	12.22	0	251,153
13-Apr-16	88,315,127	186,941	16.23	0	251,153
20-Apr-16	88,408,324	93,197	9.25	16.5	251,169
27-Apr-16	88,499,302	90,978	9.03	28.6	251,198
4-May-16	88,578,074	78,772	7.81	0	251,198
9-May-16	88,646,251	68,177	9.47	0	251,198
19-May-16	88,775,224	128,973	8.96	0	251,198
25-May-16	88,858,517	83,293	9.64	47.0	251,245
3-Jun-16	89,047,271	188,754	14.56	7.9	251,253
9-Jun-16	89,176,016	128,745	14.90	5.2	251,258
16-Jun-16	89,302,981	126,965	12.60	34.1	251,292
22-Jun-16	89,408,643	105,662	12.23	0	251,292
1-Jul-16	89,568,046	159,403	12.30	32.1	251,324

NOTES:

LNAPL: Light Non-Aqueous Phase Liquid

The Belmont Terminal systems consist of the Loading Rack system (RW-4 and RW-21 through RW-25) and the Frontage Road system (RW-15 and RW-26 through RW-32). Both systems have a dedicated totalizer.

On August 30, 2012, the Frontage Road system was turned off and remained off for the reporting period. The system will remain offline unless there is a significant increase of LNAPL in the recovery wells. The recovery wells were routinely gauged, and no product was detected during the second half of 2015 and the first half of 2016.

The Loading Rack system was operational for the reporting period with the exception of the following: The RW-22 water pump was tripped on December 28; the water pump was left off. On January 8, the flow meter was clogged, and the RW-24 product float was inoperable. RW-24 was inoperable again January 13 due to a broken probe wire at the product float. The product float was removed and repalced on January 15, and the RW-24 product pump was restarted. The RW-23 and RW-24 product pumps were shut off on April 27. Thw RW-23 propduct pump was restarted on May 4. The RW-4 product pump was removed for repairs on May 19 due to missing magnets (on the low float). On May 25, the product pumps were removed from RW-23 and RW-24 for maintenance. The RW-23 and RW-24 product pumps were installed and restarted on June 3. The RW-24 product pump was shut off from June 16 to June 22.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC AOI 1: Shunk Street Sewer Ventilation System and Biofilter Organic Vapor Concentrations

First and Second Quarters 2016

Date	Flow Rate (CFM)	Sewer Air PID	PID PID Temperature						
	(Oim)	(ppm)	(ppm)	Cell #1	Cell #2	Cell #3	Cell #1	Cell #2	Cell #3
8-Jan-16	4,400	0	0	0	0	0	60	60	60
13-Jan-16	4,100	1	1	0	0	0	58	58	58
21-Jan-16	4,100	1	1	0	0	0	60	60	60
25-Jan-16	4,100	1	1	0	0	0	60	60	60
4-Feb-16	NM	NM	NM	NM	NM	NM	NM	NM	NM
9-Feb-16	4,100	0	0	0	0	0	60	60	60
18-Feb-16	4,160	1	1	0	0	0	56	56	56
24-Feb-16	4,160	0	0	0	0	0	56	56	56
29-Feb-16	4,160	1	1	0	0	0	56	56	56
10-Mar-16	4,160	2	2	0	0	0	68	68	68
17-Mar-16	4,160	1	1	0	0	0	60	60	60
25-Mar-16	4,160	0	0	0	0	0	68	68	68
30-Mar-16	4,200	1	1	0	0	0	68	68	68
5-Apr-16	4,200	1	1	0	0	0	60	60	60
13-Apr-16	4,200	1	1	0	0	0	64	64	64
20-Apr-16	4,200	1	1	0	0	0	65	65	65
27-Apr-16	4,200	1	1	0	0	0	62	62	62
4-May-16	4,200	1	1	0	0	0	64	64	64
9-May-16	4,200	1	1	0	0	0	78	78	78
19-May-16	4,200	0	0	0	0	0	74	74	74
25-May-16	4,200	1	1	0	0	0	70	71	70
3-Jun-16	4,200	1	1	0	0	0	70	70	70
9-Jun-16	4,200	1	1	0	0	0	78	78	78
16-Jun-16	4,200	1	1	0	0	0	70	70	70
22-Jun-16	4,200	1	1	0	0	0	80	80	80
1-Jul-16	4,200	1	1	0	0	0	84	84	84

NOTES:

CFM: cubic feet per minute

ppm: parts per million

F: Degrees Fahrenheit

NM = not measured

Vapor concentrations are collected using a MultiRAE Lite Photoionization Detector (PID).

The Sewer Air reading is collected from the Shunk Street sewer air stream only.

The air stripper was taken offline on June 17, 2004; therefore, the Total Flow is equal to the Sewer Air reading.

The system was operational for the reporting period with the following exception: On January 8, the belts were replaced on the blower.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC AOI 1: Shunk Street Sewer Biofilter System pH Data

First and Second Quarters 2016

Date	Leachate pH	Biofilter Treatment Cell - Soil pH					
Dule	Leachale ph	Cell 1	Cell 2	Cell 3			
25-Jan-16	5.48						
29-Feb-16	NA						
30-Mar-16	NA	5.91	5.88	5.62			
27-Apr-16	NA						
25-May-16	NA						
3-Jun-16	NA						
9-Jun-16	NA						
16-Jun-16	NA						
22-Jun-16	NA						
1-Jul-16	NA	6.00	5.97	5.83			

NOTES:

Leachate pH readings are collected on a monthly basis.

Media pH readings are collected on a quarterly basis.

NA = No leachate available to record pH.

The system was operational for the reporting period with the following exception: On January 8, the belts were replaced on the blower.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC Total Fluids Recovery System Operational Data AOI 1: 26th Street Sewer Area

First and Second Quarters 2016

Date	Total Flow (gallons)	Period Total Flow (gallons)	Calculated System Flow Rate (gpm)	LNAPL Recovered in Period (gallons)	Total LNAPL Recovered (gallons)
5-Jan-16	57,599,892	0	0.00	NA	9,148.60
12-Jan-16	57,826,087	226,195	22.44	NA	9,148.60
19-Jan-16	58,052,282	226,195	22.44	NA	9,148.60
26-Jan-16	58,278,478	226,195	22.44	NA	9,148.60
2-Feb-16	58,542,070	263,592	26.15	NA	9,148.60
9-Feb-16	58,774,313	232,243	23.04	NA	9,148.60
16-Feb-16	59,149,289	374,976	37.20	NA	9,148.60
23-Feb-16	59,355,727	206,438	20.48	NA	9,148.60
3-Mar-16	59,698,001	342,274	26.41	NA	9,148.60
9-Mar-16	59,922,814	224,813	26.02	NA	9,148.60
16-Mar-16	60,139,130	216,317	21.46	NA	9,148.60
25-Mar-16	60,474,276	335,146	25.86	NA	9,148.60
29-Mar-16	60,511,270	36,994	6.42	NA	9,148.60
8-Apr-16	60,808,342	297,072	20.63	NA	9,148.60
12-Apr-16	60,949,346	141,005	24.48	NA	9,148.60
19-Apr-16	61,169,695	220,349	21.86	NA	9,148.60
26-Apr-16	61,404,761	235,066	23.32	NA	9,148.60
3-May-16	61,695,266	290,506	28.82	NA	9,148.60
9-May-16	61,882,582	187,315	21.68	NA	9,148.60
20-May-16	62,249,436	366,854	23.16	NA	9,148.60
23-May-16	62,351,863	102,427	23.71	NA	9,148.60
1-Jun-16	62,650,591	298,728	23.05	NA	9,148.60
8-Jun-16	62,870,134	219,542	21.78	NA	9,148.60
15-Jun-16	63,089,676	219,542	21.78	NA	9,148.60
22-Jun-16	63,353,167	263,491	26.14	NA	9,148.60
28-Jun-16	63,596,470	243,302	28.16	NA	9,148.60

NOTES:

LNAPL: Light Non-Aqueous Phase Liquid

The Total Flow and Total LNAPL Recovered includes historical totals from former recovery wells RW-400 through RW-406

The 26th Street Sewer Area (26th Street North) system consists of 20 total fluids recovery wells [15 wells on-site along 26th Street (\$-180, \$-181, \$-182, \$-183, \$-184, \$-185, \$-186, \$-187, \$-188, \$-189, \$-190, \$-191, \$-192, RW-400 & RW-402) and five wells offsite on CSX property (\$-193, \$-194, \$-265, \$-267, & \$-268)] which discharge directly to a process sewer; therefore, the volume of recoverable LNAPL cannot be quantified.

The 26th Street Sewer Area system was restarted on October 12, 2015. The system was restarted on December 30 and shut off December 31. On January 5, the system was restarted, and S-184 and S-192 were hung up. S-184 was hung up on January 19, and the valves on the (flow meter) bypass line were frozen. On February 2, S-184, S-186, and S-189 were hung up. S-186 was inoperable on February 16. The pump was removed for maintenance. On February 23, S-184 was inoperable; left pump off. All pumps were removed for semi-annual maintenance on March 2. The system was shut off from March 25 to March 28 due to a pump fire near 129 tank. S-186 and S-189 were hung up on May 3. On May 20, S-186 and S-192 were hung up. S-191 was inoperable on May 23 and removed for service. S-186 was hung up on June 8, and S-191 was cleaned, reinstalled and restarted. On June 13, the system was shut down for repairs on S-185. The repairs were completed and the system was restarted. S-187 was hung up on June 15 and June 21. The compressor was inoperable on June 22. The belts were replaced, and the system was restarted.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC AOI 1: 26th Street & Packer Avenue Sewers Biofilter System pH Data

First and Second Quarters 2016

Date	Lagabeta nU	Biofilter Bed - Soil pH						
Dale	Leachate pH	Cell 1	Cell 2	Cell 3	Cell 4			
27-Jan-16	6.22							
29-Feb-16	6.94							
29-Mar-16	6.88	7.05	7.11	5.96	6.02			
26-Apr-16	6.79							
24-May-16	6.97							
2-Jun-16								
7-Jun-16								
15-Jun-16								
21-Jun-16								
28-Jun-16	7.04	6.97	7.03	6.01	6.12			

NOTES:

Media pH readings are collected on a quarterly basis.

NM: Field reading not measured due to system upgrades

Cells 3 and 4 were shut off on June 18, 2010 and remained off for the reporting period as they are not currently needed for vapor treatment.

The system was operational for the reporting period with the exception of the following: The system was shut off on September 30, 2015 for upgrades and remained off the reporting period.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC AOI 1: 26th Street & Packer Avenue Sewers Biofilter System Organic Vapor Concentrations

First and Second Quarters 2016

	Biofilter Influent				Biofilter Effluent						
Date	Packer Ave. (ppm)	26 th Street (ppm)	ST-1 (Combined Influent) (ppm)	Cell-1N	Cell-1S	Cell-2N	Cell-2\$	Cell-3N	Cell-3S	Cell-4N	Cell-4S
08-Jan-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
12-Jan-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
21-Jan-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
27-Jan-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
03-Feb-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
10-Feb-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
18-Feb-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
26-Feb-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
29-Feb-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
09-Mar-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
16-Mar-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
22-Mar-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
29-Mar-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
08-Apr-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
12-Apr-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
19-Apr-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
26-Apr-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
03-May-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
13-May-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
20-May-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
24-May-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
02-Jun-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
07-Jun-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
15-Jun-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
21-Jun-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA
28-Jun-16	NM	NM	NM	NM	NM	NM	NM	NA	NA	NA	NA

NOTES:

ppm: parts per million NA: Not applicable

NM: Field reading not measured due to system upgrades

Vapor concentrations are collected using a MultiRAE Lite Photoionization Detector (PID).

Cells 3 and 4 were shut off on June 18, 2010 and remained off for the reporting period as they are not currently needed for vapor treatment.

The system was operational for the reporting period with the exception of the following: The system was shut off on September 30, 2015 for upgrades and remained off the rest of the reporting period.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC Groundwater and LNAPL Recovery System Operational Data AOI 2: Pollock Street West End System

First and Second Quarters 2016

Date	Period Total Flow (gallons)	Total Flow (gallons)	LNAPL Recovered in Period (gallons)	Total LNAPL Recovered (gallons)
4-Jan-16	65,600	27,729,605	451.1	60,341
11-Jan-16	44,200	27,773,805	31.0	60,372
19-Jan-16	33,000	27,806,805	4.8	60,377
25-Jan-16	20,700	27,827,505	15.5	60,392
1-Feb-16	11,000	27,838,505	23.8	60,416
10-Feb-16	39,000	27,877,505	23.6	60,440
16-Feb-16	9,400	27,886,905	3.3	60,443
22-Feb-16	19,400	27,906,305	5.0	60,448
29-Feb-16	46,500	27,952,805	1.6	60,449
7-Mar-16	29,500	27,982,305	11.1	60,461
14-Mar-16	39,000	28,021,305	19.7	60,480
21-Mar-16	31,800	28,053,105	8.7	60,489
28-Mar-16	28,500	28,081,605	9.8	60,499
4-Apr-16	36,100	28,117,705	0.0	60,499
11-Apr-16	41,400	28,159,105	3.8	60,503
18-Apr-16	73,000	28,232,105	0.0	60,503
25-Apr-16	129,000	28,361,105	0.0	60,503
2-May-16	119,600	28,480,705	25.2	60,528
10-May-16	128,600	28,609,305	29.9	60,558
16-May-16	97,500	28,706,805	18.6	60,576
23-May-16	106,300	28,813,105	27.9	60,604
31-May-16	3,500	28,816,605	26.9	60,631
6-Jun-16	113,000	28,929,605	0.0	60,631
13-Jun-16	142,000	29,071,605	0.0	60,631
20-Jun-16	128,800	29,200,405	0.0	60,631
27-Jun-16	100,800	29,301,205	0.0	60,631

NOTES:

LNAPL: Light Non-Aqueous Phase Liquid

The Pollock Street West End system was started on February 23, 2012. The groundwater and LNAPL recovery totals do not include historical totals from the former Pollock Street Vertical system recovery wells.

On January 4 the system down on holding tank full alarm; vac'd out the tanks and restarted the pumps in RW-105, RW-122, and RW-124 only. On February 16, RW-122 was hung up, and S-315 was restarted. RW-122 was hung up on February 22, and RW-128 was restarted. On February 29, RW-122 and S-315 were turned off. On March 7, RW-122 and S-315 were restarted. RW-128 was shut off on March 14. On March 21, RW-124 was inoperable; removed, cleaned and replaced the clogged discharge hose. RW-124 was restarted on March 22; however, the underground discharge line is clogged. The RW-105, RW-124, and RW-124 discharge lines were cleaned on March 31, and RW-124 was restarted. On April 11, RW-127 was restarted. The system was down on high OWS alarm on April 18; cleaned the floats and restarted system. On May 16, RW-122 was hung up. RW-128 and RW129 were restarted on May 23, and the totalizer and RW-122 were inoperable; the effluent line was cleared, the totalized was removed and cleaned, and RW-122 was removed for cleaning. The system was shut down on May 31 to repair the transfer pumps. The system was restarted on June 1. RW-122 was cleaned, reinstalled, and restarted on June 10.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC Groundwater and LNAPL Recovery System Operational Data AOI 4: Penrose Avenue Remediation System

First and Second Quarter 2016

Date	Period Total Flow (gallons)	Total Flow (gallons)	Average Daily Flow (gpd)	LNAPL Recovered in Period (gallons)	Total LNAPL Recovered (gallons)
07-Jan-16	142,350	12,776,260	14,235	18.5	633.7
12-Jan-16	82,370	12,858,630	16,474	0	633.7
21-Jan-16	58,210	12,916,840	6,468	0	633.7
27-Jan-16	91,500	13,008,340	15,250	16	649.7
03-Feb-16	58,380	13,066,720	8,340	11.3	661.0
08-Feb-16	45,270	13,111,990	9,054	1.9	662.9
17-Feb-16	0	13,111,990	0	11.4	674.3
26-Feb-16	165,490	13,277,480	18,388	5.8	680.1
03-Mar-16	48,210	13,325,690	8,035	3.8	683.9
08-Mar-16	94,370	13,420,060	18,874	1.9	685.8
16-Mar-16	146,970	13,567,030	18,371	0	685.8
22-Mar-16	37,910	13,604,940	6,318	0	685.8
29-Mar-16	121,270	13,726,210	17,324	0	685.8
07-Apr-16	70,720	13,796,930	7,858	3.9	689.7
12-Apr-16	85,970	13,882,900	17,194	0	689.7
19-Apr-16	11,900	13,894,800	1,700	3.8	693.5
26-Apr-16	10,240	13,905,040	1,463	5.8	699.3
03-May-16	50,360	13,955,400	7,194	5.7	705.0
13-May-16	101,780	14,057,180	10,178	1.9	706.9
18-May-16	82,300	14,139,480	16,460	2.0	708.9
24-May-16	113,710	14,253,190	18,952	0	708.9
02-Jun-16	176,500	14,429,690	19,611	7.5	716.4
09-Jun-16	136,860	14,566,550	19,551	4	720.4
15-Jun-16	111,090	14,677,640	18,515	2.7	723.1
21-Jun-16	106,540	14,784,180	17,757	6.8	729.9
28-Jun-16	30,080	14,814,260	4,297	1	730.9

NOTES:

gpd: gallons per day

LNAPL: Light Non-Aqueous Phase Liquid

The Penrose Avenue Remediation System consisting of 18 recovery wells (RW-700 through RW-717) was started on March 20, 2013. Groundwater and LNAPL are extracted using pneumatic pumps, and total fluids pass through an oil/water separator (OWS). The groundwater is discharged to the Philadelphia Water Department (PWD) sanitary sewer system along Penrose Avenue, and LNAPL is recovered in a 550-gallon storage tank.

The system was operational for the reporting period with the following exceptions: The flow meter was inoperable on January 21; removed, cleaned, and reinstalled. RW-700 through RW-704 were removed for semi-annual maintenance on January 29. The flow meter was inoperable on February 3, February 8, February 17, March 22, and April 19. The flow meter was inoperable on April 26, and RW-705 was inoperable due to debris under the float assembly. On May 3, the flow meter was inoperable. The system was shut off on May 18 to clean the separator, tranfer pump and influent/effluent lines. On June 28, RW-706 was removed for cleaning.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC **Biofiltration Operational Data**

AOI 4: Penrose Avenue Remediation System

First and Second Quarters 2016

	Biofilter									GAC	
	Flow	Rate	Tempo	erature			Vapor Cor	centration	n Vapor Concentration		
Date	Influent (CFM)	Effluent (CFM)	Influent (°F)	Effluent (°F)	Humidity (%)		Influent (ppm)	Effluent (ppm)	GAC-1 Effluent (ppm)	GAC-2 Effluent (ppm)	
7-Jan-16	29.3	0.0436	70	52	89.0	57.7	450	0	0	0	
12-Jan-16	29.1	0.0436	66	60	88.0	61.8	375	0	0	0	
21-Jan-16	27.8	0.565	60	48	75.3	45.7	469	0	0	0	
27-Jan-16	29.0	0.175	72	56	94.8	64.3	420	0	0	0	
3-Feb-16	29.1	0.250	72	56	88.0	73.4	326	14	0	0	
8-Feb-16	29.4	0.250	70	64	88.6	63.7	405	32	0	0	
17-Feb-16	29.1	0.0655	72	54	95.0	58.7	212	44	0	0	
26-Feb-16	28.9	0.07	74	62	96.1	59.0	318	50	0	0	
3-Mar-16	28.9	0.436	60	62	96.0	55.8	261	9	0	0	
8-Mar-16	29.0	0.075	96	66	57.1	63.9	292	0	0	0	
16-Mar-16	29.0	0.075	52	50	81.8	48.2	357	53	0	0	
22-Mar-16	29.3	0.07	70	62	82.4	63.3	219	130	0	0	
29-Mar-16	0	0	84	70	91.0	74.2	27	0	0	0	
7-Apr-16	0	0	82	62	91.0	72.9	308	22	0	0	
12-Apr-16	0	0	84	66	92.5	78.7	260	51	0	0	
19-Apr-16	26.9	29.2	90	76	51.0	59.9	253	112	60	25	
26-Apr-16	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
3-May-16	15.6	44.6	60	60	98.3	58.2	150	65	0	0	
13-May-16	17.6	43.7	72	68	85.7	64.3	120	26	0	0	
18-May-16	9.7	49	72	56	74.7	54.3	51	26	0	0	
24-May-16	13.3	43.9	74	62	83.2	61.8	46	19	19	5	
2-Jun-16	18.2	42	76	70	80.8	65.7	77	29	29	0	
9-Jun-16	16.3	42.4	70	60	73.4	55.1	77	33	33	0	
15-Jun-16	17.5	47.3	70	60	70.9	63.3	195	49	49	5	
21-Jun-16	14.1	35.7	86	76	73.5	71.2	170	54	54	0	
28-Jun-16	13.6	32.8	84	76	84.3	75.7	528	48	0	0	

NOTES:

GAC = Granular activated carbon

CFM = Cubic feet per minute

°F = Degrees Fahrenheit

ppm = Parts per million

NM = Field reading not measured
Vapor concentrations are collected using a MultiRAE Lite Photoionization Detector (PID)

The system was operational for the reporting period with the exception of the following: On January 21, the biofilter lines were frozen; therefore, the biofilter could not be humidified. On March 29, the blower was shut off for piping upgrades. The carbon canisters were replaced on April 19; shut off influent blower. The biofilter remained off until May 3 (approximate) for rebedding. On June 28, the system was down due to a OWS alarm.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC Recovery System Operational Data AOI 7: 3 Separator System

First and Second Quarters 2016

Date	Total Flow (gallons)	Period Total Flow (gallons)	Calculated System Flow Rate (gpm)	LNAPL Recovered in Period (gallons)	Total LNAPL Recovered (gallons)
7-Jan-16	14,534,385	96,400	133.89	0.1	107,966.0
12-Jan-16	14,572,885	38,500	53.47	43.3	108,009.3
21-Jan-16	14,645,685	72,800	101.11	267.9	108,277.2
26-Jan-16	14,676,885	31,200	43.33	131.7	108,408.9
2-Feb-16	14,724,585	47,700	66.25	226.7	108,635.5
8-Feb-16	14,771,585	47,000	65.28	75.7	108,711.3
17-Feb-16	14,843,985	72,400	100.56	0.0	108,711.3
23-Feb-16	14,896,085	52,100	72.36	161.4	108,872.6
3-Mar-16	14,992,185	96,100	133.47	66.2	108,938.8
8-Mar-16	15,047,885	55,700	77.36	84.6	109,023.4
14-Mar-16	15,107,985	60,100	83.47	58.2	109,081.6
22-Mar-16	15,185,185	77,200	107.22	40.4	109,122.0
28-Mar-16	15,232,585	47,400	65.83	43.2	109,165.2
5-Apr-16	15,297,485	64,900	90.14	53.3	109,218.5
11-Apr-16	15,340,685	43,200	60.00	37.0	109,255.6
18-Apr-16	15,399,185	58,500	81.25	130.5	109,386.1
25-Apr-16	15,452,085	52,900	73.47	80.5	109,466.5
2-May-16	15,498,785	46,700	64.86	40.5	109,507.1
5-May-16	15,513,385	14,600	20.28	46.3	109,553.3
12-May-16	15,587,385	74,000	102.78	55.4	109,608.7
17-May-16	15,634,785	47,400	65.83	18.5	109,627.2
23-May-16	15,683,885	49,100	68.19	27.8	109,655.0
1-Jun-16	15,771,485	87,600	121.67	28.3	109,683.3
7-Jun-16	15,840,185	68,700	95.42	12.8	109,696.1
13-Jun-16	15,901,885	61,700	85.69	8.7	109,704.8
20-Jun-16	15,950,785	48,900	67.92	27.1	109,731.9
28-Jun-16	15,994,585	43,800	60.83	88.2	109,820.1

gpm: gallons per minute

LNAPL: Light Non-Aqueous Phase Liquid

The 3 Separator System is a hydraulic control system constructed of ten recovery wells (RW-801 through RW-810) which was started on August 23, 2012. Groundwater and LNAPL are extracted using pneumatic submersible pumps, and total fluids pass through an oil/water separator (OWS). Water is discharged to an on-site process sewer, and LNAPL is recovered in a tank and recycled by the refinery. Groundwater and LNAPL recovery totals include system startup through the end of the first half of 2016.

The system was operational for the reporting period with the exception of the following: On January 14, all pumps were removed for semi-annual maintenance. The system was down on high OWS on May 2, and a leak was observed on the influent side of the OWS - temporarily shut off RW-810 until May 5.

Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC AOI 8: Jackson Street Sewer Water Curtain

First and Second Quarters 2016

		PID readings (ppm)		
Date	Blower	Water Curtain	Interceptor Chamber	Comments
05-Jan-16	NA	0.0	0.0	
13-Jan-16	NA	0.0	0.0	
21-Jan-16	NA	0.0	0.0	
27-Jan-16	NA	0.0	0.0	
03-Feb-16	NA	0.0	0.0	
11-Feb-16	NA	0.0	0.0	
17-Feb-16	NA	0.0	0.0	
24-Feb-16	NA	0.0	0.0	
03-Mar-16	NA	0.0	0.0	
08-Mar-16	NA	0.0	0.0	
14-Mar-16	NA	0.0	0.0	
25-Mar-16	NA	0.0	0.0	
29-Mar-16	NA	0.0	0.0	
04-Apr-16	NA	0.0	0.0	
12-Apr-16	NA	0.0	0.0	
20-Apr-16	NA	0.0	0.0	
29-Apr-16	NA	0.0	0.0	
06-May-16	NA	0.0	0.0	
11-May-16	NA	0.0	0.0	
20-May-16	NA	0.0	0.0	
24-May-16	NA	0.0	0.0	
02-Jun-16	NA	0.0	0.0	
07-Jun-16	NA	0.0	0.0	
17-Jun-16	NA	0.0	0.0	
23-Jun-16	NA	0.0	0.0	
01-Jul-16	NA	0.0	0.0	

NOTES:

PID: Photoionization detector

ppm: parts per million

NA: Not Available (PID readings are not collected at the blower.) Vapor concentrations are collected using a MultiRAE Lite PID.

The totalizer was removed on December 11, 2009.

The system was operational for the reporting period.

APPENDIX 2 Laboratory Analytical Data Reports

(electronic copy only; provided on CD included with report)



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Stantec 1060 Andrew Drive Suite 140 West Chester PA 19380

Report Date: June 09, 2016

Project: PHRO Annual Perimeter GWS

Submittal Date: 05/27/2016 Group Number: 1666456 PO Number: PHRO ANNUAL PERIMETER State of Sample Origin: PA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
S-280-20160520 Grab Groundwater	8402589
B-43-20160523 Grab Groundwater	8402590
B-95-20160523 Grab Groundwater	8402591
N-2-20160523 Grab Groundwater	8402592
N-1-20160523 Grab Groundwater	8402593
N-100-20160523 Grab Groundwater	8402594
C-104-20160524 Grab Groundwater	8402595
C-127-20160524 Grab Groundwater	8402596
C-129-20160524 Grab Groundwater	8402597
N-8-20160524 Grab Groundwater	8402598
N-98-20160524 Grab Groundwater	8402599
Trip Blank Water	8402600
N-37-20160526 Grab Groundwater	8402601
N-111-20160526 Grab Groundwater	8402602
N-111-20160526-DUP Grab Groundwater	8402603
N-57-20160526 Grab Groundwater	8402604
N-64-20160526 Grab Groundwater	8402605
N-85-20160526 Grab Groundwater	8402606
N-99-20160526 Grab Groundwater	8402607
N-3-20160527 Grab Groundwater	8402608
N-74-20160527 Grab Groundwater	8402609
EB-20160527 Grab Water	8402610

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/.



Analysis Report

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Electronic Copy To Sunoco c/o Stantec

Attn: Jennifer Menges

mek Carts

Respectfully Submitted,

Amek Carter Specialist

(717) 556-7252



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-280-20160520 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402589 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/20/2016 11:05 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO01

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	16,000	250	500
10945	1,2-Dichloroethane		107-06-2	N.D.	25	50
10945	Ethylbenzene		100-41-4	N.D.	25	50
10945	L L 2		98-82-8	N.D.	25	50
10945	1 1	yl Ether	1634-04-4	N.D.	25	50
10945	Toluene		108-88-3	26 J	25	50
10945	, ,		95-63-6	N.D.	25	50
10945		ene	108-67-8	N.D.	25	50
10945	Xylene (Total)		1330-20-7	N.D.	25	50
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805			205-99-2	N.D.	0.1	1
07805		е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805			86-73-7	N.D.	0.1	1
07805			91-20-3	N.D.	0.1	1
07805			85-01-8	N.D.	0.1	1
07805	2		129-00-0	N.D.	0.1	1
limit	LCS/LCSD surrogate(s) ts as noted on the QG acted and the data re	C Summary.		acceptance		
	nolding time was not ratory with insuffic					
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide		106-93-4	N.D.	0.0097	1
Metals	B Dissolved	SW-846	6020	ug/l	ug/l	
06035		2 010	7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161541AA	06/03/2016 04:13	Hu Yang	5.0



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-280-20160520 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402589 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Collected: 05/20/2016 11:05 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 06/09/2016 10:29

PRO01

	Laboratory Sample Analysis Record										
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	.me	Analyst	Dilution Factor			
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161541AA	06/03/2016	04:35	Hu Yang	500			
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161541AA	06/03/2016	04:13	Hu Yang	50			
01163	GC/MS VOA Water Prep	SW-846 5030B	2	F161541AA	06/03/2016	04:35	Hu Yang	500			
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/01/2016	19:34	Holly B Ziegler	1			
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016	10:00	Nicholas W Shroyer	1			
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	05:24	Heather M Miller	1			
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1			
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:28	Choon Y Tian	1			
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1			



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: B-43-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402590 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 10:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles SW-8	46 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Isopropylbenzene	98-82-8	4	0.5	1
10945	Methyl Tertiary Butyl Eth	er 1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles SW-8	46 8270C	ug/l	ug/l	
07805	Anthracene	120-12-7	0.7	0.1	1
07805	Benzo(a)anthracene	56-55-3	2	0.1	1
07805	Benzo(a)pyrene	50-32-8	2	0.1	1
07805	Benzo(b)fluoranthene	205-99-2	2	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	1	0.1	1
07805	Chrysene	218-01-9	3	0.1	1
07805	Fluorene	86-73-7	0.9	0.1	1
07805	Naphthalene	91-20-3	N.D.	0.1	1
07805	Phenanthrene	85-01-8	N.D.	0.1	1
07805	Pyrene	129-00-0	7	0.1	1
limit	LCS/LCSD surrogate(s) reco ts as noted on the QC Summ acted and the data reporte	ary. The client was	C acceptance		
Pestio	cides/PCBs SW-8	46 8011	ug/l	ug/l	
10398	Ethylene dibromide	106-93-4	N.D.	0.0097	1
Metals	s Dissolved SW-8	46 6020	ug/l	ug/l	
06035		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No. 10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	Date and Time 06/02/2016 21:50	Hu Yang	Factor
10313	BIBA, HIBB, camerie, EBC, HiBB	DW 010 0200D	<u> </u>	11013121111	00/02/2010 21.50	na rang	_
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/02/2016 21:50	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/02/2016 10:10	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016 10:00	Nicholas W Shrover	1



Analysis Report

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Sample Description: B-43-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402590 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Collected: 05/23/2016 10:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 06/09/2016 10:29

PRO02

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	06:10	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:30	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: B-95-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402591 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 12:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO03

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor		
GC/MS	Volatiles	SW-846 82	260B	ug/l		ug/l			
10945	Benzene		71-43-2	N.D.		0.5	1		
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1		
10945	Ethylbenzene		100-41-4	N.D.		0.5	1		
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1		
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1		
10945	Toluene		108-88-3	N.D.		0.5	1		
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1		
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1		
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1		
GC/MS	Semivolatiles	SW-846 82	270C	ug/l		ug/l			
07805	Anthracene		120-12-7	N.D.		0.1	1		
07805	Benzo(a)anthracene		56-55-3	0.2	J	0.1	1		
07805	Benzo(a)pyrene		50-32-8	0.3	J	0.1	1		
07805	Benzo(b) fluoranthen	е	205-99-2	0.2	J	0.1	1		
07805	Benzo(g,h,i)perylen	е	191-24-2	0.2	J	0.1	1		
07805	Chrysene		218-01-9	0.4	J	0.1	1		
07805	Fluorene		86-73-7	N.D.		0.1	1		
07805	Naphthalene		91-20-3	N.D.		0.1	1		
07805	Phenanthrene		85-01-8	N.D.		0.1	1		
07805	Pyrene		129-00-0	0.7		0.1	1		
The recovery for the LCS/LCSD and sample surrogate(s) are outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials with the exception of: Fluorene was detected in the re-extracted sample.									
	cides/PCBs	SW-846 8		ug/l		ug/l			
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1		
Metals	Dissolved	SW-846 60	020	ug/l		ug/l			
06035			7439-92-1	N.D.		0.13	1		

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT Analysis Name Method Trial# Batch# Analysis Analyst Dilution No. Date and Time Factor



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: B-95-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402591 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Collected: 05/23/2016 12:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 06/09/2016 10:29

PRO03

Laboratory Sample Analysis Record Method CAT Analysis Name Trial# Batch# Analysis Analyst Dilution Date and Time No. 10945 BTEX/MTBE/Cumene/EDC/TMBs SW-846 8260B F161542AA 06/02/2016 22:12 Hu Yang 01163 GC/MS VOA Water Prep SW-846 5030B 06/02/2016 22:12 F161542AA Hu Yang 1 07805 PAHs by 8270 SW-846 8270C 16149WAC026 06/02/2016 10:38 Holly B Ziegler 07807 BNA Water Extraction SW-846 3510C 16149WAC026 05/29/2016 10:00 Nicholas W Shroyer 1 SW-846 8011 10398 EDB in Wastewater 1 161530009A 06/03/2016 06:26 Heather M Miller 1 07786 EDB Extraction (8011) SW-846 8011 1 161530009A 06/01/2016 18:00 Benjamin J 1 Rosenberger 06/09/2016 07:35 06/08/2016 17:35 SW-846 6020 161606050002A Choon Y Tian 06035 Lead 06050 ICPMS-Water, 3020A - U3 SW-846 3010A 161606050002 Barbara A Kane 1 1 modified



Analysis Report

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Sample Description: N-2-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402592 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 14:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO04

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detection Limit	Dilution Factor			
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l				
10945	Benzene		71-43-2	N.D.		0.5	1			
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1			
10945	Ethylbenzene		100-41-4	N.D.		0.5	1			
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1			
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1			
10945	Toluene		108-88-3	N.D.		0.5	1			
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1			
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1			
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1			
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l				
07805	Anthracene		120-12-7	0.2	J	0.1	1			
07805	Benzo(a)anthracene		56-55-3	0.4	J	0.1	1			
07805	Benzo(a)pyrene		50-32-8	0.5	J	0.1	1			
07805	Benzo(b) fluoranthen	е	205-99-2	0.5	J	0.1	1			
07805	Benzo(g,h,i)perylen	е	191-24-2	0.4	J	0.1	1			
07805	Chrysene		218-01-9	0.4	J	0.1	1			
	Fluorene		86-73-7	0.6		0.1	1			
	Naphthalene		91-20-3	N.D.		0.1	1			
	Phenanthrene		85-01-8	0.1	J	0.1	1			
	Pyrene		129-00-0	1		0.1	1			
the (correction the stime	The recovery for the LCS/LCSD and sample surrogate(s) are outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.									
	ides/PCBs	SW-846	8011	ug/l		ug/l				
10398	Ethylene dibromide		106-93-4	N.D.		0.0096	1			
Metals	Dissolved	SW-846	6020	ug/l		ug/l				
06035	Lead		7439-92-1	N.D.		0.13	1			

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/02/2016 22:34	Hu Yang	1
01163	GC/MS VOA Water Pren	SW-846 5030B	1	F161542AA	06/02/2016 22:34	Hu Vang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-2-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402592 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 14:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO04

			_					
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/02/2016	11:06	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016	10:00	Nicholas W Shroyer	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	06:42	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:37	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-1-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402593 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/23/2016 15:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

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Reported: 06/09/2016 10:29

Submitted: 05/27/2016 19:00

PRO05

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
limit	CCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		acceptance		
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	N.D.	0.0097	1
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method		Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846	8260B	1	F161542AA	06/02/2016	22:56	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846	5030B	1	F161542AA	06/02/2016	22:56	Hu Yang	1
07805	PAHs by 8270	SW-846	8270C	1	16149WAC026	06/02/2016	11:34	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846	3510C	1	16149WAC026	05/29/2016	10.00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-1-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402593 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 15:25 by DD Stantec

modified

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West Chester PA 19380

PRO05

	Laboratory Sample Analysis Record										
CAT No.	Analysis Name	Method		Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor		
10398	EDB in Wastewater	SW-846	8011	1	161530009A	06/03/2016	06:57	Heather M Miller	1		
07786	EDB Extraction (8011)	SW-846	8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1		
06035	Lead	SW-846	6020	1	161606050002A	06/09/2016	07:38	Choon Y Tian	1		
06050	ICPMS-Water, 3020A - U3	SW-846	3010A	1	161606050002	06/08/2016	17:35	Barbara A Kane	1		



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-100-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402594 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/23/2016 16:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO06

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthene	е	205-99-2	N.D.	0.1	1
07805	Benzo(q,h,i)perylene	е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
limit	LCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		de acceptance		
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide		106-93-4	N.D.	0.0096	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035			7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method		Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846	8260B	1	F161542AA	06/02/2016		Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846	5030B	1	F161542AA	06/02/2016	20:45	Hu Yang	1
07805	PAHs by 8270	SW-846	8270C	1	16149WAC026	06/02/2016	12:02	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846	3510C	1	16149WAC026	05/29/2016	10.00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-100-20160523 Grab Groundwater

PHRO Annual Perimeter GWS

SW-846 3010A

modified

LL Sample # WW 8402594 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

06050 ICPMS-Water, 3020A - U3

Collected: 05/23/2016 16:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

1 161606050002 06/08/2016 17:35 Barbara A Kane

PRO06

Laboratory Sample Analysis Record											
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor			
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	07:13	Heather M Miller	1			
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1			
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:40	Choon Y Tian	1			



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-104-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402595 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 10:00 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO07

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor				
GC/MS	Volatiles	SW-846 8	3260B	ug/l	ug/l					
10945	Benzene		71-43-2	N.D.	0.5	1				
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1				
10945	Ethylbenzene 100-41-4		N.D.	0.5	1					
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1				
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1				
10945	Toluene		108-88-3	N.D.	0.5	1				
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1				
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1				
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1				
GC/MS	Semivolatiles	SW-846 8	3270C	ug/l	ug/l					
07805	Anthracene		120-12-7	0.5 J	0.1	1				
07805	Benzo(a)anthracene		56-55-3	0.1 J	0.1	1				
07805	5 Benzo(a)pyrene		50-32-8	N.D.	0.1	1				
07805	Benzo(b) fluoranthen	е	205-99-2	N.D.	0.1	1				
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.	0.1	1				
07805	Chrysene		218-01-9	0.1 J	0.1	1				
07805	Fluorene		86-73-7	6	0.1	1				
07805	Naphthalene		91-20-3	N.D.	0.1	1				
07805	Phenanthrene		85-01-8	0.3 J	0.1	1				
07805	4		129-00-0	2	0.1	1				
the (correction the stime	The recovery for the LCS/LCSD and sample surrogate(s) are outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.									
	cides/PCBs	SW-846 8		ug/l	ug/1	-				
10398	Ethylene dibromide		106-93-4	N.D.	0.0096	1				
Metals	Dissolved	SW-846 6	5020	ug/l	ug/l					
06035	Lead		7439-92-1	N.D.	0.13	1				

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/02/2016 23:18	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/02/2016 23:18	Hu Yang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-104-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402595 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 10:00 by DD Stantec

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PRO07

			_					
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/02/2016	12:31	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016	10:00	Nicholas W Shroyer	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	07:28	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:42	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-127-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402596 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Collected: 05/24/2016 10:50 by DD Stantec

1060 Andrew Drive

Suite 140

Reported: 06/09/2016 10:29 West Chester PA 19380

PRO08

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detect	ion Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l		
10945	Benzene		71-43-2	N.D.		0.5		1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5		1
10945	Ethylbenzene	100-41-4	N.D.		0.5		1	
10945	Isopropylbenzene		98-82-8	4		0.5		1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	5		0.5		1
10945	Toluene		108-88-3	N.D.		0.5		1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5		1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5		1
10945	Xylene (Total)		1330-20-7	N.D.		0.5		1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l		
07805	Anthracene		120-12-7	0.4	J	0.1		1
07805	Benzo(a)anthracene		56-55-3	0.1	J	0.1		1
07805	Benzo(a)pyrene		50-32-8	0.1	J	0.1		1
07805	Benzo(b) fluoranthen	е	205-99-2	N.D.		0.1		1
07805	Benzo(g,h,i)perylen	е	191-24-2	0.6		0.1		1
07805	Chrysene		218-01-9	N.D.		0.1		1
07805	Fluorene		86-73-7	3		0.1		1
	Naphthalene		91-20-3	N.D.		0.1		1
07805	Phenanthrene		85-01-8	0.3	J	0.1		1
	Pyrene		129-00-0	0.7		0.1		1
limit	CCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		: accept	ance			
Pestio	ides/PCBs	SW-846	8011	ug/l		ug/l		
	Ethylene dibromide		106-93-4	N.D.		0.0097		1
Metals	Dissolved	SW-846	6020	ug/l		ug/l		
06035	Lead		7439-92-1	N.D.		0.13		1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	me	Analyst	Dilution Factor
	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260)B 1	F161542AA	06/02/2016		Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030)B 1	F161542AA	06/02/2016	23:40	Hu Yang	1
07805	PAHs by 8270	SW-846 8270)C 1	16149WAC026	06/02/2016	12:59	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510)C 1	16149WAC026	05/29/2016	10.00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-127-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402596 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 10:50 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO08

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	07:44	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:43	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-129-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402597 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 11:55 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO09

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	l Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
CC /MC	Semivolatiles	SW-846	9270 <i>C</i>	ug/l	ug/l	
•		5W-040		- -	- '	
07805	Anthracene		120-12-7	N.D.	0.1	1
	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
	Benzo(b)fluoranthene		205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	9	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
	Naphthalene		91-20-3	N.D.	0.1	1
	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
limit	LCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		acceptance		
Pestio	ides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide		106-93-4	N.D.	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035			7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016 00:01	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016 00:01	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/02/2016 13:27	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016 10:00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: C-129-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402597 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 11:55 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO09

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	07:59	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:45	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-8-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402598 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 14:15 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO10

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
aa /wa	Semivolatiles	CT4 046	00700	ug/l	ug/l	
•		SW-040		<u> </u>	•	_
07805	Anthracene		120-12-7	N.D.	0.1	1
	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
	Benzo(b) fluoranthene		205-99-2	N.D.	0.1	1
07805		е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
	Fluorene		86-73-7	N.D.	0.1	1
	Naphthalene		91-20-3	N.D.	0.1	1
	Phenanthrene		85-01-8	N.D.	0.1	1
	Pyrene		129-00-0	N.D.	0.1	1
limit	CCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		acceptance		
Pestio	ides/PCBs	SW-846	8011	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	N.D.	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016 00:23	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016 00:23	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16149WAC026	06/02/2016 13:55	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16149WAC026	05/29/2016 10:00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-8-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402598 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/24/2016 14:15 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/27/2016 19:00 Reported: 06/09/2016 10:29

PRO10

Labor	ratory Sa	ample Analys	sis Record			
	Trial#	Batch#	Analysis		Analyst	Dilution
			Date and Ti	.me		Factor
8011	1	161530009A	06/03/2016	08:15	Heather M Miller	1
0.011	- 1	1 (1 2 0 0 0 0 7	06/01/0016	10 00	Daniel and a T	1

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	08:15	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:47	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-98-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402599 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 15:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO11

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.	0.1	1
	Chrysene		218-01-9	N.D.	0.1	1
	Fluorene		86-73-7	N.D.	0.1	1
	Naphthalene		91-20-3	N.D.	0.1	1
	Phenanthrene		85-01-8	N.D.	0.1	1
	Pyrene		129-00-0	N.D.	0.1	1
limit	CCS/LCSD surrogate(s) is as noted on the QC acted and the data re	Summary.		acceptance		
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	N.D.	0.0096	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method		Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
	BTEX/MTBE/Cumene/EDC/TMBs	SW-846	8260B	1	F161542AA	06/03/2016		Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846	5030B	1	F161542AA	06/03/2016	00:45	Hu Yang	1
07805	PAHs by 8270	SW-846	8270C	1	16149WAC026	06/02/2016	14:23	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846	3510C	1	16149WAC026	05/29/2016	10.00	Nicholas W Shrover	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-98-20160524 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402599 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/24/2016 15:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO11

			_					
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	08:31	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J	1
							Dogonhorgor	



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: Trip Blank Water

PHRO Annual Perimeter GWS

LL Sample # WW 8402600 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/09/2016

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Stantec

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West Chester PA 19380

PRO12

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles SW-84	6 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Isopropylbenzene	98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/EDB/ TMBs	SW-846 8260B	1	F161542AA	06/02/2016 20:23	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/02/2016 20:23	Hu Yang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-37-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402601 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 09:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO13

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Dogtic	cides/PCBs	SW-846	0.011	ug/l	ug/1	
	•	SW-846		<u> </u>	5 .	
10398	Ethylene dibromide		106-93-4	N.D.	0.0096	1
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161572AA	06/06/2016	00:39	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161572AA	06/06/2016	00:39	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	14:51	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	09:17	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:49	Rosenberger Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-37-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402601 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 09:35 by DD Stantec

1060 Andrew Drive

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West Chester PA 19380

PRO13

Laboratory Sample Analysis Record

 CAT
 Analysis Name
 Method
 Trial#
 Batch#
 Analysis
 Analyst
 Dilution

 No.
 06050
 ICPMS-Water, 3020A - U3
 SW-846 3010A
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1

 modified
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1

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Analysis Report

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Sample Description: N-111-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402602 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 10:45 by DD Stantec

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Suite 140

West Chester PA 19380

PRO14

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	1	J	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
~~ /		046	00506	/3		/3	
•	Semivolatiles	SW-846		ug/l		ug/l	
07805	Anthracene		120-12-7	0.5	J	0.1	1
	Benzo(a)anthracene		56-55-3	0.3	J	0.1	1
	Benzo(a)pyrene		50-32-8	0.3	J	0.1	1
07805	Benzo(b) fluoranthen		205-99-2	0.2	J	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	0.2	J	0.1	1
07805	Chrysene		218-01-9	0.5	J	0.1	1
07805	Fluorene		86-73-7	3		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	0.9		0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l		ug/l	
	Ethylene dibromide	541-040	106-93-4	N.D.		0.0097	1
10338	Printing arprowide		100-93-4	и.р.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	ne	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	01:29	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	01:29	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	15:19	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	09:33	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J	1
							Rosenberger	
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:50	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-111-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402602 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Collected: 05/26/2016 10:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 06/09/2016 10:29

PRO14

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ie	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-111-20160526-DUP Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402603 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 10:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO15

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	2	J	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
CC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene	5W-040	120-12-7	0.4	J	0.1	1
	Benzo(a)anthracene		56-55-3	0.4	J	0.1	1
	Benzo (a) pyrene		50-32-8	0.2	J	0.1	1 1
07805	Benzo(b) fluoranthen	_	205-99-2	0.3	J	0.1	1
07805	Benzo(g,h,i)perylen		191-24-2	0.2	J	0.1	1
07805	Chrysene	E	218-01-9	0.3	ıΤ	0.1	1
07805	Fluorene		86-73-7	3	O	0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	0.8		0.1	1
				/ 3		/3	
	cides/PCBs	SW-846		ug/l		ug/l	
10398	Ethylene dibromide		106-93-4	N.D.		0.0096	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead	2 010	7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory	Sample	Analvsis	Record
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CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	01:51	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	01:51	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	15:47	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	09:49	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J	1
							Rosenberger	
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:56	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-111-20160526-DUP Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402603 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 10:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO15

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161606050002	06/08/2016	17:35	Barbara A Kane	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-57-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402604 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 11:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO16

CAT No.	Analysis Name		CAS Number	Result	=	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	0.7	J	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	1	J	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	56		0.5	1
aa /wa	Semivolatiles	CM 046	92700	ug/l		ug/l	
•		5W-846		•		<u> </u>	
07805	Anthracene		120-12-7	N.D.	_	0.1	1
	Benzo(a) anthracene		56-55-3	0.2	J	0.1	1
	Benzo(a)pyrene		50-32-8	0.4	J	0.1	1
07805	Benzo(b) fluoranthen		205-99-2	0.3	J -	0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	0.5	J	0.1	1
07805	Chrysene		218-01-9	0.3	J	0.1	1
07805	Fluorene		86-73-7	N.D.		0.1	1
07805	Naphthalene Phenanthrene		91-20-3	N.D.	-	0.1	1
07805			85-01-8	0.1	J	0.1	1
07805	Pyrene		129-00-0	0.3	J	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l		ug/l	
	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	0.23	J	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ie	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	02:13	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	02:13	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	16:15	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161530009A	06/03/2016	10:04	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161530009A	06/01/2016	18:00	Benjamin J Rosenberger	1
06035	Lead	SW-846 6020	1	1616060500024	06/09/2016	07.57	Choon V Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-57-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402604 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 11:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO16

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161606050002	06/08/2016 17:35	Barbara A Kane	1
		modified					



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-64-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402605 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 13:15 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO17

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	1		0.1	1
07805	Benzo(a)anthracene		56-55-3	0.3	J	0.1	1
07805	Benzo(a)pyrene		50-32-8	0.2	J	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	0.2	J	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	0.1	J	0.1	1
07805	Chrysene		218-01-9	0.3	J	0.1	1
07805	Fluorene		86-73-7	4		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	2		0.1	1
07805	Pyrene		129-00-0	0.6		0.1	1
Pesti	cides/PCBs	SW-846	8011	ug/l		ug/l	
10398	Ethylene dibromide		106-93-4	N.D.		0.0094	1
Metals	s Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	0.14	J	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	02:34	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	02:34	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	16:44	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161540028A	06/06/2016	20:26	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161540028A	06/03/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	07:59	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-64-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402605 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 13:15 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO17

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161606050002	06/08/2016 17:35	Barbara A Kane	1
		modified					



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-85-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402606 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 14:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO18

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Dectio	ides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide	PM-040	106-93-4	N.D.	0.0093	1
10398	Echylene dipromide		106-93-4	N.D.	0.0093	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	02:56	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	02:56	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	17:12	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161540028A	06/06/2016	20:42	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161540028A	06/03/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	08:01	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-85-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402606 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 14:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO18

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161606050002	06/08/2016 17:35	Barbara A Kane	1
		modified					



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-99-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402607 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 15:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO19

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	l Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ne	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ne	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthene		205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene		191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
					, -	
Pestic	cides/PCBs	SW-846	8011	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	N.D.	0.0093	1
Metals	Bissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161542AA	06/03/2016	03:18	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161542AA	06/03/2016	03:18	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	17:40	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161540028A	06/06/2016	21:29	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161540028A	06/03/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	08:03	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-99-20160526 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402607 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/26/2016 15:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO19

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161606050002	06/08/2016 17:35	Barbara A Kane	1
		modified					



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-3-20160527 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402608 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/27/2016 11:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO20

CAT No.	Analysis Name		CAS Number	Result		Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
aa /24a	G	GTT 0.4.6	00506	/1		/1	
•	Semivolatiles	SW-846		ug/l		ug/l	
07805	Anthracene		120-12-7	0.5		0.1	1
	Benzo(a) anthracene		56-55-3	0.7		0.1	1
	Benzo(a)pyrene		50-32-8	0.9		0.1	1
07805	Benzo(b) fluoranthen		205-99-2	0.8		0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	0.6		0.1	1
07805	Chrysene		218-01-9	0.9		0.1	1
07805	Fluorene		86-73-7	0.3	J	0.1	1
07805	Naphthalene		91-20-3	1		0.1	1
07805	Phenanthrene		85-01-8	0.7		0.1	1
07805	Pyrene		129-00-0	1		0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l		ug/l	
	Ethylene dibromide	2 010	106-93-4	N.D.		0.0095	1
10000	zen, rene arbromiae		100 99 1			3.333	<u> </u>
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	1.6		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161572AA	06/06/2016 01:00	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161572AA	06/06/2016 01:00	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016 18:08	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016 17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161540028A	06/06/2016 21:44	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161540028A	06/03/2016 09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016 08:04	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-3-20160527 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402608 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/27/2016 11:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO20

Laboratory Sample Analysis Record

 CAT
 Analysis Name
 Method
 Trial#
 Batch#
 Analysis
 Analyst
 Dilution

 No.
 06050
 ICPMS-Water, 3020A - U3
 SW-846 3010A
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1

 modified
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-74-20160527 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402609 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/27/2016 12:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO21

CAT No.	Analysis Name		CAS Number	Result	t	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	26		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	0.6	J	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	0.6		0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.		0.1	1
07805	Chrysene		218-01-9	N.D.		0.1	1
07805	Fluorene		86-73-7	3		0.1	1
07805	Naphthalene		91-20-3	1		0.1	1
07805	Phenanthrene		85-01-8	0.5	J	0.1	1
07805	Pyrene		129-00-0	0.5	J	0.1	1
5	' 1 /p.cp	GTT 046	0011	ug/l		ug/l	
	ides/PCBs	SW-846		-		- -	
10398	Ethylene dibromide		106-93-4	N.D.		0.0096	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals..

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161572AA	06/06/2016	01:22	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161572AA	06/06/2016	01:22	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16153WAA026	06/02/2016	18:36	Holly B Ziegler	1
07807	BNA Water Extraction	SW-846 3510C	1	16153WAA026	06/01/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161540028A	06/06/2016	22:00	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161540028A	06/03/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161606050002A	06/09/2016	08:06	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: N-74-20160527 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8402609 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/27/2016 12:35 by DD

1060 Andrew Drive

Suite 140

Stantec

West Chester PA 19380

Submitted: 05/27/2016 19:00 Reported: 06/09/2016 10:29

PRO21

Laboratory Sample Analysis Record

 CAT
 Analysis Name
 Method
 Trial#
 Batch#
 Analysis
 Analyst
 Dilution

 No.
 06050
 ICPMS-Water, 3020A - U3
 SW-846 3010A
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1

 modified
 1
 161606050002
 06/08/2016
 17:35
 Barbara A Kane
 1

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Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: EB-20160527 Grab Water

PHRO Annual Perimeter GWS

LL Sample # WW 8402610 LL Group # 1666456 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/27/2016 19:00

Reported: 06/09/2016 10:29

Collected: 05/27/2016 13:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PRO22

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles SW-846	8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Isopropylbenzene	98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161572AA	06/05/2016 19:37	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161572AA	06/05/2016 19:37	Hu Yang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: F161541AA Benzene 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	Sample number(s): N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D	8402589 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
Batch number: F161542AA Benzene 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	Sample number(s): N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D	8402590-8402600,8402602-8402607 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
Batch number: F161572AA Benzene 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	Sample number(s): N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D	8402601,8402608-8402610 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.
Batch number: 16149WAC026 Anthracene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(g,h,i) perylene Chrysene Fluorene Naphthalene Phenanthrene Pyrene	Sample number(s): N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D	8402589-8402599 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: 16153WAA026	Sample number(s):	8402601-8402609
Anthracene	N.D.	0.1
Benzo(a)anthracene	N.D.	0.1
Benzo(a)pyrene	N.D.	0.1
Benzo(b)fluoranthene	N.D.	0.1
Benzo(g,h,i)perylene	N.D.	0.1
Chrysene	N.D.	0.1
Fluorene	N.D.	0.1
Naphthalene	N.D.	0.1
Phenanthrene	N.D.	0.1
Pyrene	N.D.	0.1
Batch number: 161530009A Ethylene dibromide	<pre>Sample number(s): N.D.</pre>	8402589-8402599,8402601-8402604 0.010
Batch number: 161540028A Ethylene dibromide	<pre>Sample number(s): N.D.</pre>	8402605-8402609 0.010
Batch number: 161606050002A Lead	<pre>Sample number(s): N.D.</pre>	8402589-8402599,8402601-8402609 0.13

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F161541AA	Sample number	r(s): 84025	589						
Benzene	20	19.01			95		78-120		
1,2-Dichloroethane	20	18.08			90		72-127		
Ethylbenzene	20	18.17			91		78-120		
Isopropylbenzene	20	19.02			95		80-120		
Methyl Tertiary Butyl Ether	20	17.74			89		75-120		
Toluene	20	18.54			93		80-120		
1,2,4-Trimethylbenzene	20	17.88			89		75-120		
1,3,5-Trimethylbenzene	20	17.52			88		75-120		
Xylene (Total)	60	55.78			93		80-120		
Batch number: F161542AA	Sample number	r(s): 84025	590-8402600,840	02602-8402	2607				
Benzene	20	19.26			96		78-120		
1,2-Dibromoethane	20	18.66			93		80-120		
1,2-Dichloroethane	20	17.91			90		72-127		
Ethylbenzene	20	18.23			91		78-120		
Isopropylbenzene	20	18.43			92		80-120		
Methyl Tertiary Butyl Ether	20	16.94			85		75-120		
Toluene	20	17.95			90		80-120		
1,2,4-Trimethylbenzene	20	17.11			86		75-120		
1,3,5-Trimethylbenzene	20	17.32			87		75-120		
Xylene (Total)	60	54.74			91		80-120		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

LCS/LCSD (continued)

Batch number: F161572AA Sample number(s): 8402601,8402608-8402610 Septence	Analysis Name	LCS Spike Added ug/l	LCS Conc ug/1	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Denzene		J .	٥.	5 .	.					
1,2 20 17,06 85 72-127 81 81 78-120 85 78-120 85 78-120 85 78-120 85 78-120 85 78-120 85 85 78-120 85 85 85 85 85 85 85 8		-		501,8402608-84	02610	0.1		E0 100		
Ethylenzene										
Sepropry Denzene 20 17.73 89 80-120 Methyl Tertiary Butyl Ether 20 15.64 78 75-120 78 75-120 70 10 10 10 10 10 10 1	,	·								
Nethyl	1									
Toluene										
1,2,4-Trimethylbenzene										
1.3.5-Trimethylbenzene										
Xylene (Total) ug/l										
Batch number: 16149WAC026										
Batch number: 16149WAC026 Anthracene 50 44.47 89 68-126 Benzo (a) pyrene 50 48.09 96 69-133 Benzo (a) pyrene 50 46.67 93 71-131 Benzo (g, h, i) perylene 50 46.67 93 71-131 Benzo (g, h, i) perylene 50 48.04 92 62-132 Chrysene 50 47.03 94 71-127 Naphthalene 50 42.69 85 62-121 Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Benzo (a) anthracene 50 47.3 50 49.12 95 98 68-126 6 Benzo (a) pyrene 50 49.48 50 51.63 99 103 69-133 4 30 Benzo (a) anthracene 50 47.3 50 49.12 95 98 68-126 6 30 Benzo (a) pyrene 50 47.3 50 49.12 95 98 68-126 4 30 Benzo (a) pyrene 50 47.3 50 49.12 95 98 68-126 4 30 Benzo (a) pyrene 50 47.3 50 49.12 95 98 71-131 3 30 Benzo (a) pyrene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 49.28 50 52.19 99 104 62-132 6 30 Fluorene 50 49.28 50 47.9 90 96 71-127 6 30 Raphthalene 50 45.2 50 47.9 90 96 71-127 6 30 Raphthalene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 42.99 80 85 62-121 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 42.99 80 85 62-121 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 66-120 6 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 6 30 Pyrene	xylene (Total)	60	53.2			89		80-120		
Anthracene 50 44.47 89 68-126 Benzo(a) anthracene 50 48.09 96 69-133 Benzo(a) pyrene 50 45.81 92 68-126 Benzo(b) fluoranthene 50 46.67 93 71-131 Benzo(g), i) perylene 50 46.67 93 71-131 Benzo(g), i) perylene 50 46.64 92 62-132 Chrysene 50 48.04 96 71-136 Fluorene 50 42.69 85 62-121 Phenanthrene 50 42.69 85 62-121 Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Anthracene 50 49.48 50 51.63 99 103 69-133 4 30 Benzo(a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.7 9 95 98 67-120 6 30 Pyrene 50 41.93 50 42.29 80 85 62-121 6 30 Pyrene 50 41.93 50 43.63 84 87 68-118 4 30 Batch number: 161540028A Ethylene dibromide 50 0.128 0.123 0.128 0.130 96 102 60-140 5 20 Batch number: 161540028A Ethylene dibromide 50 0.128 0.125 0.128 0.130 97 93 60-140 5 20 Batch number: 161640050002A Batch number: 161640050002A Sample number(s): 8402605-8402609 Ethicanthracene 50 0.128 0.125 0.128 0.119 97 93 60-140 5 20		ug/l	ug/l	ug/l	ug/l					
Benzo(a) anthracene	Batch number: 16149WAC026	Sample numbe	er(s): 84025	589-8402599						
Benzo(a) pyrene 50 45.81 92 68-126 Benzo(b) fluoranthene 50 46.67 93 71-131 Benzo(a) pyrene 50 46.67 93 71-131 Benzo(a), h, i) perylene 50 48.04 96 71-136 Fluorene 50 47.03 94 71-127 Naphthalene 50 42.69 85 62-121 Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Sample number(s): 8402601-8402609 85 66-120 Anthracene 50 43.3 50 45.87 87 92 68-126 6 30 Benzo (a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo (a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo (a) pyrene 50	Anthracene	50	44.47			89		68-126		
Benzo (h) fluoranthene	Benzo(a)anthracene	50	48.09			96		69-133		
Benzo(g,h,i)perylene	Benzo(a)pyrene	50	45.81			92		68-126		
Chrysene 50 48.04 96 71-136 Fluorene 50 47.03 94 71-127 Naphthalene 50 42.69 85 62-121 Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Anthracene 50 43.3 50 45.87 87 92 68-126 6 30 Benzo(a) anthracene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo(g, h, i) perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 45.2 50 47.9 90 96 71-127 6 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 41.91 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Batch number: 161530009A Ethylene dibromide 50 8ample number(s): 8402589-8402599,8402601-8402609 Batch number: 161540028A Ethylene dibromide 50.128 0.128 0.119 97 93 60-140 5 20 ug/l ug/l ug/l ug/l Batch number: 161660650002A Sample number(s): 8402589-8402599,8402601-8402609	Benzo(b) fluoranthene	50	46.67			93		71-131		
Fluorene 50 47.03 94 71-127 Naphthalene 50 42.69 85 62-121 Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Anthracene 50 43.3 50 45.87 87 92 68-126 6 30 Benzo(a) anthracene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo(b) fluoranthene 50 47.3 50 51.63 99 104 62-132 6 30 Benzo(b) fluoranthene 50 47.3 50 52.19 99 104 62-132 6 30 Chrysene 50 49.82 50 52.19 99 104 62-132 6 30 Chrysene 50 45.2 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 43.63 84 87 68-118 4 30 Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609 Ethylene dibromide 5.8402589-8402599,8402601-8402609	Benzo(g,h,i)perylene	50	46.24			92		62-132		
Naphthalene	Chrysene	50	48.04			96		71-136		
Phenanthrene 50 42.58 85 65-120 Pyrene 50 42.24 84 68-118 Batch number: 16153WAA026 Sample number(s): 8402601-8402609 Anthracene 50 43.3 50 45.87 87 92 68-126 6 30 Benzo(a)anthracene 50 49.48 50 51.63 99 103 69-133 4 30 Benzo(b)fluoranthene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(g,h,i)perylene 50 47.36 50 49.12 95 98 71-131 3 30 Benzo(g,h,i)perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Ug/l Ug/l Ug/l Batch number: 161530009A Ethylene dibromide Sample number(s): 8402589-8402599,8402601-8402609 Ethylene dibromide Sample number(s): 8402605-8402609 Ethylene dibromide Sample number(s): 8402605-8402609 Ethylene dibromide Sample number(s): 8402589-8402599,8402601-8402609	Fluorene	50	47.03			94		71-127		
## Batch number: 16153WAA026 Sample number(s): 8402601-8402609 Anthracene	Naphthalene	50	42.69			85		62-121		
Batch number: 16153WAA026	Phenanthrene	50	42.58			85		65-120		
Anthracene 50 43.3 50 45.87 87 92 68-126 6 30 Benzo(a) anthracene 50 49.48 50 51.63 99 103 69-133 4 30 Benzo(a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo(b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo(g,h,i) perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 49.28 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Batch number: 161530009A Ethylene dibromide 50: 8402589-8402599,8402601-8402604 5102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 50: 8402589-8402599,8402601-8402604 5128 0.128 0.128 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Pyrene	50	42.24			84		68-118		
Benzo(a) anthracene 50 49.48 50 51.63 99 103 69-133 4 30 Benzo (a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo (b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo (g, h, i) perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 50.14 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.93 50 43.63 84 87 68-118 4 30 Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 161660650002A Sample number(s): 8402589-8402599,8402601-8402609	Batch number: 16153WAA026	Sample numbe	er(s): 84026	501-8402609						
Benzo (a) pyrene 50 47.36 50 49.12 95 98 68-126 4 30 Benzo (b) fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo (g,h,i) perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 50 50.14 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 16166050002A Sample number(s): 8402589-8402599,8402601-8402609	Anthracene	50	43.3	50	45.87	87	92	68-126	6	30
Benzo(b)fluoranthene 50 47.3 50 48.79 95 98 71-131 3 30 Benzo(g,h,i)perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 50.14 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 ug/l ug/l ug/l ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609 Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Benzo(a) anthracene	50	49.48	50	51.63	99	103	69-133	4	30
Benzo (g,h,i) perylene 50 49.28 50 52.19 99 104 62-132 6 30 Chrysene 50 50.14 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Ug/l Ug/l Ug/l Batch number: 161530009A Ethylene dibromide 50.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Ug/l Ug/l Ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609 Eatch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609 Sample number(s): 8402589-8402599,8402601-8402609 Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Ug/l Ug/l Ug/l Ug/l Ug/l Ug/l	Benzo(a)pyrene	50	47.36	50	49.12	95	98	68-126	4	30
Chrysene 50 50.14 50 51.02 100 102 71-136 2 30 Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Ug/l Ug/l Ug/l Batch number: 161530009A Sample number(s): 8402589-8402599,8402601-8402604 Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Benzo(b) fluoranthene	50	47.3	50	48.79	95	98	71-131	3	30
Fluorene 50 45.2 50 47.9 90 96 71-127 6 30 Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Ug/l Ug/l Ug/l Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609 Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Benzo(g,h,i)perylene	50	49.28	50	52.19	99	104	62-132	6	30
Naphthalene 50 39.82 50 42.29 80 85 62-121 6 30 Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 Ug/l Ug/l Ug/l Ug/l Batch number: 161530009A Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 Ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Chrysene	50	50.14	50	51.02	100	102	71-136	2	30
Phenanthrene 50 41.93 50 44.35 84 89 65-120 6 30 Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 ug/l ug/l ug/l ug/l	Fluorene	50	45.2	50	47.9	90	96	71-127	6	30
Pyrene 50 41.91 50 43.63 84 87 68-118 4 30 ug/l ug/l ug/l ug/l	Naphthalene	50	39.82	50	42.29	80	85	62-121	6	30
ug/l ug/l ug/l ug/l Batch number: 161530009A Sample number(s): 8402589-8402599,8402601-8402604 50.128 50.128 50.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 60.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 50.128 60-140 60.128 60-140 60.128 60-140 60.128 60.128 60-140 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128 60.128<	Phenanthrene	50	41.93	50	44.35	84	89	65-120	6	30
Batch number: 161530009A	Pyrene	50	41.91	50	43.63	84	87	68-118	4	30
Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A		ug/l	ug/l	ug/l	ug/l					
Ethylene dibromide 0.128 0.123 0.128 0.130 96 102 60-140 6 20 Batch number: 161540028A Sample number(s): 8402605-8402609	Batch number: 161530009A	Sample numbe	er(s): 84025	589-8402599,84	02601-8402	604				
Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 ug/l ug/l ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Ethylene dibromide	-					102	60-140	6	20
Ethylene dibromide 0.128 0.125 0.128 0.119 97 93 60-140 5 20 ug/l ug/l ug/l ug/l Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Batch number: 161540028A	Sample numbe	er(s): 84026	505-8402609						
Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609	Ethylene dibromide	-			0.119	97	93	60-140	5	20
		ug/l	ug/l	ug/l	ug/l					
			er(s): 84025 15.37	589-8402599,84	02601-8402			80-120		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: F161541AA	Sample numb	er(s): 8402	589 UNSE	K: P401665						
Benzene	N.D.	20	20.29	20	20.02	101	100	78-120	1	30
1,2-Dichloroethane	N.D.	20	18.48	20	18.54	92	93	72-127	0	30
Ethylbenzene	N.D.	20	19.67	20	19.63	98	98	78-120	0	30
Isopropylbenzene	N.D.	20	20.32	20	20.16	102	101	80-120	1	30
Methyl Tertiary Butyl Ether	N.D.	20	17.57	20	18.16	88	91	75-120	3	30
Toluene	N.D.	20	20.01	20	19.43	100	97	80-120	3	30
1,2,4-Trimethylbenzene	N.D.	20	18.57	20	19.04	93	95	75-120	3	30
1,3,5-Trimethylbenzene	N.D.	20	18.46	20	18.92	92	95	75-120	2	30
Xylene (Total)	N.D.	60	59.92	60	58.98	100	98	80-120	2	30
Batch number: F161542AA	Sample numb	per(s): 8402	590-8402	2600,8402602	-8402607	UNSPK: 8	402594,	P402594		
Benzene	N.D.	20	20.38	20	19.98	102	100	78-120	2	30
1,2-Dibromoethane	N.D.	20	18.56	20	18.85	93	94	80-120	2	30
1,2-Dichloroethane	N.D.	20	18.14	20	18.71	91	94	72-127	3	30
Ethylbenzene	N.D.	20	19.39	20	19.26	97	96	78-120	1	30
Isopropylbenzene	N.D.	20	19.77	20	19.59	99	98	80-120	1	30
Methyl Tertiary Butyl Ether	N.D.	20	17.16	20	17.35	86	87	75-120	1	30
Toluene	N.D.	20	19.55	20	19.26	98	96	80-120	2	30
1,2,4-Trimethylbenzene	N.D.	20	18.23	20	17.63	91	88	75-120	3	30
1,3,5-Trimethylbenzene	N.D.	20	18.5	20	17.96	93	90	75-120	3	30
Xylene (Total)	N.D.	60	58.09	60	57.77	97	96	80-120	1	30
Batch number: F161572AA	Sample numb	er(s): 8402	601,8402	608-8402610	UNSPK: E	404784				
Benzene	2.97	20	23.93	20	22.75	105	99	78-120	5	30
1,2-Dichloroethane	0.609	20	19.03	20	18.86	92	91	72-127	1	30
Ethylbenzene	N.D.	20	19.26	20	19.06	96	95	78-120	1	30
Isopropylbenzene	1.08	20	21.32	20	20.58	101	97	80-120	4	30
Methyl Tertiary Butyl Ether	N.D.	20	17.04	20	17.17	85	86	75-120	1	30
Toluene	N.D.	20	19.31	20	19.2	97	96	80-120	1	30
1,2,4-Trimethylbenzene	N.D.	20	18.24	20	18.49	91	92	75-120	1	30
1,3,5-Trimethylbenzene	N.D.	20	18.52	20	18.66	93	93	75-120	1	30
Xylene (Total)	N.D.	60	58.14	60	57.49	97	96	80-120	1	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 16149WAC026	-			2599 UNSPK:						
Anthracene	0.141	50.61	40.3	50.81	43.77	79	86	68-126	8	30
Benzo(a) anthracene	0.199	50.61	45.34	50.81	48.97	89	96	69-133	8	30
Benzo(a)pyrene	0.329	50.61	43.04	50.81	46.55	84	91	68-126	8	30
Benzo(b)fluoranthene	0.188	50.61	42.11	50.81	46.58	83	91	71-131	10	30
Benzo(g,h,i)perylene	0.226	50.61	43.3	50.81	46.65	85	91	62-132	7	30
Chrysene	0.260	50.61	44.15	50.81	47.69	87	93	71-136	8	30
Fluorene	N.D.	50.61	42.74	50.81	45.26	84	89	71-127	6	30
Naphthalene	N.D.	50.61	38.33	50.81	41.45	76	82	62-121	8	30
Phenanthrene	N.D.	50.61	39.18	50.81	42.52	77	84	65-120	8	30
Pyrene	0.448	50.61	39.19	50.81	41.43	77	81	68-118	6	30
	ug/l	ug/l	ug/l	ug/l	ug/l					

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 161540028A Ethylene dibromide	Sample numb N.D.	er(s): 8402 0.122	605-8402 0.111	609 UNSPK: 0.123	P402425 0.107	91	87	60-140	3	20
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 161606050002A	Sample numb	er(s): 8402	589-8402	599,8402601	-8402609	UNSPK: 8	402599			
Lead	N.D.	15	15.41	15	15.28	103	102	75-125	1	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name BKG Conc DUP Conc DUP RPD DUP RPD Max ug/1 ug/1

ug/1 ug/

Batch number: 161606050002A Sample number(s): 8402589-8402599,8402601-8402609 BKG: 8402599 Lead N.D. N.D. 0 (1) 20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs

Batch number: F161541AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8402589	96	93	99	89
Blank	99	96	97	90
LCS	98	99	98	95
MS	98	96	98	93
MSD	97	99	97	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs

Batch number: F161542AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8402590	97	97	94	92
8402591	97	94	97	91
8402592	96	98	95	90
8402593	97	98	96	89
8402594	98	95	97	92
8402595	97	97	95	92
8402596	98	94	95	91

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8402597	97	97	96	89
8402598	97	96	96	91
8402599	99	98	96	89
8402600	99	96	95	89
8402602	97	97	96	92
8402603	96	97	96	91
8402604	97	96	96	93
8402605	97	97	96	91
8402606	97	98	95	89
8402607	98	96	97	90
Blank	98	97	97	86
LCS	96	97	97	96
MS	97	95	98	94
MSD	97	98	96	94
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs

Batch number: F161572AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8402601	97	97	96	89
8402608	97	95	95	89
8402609	98	98	95	91
8402610	101	99	94	88
Blank	100	94	96	89
LCS	97	94	96	94
MS	99	97	95	97
MSD	98	95	96	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PAHs by 8270 Batch number: 16149WAC026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
8402589	54	45*	21*	
8402590	86	83	42	
8402591	84	82	35*	
8402592	83	81	39*	
8402593	88	85	48	
8402594	81	80	48	
8402595	87	82	39*	
8402596	86	80	48	
8402597	90	87	73	
8402598	87	84	47	
8402599	89	91	56	
Blank	93	91	65	
LCS	88	90	39*	
MS	81	79	30*	
MSD	88	86	49	

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Limits: 46-128 61-112 41-125

Analysis Name: PAHs by 8270 Batch number: 16153WAA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
8402601	92	89	93	
8402602	90	87	85	
8402603	91	85	91	
8402604	92	86	81	
8402605	91	87	84	
8402606	87	83	91	
8402607	91	88	91	
8402608	91	87	85	
8402609	93	86	82	
Blank	93	89	96	
LCS	89	86	94	
LCSD	93	89	99	

Limits: 46-128 61-112 41-125

Analysis Name: EDB in Wastewater

Datem Hambe	10155000511
	1,1,2,2-Tetrachloroethane
8402589	100

8402589	100
8402590	105
8402591	106
8402592	105
8402593	97
8402594	100
8402595	104
8402596	104
8402597	101
8402598	101
8402599	94
8402601	94
8402602	94
8402603	92
8402604	95
Blank	112
LCS	97
LCSD	104

Limits: 46-136

Analysis Name: EDB in Wastewater Batch number: 161540028A

	1,1,2,2-Tetrachloroethane
8402605	74
8402606	70
8402607	74

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1666456

Reported: 06/09/2016 10:29

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

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8402608	73	
8402609	86	
Blank	87	
LCS	88	
LCSD	84	
MS	80	
MSD	74	
Limits:	46-136	
Blank LCS LCSD MS MSD	87 88 84 80 74	

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

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Project Name/#:

Sampler:

For Eurofins Lancaster Laboratories Environmental use only COC # 496843 Acct. # 16657 Group # 1666456 Sample # 8402589-610 **Lancaster Laboratories** Environmental For Lab Use Only Client Information Matrix **Analysis Requested** Acct. #: Evergreen FSC: Stantec **Preservation Codes** \square SCR#: 14 Ground Surface **Preservation Codes** 8260* Speatics 8270/#(8pen A23) Evergreen PHRO Annual Perimeter GWS Sediment H=HCI T=Thiosulfate P.O. #: N=HNO₃ B=NaOH Jennifer Menges Total # of Containers O=Other S=HoSOA 8011 Quote #: Remarks NPDES Potable *FOR Specific VOCS 1019 analyses, see attached Evergneen shortlist For Compliance: Composite SVICE by 9 Yes No 🗆 Š 未来 For specific SVOC ZOC. Water Collected analyses, see attached Evergreen short list Grab Soil Sample Identification Time Date 5-280-20160520 \$700lb 11ios B-43-20160523 5/23/16 1025 В B-95-20160573 5/23/16 8 1220 N-2-20160523 5/23/16 1425 8 × N-1-20160523 1525 8 × N-100-20160573 1620 × X 5/24/16 8 C-104-20160524 1000 1050 C-128-20160524 5/24/16 8 X C-129-20160524 5/24/16/1155 8

Turnaround Time (TAT)	Requested (please circle)
Standard	Rush

(Rush TAT is subject to laboratory approval and surcharge.)

E-mail address: Jennifer, Menges @ Stuntec - com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)

Date results are needed:

Type VI (Raw Data Only)

Type III (Reduced non-CLP)

N-8-70160574

NJ DKQP

MA MCP

TX TRRP-13

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NYSDEC Category A or B

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Site-Specific QC (MS/MSD/Dup)? (If yes, indicate QC sample and submit triplicate sample volume.) Relinquished by Commercial Carrier:

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5/27/16

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Lancaster Laboratories Acct. # 16657 Group # 166456 Sample # 6402569-676

COC #500197

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Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Lancaster Laboratories

Acct. # 16657 Group # 166456 Sample # 8402569-610

COC # 500198

Client Informatio	n	Matrix					Analysis Req						equested				Jse Only	
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G:1666456

Annual Perimeter Groundwater Sampling Scope Of Work Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC May 2016

enter "EQuIS-EFW-Stantec_4" on the COC. Also, under the Client Information section on the COC, enter Stantec for Client and for Acct #, enter "Evergreen".

Sampling pumps and interface probes <u>must be</u> decontaminated with an Alconox® or Liquinox® wash and distilled or DI water rinse before the start of sampling and between wells. Dedicated buckets designated for decon for these wells can be found in the Stantec storage trailer. At the end of each day, the excess decontamination water should be filtered through a GAC unit and discharged to the ground surface in an area near the trailers that will not create a puddle in the general walking/working area of the ground.

At the completion of the sampling event, email the EDD file(s) to Andrew Klingbeil for review.

Philadelphia Refinery Complex Groundwater COC List (PHL GW COC List) Evergreen Petroleum Short List (April 2016)

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VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7
SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(a)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

^{*}Ethylene Dibromide should be analyzed by EPA Method 8011 instead of 8260 in soil for tank investigations, soil reuse sampling, and in all groundwater samples.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

^{**}Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

^{***}Metals analysis should be total in soil and dissolved in groundwater.

6.1666456

Annual Perimeter Groundwater Sampling Scope Of Work Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC May 2016

enter "EQuIS-EFW-Stantec_4" on the COC. Also, under the Client Information section on the COC, enter Stantec for Client and for Acct #, enter "Evergreen".

Sampling pumps and interface probes <u>must be</u> decontaminated with an Alconox® or Liquinox® wash and distilled or DI water rinse before the start of sampling and between wells. Dedicated buckets designated for decon for these wells can be found in the Stantec storage trailer. At the end of each day, the excess decontamination water should be filtered through a GAC unit and discharged to the ground surface in an area near the trailers that will not create a puddle in the general walking/working area of the ground.

At the completion of the sampling event, email the EDD file(s) to Andrew Klingbeil for review.

Philadelphia Refinery Complex Groundwater COC List (PHL GW COC List) Evergreen Petroleum Short List (April 2016)

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VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7
SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(a)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

^{*}Ethylene Dibromide should be analyzed by EPA Method 8011 instead of 8260 in soil for tank investigations, soil reuse sampling, and in all groundwater samples.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

^{**}Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

^{***}Metals analysis should be total in soil and dissolved in groundwater.

6.1666456

Annual Perimeter Groundwater Sampling Scope Of Work Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC May 2016

enter "EQuIS-EFW-Stantec_4" on the COC. Also, under the Client Information section on the COC, enter Stantec for Client and for Acct #, enter "Evergreen".

Sampling pumps and interface probes <u>must be</u> decontaminated with an Alconox® or Liquinox® wash and distilled or DI water rinse before the start of sampling and between wells. Dedicated buckets designated for decon for these wells can be found in the Stantec storage trailer. At the end of each day, the excess decontamination water should be filtered through a GAC unit and discharged to the ground surface in an area near the trailers that will not create a puddle in the general walking/working area of the ground.

At the completion of the sampling event, email the EDD file(s) to Andrew Klingbeil for review.

Philadelphia Refinery Complex Groundwater COC List (PHL GW COC List) Evergreen Petroleum Short List (April 2016)

,	
VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7
SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(a)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1
•	

^{*}Ethylene Dibromide should be analyzed by EPA Method 8011 instead of 8260 in soil for tank investigations, soil reuse sampling, and in all groundwater samples.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

^{**}Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

^{***}Metals analysis should be total in soil and dissolved in groundwater.



Sample Administration Receipt Documentation Log

Doc Log ID:

148367

Group Number(s): 166456

Client: Stantec

Delivery and Receipt Information

Delivery Method:

ELLE Courier

Arrival Timestamp:

05/27/2016 19:00

Number of Packages:

<u>4</u>

Number of Projects:

1

State/Province of Origin:

<u>PA</u>

Arrival Condition Summary

Shipping Container Sealed:

No

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

No

Sample Date/Times match COC:

Yes

Samples Chilled:

Yes

VOA Vial Headspace ≥ 6mm:

Air Quality Samples Present:

No

Paperwork Enclosed:

Yes

Total Trip Blank Qty:

3

Samples Intact:

Yes

Trip Blank Type:

HCI No

Missing Samples: Extra Samples:

No No

Discrepancy in Container Qty on COC:

No

Unpacked by Patrick Engle (3472) at 21:04 on 05/27/2016

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler#	Thermometer ID	Corrected Temp	Therm. Type	<u>lce Type</u>	<u>lce Present?</u>	<u>lce Container</u>	Elevated Temp?
1	DT121	0.6	DT	Wet	Υ	Loose/Bag	N
2	DT121	0.1	DT	Wet	Υ	Loose/Bag	N
3	DT121	2.9	DT	Wet	Υ	Loose/Bag	N
4	DT121	0.4	DT	Wet	Υ	Loose	N



Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
μg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	μL	microliter(s)
		pg/L	picogram/liter

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Stantec 1060 Andrew Drive Suite 140 West Chester PA 19380

Report Date: June 02, 2016

Project: PHRO Annual Perimeter GWS

Submittal Date: 05/20/2016 Group Number: 1664163 PO Number: PHRO ANNUAL PERIMETER State of Sample Origin: PA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
S-74-20160516 Grab Groundwater	8392561
TW-8-20160516 Grab Groundwater	8392562
MW-37-20160516 Grab Groundwater	8392563
MW-30-20160516 Grab Groundwater	8392564
S-196-20160516 Grab Groundwater	8392565
S-193-20160518 Grab Groundwater	8392566
S-268-20160518 Grab Groundwater	8392567
S-120-20160518 Grab Groundwater	8392568
S-222-20160518 Grab Groundwater	8392569
S-38-20160518 Grab Groundwater	8392570
S-40-20160519 Grab Groundwater	8392571
S-223-20160519 Grab Groundwater	8392572
A-133-20160519 Grab Groundwater	8392573
A-133-20160519-DUP Grab Groundwater	8392574
A-137-20160519 Grab Groundwater	8392575
WP-14-20160520 Grab Groundwater	8392576
EB-20160520 Water	8392577
Trip Blank Water	8392578

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/.

Electronic Copy To Sunoco c/o Stantec Attn: Jennifer Menges

Analysis Report

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Respectfully Submitted,

Amek Carter Specialist

(717) 556-7252



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-74-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392561 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 11:00 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR01

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	vl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthene	9	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	9	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
				/1	/1	
	cides/PCBs	SW-846		ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	N.D.	0.0097	1
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161442AA	05/23/2016	15:11	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161442AA	05/23/2016	15:11	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	12:25	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420021A	05/25/2016	01:32	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:38	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-74-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392561 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 11:00 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR01

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: TW-8-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392562 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 11:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR02

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	500	5	10
10945	1,2-Dichloroethane		107-06-2	2	0.5	1
10945	Ethylbenzene		100-41-4	560	5	10
10945	Isopropylbenzene		98-82-8	150	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	4	0.5	1
10945	Toluene		108-88-3	0.9 J	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	530	5	10
10945	1,3,5-Trimethylbenz	ene	108-67-8	52	0.5	1
10945	Xylene (Total)		1330-20-7	89	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	15	0.1	1
07805	Benzo(a)anthracene		56-55-3	7	0.1	1
07805	Benzo(a)pyrene		50-32-8	5	0.1	1
07805	Benzo(b) fluoranthen		205-99-2	6	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	3	0.1	1
07805	Chrysene		218-01-9	9	0.1	1
07805	Fluorene		86-73-7	56	0.1	1
07805	Naphthalene		91-20-3	6,000	10	100
07805	Phenanthrene		85-01-8	67	0.1	1
07805	Pyrene		129-00-0	18	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide	2 010	106-93-4	N.D.	0.0097	1
T0390	nemy tene arbromitae		100-23-4	м.р.	0.0057	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161442AA	05/23/2016 15:3	Brett W Kenyon	1
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016 13:5	Brett W Kenyon	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161442AA	05/23/2016 15:3	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z161451AA	05/24/2016 13:5	Brett W Kenyon	10
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016 12:54	Brandon H Smith	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/26/2016 03:5	William H Saadeh	100
07807	BNA Water Extraction	SW-846 3510C	1	16144WAR026	05/22/2016 17.00	Ryan A Schafran	1



Analysis Report

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Sample Description: TW-8-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392562 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 11:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR02

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ıe	Analyst	Dilution Factor
10398	EDB in Wastewater	SW-846 8011	1	161420021A	05/25/2016	02:04	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:40	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

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Sample Description: MW-37-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392563 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 12:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR03

CAT No.	Analysis Name		CAS Number	CAS Number Result		Dilution Factor
GC/MS	Volatiles S	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	130,000	1,000	2000
10945	1,2-Dichloroethane		107-06-2	N.D.	100	200
10945	Ethylbenzene		100-41-4	N.D.	100	200
10945	Isopropylbenzene		98-82-8	N.D.	100	200
10945	Methyl Tertiary Butyl	l Ether	1634-04-4	N.D.	100	200
10945	Toluene		108-88-3	1,100	100	200
10945	1,2,4-Trimethylbenzer	ne	95-63-6	N.D.	100	200
10945	1,3,5-Trimethylbenzer	ne	108-67-8	N.D.	100	200
10945	Xylene (Total)		1330-20-7	N.D.	100	200
aa /wa	G	GT-7 0.4.C	00700	ug/l	ug/l	
•		SW-846			- -	
07805	Anthracene		120-12-7	0.2 J	0.1	1
07805	Benzo(a) anthracene		56-55-3	N.D.	0.1	1
	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
	Benzo(b) fluoranthene		205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene		191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	0.7	0.1	1
07805	Naphthalene		91-20-3	10	0.1	1
	Phenanthrene		85-01-8	0.8	0.1	1
07805	Pyrene		129-00-0	0.2 J	0.1	1
Pestio	cides/PCBs S	SW-846	8011	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	0.024 J	0.0098	1
Metals	s Dissolved S	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	Laboratory	Sample	Analvsis	Record
--	------------	--------	----------	--------

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016 13:07	Brett W Kenyon	200
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016 13:31	Brett W Kenyon	2000
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016 13:07	Brett W Kenyon	200
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z161451AA	05/24/2016 13:31	Brett W Kenyon	2000
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016 13:24	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016 17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420021A	05/25/2016 02:21	Heather M Miller	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-37-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392563 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 12:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR03

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:45	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-30-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392564 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 13:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR04

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	61		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	1	J	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	2		0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	1	J	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	2		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/1		ug/l	
07805	Anthracene		120-12-7	2		0.1	1
07805	Benzo(a)anthracene		56-55-3	21		0.1	1
07805	Benzo(a)pyrene		50-32-8	30		0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	56		0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	28		0.1	1
07805	Chrysene		218-01-9	48		0.1	1
07805	Fluorene		86-73-7	6		0.1	1
07805	Naphthalene		91-20-3	14		0.1	1
07805	Phenanthrene		85-01-8	34		0.1	1
07805	Pyrene		129-00-0	57		0.1	1
Posti	ides/PCBs	SW-846	0.011	ug/l		ug/l	
	•	5W-040			_	- -	-
10398	Ethylene dibromide		106-93-4	0.022	J	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016	14:43	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016	14:43	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	13:53	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420021A	05/25/2016	02:53	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:47	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-30-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392564 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 13:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR04

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-196-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392565 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 15:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR05

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
					_	
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthen	e	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Desti	cides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide	DM-040	106-93-4	0.013 J	0.0097	1
10338	Eculatene armiomide		100-93-4	0.013 0	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016		Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016	15:07	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	14:23	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420021A	05/25/2016	03:09	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10.49	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-196-20160516 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392565 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/16/2016 15:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR05

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-193-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392566 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 09:00 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR06

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	240		5	10
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	9		0.5	1
10945	Isopropylbenzene		98-82-8	16		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	10		0.5	1
10945	Toluene		108-88-3	5		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	19		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	11		0.5	1
10945	Xylene (Total)		1330-20-7	38		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene	DW-040	120-12-7	N.D.		0.1	1
	Benzo(a)anthracene		56-55-3	N.D.		0.1	1
	Benzo (a) pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b) fluoranthen	0	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen		191-24-2	N.D.		0.1	1
07805	Chrysene	е	218-01-9	N.D.		0.1	1
07805	Fluorene		86-73-7	0.1	J	0.1	1
07805	Naphthalene		91-20-3	1	U	0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	N.D.		0.1	1
	1						
Pestio	cides/PCBs	SW-846	8011	ug/1		ug/l	
10398	Ethylene dibromide		106-93-4	0.029		0.0098	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead	2 010	7439-92-1	0.82	J	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161442AA	05/23/2016		Brett W Kenyon	1
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016	14:19	Brett W Kenyon	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161442AA	05/23/2016	17:11	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z161451AA	05/24/2016	14:19	Brett W Kenyon	10
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	14:53	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10200	EDD in Wastewater	CM-016 0011	1	1614200217	05/05/0016	02.25	Weather M Miller	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-193-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392566 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 09:00 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR06

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
07786	EDB Extraction (8011)	SW-846 8011	1	161420021A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:50	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-268-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392567 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/18/2016 10:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

- <u>-</u>

Reported: 06/02/2016 12:51

Submitted: 05/20/2016 16:40

PHR07

CAT No.	Analysis Name		CAS Number	Result	=	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
						,-	
•	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b) fluoranthen		205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.		0.1	1
07805	Chrysene		218-01-9	N.D.		0.1	1
07805	Fluorene		86-73-7	N.D.		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	0.1	J	0.1	1
D = = + ! :		GT-7 0.4.C	0.011	ug/l		ug/l	
	ides/PCBs	SW-846		-		- ·	
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metalo	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead	2 010	7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016	15:31	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016	15:31	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	15:23	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	09:22	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:52	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-268-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392567 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 10:25 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR07

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-120-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392568 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 13:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR08

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Pestic	cides/PCBs	SW-846	8011	ug/l	ug/l	
	Ethylene dibromide	5W-040	106-93-4	N.D.	0.0098	1
10398	Fruitene arpromitae		100-93-4	и	0.0098	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016		Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016	15:55	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	15:52	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	09:37	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10.54	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-120-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392568 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 13:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR08

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-222-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392569 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 14:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR09

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	N.D.	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Desti	ides/PCBs	SW-846	2011	ug/l	ug/l	
	•	DM-040		<u>.</u>	J ,	1
10398	Ethylene dibromide		106-93-4	N.D.	0.0096	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti		Analyst	Dilution Factor
No. 10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161451AA	05/24/2016		Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161451AA	05/24/2016	16:19	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	16:22	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	09:54	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10.56	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-222-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392569 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 14:45 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR09

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-38-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392570 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 15:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR10

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	180	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	79	0.5	1
10945	Isopropylbenzene		98-82-8	13	0.5	1
10945	Methyl Tertiary Bu	tyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	96	0.5	1
10945	1,2,4-Trimethylben	zene	95-63-6	17	0.5	1
10945	1,3,5-Trimethylben	zene	108-67-8	7	0.5	1
10945	Xylene (Total)		1330-20-7	83	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	
07805	Anthracene		120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.	0.1	1
07805	Benzo(b) fluoranthe	ne	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)peryle	ne	191-24-2	N.D.	0.1	1
07805	Chrysene		218-01-9	N.D.	0.1	1
07805	Fluorene		86-73-7	N.D.	0.1	1
07805	Naphthalene		91-20-3	26	0.1	1
07805	Phenanthrene		85-01-8	N.D.	0.1	1
07805	Pyrene		129-00-0	N.D.	0.1	1
Pesti	cides/PCBs	SW-846	8011	ug/l	ug/l	
10398			106-93-4	N.D.	0.0096	1
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	
06035	Lead		7439-92-1	N.D.	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method		Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8	260B	1	Z161442AA	05/23/2016	18:48	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5	030B	1	Z161442AA	05/23/2016	18:48	Brett W Kenyon	1
07805	PAHs by 8270	SW-846 8	270C	1	16144WAB026	05/25/2016	16:52	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3	510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8	011	1	161420022A	05/25/2016	10:11	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8	011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6	020	1	161496050002A	06/02/2016	10:58	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-38-20160518 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392570 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/18/2016 15:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR10

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-40-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392571 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/19/2016 09:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/20/2016 16:40 Reported: 06/02/2016 12:51

PHR11

CAT No.	Analysis Name		CAS Number	Resul	ŧ	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	18		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	1		0.5	1
10945	Isopropylbenzene		98-82-8	16		0.5	1
10945	Methyl Tertiary Butyl Ether		1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	4		0.5	1
10945	1,2,4-Trimethylbenzene		95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	1		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	0.5	J	0.1	1
07805	Benzo(a)anthracene		56-55-3	0.2	J	0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.		0.1	1
07805	Chrysene		218-01-9	0.2	J	0.1	1
07805	Fluorene		86-73-7	1		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	2		0.1	1
07805	Pyrene		129-00-0	0.4	J	0.1	1
Deatic	ides/PCBs	SW-846	8011	ug/l		ug/l	
	Ethylene dibromide	PM-040	106-93-4	N.D.		0.0097	1
10398	Ethylene dibromide		100-93-4	N.D.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161481AA	05/27/2016	11:08	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161481AA	05/27/2016	11:08	Anita M Dale	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/25/2016	17:21	Brandon H Smith	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	10:27	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	10:59	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-40-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392571 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 09:20 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR11

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-223-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392572 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 11:10 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR12

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	2,200		10	20
10945	1,2-Dichloroethane		107-06-2	N.D.		10	20
10945	Ethylbenzene		100-41-4	440		10	20
10945	Isopropylbenzene		98-82-8	16	J	10	20
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		10	20
10945	Toluene		108-88-3	330		10	20
10945	1,2,4-Trimethylbenz	ene	95-63-6	490		10	20
10945	1,3,5-Trimethylbenz	ene	108-67-8	170		10	20
10945	Xylene (Total)		1330-20-7	1,500		10	20
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	0.1	J	0.1	1
	Benzo(a)anthracene		56-55-3	N.D.		0.1	1
	Benzo(a)pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthen		205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	N.D.		0.1	1
07805	Chrysene		218-01-9	N.D.		0.1	1
07805	Fluorene		86-73-7	0.8		0.1	1
07805	Naphthalene		91-20-3	87		0.1	1
07805	Phenanthrene		85-01-8	0.2	J	0.1	1
07805	Pyrene		129-00-0	N.D.		0.1	1
Dogbi	cides/PCBs	SW-846	0.011	ug/l		ug/l	
	•	SW-040		•		- -	_
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metals	s Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead	2 010	7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161481AA	05/27/2016	11:30	Anita M Dale	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161481AA	05/27/2016	11:30	Anita M Dale	20
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/26/2016	04:27	William H Saadeh	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	11:15	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	11:01	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-223-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392572 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 11:10 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR12

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	me	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-133-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392573 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 13:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR13

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary Butyl Ether		1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenzene		95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene		56-55-3	0.2	J	0.1	1
07805	Benzo(a)pyrene		50-32-8	0.4	J	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	0.2	J	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	0.2	J	0.1	1
07805	Chrysene		218-01-9	0.9		0.1	1
07805	Fluorene		86-73-7	N.D.		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	1		0.1	1
Postic	ides/PCBs	SW-846	0.011	ug/l		ug/l	
	•	SW-040		•		- -	
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161481AA	05/27/2016	11:52	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161481AA	05/27/2016	11:52	Anita M Dale	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/26/2016	04:56	William H Saadeh	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	11:32	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	11:07	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-133-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392573 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 13:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR13

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161496050002	06/01/2016	12:46	James L Mertz	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-133-20160519-DUP Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392574 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 13:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR14

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene		56-55-3	0.2	J	0.1	1
07805	Benzo(a)pyrene		50-32-8	0.3	J	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	0.2	J	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	0.2	J	0.1	1
07805	Chrysene		218-01-9	1		0.1	1
07805	Fluorene		86-73-7	N.D.		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	N.D.		0.1	1
07805	Pyrene		129-00-0	1		0.1	1
Postic	ides/PCBs	SW-846	0.011	ug/l		ug/l	
	•	SW-040		•		- '	
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No. 10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161481AA	Date and Ti 05/27/2016	me 08:44	Anita M Dale	Factor 1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161481AA	05/27/2016	08:44	Anita M Dale	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026		05:26	William H Saadeh	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161420022A	05/25/2016	11:48	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161420022A	05/23/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	11.09	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-133-20160519-DUP Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392574 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 13:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR14

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-137-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392575 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 14:50 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR15

CAT No.	Analysis Name		CAS Number	Resul	t	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	1		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	
07805	Anthracene		120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene		56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene		50-32-8	N.D.		0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	N.D.		0.1	1
07805	Chrysene		218-01-9	N.D.		0.1	1
07805	Fluorene		86-73-7	N.D.		0.1	1
07805	Naphthalene		91-20-3	N.D.		0.1	1
07805	Phenanthrene		85-01-8	0.3	J	0.1	1
07805	Pyrene		129-00-0	0.2	J	0.1	1
Pogt:	ides/PCBs	SW-846	0.011	ug/l		ug/l	
	•	5M-040		-		5.	
10398	Ethylene dibromide		106-93-4	N.D.		0.0097	1
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	N.D.		0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	F161481AA	05/27/2016	09:06	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161481AA	05/27/2016	09:06	Anita M Dale	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/26/2016	05:55	William H Saadeh	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161440016A	05/25/2016	23:30	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161440016A	05/24/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	11.11	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: A-137-20160519 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392575 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/19/2016 14:50 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR15

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tir			Factor
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161496050002	06/01/2016	12:46	James L Mertz	1
		modified						



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: WP-14-20160520 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392576 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/20/2016 09:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 06/02/2016 12:51

Submitted: 05/20/2016 16:40

PHR16

CAT No.	Analysis Name		CAS Number	Result	:	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	
10945	Benzene		71-43-2	N.D.		0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.		0.5	1
10945	Ethylbenzene		100-41-4	N.D.		0.5	1
10945	Isopropylbenzene		98-82-8	N.D.		0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.		0.5	1
10945	Toluene		108-88-3	N.D.		0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	1
10945	Xylene (Total)		1330-20-7	N.D.		0.5	1
aa /wa	G	GT-7 0.4.C	00700	ug/l		ug/l	
	Semivolatiles	SW-846		-		- ·	
07805	Anthracene		120-12-7	0.3	J	0.1	1
07805	Benzo(a) anthracene		56-55-3	0.6		0.1	1
	Benzo(a)pyrene		50-32-8	0.7		0.1	1
	Benzo(b) fluoranthene		205-99-2	0.7		0.1	1
07805	Benzo(g,h,i)perylene	e	191-24-2	0.6		0.1	1
07805	Chrysene		218-01-9	0.7		0.1	1
07805	Fluorene		86-73-7	0.5		0.1	1
07805	Naphthalene		91-20-3	0.4	J	0.1	1
07805	Phenanthrene		85-01-8	0.6		0.1	1
07805	Pyrene		129-00-0	1		0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l		ug/l	
10398	Ethylene dibromide	D., 010	106-93-4	N.D.		0.0097	1
10000			100 20 1				-
Metals	Dissolved	SW-846	6020	ug/l		ug/l	
06035	Lead		7439-92-1	0.31	J	0.13	1
		SW-846			J	- ·	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No. 10945	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	Z161462AA	Date and Ti 05/26/2016		Hu Yang	Factor 1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161462AA	05/26/2016	03:40	Hu Yang	1
07805	PAHs by 8270	SW-846 8270C	1	16144WAB026	05/26/2016	06:25	William H Saadeh	1
07807	BNA Water Extraction	SW-846 3510C	1	16144WAB026	05/23/2016	17:00	Ryan A Schafran	1
10398	EDB in Wastewater	SW-846 8011	1	161440016A	05/25/2016	23:45	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161440016A	05/24/2016	09:00	Scott J Carini	1
06035	Lead	SW-846 6020	1	161496050002A	06/02/2016	11.12	Choon Y Tian	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax; 717-656-2681 • www.LancasterLabs.com

Sample Description: WP-14-20160520 Grab Groundwater

PHRO Annual Perimeter GWS

LL Sample # WW 8392576 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/20/2016 09:35 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR16

Laboratory Sample Analysis Record

 CAT
 Analysis Name
 Method
 Trial#
 Batch#
 Analysis
 Analysis
 Analyst
 Dilution

 No.
 06050
 ICPMS-Water, 3020A - U3
 SW-846 3010A
 1
 161496050002
 06/01/2016
 12:46
 James L Mertz
 1

 modified
 Modified
 Modified
 Modified
 1
 161496050002
 06/01/2016
 12:46
 James L Mertz
 1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: EB-20160520 Water

PHRO Annual Perimeter GWS

LL Sample # WW 8392577 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

Collected: 05/20/2016 12:30 by DD Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR17

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles SW-	846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Isopropylbenzene	98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Butyl Et	her 1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/EDB/ TMBs	SW-846 8260B	1	Z161462AA	05/25/2016 20:02	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161462AA	05/25/2016 20:02	Hu Yang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: Trip Blank Water

Submitted: 05/20/2016 16:40

Reported: 06/02/2016 12:51

PHRO Annual Perimeter GWS

LL Sample # WW 8392578 LL Group # 1664163 Account # 16657

Project Name: PHRO Annual Perimeter GWS

Collected: 05/09/2016 Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHR18

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	
10945	Benzene		71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane		106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane		107-06-2	N.D.	0.5	1
10945	Ethylbenzene		100-41-4	N.D.	0.5	1
10945	Isopropylbenzene		98-82-8	N.D.	0.5	1
10945	Methyl Tertiary Buty	vl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene		108-88-3	N.D.	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	1
10945	Xylene (Total)		1330-20-7	N.D.	0.5	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/EDB/ TMBs	SW-846 8260B	1	Z161462AA	05/25/2016 20:26	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161462AA	05/25/2016 20:26	Hu Yang	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: F161481AA	Sample number(s):	8392571-8392575
Benzene	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Isopropylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
1,2,4-Trimethylbenzene	N.D.	0.5
1,3,5-Trimethylbenzene	N.D.	0.5
Xylene (Total)	N.D.	0.5
Batch number: Z161442AA		8392561-8392562,8392566,8392570
Benzene	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Isopropylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
1,2,4-Trimethylbenzene	N.D.	0.5
1,3,5-Trimethylbenzene	N.D.	0.5
Xylene (Total)	N.D.	0.5
Batch number: Z161451AA	Sample number(s):	8392562-8392569
Benzene	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Isopropylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
1,2,4-Trimethylbenzene	N.D.	0.5
1,3,5-Trimethylbenzene	N.D.	0.5
Xylene (Total)	N.D.	0.5
Batch number: Z161462AA	Sample number(s):	
Benzene	N.D.	0.5
1,2-Dibromoethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Isopropylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
1,2,4-Trimethylbenzene	N.D.	0.5
1,3,5-Trimethylbenzene	N.D.	0.5
Xylene (Total)	N.D.	0.5
Batch number: 16144WAB026	Sample number(s):	8392561-8392576

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Anthracene	N.D.	0.1
Benzo(a)anthracene	N.D.	0.1
Benzo(a)pyrene	N.D.	0.1
Benzo(b) fluoranthene	N.D.	0.1
Benzo(g,h,i)perylene	N.D.	0.1
Chrysene	N.D.	0.1
Fluorene	N.D.	0.1
Naphthalene	N.D.	0.1
Phenanthrene	N.D.	0.1
Pyrene	N.D.	0.1
Batch number: 161420021A Ethylene dibromide	<pre>Sample number(s): N.D.</pre>	8392561-8392566 0.010
Batch number: 161420022A Ethylene dibromide	<pre>Sample number(s): N.D.</pre>	8392567-8392574 0.010
Batch number: 161440016A Ethylene dibromide	<pre>Sample number(s): N.D.</pre>	8392575-8392576 0.010
Batch number: 161496050002A Lead	<pre>Sample number(s): N.D.</pre>	8392561-8392576 0.13

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F161481AA	Sample number	r(s): 8392	571-8392575						
Benzene	20	19.22			96		78-120		
1,2-Dichloroethane	20	18.56			93		72-127		
Ethylbenzene	20	17.95			90		78-120		
Isopropylbenzene	20	18.28			91		80-120		
Methyl Tertiary Butyl Ether	20	19.15			96		75-120		
Toluene	20	18.51			93		80-120		
1,2,4-Trimethylbenzene	20	17.55			88		75-120		
1,3,5-Trimethylbenzene	20	17.52			88		75-120		
Xylene (Total)	60	55.02			92		80-120		
Batch number: Z161442AA	Sample number	r(s): 8392	561-8392562,83	92566,8392	570				
Benzene	20	18.02	20	18.43	90	92	78-120	2	30
1,2-Dichloroethane	20	18.13	20	18.52	91	93	72-127	2	30
Ethylbenzene	20	18.05	20	18.51	90	93	78-120	3	30
Isopropylbenzene	20	18.55	20	19.03	93	95	80-120	3	30
Methyl Tertiary Butyl Ether	20	18.44	20	18.9	92	94	75-120	2	30
Toluene	20	19.13	20	19.5	96	98	80-120	2	30
1,2,4-Trimethylbenzene	20	17.77	20	17.89	89	89	75-120	1	30
1,3,5-Trimethylbenzene	20	17.36	20	17.51	87	88	75-120	1	30
Xylene (Total)	60	56.71	60	58.2	95	97	80-120	3	30

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Z161451AA	Sample numbe	r(s): 8392	562-8392569						
Benzene	20	19.08	20	18.85	95	94	78-120	1	30
1,2-Dichloroethane	20	18.49	20	18.38	92	92	72-127	1	30
Ethylbenzene	20	18.78	20	18.29	94	91	78-120	3	30
Isopropylbenzene	20	19.22	20	18.63	96	93	80-120	3	30
Methyl Tertiary Butyl Ether	20	18.25	20	18.56	91	93	75-120	2	30
Toluene	20	19.57	20	18.91	98	95	80-120	3	30
1,2,4-Trimethylbenzene	20	18.2	20	18.12	91	91	75-120	0	30
1,3,5-Trimethylbenzene	20	18.13	20	18.08	91	90	75-120	0	30
Xylene (Total)	60	58.04	60	56.45	97	94	80-120	3	30
Batch number: Z161462AA	Sample numbe	r(s): 8392	576-8392578						
Benzene	20	17.62			88		78-120		
1,2-Dibromoethane	20	17.07			85		80-120		
1,2-Dichloroethane	20	16.92			85		72-127		
Ethylbenzene	20	16.54			83		78-120		
Isopropylbenzene	20	17.08			85		80-120		
Methyl Tertiary Butyl Ether	20	15.94			80		75-120		
Toluene	20	17.88			89		80-120		
1,2,4-Trimethylbenzene	20	16.42			82		75-120		
1,3,5-Trimethylbenzene	20	16.14			81		75-120		
Xylene (Total)	60	51.94			87		80-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16144WAB026	Sample numbe	r(s): 8392	561-8392576						
Anthracene	50	46.07	50	44.58	92	89	68-126	3	30
Benzo(a)anthracene	50	52.62	50	49.54	105	99	69-133	6	30
Benzo(a)pyrene	50	47.42	50	45.49	95	91	68-126	4	30
Benzo(b)fluoranthene	50	47.29	50	45.02	95	90	71-131	5	30
Benzo(g,h,i)perylene	50	50.98	50	44.69	102	89	62-132	13	30
Chrysene	50	54.77	50	50.59	110	101	71-136	8	30
Fluorene	50	46.49	50	44.85	93	90	71-127	4	30
Naphthalene	50	44.95	50	42.23	90	84	62-121	6	30
Phenanthrene Pyrene	50 50	45.57 46.15	50 50	42.94 42.63	91 92	86 85	65-120 68-118	6 8	30 30
1	ug/l	ug/l	ug/l	ug/l					
D 1 1 1 1 1 1 1 1 1				-3/-					
Batch number: 161420021A	Sample numbe			0 101	116	0.5	60 140	0.0	0.0
Ethylene dibromide	0.128	0.148	0.128	0.121	116	95	60-140	20	20
Batch number: 161420022A Ethylene dibromide	Sample numbe 0.128	r(s): 83925 0.129	567-8392574 0.128	0.108	101	84	60-140	18	20
Batch number: 161440016A	Sample numbe	r(s): 8392!	575-8392576						
Ethylene dibromide	0.128	0.126	0.128	0.123	98	96	60-140	2	20
	ug/l	ug/l	ug/l	ug/l					
Batch number: 161496050002A	Sample numbe	r(s): 8392	561-8392576						
Lead	15	15.89			106		80-120		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Analysis Report

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Environmental

Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

MS/MSD

 ${\tt Unspiked} \ \ ({\tt UNSPK}) \ = \ {\tt the} \ \ {\tt sample} \ \ {\tt used} \ \ {\tt in} \ \ {\tt conjunction} \ \ {\tt with} \ \ {\tt the} \ \ {\tt matrix} \ \ {\tt spike}$

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: F161481AA	Sample numb	er(s): 8392	571-83925	575 UNSPK:	8392575					
Benzene	N.D.	20	20.35	20	20.31	102	102	78-120	0	30
1,2-Dichloroethane	N.D.	20	18.75	20	18.89	94	94	72-127	1	30
Ethylbenzene	N.D.	20	19.45	20	19.71	97	99	78-120	1	30
Isopropylbenzene	N.D.	20	20.31	20	20.35	102	102	80-120	0	30
Methyl Tertiary Butyl Ether	1.11	20	19.92	20	20.37	94	96	75-120	2	30
Toluene	N.D.	20	19.77	20	20.03	99	100	80-120	1	30
1,2,4-Trimethylbenzene	N.D.	20	17.84	20	17.97	89	90	75-120	1	30
1,3,5-Trimethylbenzene	N.D.	20	18.21	20	18.07	91	90	75-120	1	30
Xylene (Total)	N.D.	60	58.95	60	58.6	98	98	80-120	1	30
Batch number: Z161451AA	-	er(s): 8392								
Benzene	40.24	100	143.35	100	143.02	103	103	78-120	0	30
1,2-Dichloroethane	N.D.	100	95.52	100	94.37	96	94	72-127	1	30
Ethylbenzene	288.03	100	396.11	100	384.82	108	97	78-120	3	30
Isopropylbenzene	11.7	100	117.84	100	116.11	106	104	80-120	1	30
Methyl Tertiary Butyl Ether	N.D.	100	92.45	100	94.15	92	94	75-120	2	30
Toluene	4.69	100	108.45	100	106.17	104	101	80-120	2	30
1,2,4-Trimethylbenzene	997.91	100	1071.64	100	1029.9	74 (2)	32 (2)	75-120	4	30
1,3,5-Trimethylbenzene	642.73	100	741.68	100	737.35	99 (2)	95 (2)	75-120	1	30
Xylene (Total)	1917.27	300	2215.61	300	2139.33	99 (2)	74 (2)	80-120	4	30
Batch number: Z161462AA	Sample numb	er(s): 8392	576-83925	578 UNSPK:	P393782					
Benzene	N.D.	20	20.24	20	19.99	101	100	78-120	1	30
1,2-Dibromoethane	N.D.	20	18.97	20	18.76	95	94	80-120	1	30
1,2-Dichloroethane	N.D.	20	18.8	20	18.53	94	93	72-127	1	30
Ethylbenzene	N.D.	20	19.98	20	19.64	100	98	78-120	2	30
Isopropylbenzene	N.D.	20	20.89	20	20.73	104	104	80-120	1	30
Methyl Tertiary Butyl Ether	N.D.	20	17.81	20	17.51	89	88	75-120	2	30
Toluene	N.D.	20	20.56	20	20.44	103	102	80-120	1	30
1,2,4-Trimethylbenzene	5.50	20	25.24	20	25.69	99	101	75-120	2	30
1,3,5-Trimethylbenzene	0.579	20	19.89	20	19.82	97	96	75-120	0	30
Xylene (Total)	N.D.	60	61.81	60	61.29	103	102	80-120	1	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 161420021A	Sample numb	er(s): 8392	561-83925	566 UNSPK:	8392561					
Ethylene dibromide	N.D.	0.124	0.129			104		60-140		
Batch number: 161420022A		er(s): 8392								
Ethylene dibromide	N.D.	0.123	0.112	0.123	0.118	91	96	60-140	6	20
Batch number: 161440016A		er(s): 8392		576 UNSPK:	P390402					
Ethylene dibromide	N.D.	0.124	0.119			96		60-140		
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 161496050002A	Sample numb	er(s): 8392	561-83925	576 UNSPK:	P393791					

^{*-} Outside of specification

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⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Group Number: 1664163 Client Name: Stantec

Reported: 06/02/2016 12:51

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Lead	0.226	15	16.18	15	16.05	106	105	75-125	1	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	ug/l	ug/l		
Batch number: 161420021A Ethylene dibromide	Sample number(s): 0.0242	8392561-8392566 BKG 0.0259	3: 8392563 7 (1)	30
Batch number: 161440016A Ethylene dibromide	Sample number(s): N.D.	8392575-8392576 BKG N.D.	G: P390404 0 (1)	30
	ug/l	ug/l		
Batch number: 161496050002A Lead	Sample number(s): 0.226	8392561-8392576 BKG 0.222	9: P393791 2 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs Batch number: F161481AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8392571	97	97	95	98
8392572	96	94	99	95
8392573	98	98	95	90
8392574	100	95	96	89
8392575	99	94	96	90
Blank	99	96	96	88
LCS	98	97	97	93
MS	98	99	97	95
MSD	99	97	97	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs

Batch number: Z161442AA

^{*-} Outside of specification

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Analysis Report

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Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8392561	100	97	95	88
8392562	96	94	96	99
8392566	94	95	99	98
8392570	97	94	98	93
Blank	101	100	96	89
LCS	97	96	98	98
LCSD	98	96	97	97
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/TMBs

Batch number: Z161451AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8392563	93	93	97	89
8392564	94	96	96	93
8392565	98	97	96	90
8392567	98	97	97	94
8392568	99	99	96	90
8392569	99	99	97	91
Blank	99	99	96	90
LCS	96	98	98	97
LCSD	96	98	97	96
MS	95	98	98	97
MSD	94	98	98	96
Limits	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/EDB/TMBs

Batch number: Z161462AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8392576	97	96	98	91
8392577	100	98	96	89
8392578	101	99	96	88
Blank	99	98	96	90
LCS	96	96	98	96
MS	97	96	98	96
MSD	96	98	98	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PAHs by 8270 Batch number: 16144WAB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
8392561	87	95	82	
8392562	99	84	83	
8392563	89	85	61	
8392564	86	81	58	
8392565	85	89	50	
8392566	90	93	70	

^{*-} Outside of specification

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⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Client Name: Stantec Group Number: 1664163

Reported: 06/02/2016 12:51

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
8392567	90	90	95	
8392568	84	88	87	
8392569	95	83	83	
8392570	87	93	78	
8392571	92	80	62	
8392572	90	81	47	
8392573	83	85	82	
8392574	87	85	86	
8392575	88	84	80	
8392576	89	83	49	
Blank	92	87	91	
LCS	87	77	79	
LCSD	83	81	69	

Limits: 46-128 61-112 41-125

Analysis Name: EDB in Wastewater Batch number: 161420021A

1 1 2 2 Tetrachlaroothana

	1,1,2,2-1etrachioroethane
8392561	86
8392562	83
8392563	89
8392564	99
8392565	127
8392566	101
Blank	91
DUP	87
LCS	101
LCSD	87
MS	72

Limits: 46-136

Analysis Name: EDB in Wastewater Batch number: 161420022A

	1,1,2,2-Tetrachloroethane
8392567	99
8392568	96
8392569	93
8392570	160*
8392571	110
8392572	112
8392573	93
8392574	100
Blank	84
LCS	79
LCSD	75
MS	79
MSD	82

^{*-} Outside of specification

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Analysis Report

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Quality Control Summary

Group Number: 1664163 Client Name: Stantec

Reported: 06/02/2016 12:51

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed $% \left(1\right) =\left(1\right) \left(1\right) +\left(1\right) \left(1\right) \left(1\right) +\left(1\right) \left(unless attributed to dilution or otherwise noted on the Analysis Report.

46-136

Analysis Name: EDB in Wastewater Batch number: 161440016A

1,1,2,2-Tetrachloroethane

8392575	87	
8392576	75	
Blank	79	
DUP	4650*	
LCS	89	
LCSD	87	
MS	13368*	
Limits:	46-136	

*- Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

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Lancaster Laboratories

For Eurofins Lancaster Laboratories Environmental use only Acct. # $\frac{16657}{992561-78}$ Group # $\frac{1664163}{992561-78}$

COC #500199

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Project Name/#: Evergreen RHRO Annual Perimate 645	PWSID #:		Tissue	Ground			VOCE by SAGON GARWARS)			a				ii .	servation (ŧ
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Project Manager: Jennifer Manges						STS	\$	188		ود				S =H ₂ S(other
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Environmental Analysis Request/Chain of Custody

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Lancaster Laboratories

Acct. # 16657 Group # 1664163 ample # 8392561-78

Environmental

COC # 500200

Client Informatio	n		Matrix					Memorena comes	0. 4~1.000000000000000000000000000000000000	A	nalysis	Requested				For Lab Use Only			
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Data Package Options (circle if required)																			
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data	Only)	Relinquished b						/	Date		Time	Received by	Received by				Date 5/20/16	Time (640
Type III (Reduced non-CLP) NJ DKQF	тхт	RRP-13	ge-en-Gasarladaksemad	aliekalakokokoko	f yes,	EDD Req	uirec - کیک	Etr 15 ((es)) - 51	rvtec No	-પ		Relinqui	Relinquished by Commercial Carrier:					
NYSDEC Category A or B MA MCP	CT F	RCP		Site	e-Spe	ecific QC (late QC sampl	MS/N	1SD/E	Dup)?	Υe	s	No ume.)	Temperature upon receipt <u>(0.6~1.6</u> °C			_°C			

16657 1664163 8392561-78

Annual Perimeter Groundwater Sampling Scope Of Work Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC May 2016

enter "EQuIS-EFW-Stantec_4" on the COC. Also, under the Client Information section on the COC, enter Stantec for Client and for Acct #, enter "Evergreen".

Sampling pumps and interface probes <u>must be</u> decontaminated with an Alconox® or Liquinox® wash and distilled or DI water rinse before the start of sampling and between wells. Dedicated buckets designated for decon for these wells can be found in the Stantec storage trailer. At the end of each day, the excess decontamination water should be filtered through a GAC unit and discharged to the ground surface in an area near the trailers that will not create a puddle in the general walking/working area of the ground.

At the completion of the sampling event, email the EDD file(s) to Andrew Klingbeil for review.

Philadelphia Refinery Complex Groundwater COC List (PHL GW COC List) Evergreen Petroleum Short List (April 2016)

Lvergreen retroicant short List (April 2020)	
VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7
SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(a)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

^{*}Ethylene Dibromide should be analyzed by EPA Method 8011 instead of 8260 in soil for tank investigations, soil reuse sampling, and in all groundwater samples.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

^{**}Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

^{***}Metals analysis should be total in soil and dissolved in groundwater.



Sample Administration Receipt Documentation Log

Doc Log ID:

147473

Group Number(s): 1664163

Client: Stantec

Delivery and Receipt Information

Delivery Method:

ELLE Courier

Arrival Timestamp:

05/20/2016 16:40

Number of Packages:

<u>3</u>

Number of Projects:

1

State/Province of Origin:

<u>PA</u>

Arrival Condition Summary

Shipping Container Sealed:

Yes No Sample IDs on COC match Containers:

Yes

Custody Seal Present:

No

Sample Date/Times match COC:

Yes

Samples Chilled:

Yes

VOA Vial Headspace ≥ 6mm.

165

Paperwork Enclosed:

Yes

Total Trip Blank Qty:

No 3

Samples Intact:

Yes

Trip Blank Type:

HCI

Missing Samples:

No No Air Quality Samples Present:

No

Extra Samples:
Discrepancy in Container Qty on COC:

No

Unpacked by Patrick Engle (3472) at 17:45 on 05/20/2016

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.8	DT	Wet	Υ	Bagged	N
2	DT121	1.6	DT	Wet	Υ	Bagged	N
3	DT121	0.6	DT	Wet	Υ	Bagged	N



Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL N.D.	Reporting Limit none detected	BMQL MPN	Below Minimum Quantitation Level Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
μg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	μL	microliter(s)
		pg/L	picogram/liter

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basisResults printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Evergreen c/o Stantec 1060 Andrew Drive Suite 140 West Chester PA 19380

Report Date: May 24, 2016

Project: Evergreen PHRO Annual Perimeter GWS

Submittal Date: 05/12/2016 Group Number: 1660187 PO Number: PHL REFINERY State of Sample Origin: PA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
S-232-20160510 Grab Groundwater	8378380
S-51-20160510 Grab Groundwater	8378381
S-41-20160510 Grab Groundwater	8378382
S-231-20160510 Grab Groundwater	8378383
S-43-20160510 Grab Groundwater	8378384
S-50-20160510 Grab Groundwater	8378385
S-44-20160511 Grab Groundwater	8378386
S-44-20160511DUP Grab Groundwater	8378387
S-249-20160511 Grab Groundwater	8378388
RW-108-20160511 Grab Groundwater	8378389
S-154-20160511 Grab Groundwater	8378390
S-72-20160511 Grab Groundwater	8378391
S-351-20160512 Grab Groundwater	8378392
S-1-20160512 Grab Groundwater	8378393
S-25-20160512 Grab Groundwater	8378394
S-3-20160512 Grab Groundwater	8378395
S-39-20160512 Grab Groundwater	8378396
S-122-20160512 Grab Groundwater	8378397
EB-20160512 Grab Water	8378398
TB-20160512 Water	8378399

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/.

Electronic Copy To Sunoco c/o Stantec Attn: Jennifer Menges

Analysis Report

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Respectfully Submitted,

Amek Carter Specialist

(717) 556-7252



Analysis Report

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Sample Description: S-232-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-232

LL Sample # WW 8378380 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 12:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH232

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	2	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0096	1
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 15:51	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 15:51	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 20:28	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 01:00	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-232-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-232

LL Sample # WW 8378380 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 12:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH232

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	11:48	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378381

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-51-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-51

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH051

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 5	5	3	5
10945	1,2-Dichloroethane		107-06-2	< 5	5	3	5
10945	Ethylbenzene		100-41-4	< 5	5	3	5
10945	Isopropylbenzene		98-82-8	28	10	3	5
10945	Methyl Tertiary But	yl Ether	1634-04-4	32	5	3	5
10945	Toluene		108-88-3	< 5	5	3	5
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 10	10	3	5
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 10	10	3	5
10945	Xylene (Total)		1330-20-7	< 5	5	3	5
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	e	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	2	0.5	0.1	1
07805	Naphthalene		91-20-3	0.6	0.5	0.1	1
07805	Phenanthrene		85-01-8	1	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Dogtio	ides/PCBs	SW-846	0.011	ug/l	ug/l	ug/l	
		5W-846		<u> </u>	- -	<u> </u>	_
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1
00000	LCGG		/432 JZ I	` 1.0	1.0	0.13	_

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 16:12	Daniel H Heller	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 16:12	Daniel H Heller	5
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 20:56	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 01:16	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-51-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-51

LL Sample # WW 8378381 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH051

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016 11:50	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161396050001	05/19/2016 22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378382

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-41-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-41

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH041

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 5	5	3	5
10945	1,2-Dichloroethane		107-06-2	< 5	5	3	5
10945	Ethylbenzene		100-41-4	< 5	5	3	5
10945	Isopropylbenzene		98-82-8	28	10	3	5
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	6	5	3	5
10945	Toluene		108-88-3	< 5	5	3	5
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 10	10	3	5
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 10	10	3	5
10945	Xylene (Total)		1330-20-7	< 5	5	3	5
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	2	0.5	0.1	1
07805	Naphthalene		91-20-3	2	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metalo	: Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035		DM-040	7439-92-1		<u>-</u> .	<u>-</u>	1
06035	Lead		/439-92-I	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 16:34	Daniel H Heller	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 16:34	Daniel H Heller	5
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 21:25	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 01:31	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-41-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-41

LL Sample # WW 8378382 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH041

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	11:37	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-231-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-231

LL Group # 1660187 Account # 16657

LL Sample # WW 8378383

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH231

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	29	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	11	1	0.5	1
10945	Isopropylbenzene		98-82-8	29	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	4	1	0.5	1
10945	Toluene		108-88-3	15	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	10	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	16	2	0.5	1
10945	Xylene (Total)		1330-20-7	18	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	0.6	0.5	0.1	1
07805	Naphthalene		91-20-3	4	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	•		106-93-4	< 0.029	0.029	0.0096	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 16:56	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 16:56	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 21:53	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 10:06	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-231-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-231

LL Sample # WW 8378383 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH231

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	11:55	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

Account

LL Sample # WW 8378384

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-43-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-43

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH043

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	11	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	3	1	0.5	1
10945	Isopropylbenzene		98-82-8	56	2	0.5	1
10945	Methyl Tertiary Buty	/l Ether	1634-04-4	5	1	0.5	1
10945	Toluene		108-88-3	7	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	7	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene	J J.J	120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
	Benzo (a) pyrene		50-32-8	< 0.5	0.5	0.1	1
	Benzo(b) fluoranthene	2	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(q,h,i)perylene		191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene	-	218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	4	0.5	0.1	1
07805	Naphthalene		91-20-3	1	0.5	0.1	1
07805	Phenanthrene		85-01-8	2	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Desti	ides/PCBs	SW-846	9011	ug/l	ug/l	ug/l	
	•	DW-040			- '	- '	1
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 17:18	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 17:18	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 22:21	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 10:21	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-43-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-43

LL Sample # WW 8378384 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH043

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	11:57	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378385

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-50-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-50

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH050

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pesti	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	211 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 17:39	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 17:39	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 22:50	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 10:37	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-50-20160510 Grab Groundwater

PHRO Annual Perimeter GWS S-50

LL Sample # WW 8378385 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/10/2016 13:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH050

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	11:58	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378386

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-44-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-44

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH044

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	310	5	3	5
10945	1,2-Dichloroethane		107-06-2	< 5	5	3	5
10945	Ethylbenzene		100-41-4	< 5	5	3	5
10945	Isopropylbenzene		98-82-8	14	10	3	5
10945	Methyl Tertiary But	yl Ether	1634-04-4	120	5	3	5
10945	Toluene		108-88-3	14	5	3	5
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 10	10	3	5
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 10	10	3	5
10945	Xylene (Total)		1330-20-7	19	5	3	5
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	2	0.5	0.1	1
07805	Naphthalene		91-20-3	1	0.5	0.1	1
07805	Phenanthrene		85-01-8	0.6	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0095	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161372AA	05/16/2016 18:01	Daniel H Heller	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161372AA	05/16/2016 18:01	Daniel H Heller	5
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 23:18	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 10:52	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-44-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-44

LL Sample # WW 8378386 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

PH044

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:00	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-44-20160511DUP Grab Groundwater

PHRO Annual Perimeter GWS S-44

LL Sample # WW 8378387 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHFDP

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	310	5	3	5
10945	1,2-Dichloroethane		107-06-2	< 5	5	3	5
10945	Ethylbenzene		100-41-4	< 5	5	3	5
10945	Isopropylbenzene		98-82-8	14	10	3	5
10945	Methyl Tertiary But	yl Ether	1634-04-4	120	5	3	5
10945	Toluene		108-88-3	14	5	3	5
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 10	10	3	5
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 10	10	3	5
10945	Xylene (Total)		1330-20-7	17	5	3	5
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene	D 010	120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo (a) pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	e	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(q,h,i)perylen		191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	2	0.5	0.1	1
07805	Naphthalene		91-20-3	1	0.5	0.1	1
07805	Phenanthrene		85-01-8	0.7	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	•	D 040	106-93-4	< 0.029	0.029	0.0097	1
10390	Eculytene albiomide		100-93-4	₹ 0.029	0.029	0.0091	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 14:35	Daniel H Heller	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 14:35	Daniel H Heller	5
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/20/2016 23:46	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 11:08	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-44-20160511DUP Grab Groundwater

PHRO Annual Perimeter GWS S-44

LL Sample # WW 8378387 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHFDP

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:02	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-249-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-249

LL Sample # WW 8378388 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH249

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	•		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	510	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 14:57	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 14:57	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 00:14	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350018A	05/19/2016 11:23	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350018A	05/16/2016 19:00	Shawn J McMullen	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-249-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-249

LL Sample # WW 8378388 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

nopologa.

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH249

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:04	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: RW-108-20160511 Grab Groundwater

PHRO Annual Perimeter GWS RW-108

LL Sample # WW 8378389 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH108

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthene	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
	Ethylene dibromide		106-93-4	< 0.030	0.030	0.0098	1
Metalo	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2.1. 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 15:19	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 15:19	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 00:43	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 09:37	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: RW-108-20160511 Grab Groundwater

PHRO Annual Perimeter GWS RW-108

LL Sample # WW 8378389 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH108

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:05	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-154-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-154

LL Group # 1660187 Account # 16657

LL Sample # WW 8378390

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

- .

PH154

Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	2	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	5	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	34	1	0.5	1
10945	Toluene		108-88-3	1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	7	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	0.9	0.5	0.1	1
07805	Naphthalene		91-20-3	0.6	0.5	0.1	1
07805	Phenanthrene		85-01-8	0.6	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record Analysis Name Method Trial# Batch# Analysis

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	me	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016	15:41	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016	15:41	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016	01:11	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016	17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016	09:53	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016	09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-154-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-154

LL Sample # WW 8378390 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH154

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:07	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378391

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-72-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-72

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 13:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH072

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	9	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
aa /24a	G	grz 046	00506	/1	/3	/1	
		SW-846		ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	1	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	1	0.5	0.1	1
	Benzo(a)pyrene		50-32-8	2	0.5	0.1	1
	Benzo(b)fluoranthene		205-99-2	3	0.5	0.1	1
07805	Benzo(g,h,i)perylene	9	191-24-2	1	0.5	0.1	1
07805	Chrysene		218-01-9	3	0.5	0.1	1
07805	Fluorene		86-73-7	3	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	2	0.5	0.1	1
07805	Pyrene		129-00-0	4	0.5	0.1	1
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide	010	106-93-4	< 0.029	0.029	0.0096	1
20000	zen, rene arbromiae		100 33 1	. 0.025	0.023	0.0000	-
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 16:03	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 16:03	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 01:39	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 10:08	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-72-20160511 Grab Groundwater

PHRO Annual Perimeter GWS S-72

LL Sample # WW 8378391 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/11/2016 13:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH072

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:09	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-351-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-351

LL Sample # WW 8378392 LL Group # 1660187 Account # 16657

Dilution

Analyst

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 08:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH351

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	•		106-93-4	< 0.030	0.030	0.0098	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record CAT Analysis Name Method Trial# Batch# Analysis No. Date and Time

No.					Date and Ti	.me		Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016	16:25	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016	16:25	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016	02:08	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016	17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016	10:24	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016	09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-351-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-351

LL Sample # WW 8378392 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 08:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH351

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016 12:11	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A	1	161396050001	05/19/2016 22:00	Annamaria Kuhns	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-1-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-1

LL Sample # WW 8378393 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45 Reported: 05/24/2016 11:13

PH001

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene	D.I. 010	120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo (a) pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthene	2	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene		191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene	_	218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
5	· ' · I · · · · / D.CD ··	GTT 046	0011	ug/l	ug/l	ug/l	
	cides/PCBs	SW-846			5 .	3.	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 16:47	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 16:47	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 02:36	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 11:10	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-1-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-1

LL Sample # WW 8378393 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH001

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:16	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378394

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-25-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-25

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH025

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthene	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metalo	: Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	54-040	7439-92-1	< 1.0	1.0	0.13	1
00033	псаа		1439-92-1	\ 1.U	1.0	0.13	±

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 17:08	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 17:08	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 03:05	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 11:26	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-25-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-25

LL Sample # WW 8378394 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:15 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH025

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:18	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

Account

LL Sample # WW 8378395

16657

LL Group # 1660187

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-3-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-3

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

PH003

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary But	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenz	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenz	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthen	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylen	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 17:30	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 17:30	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 03:33	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 11:42	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-3-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-3

LL Sample # WW 8378395 LL Group # 1660187

16657 Account

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:30 by D

1060 Andrew Drive

Suite 140

West Chester PA 19380

Evergreen c/o Stantec

PH003

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:20	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-39-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-39

LL Group # 1660187 Account # 16657

LL Sample # WW 8378396

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

PH039

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	/l Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
aa /wa	Comincolotilos	GT 046	92700	ug/l	ug/l	ug/l	
		SW-846		_	- :	<u>-</u> .	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthene		205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	9	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	cides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
35.1.3		arr 0.45	5000	/1	/1	/1	
	Dissolved	SW-846		ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 17:52	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 17:52	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 04:02	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 11:57	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-39-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-39

LL Sample # WW 8378396 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 12:45 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH039

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:21	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-122-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-122

LL Group # 1660187 Account # 16657

LL Sample # WW 8378397

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PH122

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
aa /wa	O	GT-7 0.4.C	00700	ug/l	ug/l	/1	
•	Semivolatiles	SW-846			<u>-</u>	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a) anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b)fluoranthene		205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(g,h,i)perylene	9	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestic	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide		106-93-4	< 0.029	0.029	0.0097	1
Metals	: Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead	2 010	7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 18:14	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 18:14	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 04:30	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 12:13	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: S-122-20160512 Grab Groundwater

PHRO Annual Perimeter GWS S-122

LL Sample # WW 8378397 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 13:00 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

nopoloda. vo

Reported: 05/24/2016 11:13

Submitted: 05/12/2016 16:45

PH122

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:23	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: EB-20160512 Grab Water

PHRO Annual Perimeter GWS EB

LL Sample # WW 8378398 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 13:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHEBK

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10945	Benzene		71-43-2	< 1	1	0.5	1
10945	1,2-Dichloroethane		107-06-2	< 1	1	0.5	1
10945	Ethylbenzene		100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene		98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Buty	yl Ether	1634-04-4	< 1	1	0.5	1
10945	Toluene		108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenze	ene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenze	ene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)		1330-20-7	< 1	1	0.5	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Anthracene		120-12-7	< 0.5	0.5	0.1	1
07805	Benzo(a)anthracene		56-55-3	< 0.5	0.5	0.1	1
07805	Benzo(a)pyrene		50-32-8	< 0.5	0.5	0.1	1
07805	Benzo(b) fluoranthene	е	205-99-2	< 0.5	0.5	0.1	1
07805	Benzo(q,h,i)perylene	е	191-24-2	< 0.5	0.5	0.1	1
07805	Chrysene		218-01-9	< 0.5	0.5	0.1	1
07805	Fluorene		86-73-7	< 0.5	0.5	0.1	1
07805	Naphthalene		91-20-3	< 0.5	0.5	0.1	1
07805	Phenanthrene		85-01-8	< 0.5	0.5	0.1	1
07805	Pyrene		129-00-0	< 0.5	0.5	0.1	1
Pestio	ides/PCBs	SW-846	8011	ug/l	ug/l	ug/l	
10398	Ethylene dibromide	010	106-93-4	< 0.029	0.029	0.0097	1
					_	4-	
Metals	s Dissolved	SW-846	6020	ug/l	ug/l	ug/l	
06035	Lead		7439-92-1	< 1.0	1.0	0.13	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17. This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST Unleaded/Leaded minus NAPH	SW-846 8260B	1	F161371AA	05/16/2016 18:35	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F161371AA	05/16/2016 18:35	Daniel H Heller	1
07805	PAHs by 8270	SW-846 8270C	1	16134WAD026	05/21/2016 04:58	Catherine E Bachman	1
07807	BNA Water Extraction	SW-846 3510C	1	16134WAD026	05/13/2016 17:00	Shawn J McMullen	1
10398	EDB in Wastewater	SW-846 8011	1	161350039A	05/18/2016 12:28	Heather M Miller	1
07786	EDB Extraction (8011)	SW-846 8011	1	161350039A	05/17/2016 09:00	Scott J Carini	1

^{*=}This limit was used in the evaluation of the final result



Submitted: 05/12/2016 16:45

Lancaster Laboratories Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: EB-20160512 Grab Water

PHRO Annual Perimeter GWS EB

LL Sample # WW 8378398 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 13:30 by D Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

Reported: 05/24/2016 11:13

PHEBK

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	161396050001A	05/20/2016	12:25	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	161396050001	05/19/2016	22:00	Annamaria Kuhns	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: TB-20160512 Water

Submitted: 05/12/2016 16:45

Reported: 05/24/2016 11:13

PHRO Annual Perimeter GWS TB

LL Sample # WW 8378399 LL Group # 1660187 Account # 16657

Project Name: Evergreen PHRO Annual Perimeter GWS

Collected: 05/12/2016 Evergreen c/o Stantec

1060 Andrew Drive

Suite 140

West Chester PA 19380

PHTBK

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation*	Method Detection Limit	Dilution Factor
GC/MS	Volatiles SW-8	46 8260B	ug/l	ug/l	ug/l	
10945	Benzene	71-43-2	< 1	1	0.5	1
10945	1,2-Dibromoethane	106-93-4	< 1	1	0.5	1
10945	1,2-Dichloroethane	107-06-2	< 1	1	0.5	1
10945	Ethylbenzene	100-41-4	< 1	1	0.5	1
10945	Isopropylbenzene	98-82-8	< 2	2	0.5	1
10945	Methyl Tertiary Butyl Ethe	er 1634-04-4	< 1	1	0.5	1
10945	Toluene	108-88-3	< 1	1	0.5	1
10945	1,2,4-Trimethylbenzene	95-63-6	< 2	2	0.5	1
10945	1,3,5-Trimethylbenzene	108-67-8	< 2	2	0.5	1
10945	Xylene (Total)	1330-20-7	< 1	1	0.5	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE/Cumene/EDC/EDB/ TMBs	SW-846 8260B	1	Z161401AA	05/19/2016 11:06	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z161401AA	05/19/2016 11:06	Brett W Kenyon	1

Analysis Report

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Quality Control Summary

Client Name: Evergreen c/o Stantec Group Number: 1660187

Reported: 05/24/2016 11:13

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ**	MDL
	ug/l	ug/l	ug/l
Batch number: F161371AA Benzene 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	<pre>Sample number(s): < 1 < 1 < 1 < 2 < 1 < 1 < 2 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1</pre>	8378387-8378398 1 1 1 2 1 1 2 2 1	0.5 0.5 0.5 0.5 0.5 0.5 0.5
Batch number: F161372AA Benzene 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	<pre>Sample number(s): < 1 < 1 < 1 < 1 < 2 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1</pre>	8378380-8378386 1 1 1 2 1 2 2 1	0.5 0.5 0.5 0.5 0.5 0.5
Batch number: Z161401AA Benzene 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene Isopropylbenzene Methyl Tertiary Butyl Ether Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylene (Total)	<pre>Sample number(s): < 1 < 1 < 1 < 1 < 1 < 2 < 1 < 2 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1</pre>	8378399 1 1 1 1 1 2 1 2 1	0.5 0.5 0.5 0.5 0.5 0.5 0.5
Batch number: 16134WAD026 Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g,h,i)perylene Chrysene Fluorene Naphthalene Phenanthrene Pyrene	Sample number(s): < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5	8378380-8378398 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1

^{*-} Outside of specification

P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{**-}This limit was used in the evaluation of the final result for the blank

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Client Name: Evergreen c/o Stantec Group Number: 1660187

Reported: 05/24/2016 11:13

Method Blank (continued)

Analysis Name	Result	LOQ**	MDL
-	ug/l	ug/l	ug/l
Batch number: 161350018A Ethylene dibromide	Sample number(s): < 0.030	8378380-8378388	0.010
Batch number: 161350039A Ethylene dibromide	Sample number(s): < 0.030	8378389-8378398	0.010
Batch number: 161396050001A	Sample number(s):	8378380-8378398	0.13

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F161371AA	Sample numbe	r(s): 8378	387-8378398						
Benzene	20	18.89	20	20.01	94	100	78-120	6	30
1,2-Dichloroethane	20	18.57	20	18.74	93	94	72-127	1	30
Ethylbenzene	20	17.93	20	18.59	90	93	78-120	4	30
Isopropylbenzene	20	18.24	20	19.08	91	95	80-120	5	30
Methyl Tertiary Butyl Ether	20	19.05	20	19.24	95	96	75-120	1	30
Toluene	20	18.12	20	18.94	91	95	80-120	4	30
1,2,4-Trimethylbenzene	20	16.68	20	17.8	83	89	75-120	6	30
1,3,5-Trimethylbenzene	20	16.35	20	18.05	82	90	75-120	10	30
Xylene (Total)	60	53.98	60	56.33	90	94	80-120	4	30
Batch number: F161372AA	Sample numbe	r(s): 8378	380-8378386						
Benzene	20	20.09	20	20.13	100	101	78-120	0	30
1,2-Dichloroethane	20	18.88	20	18.81	94	94	72-127	0	30
Ethylbenzene	20	19.18	20	18.84	96	94	78-120	2	30
Isopropylbenzene	20	19.85	20	19.22	99	96	80-120	3	30
Methyl Tertiary Butyl Ether	20	20.01	20	20.13	100	101	75-120	1	30
Toluene	20	19.03	20	18.84	95	94	80-120	1	30
1,2,4-Trimethylbenzene	20	17.95	20	17.45	90	87	75-120	3	30
1,3,5-Trimethylbenzene	20	18.05	20	17.49	90	87	75-120	3	30
Xylene (Total)	60	57.41	60	57.74	96	96	80-120	1	30
Batch number: Z161401AA	Sample numbe	r(s): 8378	399						
Benzene	20	18.81	20	18.86	94	94	78-120	0	30
1,2-Dibromoethane	20	19.39	20	18.89	97	94	80-120	3	30
1,2-Dichloroethane	20	18.78	20	18.97	94	95	72-127	1	30
Ethylbenzene	20	18.56	20	18.44	93	92	78-120	1	30
Isopropylbenzene	20	18.81	20	18.98	94	95	80-120	1	30
Methyl Tertiary Butyl Ether	20	18.58	20	18.58	93	93	75-120	0	30
Toluene	20	19.53	20	19.54	98	98	80-120	0	30
1,2,4-Trimethylbenzene	20	17.89	20	17.61	89	88	75-120	2	30
1,3,5-Trimethylbenzene	20	17.38	20	17.35	87	87	75-120	0	30
Xylene (Total)	60	57.46	60	57.54	96	96	80-120	0	30
	ug/l	ug/l	ug/l	ug/l					

^{*-} Outside of specification

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^{**-}This limit was used in the evaluation of the final result for the blank

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⁽²⁾ The unspiked result was more than four times the spike added.

Analysis Report

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Environmental

Quality Control Summary

Client Name: Evergreen c/o Stantec Group Number: 1660187

Reported: 05/24/2016 11:13

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 16134WAD026	Sample numbe	r(s): 8378	380-8378398						
Anthracene	50	51.5	50	50.92	103	102	68-126	1	30
Benzo(a)anthracene	50	53.17	50	54.01	106	108	69-133	2	30
Benzo(a)pyrene	50	51.49	50	51.57	103	103	68-126	0	30
Benzo(b)fluoranthene	50	50.67	50	50.44	101	101	71-131	0	30
Benzo(g,h,i)perylene	50	52.22	50	51.65	104	103	62-132	1	30
Chrysene	50	55.39	50	56.5	111	113	71-136	2	30
Fluorene	50	49.79	50	50.21	100	100	71-127	1	30
Naphthalene	50	48.17	50	47.69	96	95	62-121	1	30
Phenanthrene	50	49.58	50	48.83	99	98	65-120	2	30
Pyrene	50	49.59	50	50.09	99	100	68-118	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 161350018A	Sample numbe	r(s): 8378	380-8378388						
Ethylene dibromide	0.128	0.140	0.128	0.144	109	113	60-140	3	20
Batch number: 161350039A	Sample numbe	r(s): 8378	389-8378398						
Ethylene dibromide	0.128	0.125	0.128	0.133	98	104	60-140	6	20
	ug/l	ug/l	ug/l	ug/l					
Batch number: 161396050001A	Sample numbe	r(s): 8378	380-8378398						
Lead	15	15.18			101		80-120		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 161350018A Ethylene dibromide	Sample numb	er(s): 8378 0.124	380-8378 0.130	388 UNSPK:	P374854	105		60-140		
Batch number: 161350039A Ethylene dibromide	Sample number < 0.029	er(s): 8378 0.126	389-8378 0.138	398 UNSPK:	P377354	110		60-140		
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 161396050001A Lead	Sample numb	er(s): 8378 15	380-8378 15.47	398 UNSPK:	8378382 15.74	102	104	75-125	2	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{*-} Outside of specification

^{**-}This limit was used in the evaluation of the final result for the blank

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⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Group Number: 1660187 Client Name: Evergreen c/o Stantec

Reported: 05/24/2016 11:13

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	ug/l	ug/l		
Batch number: 161350018A	Sample number(s):	8378380-8378388 BKG:	P374855	
Ethylene dibromide	< 0.029	< 0.029	0 (1)	30
Batch number: 161350039A	Sample number(s):	8378389-8378398 BKG:	P377356	
Ethylene dibromide	< 0.029	< 0.029	0 (1)	30
	ug/l	ug/l		
Batch number: 161396050001A	Sample number(s):	8378380-8378398 BKG:	8378382	
Lead	0.170	0.171	1 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST Unleaded/Leaded minus NAPH

Batch number: F161371AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8378387	97	95	96	92
8378388	100	97	95	90
8378389	99	96	95	90
8378390	97	96	95	92
8378391	99	95	95	95
8378392	98	95	96	93
8378393	99	96	95	90
8378394	100	98	95	91
8378395	99	97	96	91
8378396	101	98	96	89
8378397	99	95	94	89
8378398	100	97	95	90
Blank	100	96	95	86
LCS	97	99	95	93
LCSD	98	98	94	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST Unleaded/Leaded minus NAPH Batch number: F161372AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8378380	98	95	93	91
8378381	97	97	92	93
8378382	96	95	93	95
8378383	96	96	94	95
8378384	98	95	95	95
8378385	95	95	94	91
8378386	97	98	93	92

^{*-} Outside of specification

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{**-}This limit was used in the evaluation of the final result for the blank

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⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Group Number: 1660187 Client Name: Evergreen c/o Stantec

Reported: 05/24/2016 11:13

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed $% \left(1\right) =\left(1\right) \left(1$ unless attributed to dilution or otherwise noted on the Analysis Report.

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
Blank	97	96	94	90
LCS	96	96	94	95
LCSD	98	99	94	92
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/Cumene/EDC/EDB/TMBs

Batch number: Z161401AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8378399	100	99	96	91
Blank	101	99	96	90
LCS	97	97	98	98
LCSD	98	97	98	98
Limits:	80-116	77-113	80-113	78-113

Tornbonyl d14

Analysis Name: PAHs by 8270 Batch number: 16134WAD026

Nitrobonzono dE

	Nitrobenzene-d5	2-Fluorobiphenyl	l erphenyl-d14	
8378380	90	88	90	
8378381	76	67	67	
8378382	93	87	90	
8378383	92	85	85	
8378384	83	85	88	
8378385	90	86	87	
8378386	92	88	87	
8378387	92	88	94	
8378388	92	91	96	
8378389	93	92	92	
8378390	79	75	81	
8378391	90	82	82	
8378392	91	85	81	
8378393	91	84	90	
8378394	93	90	96	
8378395	92	91	93	
8378396	92	90	95	
8378397	90	89	92	
8378398	92	90	95	
Blank	95	95	105	
LCS	95	94	99	
LCSD	96	94	101	
Limits:	46-128	61-112	41-125	

2 Eluorohinhonyl

Analysis Name: EDB in Wastewater

Batch number	: 161350018A
1	,1,2,2-Tetrachloroethane
8378380 1	.06
8378381 1	.31

^{*-} Outside of specification

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{**-}This limit was used in the evaluation of the final result for the blank

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⁽²⁾ The unspiked result was more than four times the spike added.



Analysis Report

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Quality Control Summary

Group Number: 1660187 Client Name: Evergreen c/o Stantec

Reported: 05/24/2016 11:13

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed $% \left(1\right) =\left(1\right) \left(1\right) +\left(1\right) \left(1\right) \left(1\right) +\left(1\right) \left(unless attributed to dilution or otherwise noted on the Analysis Report.

8378382	129	
8378383	107	
8378384	117	
8378385	111	
8378386	112	
8378387	109	
8378388	105	
Blank	110	
DUP	117	

1,1,2,2-Tetrachloroethane

MS 101 Limits: 46-136

LCS

LCSD

Analysis Name: EDB in Wastewater

Batch number: 161350039A

111

	1,1,2,2-Tetrachloroethane
8378389	103
8378390	108
8378391	102
8378392	100
8378393	103
8378394	99
8378395	90
8378396	100
8378397	101
8378398	105
Blank	99
DUP	104
LCS	98
LCSD	102
MS	191*

Limits: 46-136

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{*-} Outside of specification

^{**-}This limit was used in the evaluation of the final result for the blank

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only Group # 1660187 Sample # 8378380 -99 COC # 500194 Lancaster Laboratories Acct. # 11289 **Environmental** Client Information Matrix **Analysis Requested** For Lab Use Only **Preservation Codes** FSC: \square Evegreen PWSID#: Surface Ground Preservation Codes H=HCI T=Thiosulfate P.O. #: 1 voca by 8/260 * 5/0/s by 52704 N=HNO₃ B=NaOH Total # of Containers S=H2SO4 O=Other Sediment Remarks Potable & See affacted 15+ of For Compliance: Conskituents of Concern Composite Yes 🗆 No 🗆 for GW Sampling MRDISTOLNED lead to be Collected Water Grab Soil Sample Identification Altored by lab Date Time 5-232-20160510 5/10/16 1230 × X 5-51-20160510 5/10/16 1245 X 5/10/16 5-41-20160510 1300 Y-5-231-20160510 5/10/16 13/5 X 5-43-20160510 5/10/16 1330 8 5-50-20160510 1345 χ 5-44-20160511 1200 X 5-249-720160511DUP 1215 X 5-249-2016-0511 1230 12W-108-20160511 1245 Turnaround Time (TAT) Requested (please circle) 5/10/16 Standard 1050 (Rush TAT is subject to laboratory approval and surcharge.) 5/12/16 1450 14.50 Date results are needed: E-mail address: <u>jennifer. mengerostantec. Com</u>

Data Package Options (circle if required) Received by Time Type I (EPA Level 3 Relinguished by Received by Time Type VI (Raw Data Only) Equivalent/non-CLP) 5/12/16 1645 EDD Required? Yes No Relinguished by Commercial Carrier: Type III (Reduced non-CLP) NJ DKQP TX TRRP-13 If yes, format: FQUTS-FFW-Stantec_4 FedEx Site-Specific QC (MS/MSD/Dup)? NYSDEC Category A or B Temperature upon receipt 0.6-1.0 °C MA MCP CT RCP (If yes, indicate QC sample and submit triplicate sample volume.)

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Lancaster Laboratories Acct. # 11289 Group # 1660187 Sample # 8378380 -99

COC #500195

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6# 1660187

Annual Perimeter Groundwater Sampling Scope Of Work Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC May 2016

enter "EQuIS-EFW-Stantec_4" on the COC. Also, under the Client Information section on the COC, enter Stantec for Client and for Acct #, enter "Evergreen".

Sampling pumps and interface probes <u>must be</u> decontaminated with an Alconox® or Liquinox® wash and distilled or DI water rinse before the start of sampling and between wells. Dedicated buckets designated for decon for these wells can be found in the Stantec storage trailer. At the end of each day, the excess decontamination water should be filtered through a GAC unit and discharged to the ground surface in an area near the trailers that will not create a puddle in the general walking/working area of the ground.

At the completion of the sampling event, email the EDD file(s) to Andrew Klingbell for review.

Philadelphia Refinery Complex Groundwater COC List (PHL GW COC List) Evergreen Petroleum Short List (April 2016)

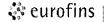
VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7
SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(a)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0
Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

^{*}Ethylene Dibromide should be analyzed by EPA Method 8011 instead of 8260 in soil for tank investigations, soil reuse sampling, and in all groundwater samples.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

^{**}Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

^{***}Metals analysis should be total in soil and dissolved in groundwater.



Sample Administration Receipt Documentation Log

Doc Log ID:

146369

Group Number(s): 1660187

Client: Stantec

Delivery and Receipt Information

Delivery Method:

ELLE Courier

Arrival Timestamp:

05/12/2016 16:45

Number of Packages:

<u>3</u>

Number of Projects:

1

State/Province of Origin:

<u>PA</u>

Arrival Condition Summary

Shipping Container Sealed:

No

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

No

Sample Date/Times match COC:

Yes

Samples Chilled:

Yes

VOA Vial Headspace ≥ 6mm:

Air Quality Samples Present:

No

Paperwork Enclosed:

Yes

Total Trip Blank Qty:

2

Samples Intact:

Yes

Trip Blank Type:

HCI No

Missing Samples: Extra Samples:

No No

No

Unpacked by Patrick Engle (3472) at 20:58 on 05/12/2016

Discrepancy in Container Qty on COC:

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	<u>lce Container</u>	Elevated Temp?
1	DT121	1.0	DT	Wet -	Υ	Bagged	N
2	DT121	0.6	DT	Wet	Υ	Bagged	N
3	DT121	0.9	, DT	Wet	Υ	Bagged	N



Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	Ě	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
μg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	μL	microliter(s)
		pg/L	picogram/liter

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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