GROUNDWATER SAMPLING REPORT
FOR THE DECEMBER 2016 SAMPLING EVENT
PHILADELPHIA GAS WORKS
PASSYUNK FACILITY
3100 WEST PASSYUNK AVENUE
PHILADELPHIA, PENNSYLVANIA

Leidos Project 307070.00.0000.1000.0100

Prepared for:

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, PA 19122

March 2017

Leidos, Inc.
1150 First Avenue, Suite 400 / King of Prussia, PA 19406 / 610.594.4310 leidos.com

Groundwater Sampling Report
for the December 2016 Sampling Event
Philadelphia Gas Works
Passyunk Facility
3100 West Passyunk Avenue
Philadelphia, Pennsylvania

Leidos Project 307070.00.0000.1000.0100

Prepared for:

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, PA 19122

Prepared by:

Leidos, Inc.
1150 First Avenue, Suite 400
King of Prussia, PA 19406
(610) 594-4310

March 2017

Prepared by:

Denae Athay

Denae Athay
QA/QC Analyst

Reviewed by:

Matt Machusick

Matthew D. Machusick, P.G.
Project Manager

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Leidos, Inc. (Leidos) has prepared this Groundwater Sampling Report (Report) for the Philadelphia Gas Works (PGW) to summarize and document the December 2016 monitoring well gauging, groundwater sampling, and related tasks conducted at the PGW Passyunk Facility (Site). The Site is located at 3100 West Passyunk Avenue, Philadelphia, Pennsylvania (**Figure 1**). **Figure 2** shows the groundwater monitoring well locations with reference to an aerial photograph.

1.1 Site Background

The Site is approximately 64 acres and is located in an area of mixed industrial, commercial, and residential uses. The Site is bounded by Passyunk Avenue to the south; Philadelphia Energy Solutions, LLC (PES) property to the north; the Schuylkill River and PES property to the west; and residential/commercial properties to the east. The Site has been owned and operated by PGW for over 100 years and has been used to manufacture, process, store, and distribute natural gas. The Site is currently used for liquefied natural gas (LNG) storage, vaporization, and gas distribution. In addition, the Site includes laboratory facilities, fleet maintenance, fueling, and parking.

Previous investigations by Weston Solutions, Inc. (Weston) and others have identified the presence of volatile and semi-volatile organic compounds (VOCs and SVOCs) and metals in soil and groundwater at concentrations above Pennsylvania Department of Environmental Protection (PADEP) medium-specific concentrations (MSC). In addition, phase-separated hydrocarbons (product) have been detected in groundwater, and PGW is currently operating a product recovery system.

The Site is in the process of voluntary remediation and monitoring in general accordance with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2). As part of the process, PGW is seeking to determine site-specific cleanup goals for the Site. The current investigation is intended to assess the contaminant concentrations at pertinent Site wells.

1.2 Site Topographic and Hydrogeologic Characteristics

Site topography is generally flat with a gentle slope toward the Schuylkill River. Ground surface elevations are between approximately 20 to 40 feet above mean sea level (ft amsl). The Site is located in the Atlantic Coastal Plain physiographic province and is underlain by the Trenton Gravel Formation. Site investigations observed a soil profile (0 to 10 feet [ft]) comprised of fill material, sandy to silty sediments, and soils. Deeper sediments consist of unconsolidated, interbedded, gravel, sand, silt, and clay.

Recent depth-to-groundwater measurements range from approximately 21 to 34 feet below the top of the inner casing (ft TIC) with resulting groundwater elevations of approximately 0.2 to 9 ft amsl. Data indicate the hydraulic gradient in the shallow aquifer generally trends southwest toward the Schuylkill River. Data from the deeper wells indicate the hydraulic gradient in the deeper aquifer trends southwest toward the Schuylkill River.

1.3 Scope of Work

This Report presents and summarizes the groundwater gauging and groundwater sampling event conducted between December 20 and 21, 2016, and the additional sample collected on January 19, 2017, at MW-42D to replace bottleware broken in transit to the laboratory.

2.0 METHODOLOGY

2.1 Monitoring Well Gauging

During the recent groundwater sampling event, Leidos gauged the depth to water at the following monitoring well network:

- MW-1D & MW-1S
- MW-2D & MW-2S
- MW-3D & MW-3S
- MW-4S
- MW-5S
- MW-6S
- MW-7S
- MW-10S
- MW-11S
- MW-12D & MW-12S
- MW-42D & MW-42R

Wells with high historical concentrations of hydrocarbon contamination and/or wells with organic vapor odors were screened for product with an interphase probe. The depth to groundwater and total well depth were measured at each well with an electronic water level meter. Total depths were compared to historical data to determine whether well development was warranted. Well total depths and groundwater depths were recorded in field logbooks.

2.2 Groundwater Sampling

After monitoring and recording groundwater depth, the wells were purged and sampled via low-flow methodology in general accordance with the guidance provided in the PADEP Groundwater Monitoring Guidance Manual (2001) and the United States Environmental Protection Agency (USEPA) Region I Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (1996). Groundwater samples were submitted to Eurofins Lancaster Laboratories, LLC for analysis of dissolved metals via USEPA Method SW-846 6010B/7000 Series, VOCs via USEPA Method SW-846 8260B, and SVOCs via USEPA Method SW-846 8270C. Quality assurance/quality control (QA/QC) samples included a duplicate sample, a rinse blank sample, and a trip blank sample.

2.3 Investigation-Derived Waste

Purge water derived from sampling was collected in 55-gallon drums and stored onsite pending future offsite disposal. Each drum was labeled with pertinent project details including date, contents, and generator contact information. The drums were placed on secondary containment with a capacity of approximately 110 percent total drum volume.

3.0 RESULTS

3.1 Monitoring Well Gauging

During the gauging event, product was not detected in any Site well. Measured total depths did not indicate the need for sediment removal and/or well development. **Table 1** below presents the results of the monitoring well gauging. Groundwater elevations and inferred elevation contours are presented for the shallow and deep aquifers on **Figures 3** and **4**. Field data collected during monitoring well gauging and sampling are included in **Appendix A**.

Table 1. Groundwater Elevations: December 20 and 21, 2016

Well ID	Easting	Northing	Top of Inner Casing Elevation (ft)	Depth to Water (ft TIC)	Total Depth (ft TIC)	Groundwater Elevation (ft)	Aquifer Zone
MW-1D	2,683,465.240	224,133.562	33.57	33.33	76.85	0.24	Deep
MW-1S	2,683,457.178	224,134.605	33.22	26.38	34.75	6.84	Shallow
MW-2D	2,683,917.577	224,285.832	35.16	33.70	82.72	1.46	Deep
MW-2S	2,683,927.594	224,288.315	35.23	27.00	35.24	8.23	Shallow
MW-3D	2,684,691.380	224,483.090	34.73	33.19	85.50	1.54	Deep
MW-3S	2,684,683.310	224,481.500	34.49	25.88	34.64	8.61	Shallow
MW-4S	2,685,043.870	224,934.393	31.34	23.06	36.30	8.28	Shallow
MW-5S	2,685,403.726	225,420.163	33.19	25.74	37.50	7.45	Shallow
MW-6S	2,685,347.530	224,948.150	32.09	24.43	33.36	7.66	Shallow
MW-7S	2,685,066.930	224,605.930	29.09	21.95	34.66	7.14	Shallow
MW-10S	2,685,131.701	225,178.850	33.62	25.32	33.43	8.30	Shallow
MW-11S	2,685,404.935	224,755.228	30.32	22.43	28.85	7.89	Shallow
MW-12D	2,685,290.315	224,520.078	30.07	28.74	75.77	1.33	Deep
MW-12S	2,685,295.012	224,520.765	29.85	21.88	33.06	7.97	Shallow
MW-42D	2,684,363.750	225,540.440	33.69	31.46	69.75	0.29	Deep
MW-42R	2,684,370.420	225,556.920	33.11	23.32	29.65	0.33	Shallow

Notes: Elevations are provided in feet above mean sea level (NAVD88)
Northing/Easting are provided in PA State Plane South feet (NAD83)

3.2 Groundwater Sampling

Results of groundwater sampling indicate benzene, toluene, ethylbenzene, and xylenes (BTEX), as well as several other VOCs and SVOCs, are present in multiple wells. Several metals were detected in Site wells including detections of arsenic, lead, and thallium at concentrations greater than applicable MSCs. Results of the groundwater sampling are presented in **Table 2** (VOCs), **Table 3** (SVOCs), and **Table 4** (metals). Copies of the laboratory results are included in **Appendix B**.

3.2.1 Volatile Organic Compounds

Samples contained detections of one or more of the following compounds: benzene, cis-1,2-dichloroethene, ethylbenzene, toluene, trichloroethene, vinyl chloride, and total xylenes. Several samples contained detections of compounds at concentrations greater than applicable MSCs. **Figure 5** presents the VOC detections above the MSCs for groundwater in nonresidential **used** aquifers. Provided below is a summary of pertinent VOC analytical results:

- The samples from MW-2D, MW-3D, MW-5S, MW-12D, and MW-42D did not contain detections above the MSCs.
- **Benzene**:
  - The samples from MW-1D, MW-1S, MW-2S, MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-11S, MW-12S, and MW-42R contained benzene at concentrations greater than the MSC for groundwater in nonresidential **non-used** aquifers (500 micrograms per liter [µg/L]) and nonresidential **used** aquifers (5 µg/L).
  - The samples from MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-11S, and MW-12S contained benzene concentrations greater than the MSC for groundwater in nonresidential **used** aquifers.
- **Ethylbenzene**: The samples from MW-2S, MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-12S, and MW-42R contained ethylbenzene at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (700 µg/L).
- **Toluene**: The samples from MW-4S, MW-4S Duplicate, MW-6S, and MW-10S contained toluene at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (1,000 µg/L).
- **Trichloroethene**: The sample from MW-1D, MW-1S, MW-2S, MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-11S, MW-12S, and MW-42R contained trichloroethene at a concentration greater than the MSC for groundwater in nonresidential **used** aquifers (5 µg/L).

3.2.2 Semi-Volatile Organic Compounds

Multiple SVOCs were detected in the groundwater samples. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, 2-methylnaphthalene, and naphthalene were detected at concentrations greater than applicable MSCs. **Figure 6** presents the SVOC detections above the MSCs for groundwater in nonresidential **used** aquifers. Provided below is a summary of pertinent SVOC analytical results:

- Samples from MW-1D, MW-1S, MW-2D, MW-3D, MW-5S, and MW-12D did not contain detections above the MSCs.
- **Benzo(a)anthracene**: The sample collected from MW-10S contained benzo(a)anthracene at a concentration (4 µg/L) greater than the MSC for groundwater in nonresidential **used** aquifers (3.6 µg/L).

- **Benzo(a)pyrene**: The samples from MW-2S, MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-10S, MW-12S, and MW-42R contained benzo(a)pyrene at concentrations greater than the MSC for groundwater in nonresidential **used** (0.2 µg/L) and MW-10S, MW-12S, and MW-42R for **non-used** aquifers (3.8 µg/L).
- **Benzo(b)fluoranthene**: The samples from MW-6S, MW-10S, MW-12S, and MW-42R contained benzo(b)fluoranthene at concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (1.2 µg/L for both).
- **Benzo(g,h,i)perylene**: The samples from MW-2S, MW-4S, MW-4S Duplicate, MW-6S, MW-10S, MW-12S, and MW-42R contained benzo(g,h,i)perylene at concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (0.26 µg/L for both).
- **Benzo(k)fluoranthene**: The samples from MW-6S, MW-10S, MW-12S, and MW-42R contained benzo(k)fluoranthene at a concentration greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (0.55 µg/L for both).
- **Chrysene**: The samples from MW-6S, MW-10S, MW-12S, and MW-42R contained chrysene at a concentration greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (1.9 µg/L for both).
- **Dibenz(a,h)anthracene**: The sample from MW-10S contained dibenz(a,h)anthracene at a concentration of 0.4 µg/L, which is greater than the MSC for groundwater in nonresidential **used** aquifers (0.36 µg/L).
- **2-Methylnaphthalene**: The samples from MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-12S, and MW-42R contained 2-methylnaphthalene at concentrations greater than the MSC for groundwater in nonresidential **used** and **non-used** aquifers (410 µg/L for both).
- **Naphthalene**: The samples from MW-2S, MW-3S, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-11S, MW-12S, and MW-42R contained naphthalene at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (100 µg/L).
- **Pentachlorophenol**: The sample from MW-6S contained pentachlorophenol at a concentration of 5 µg/L, which is greater than the MSC for groundwater in nonresidential **used** aquifers (1 µg/L).

3.2.3 Metals

Arsenic, cadmium, chromium, lead, nickel, silver, thallium, and zinc were detected in the samples. Arsenic, lead, and thallium were detected at concentrations above the nonresidential MSC for groundwater in **used** aquifers. Provided below is a summary of pertinent metals analytical results:

- The samples from MW-3S, MW-5S, MW-12S, and MW-42D did not contain detections above the MSCs.
- **Antimony**: The samples collected from MW-1D, MW-4S Duplicate, MW-7S, and MW-10S contained antimony at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (6 µg/L).
- **Arsenic**: The samples collected from MW-42D and MW-42R contained arsenic at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (10 µg/L).

- **Lead**: The samples collected from MW-1D, MW-1S, MW-2D, MW-2S, MW-3D, MW-4S, MW-4S Duplicate, MW-6S, MW-7S, MW-10S, MW-11S, and MW-12D contained lead at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (5 µg/L).
- **Thallium**: The samples collected from MW-3D and MW-12D contained thallium at concentrations greater than the MSC for groundwater in nonresidential **used** aquifers (2 µg/L).

3.3 Investigation-Derived Waste

Approximately 105 gallons of investigation-derived waste (IDW) fluids were produced during groundwater sampling at the Site. IDW was stored in three 55-gallon drums. The drums were placed on secondary containment with a capacity of approximately 110 percent total drum volume. Purge water from wells MW-1D, MW-1S, MW-3S, MW-4S, MW-6S, MW-7S, MW-10S, and MW-12S was segregated and placed in a 55-gallon drum inside of a drum overpack. Purge water and IDW fluids from other wells were stored in separate 55-gallon drums. IDW was removed from the Site by Veolia on December 22, 2016.

4.0 CONCLUSIONS, RECOMMENDATIONS, AND FUTURE ACTIVITIES

4.1 Conclusions and Recommendations

Sample results indicate concentrations greater than applicable MSCs for VOCs, SVOCs, and dissolved metals at multiple wells. Based on the compounds and concentrations detected, it is likely that benzene will serve as the primary driver for regulatory closure of the groundwater concern. Of the VOCs detected, benzene has one of the lowest MSCs, and multiple samples exceeded the MSC for used aquifers and non-used aquifers. Furthermore, most of the wells with SVOCs and dissolved metals concentrations greater than MSCs also had benzene concentrations greater than the MSC.

The current analytical results are similar to previous sampling events with a few exceptions. Benzene concentrations at MW-1D and MW-1S have declined substantially over the last several sampling events. MW-3S and MW-10S have shown an overall decline over the last two years. In contrast the benzene concentration at MW-6S, MW-7S, MW-11S are showing an increase over the last two years.

Leidos recommends continued groundwater monitoring to establish long-term trends in contaminant concentrations.

4.2 Future Activities

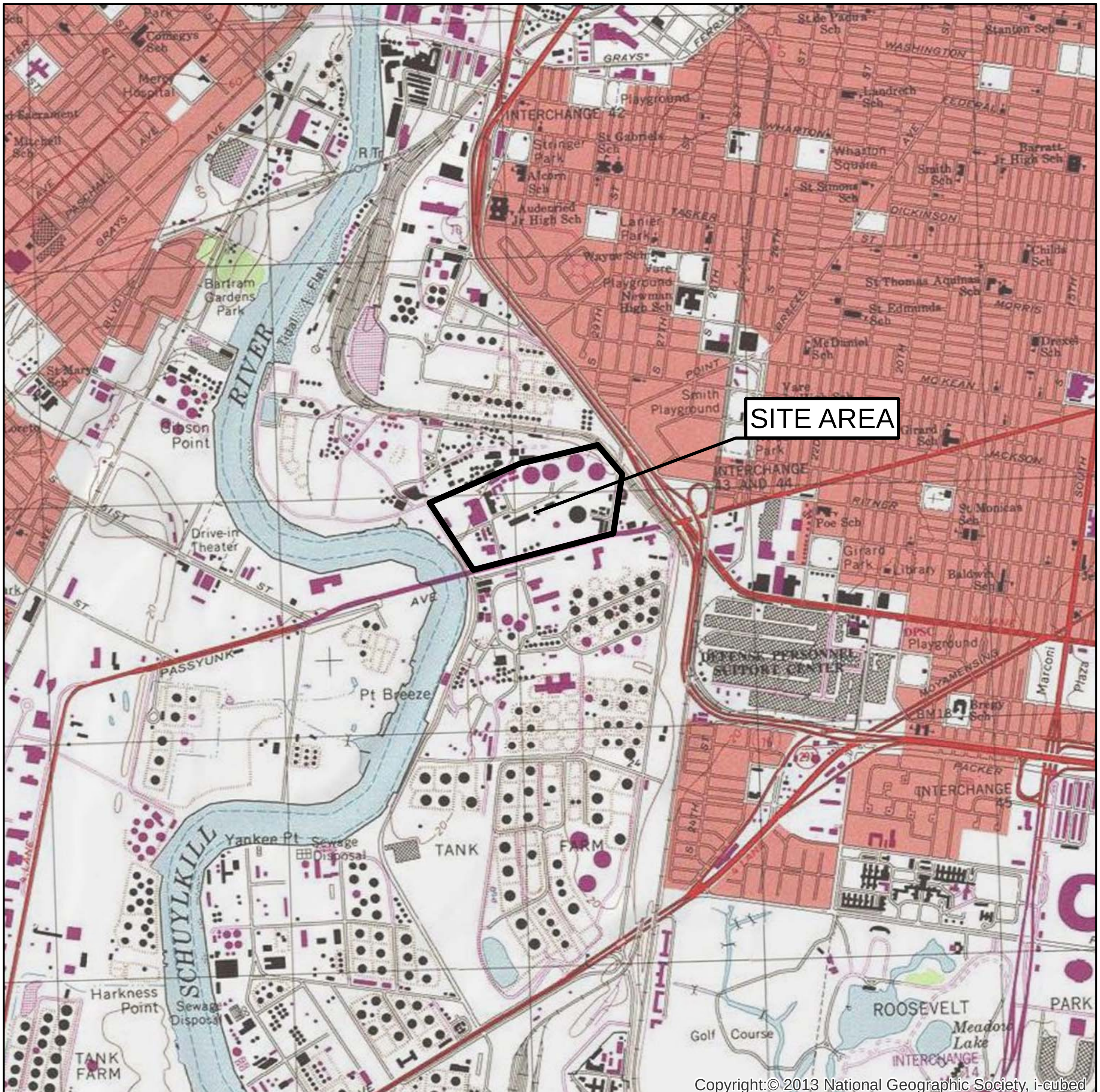
The next quarterly sampling event was conducted in March 2017. No additional activities are currently planned for this Site.

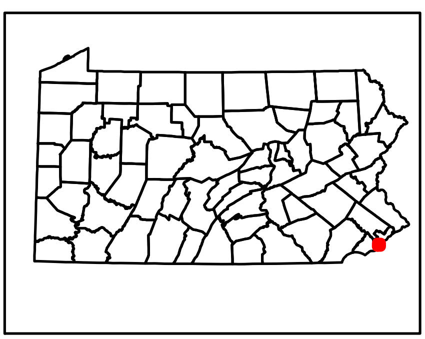
5.0 REFERENCES

Pennsylvania Department of Environmental Protection (PADEP) (2001). "Groundwater Monitoring Guidance Manual." PADEP. Document Number 383-3000-001.

United States Environmental Protection Agency (USEPA) (1996). "Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells." USEPA revision 2.

FIGURES





0 1,000 2,000 4,000
Feet

N

Philadelphia Gas Works
Passyunk Property - Philadelphia, PA

Site Location Map

drawn TAY	checked	approved	figure no. 1
date 07/03/2014	date	date	
job no. 307070.00.0000.1000.0100		file no. Fig 01 - Site Loc Map	

initials	date	revision

leidos

Source Imagery:
USGS Philadelphia Quadrangle 1994
PASDA FTP
Projection: StatePlane Pennsylvania South

D:\Harrisburg\GIS_Data\PGW\Passyunk\Projects\Fig 01 - Site Loc Map.mxd

Legend

Monitoring Well

Approximate Site Boundary

Source Imagery:
DVRPC 2005
Projection: PA State Plane NAD 1983 South

200 100 0 200 Feet

N

1 inch = 200 feet

Philadelphia Gas Works
Passyunk Property - Philadelphia, PA

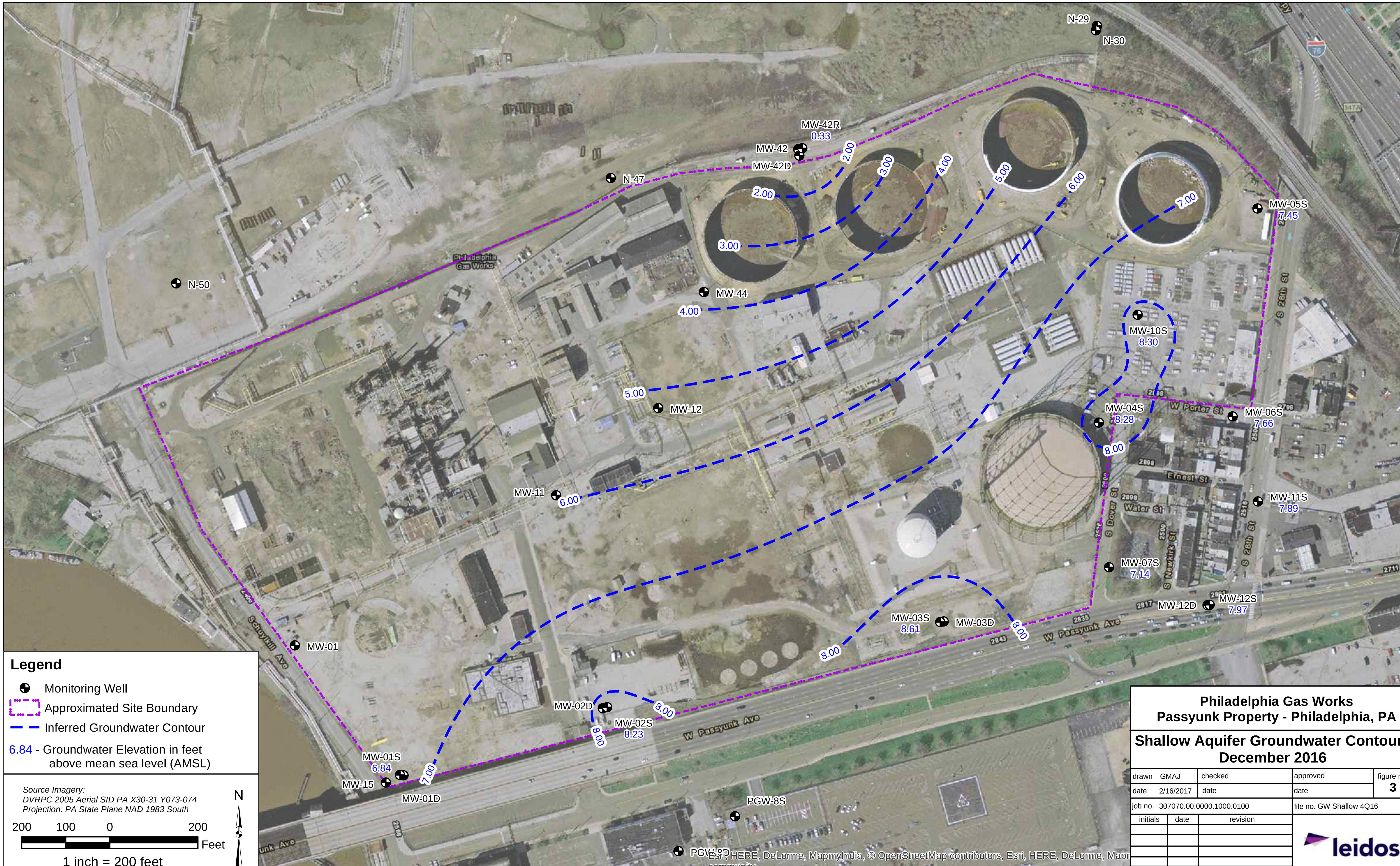
Well Location Map

drawn TAY	checked	approved	figure no.
date 07/02/2014	date	date	2
job no. 307070.00.0000.1000.0100		file no. Fig 02 - Well Map	

initials	date	revision
JMG	8/18/2015	Added approx. site boundary.

leidos

D:\Harrisburg\GIS_Data\PGW\Passyunk\Projects\Fig 02 - Well Map.mxd



Legend

Monitoring Well

Approximated Site Boundary

Inferred Groundwater Contour

6.84 - Groundwater Elevation in feet above mean sea level (AMSL)

Source Imagery:
DVRPC 2005 Aerial SID PA X30-31 Y073-074
Projection: PA State Plane NAD 1983 South

200 100 0 200 Feet

1 inch = 200 feet

N

Philadelphia Gas Works
Passyunk Property - Philadelphia, PA

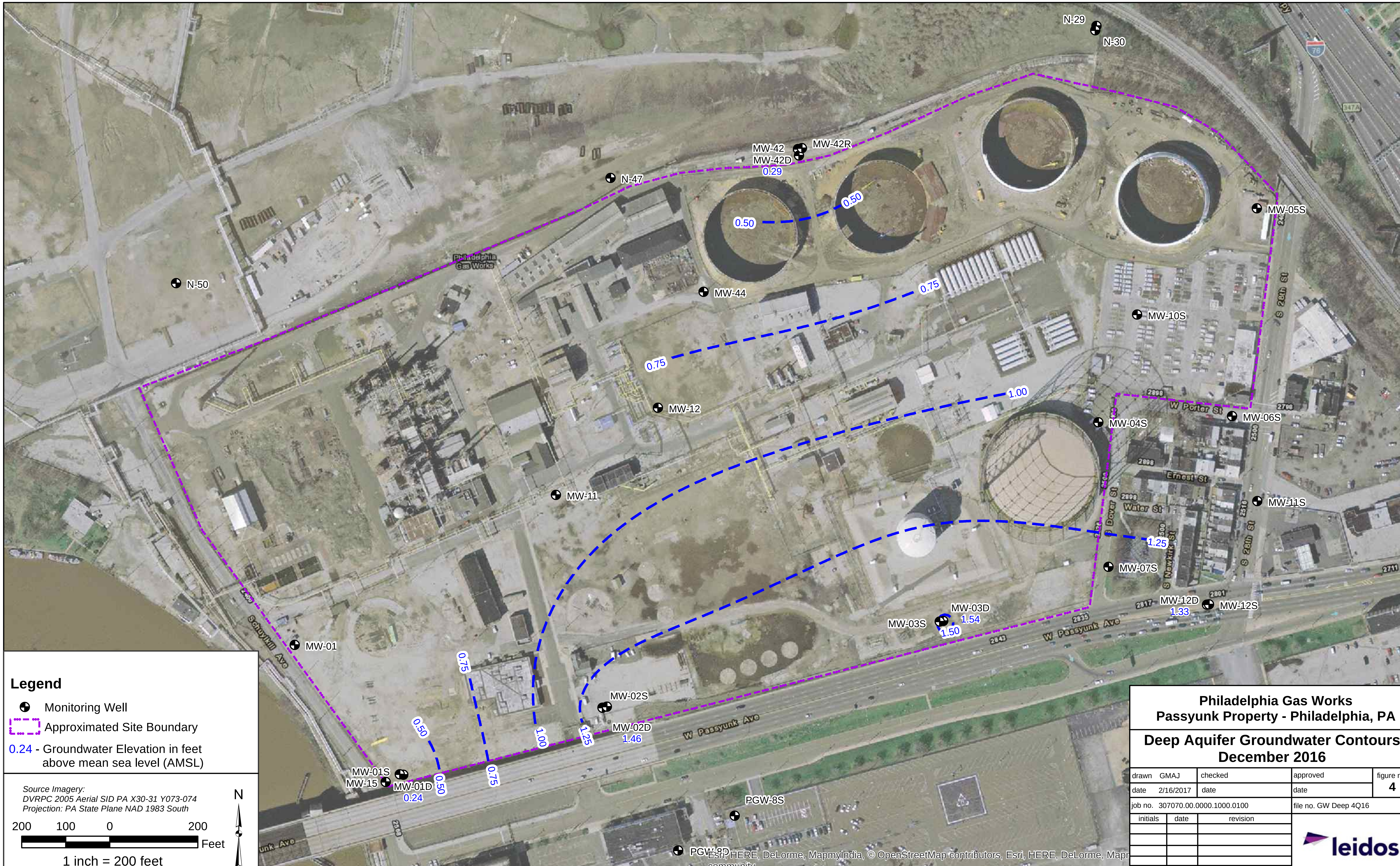
Shallow Aquifer Groundwater Contours
December 2016

drawn GMAJ	checked	approved	figure no. 3
date 2/16/2017	date	date	
job no. 307070.00.0000.1000.0100		file no. GW Shallow 4Q16	

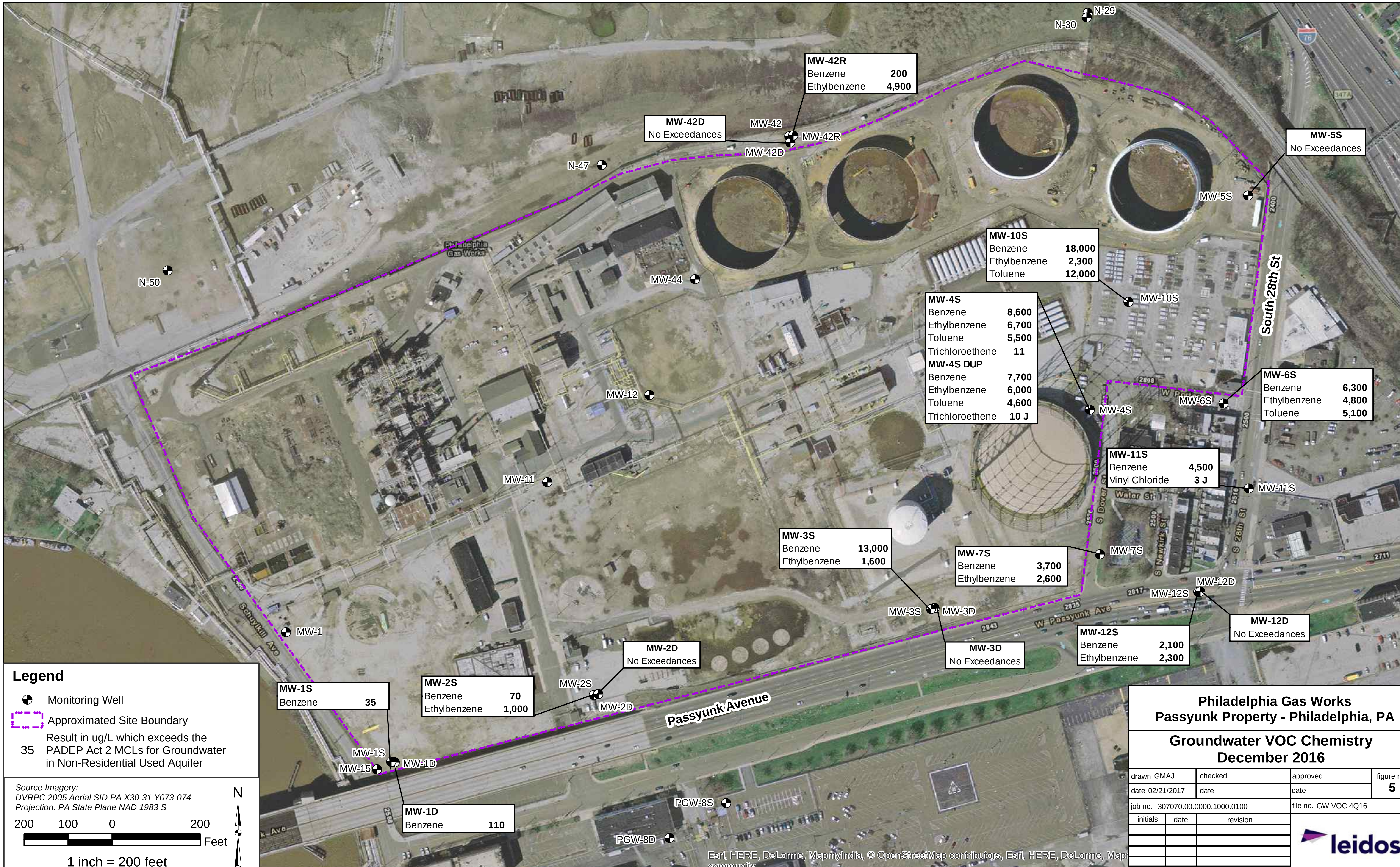
initials	date	revision

leidos

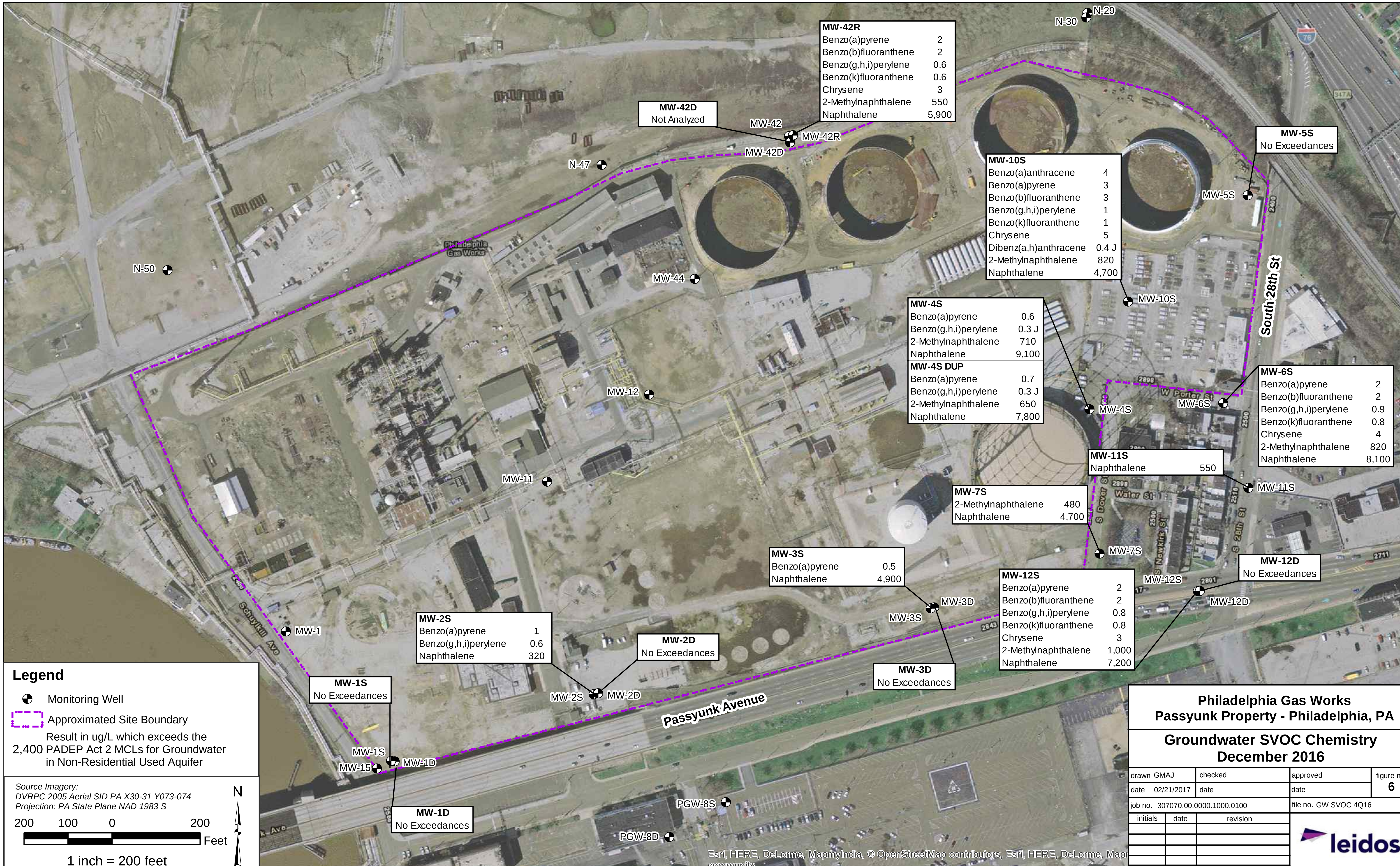
D:\Harrisburg\GISData\PGW\Passyunk\Projects\2017\GW Shallow 4Q16.mxd



D:\Harrisburg\GISData\PGW\Passyunk\Projects\2017\GW Deep 4Q16.mxd



D:\Harrisburg\GISData\PGW\Passyunk\Projects\2017\GW VOC 4Q16.mxd



D:\Harrisburg\GISData\PGW\Passyunk\Projects\2017\GW SVOC 4Q16.mxd

TABLES

Table 2
Groundwater Analytical Results
Volatile Organic Compounds
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S	MW-4S	MW-4S DUP	MW-5S	MW-6S	MW-7S	MW-10S	MW-11S
		Date	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016
Parameter	PA DEP Groundwater Used Aquifer MSC[1]	PA DEP Groundwater Non-Use Aquifer MSC[2]													
Acetone	92,000	9,200,000	<6	<6	<6	<6	<6	<60	<60	<60	<6	<60	<30	<300	<30
Benzene	5	500	**110**	**35**	**0.9 J**	**70**	<0.5	**13,000**	**8,600**	**7,700**	<0.5	**6,300**	**3,700**	**18,000**	**4,500**
Bromodichloromethane	80	8,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Bromoform	100	10,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Bromomethane	10	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
2-Butanone	4,000	400,000	<3	<3	<3	<3	<3	<30	<30	<30	<3	<30	<15	<150	<15
Carbon Disulfide	6,200	620,000	<1	<1	<1	<1	<1	<10	<10	<10	<1	<10	<5	<50	<5
Carbon Tetrachloride	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Chlorobenzene	100	10,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Chloroethane	900	90,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Chloroform	80	8,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Chloromethane	3	300	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Dibromochloromethane	100	10,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
1,1-Dichloroethane	160	16,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
1,2-Dichloroethane	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
1,1-Dichloroethene	7	700	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
cis-1,2-Dichloroethene	70	7,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	**9 J**	**8 J**	<0.5	<5	<3	<25	<3
trans-1,2-Dichloroethene	100	10,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
1,2-Dichloropropane	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
cis-1,3-Dichloropropene	26	2,600	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
trans-1,3-Dichloropropene	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Ethylbenzene	700	70,000	**1**	**7**	**5**	**1,000**	**1**	**1,600**	**6,700**	**6,000**	<0.5	**4,800**	**2,600**	**2,300**	**170**
2-Hexanone	44	4,400	<3	<3	<3	<3	<3	<30	<30	<30	<3	<30	<15	<150	<15
4-Methyl-2-pentanone	8,200	820,000	<3	<3	<3	<3	<3	<30	<30	<30	<3	<30	<15	<150	<15
Methylene Chloride	5	500	<2	<2	<2	<2	<2	<20	<20	<20	<2	<20	<10	<100	<10
Styrene	100	10,000	<1	<1	<1	<1	<1	<10	<10	<10	<1	<10	<5	<50	<5
1,1,2,2-Tetrachloroethane	4.30	430	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Tetrachloroethene	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Toluene	1,000	100,000	**0.7 J**	**1**	<0.5	**2**	<0.5	**8 J**	**5,500**	**4,600**	<0.5	**5,100**	**38**	**12,000**	**10**
1,1,1-Trichloroethane	200	20,000	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
1,1,2-Trichloroethane	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	<3
Trichloroethene	5	500	<0.5	<0.5	<0.5	<0.5	<0.5	<5	**11**	**10 J**	<0.5	<5	<3	<25	<3
Vinyl Chloride	2	200	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<3	<25	**3 J**
Xylene (Total)	10,000	1,000,000	**3**	**13**	<0.5	**79**	<0.5	**470**	**8,000**	**7,600**	<0.5	**8,100**	**4,100**	**6,400**	**23**

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
[1] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
[2] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

Table 2
Groundwater Analytical Results
Volatile Organic Compounds
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	**MW-12D**	**MW-12S**	**MW-42D**	**MW-42R**	**Rinse Blank #4**	**TRIP BLANK**
		Date	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016	12/20/2016
Parameter	**PA DEP Groundwater Used Aquifer MSC[1]**	**PA DEP Groundwater Non-Use Aquifer MSC[2]**						
Acetone	92,000	9,200,000	<6	<30	<6	<60	<6	<6
Benzene	5	500	<0.5	**2,100**	**3**	**200**	<0.5	<0.5
Bromodichloromethane	80	8,000	<0.5	<3	<0.5	<5	<0.5	<0.5
Bromoform	100	10,000	<0.5	<3	<0.5	<5	<0.5	<0.5
Bromomethane	10	1,000	<0.5	<3	<0.5	<5	<0.5	<0.5
2-Butanone	4,000	400,000	<3	<15	<3	<30	<3	<3
Carbon Disulfide	6,200	620,000	<1	<5	<1	<10	<1	<1
Carbon Tetrachloride	5	500	<0.5	<3	<0.5	<5	<0.5	<0.5
Chlorobenzene	100	10,000	<0.5	<3	<0.5	<5	<0.5	<0.5
Chloroethane	900	90,000	<0.5	<3	<0.5	<5	<0.5	<0.5
Chloroform	80	8,000	<0.5	<3	<0.5	<5	<0.5	<0.5
Chloromethane	3	300	<0.5	<3	<0.5	<5	<0.5	<0.5
Dibromochloromethane	100	10,000	<0.5	<3	<0.5	<5	<0.5	<0.5
1,1-Dichloroethane	160	16,000	<0.5	<3	<0.5	<5	<0.5	<0.5
1,2-Dichloroethane	5	500	<0.5	<3	<0.5	<5	<0.5	<0.5
1,1-Dichloroethene	7	700	<0.5	<3	<0.5	<5	<0.5	<0.5
cis-1,2-Dichloroethene	70	7,000	<0.5	<3	<0.5	<5	<0.5	<0.5
trans-1,2-Dichloroethene	100	10,000	<0.5	<3	<0.5	<5	<0.5	<0.5
1,2-Dichloropropane	5	500	<0.5	<3	<0.5	<5	<0.5	<0.5
cis-1,3-Dichloropropene	26	2,600	<0.5	<3	<0.5	<5	<0.5	<0.5
trans-1,3-Dichloropropene	NA	NA	<0.5	<3	<0.5	<5	<0.5	<0.5
Ethylbenzene	700	70,000	<0.5	**2,300**	<0.5	**4,900**	<0.5	<0.5
2-Hexanone	44	4,400	<3	<15	<3	<30	<3	<3
4-Methyl-2-pentanone	8,200	820,000	<3	<15	<3	<30	<3	<3
Methylene Chloride	5	500	<2	<10	<2	<20	<2	<2
Styrene	100	10,000	<1	<5	<1	<10	<1	<1
1,1,2,2-Tetrachloroethane	4.30	430	<0.5	<3	<0.5	<5	<0.5	<0.5
Tetrachloroethene	5	500	<0.5	<3	<0.5	<5	<0.5	<0.5
Toluene	1,000	100,000	<0.5	**23**	<0.5	**11**	<0.5	<0.5
1,1,1-Trichloroethane	200	20,000	<0.5	<3	<0.5	<5	<0.5	<0.5
1,1,2-Trichloroethane	5	500	<0.5	<3	<0.5	<5	<0.5	<0.5
Trichloroethene	5	500	**1**	<3	<0.5	<5	<0.5	<0.5
Vinyl Chloride	2	200	<0.5	<3	<0.5	<5	<0.5	<0.5
Xylene (Total)	10,000	1,000,000	<0.5	**1,300**	**0.8 J**	**390**	**0.7 J**	<0.5

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
1 : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
2 : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

Table 3
Groundwater Analytical Results
Semivolatile Organic Compounds
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S	MW-4S	MW-4S DUP	MW-5S	MW-6S
		Date	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016
Parameter	PA DEP Groundwater Used Aquifer MSC[1]	PA DEP Groundwater Non-Use Aquifer MSC[2]										
Acenaphthene	3,800	3,800	**22**	**110**	**5**	**23**	**0.3 J**	**48**	**93**	**82**	<0.1	**75**
Acenaphthylene	6,100	16,000	**0.3 J**	<0.1	**0.1 J**	**6**	<0.1	**6**	**20**	**17**	<0.1	**52**
Anthracene	66	66	**0.5 J**	**4**	<0.1	**3**	<0.1	**5**	**3**	**4**	<0.1	**7**
Benzo(a)anthracene	3.6	11	<0.1	<0.1	<0.1	**1**	<0.1	**1**	**0.8**	**0.9**	<0.1	**3**
Benzo(a)pyrene	0.2	3.8	<0.1	<0.1	<0.1	**1**	<0.1	**0.5**	**0.6**	**0.7**	<0.1	**2**
Benzo(b)fluoranthene	1.2	1.2	<0.1	<0.1	<0.1	**1**	<0.1	**0.6**	**0.6**	**0.7**	<0.1	**2**
Benzo(g,h,i)perylene	0.26	0.26	<0.1	<0.1	<0.1	**0.6**	<0.1	**0.2 J**	**0.3 J**	**0.3 J**	<0.1	**0.9**
Benzo(k)fluoranthene	0.55	0.55	<0.1	<0.1	<0.1	**0.4 J**	<0.1	**0.2 J**	**0.2 J**	**0.3 J**	<0.1	**0.8**
4-Bromophenyl-phenylether	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Butylbenzylphthalate	1,400	2,700	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Di-n-butylphthalate	10,000	400,000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbazole	130	1,200	<0.5	**5**	<0.5	**15**	<0.5	**56**	**51**	**46**	<0.5	**53**
4-Chloro-3-methylphenol	510	510	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloroaniline	13	13	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
bis(2-Chloroethoxy)methane	NA	0.29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
bis(2-Chloroethyl)ether	0.76	76	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloronaphthalene	8,200	8,200	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2-Chlorophenol	40	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorophenyl-phenylether	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,2'-oxybis(1-Chloropropane)	300	30,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	1.9	1.9	<0.1	<0.1	<0.1	**1**	<0.1	**1**	**1**	**1**	<0.1	**4**
Dibenz(a,h)anthracene	0.36	0.6	<0.1	<0.1	<0.1	**0.1 J**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.2 J**
Dibenzofuran	100	4,500	**0.8 J**	**16**	<0.5	**4**	<0.5	**14**	**11**	**12**	<0.5	**11**
1,2-Dichlorobenzene	600	60,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	600	60,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	7,500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3'-Dichlorobenzidine	5.8	3,100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2,4-Dichlorophenol	20	20,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diethylphthalate	82,000	1,100,000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2,4-Dimethylphenol	2,000	2,000,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**9**	**9**	<0.5	**9**
Dimethylphthalate	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4,6-Dinitro-2-methylphenol	85	85	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2,4-Dinitrophenol	200	200,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	8.4	8,400	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1 J**
2,6-Dinitrotoluene	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
bis(2-Ethylhexyl)phthalate	6	290	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Fluoranthene	260	260	**0.2 J**	**0.4 J**	<0.1	**2**	<0.1	**4**	**3**	**3**	<0.1	**9**
Fluorene	1,900	1,900	**5**	**46**	**0.3 J**	**11**	**0.1 J**	**27**	**21**	**19**	<0.1	**27**
Hexachlorobenzene	1	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	33	2,900	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	50	1,800	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Hexachloroethane	1	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-cd)pyrene	3.6	62	<0.1	<0.1	<0.1	**0.4 J**	<0.1	**0.2 J**	**0.2 J**	**0.3 J**	<0.1	**0.6**
Isophorone	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylnaphthalene	410	410	**0.5**	**5**	**2**	**5**	**0.7**	**390**	**710**	**650**	**0.1 J**	**820**
2-Methylphenol	5,100	510,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**4**	**4**	<0.5	**5**
4-Methylphenol	510	51,000	<0.5	<0.5	<0.5	<0.5	<0.5	**0.8 J**	**10**	**9**	<0.5	**5**
Naphthalene	100	30,000	**1**	**8**	**12**	**320**	**3**	**4,900**	**9,100**	**7,800**	**1**	**8,100**
2-Nitroaniline	310	310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-Nitroaniline	31	31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Nitroaniline	130	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrobenzene	200	200,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	820	820,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Nitrophenol	60	60,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitroso-di-n-propylamine	0.37	370	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-Nitrosodiphenylamine	530	35,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-n-octylphthalate	3,000	3,000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Pentachlorophenol	1	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	**5**
Phenanthrene	1,100	1,100	**1**	**8**	**0.4 J**	**11**	**0.1 J**	**26**	**18**	**17**	<0.1	**35**
Phenol	2,000	200,000	**0.6 J**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	130	130	**0.2 J**	**0.3 J**	**0.6**	**4**	**0.1 J**	**4**	**2**	**3**	<0.1	**8**
1,2,4-Trichlorobenzene	70	44,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	10,000	1,000,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
[1] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
[2] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

Table 3
Groundwater Analytical Results
Semivolatile Organic Compounds
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	**MW-7S**	**MW-10S**	**MW-11S**	**MW-12D**	**MW-12S**	**MW-42D**	**MW-42R**	**Rinse Blank #4**
		Date	12/21/2016	12/21/2016	12/21/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016
Parameter	**PA DEP Groundwater Used Aquifer MSC[1]**	**PA DEP Groundwater Non-Use Aquifer MSC[2]**								
Acenaphthene	3,800	3,800	**49**	**72**	**47**	**0.7**	**100**	---	**120**	<0.1
Acenaphthylene	6,100	16,000	**7**	**30**	<0.1	**0.1 J**	**4**	---	**7**	<0.1
Anthracene	66	66	**3**	**11**	**1**	<0.1	**9**	---	**10**	<0.1
Benzo(a)anthracene	3.6	11	<0.1	**4**	**0.2 J**	<0.1	**3**	---	**2**	<0.1
Benzo(a)pyrene	0.2	3.8	<0.1	**3**	**0.1 J**	**0.1 J**	**2**	---	**2**	<0.1
Benzo(b)fluoranthene	1.2	1.2	<0.1	**3**	**0.1 J**	**0.1 J**	**2**	---	**2**	<0.1
Benzo(g,h,i)perylene	0.26	0.26	<0.1	**1**	<0.1	<0.1	**0.8**	---	**0.6**	<0.1
Benzo(k)fluoranthene	0.55	0.55	<0.1	**1**	<0.1	<0.1	**0.8**	---	**0.6**	<0.1
4-Bromophenyl-phenylether	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Butylbenzylphthalate	1,400	2,700	<2	<2	<2	<2	<2	---	<2	<2
Di-n-butylphthalate	10,000	400,000	<2	<2	<2	<2	<2	---	<2	<2
Carbazole	130	1,200	**54**	**18**	**35**	<0.5	**75**	---	**53**	<0.5
4-Chloro-3-methylphenol	510	510	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
4-Chloroaniline	13	13	<2	<2	<2	<2	<2	---	<2	<2
bis(2-Chloroethoxy)methane	NA	0.29	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
bis(2-Chloroethyl)ether	0.76	76	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2-Chloronaphthalene	8,200	8,200	<0.4	<0.4	<0.4	<0.4	<0.4	---	<0.4	<0.4
2-Chlorophenol	40	40	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
4-Chlorophenyl-phenylether	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2,2'-oxybis(1-Chloropropane)	300	30,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Chrysene	1.9	1.9	<0.1	**5**	**0.3 J**	**0.1 J**	**3**	---	**3**	<0.1
Dibenz(a,h)anthracene	0.36	0.6	<0.1	**0.4 J**	<0.1	<0.1	**0.2 J**	---	**0.1 J**	<0.1
Dibenzofuran	100	4,500	**13**	**16**	**9**	<0.5	**22**	---	**17**	<0.5
1,2-Dichlorobenzene	600	60,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
1,3-Dichlorobenzene	600	60,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
1,4-Dichlorobenzene	75	7,500	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
3,3'-Dichlorobenzidine	5.8	3,100	<2	<2	<2	<2	<2	---	<2	<2
2,4-Dichlorophenol	20	20,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Diethylphthalate	82,000	1,100,000	<2	<2	<2	<2	<2	---	<2	<2
2,4-Dimethylphenol	2,000	2,000,000	**6**	**5**	<0.5	**0.7 J**	**0.5 J**	---	<0.5	<0.5
Dimethylphthalate	NA	NA	<2	<2	<2	<2	<2	---	<2	<2
4,6-Dinitro-2-methylphenol	85	85	<5	<5	<5	<5	<5	---	<5	<5
2,4-Dinitrophenol	200	200,000	<10	<11	<10	<10	<10	---	<10	<10
2,4-Dinitrotoluene	8.4	8,400	<1	**3 J**	<1	<1	<1	---	<1	<1
2,6-Dinitrotoluene	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
bis(2-Ethylhexyl)phthalate	6	290	<2	<2	<2	<2	<2	---	<2	<2
Fluoranthene	260	260	**1**	**13**	**1**	**0.2 J**	**7**	---	**10**	<0.1
Fluorene	1,900	1,900	**25**	**36**	**18**	<0.1	**41**	---	**31**	<0.1
Hexachlorobenzene	1	6	<0.1	<0.1	<0.1	<0.1	<0.1	---	<0.1	<0.1
Hexachlorobutadiene	33	2,900	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Hexachlorocyclopentadiene	50	1,800	<5	<5	<5	<5	<5	---	<5	<5
Hexachloroethane	1	100	<1	<1	<1	<1	<1	---	<1	<1
Indeno(1,2,3-cd)pyrene	3.6	62	<0.1	**1**	<0.1	<0.1	**0.6**	---	**0.5**	<0.1
Isophorone	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2-Methylnaphthalene	410	410	**480**	**820**	**71**	**0.3 J**	**1,000**	---	**550**	<0.1
2-Methylphenol	5,100	510,000	**0.6 J**	**6**	<0.5	<0.5	<0.5	---	<0.5	<0.5
4-Methylphenol	510	51,000	**1**	**7**	<0.5	<0.5	<0.5	---	<0.5	<0.5
Naphthalene	100	30,000	**4,700**	**4,700**	**550**	**2**	**7,200**	---	**5,900**	**0.3 J**
2-Nitroaniline	310	310	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
3-Nitroaniline	31	31	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
4-Nitroaniline	130	130	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Nitrobenzene	200	200,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2-Nitrophenol	820	820,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
4-Nitrophenol	60	60,000	<10	<11	<10	<10	<10	---	<10	<10
N-Nitroso-di-n-propylamine	0.37	370	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
N-Nitrosodiphenylamine	530	35,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
Di-n-octylphthalate	3,000	3,000	<2	<2	<2	<2	<2	---	<2	<2
Pentachlorophenol	1	1,000	<1	<1	<1	<1	<1	---	<1	<1
Phenanthrene	1,100	1,100	**18**	**57**	**4**	**0.1 J**	**44**	---	**51**	**0.2 J**
Phenol	2,000	200,000	<0.5	**26**	<0.5	<0.5	<0.5	---	<0.5	<0.5
Pyrene	130	130	**0.9**	**13**	**1**	**0.2 J**	**6**	---	**8**	<0.1
1,2,4-Trichlorobenzene	70	44,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2,4,5-Trichlorophenol	10,000	1,000,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5
2,4,6-Trichlorophenol	100	100,000	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
[1] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
[2] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

Table 4
Groundwater Analytical Results
Metals
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S	MW-4S	MW-4S DUP	MW-5S	MW-6S	MW-7S	MW-10S	MW-11S
		Date	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/21/2016
Parameter	**PA DEP Groundwater Used Aquifer MSC[1]**	**PA DEP Groundwater Non-Use Aquifer MSC[2]**													
Antimony (Dissolved)	6	6,000	**7.7 J**	<7.7	<7.7	<7.7	<7.7	<7.7	<7.7	**7.8 J**	<7.7	<7.7	**8.0 J**	**8.1 J**	<7.7
Arsenic (Dissolved)	10	10,000	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
Beryllium (Dissolved)	4	4,000	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67	<0.67
Cadmium (Dissolved)	5	5,000	<0.49	<0.49	**1.7 J**	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
Chromium (Dissolved)	100	100,000	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	**1.8 J**	<1.8	<1.8	<1.8
Copper (Dissolved)	1,000	1,000,000	**31.0**	<4.1	**17.1**	<4.1	**16.5**	<4.1	<4.1	<4.1	**14.3**	<4.1	**5.3 J**	**10.5**	**10.6**
Lead (Dissolved)	5	5,000	**7.7 J**	**10.5 J**	**13.9 J**	**9.9 J**	**12.6 J**	<6.2	**10.9 J**	**13.4 J**	<6.2	**14.1 J**	**9.8 J**	**16.7**	**15.2**
Mercury (Dissolved)	2	2,000	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nickel (Dissolved)	100	100,000	<2.8	<2.8	<2.8	<2.8	**4.0 J**	**3.6 J**	<2.8	<2.8	<2.8	**25.7**	<2.8	<2.8	<2.8
Selenium (Dissolved)	50	50,000	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
Silver (Dissolved)	100	100,000	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
Thallium (Dissolved)	2	2,000	<9.4	<9.4	<9.4	<9.4	**10.2 J**	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4
Zinc (Dissolved)	2,000	2,000,000	<5.4	<5.4	<5.4	<5.4	**17.1 J**	<5.4	<5.4	<5.4	<5.4	<5.4	<5.4	**61.5**	<5.4

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
[1] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
[2] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

Table 4
Groundwater Analytical Results
Metals
Philadelphia Gas Works - Passyunk Facility
Philadelphia, Pennsylvania
December 2016

		Location	MW-12D	MW-12S	MW-42D	MW-42R	Rinse Blank #4
		Date	12/20/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016
Parameter	**PA DEP Groundwater Used Aquifer MSC[1]**	**PA DEP Groundwater Non-Use Aquifer MSC[2]**					
Antimony (Dissolved)	6	6,000	<7.7	<7.7	<7.7	<7.7	<7.7
Arsenic (Dissolved)	10	10,000	<9.7	<9.7	**12.1 J**	**33.8**	<9.7
Beryllium (Dissolved)	4	4,000	<0.67	<0.67	<0.67	<0.67	<0.67
Cadmium (Dissolved)	5	5,000	<0.49	<0.49	<0.49	<0.49	<0.49
Chromium (Dissolved)	100	100,000	<1.8	<1.8	<1.8	<1.8	<1.8
Copper (Dissolved)	1,000	1,000,000	**5.2 J**	**11.6**	<4.1	**6.5 J**	<4.1
Lead (Dissolved)	5	5,000	**7.9 J**	<6.2	<6.2	<6.2	<6.2
Mercury (Dissolved)	2	2,000	<0.050	<0.050	<0.050	<0.050	<0.050
Nickel (Dissolved)	100	100,000	**7.0 J**	<2.8	<2.8	**2.9 J**	<2.8
Selenium (Dissolved)	50	50,000	<9.7	<9.7	<9.7	<9.7	<9.7
Silver (Dissolved)	100	100,000	<9.5	<1.9	<1.9	<1.9	<1.9
Thallium (Dissolved)	2	2,000	**21.7 J**	<9.4	<9.4	<9.4	<9.4
Zinc (Dissolved)	2,000	2,000,000	<5.4	<5.4	<5.4	<5.4	<5.4

Notes:
All results are in micrograms per liter (ug/L).
Bold results are detected above the method detection limit.
Shaded results exceed the listed Used Aquifer regulatory limit.
Red results exceed the listed Non Use Aquifer regulatory limit.
--- : Not Analyzed.
< : Not detected at listed reporting limit.
J : Sample result detected was less than the reporting limit but greater than the method detection limit and is considered estimated.
[1] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Used Aquifers TDS<2500, 2011.
[2] : Pennsylvania Department of Environmental Quality Medium-Specific Concentrations for Regulated Substances in Groundwater, Non-Residential Non-Used Aquifers TDS<2500, 2011.

APPENDIX A

Field Data Sheets

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-1D

Date: 12-20-16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1248	33.33	233	6.81	0.999	79.5	11.48	8.1	-53	Initial
1253	33.41	233	6.72	1.21	46.4	0.00	11.9	-98	
1258	33.42	233	6.78	1.24	62.4	0.00	9.0	-102	
1303	33.42	233	6.77	1.19	84.4	0.00	10.1	-104	
1308	33.43	233	6.78	1.19	58.3	0.00	10.3	-106	
1313	33.43	233	6.79	1.21	54.0	0.00	9.8	-107	
1318	33.43	233	6.80	1.24	54.3	0.00	9.6	-108	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in haz drum

Sample Method: *Low Flow*	Total Depth: 76.70 ft TIC
Sampling Equipment: *2" Submersible Pump*	Static Water Level: 33.33 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	Total Purge Time: 30 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 2 gal (approx.)

Sample Collection Information

Sample ID: MW-1D

Collection Time: 1320

Analysis: VOC SVOC Metals *(circle all that apply)*

Preservatives: HCL HNO3 none *(circle all that apply)*

Number of Bottles: 6

Intitials SLE & TEM

Page: 1 of 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-1S

Date: 12-20-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1250	26.38	360	6.59	>999	452	6.37	11.95	-79	Initial
1255	26.63	360	6.43	0.97	313	0.49	15.44	-98	
1300	26.66	360	6.48	0.99	180	0.00	16.29	-108	
1305	26.62	360	6.51	1.01	102	0.00	16.48	-115	
1310	26.62	360	6.53	1.02	89.9	0.00	16.46	-119	
1315	26.60	360	6.54	1.02	87.4	0.00	16.26	-120	
1320	26.60	360	6.53	1.02	88.0	0.00	16.20	-120	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments:

Purge water put into a HAZ drum.

Sample Method: *Low Flow*	**Total Depth:** 34.70 ft TIC
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 26.38 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 30 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 3 gal (approx.)

Sample Collection Information

Sample ID: MW-1S

Collection Time: 1325

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ____ of ____

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-2D

Date: 12/20/16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
10:21		300	6.95	1.14	77.3	8.59	13.1	-49	Initial
10:26	33.74	300	6.51	1.28	87.1	0.24	11.4	-48	
1031	33.76	300	6.41	1.32	93.2	0.00	11.5	-61	
1036	33.75	300	6.36	1.36	91.7	0.00	11.9	-69	
1041	33.79	300	6.36	1.36	90.5	0.00	12.2	-79	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments:

Sample Method: *Low Flow*	**Total Depth:** 83.20 **ft TIC**
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 33.70 **ft TIC**
Well Casing Diameter: *2" or 4" (circle one)*	**Total Purge Time:** 20 **min**
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 1.5 **gal (approx.)**

Sample Collection Information

Sample ID: MW-2D

Collection Time: 1045

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 **of** 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-25

Date: 12-20-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1020	27.00	860	6.60	7999	7999	0.87	16.24	-23	Initial
1025	28.05	860	6.51	7999	7999	6.26	16.76	-16	
1030	30.35	860	6.13	7999	7999	0.64	17.28	-11	
1035	29.10	860	6.08	7999	7999	0.79	16.60	-20	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water put into a non-HAZ drum. unable to maintain low-flow and allow WQ parameters to stabilize
Sample collected after 15mins. due to issue w/ pump causing sparadic flow rates

Sample Method: *Low Flow*	**Total Depth:** 35.20' ft TIC
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 27.00' ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 15 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 4.50 gal (approx.)

Sample Collection Information

Sample ID: MW-25

Collection Time: 1040

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 None (circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ____ of ____

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-3D

Date: 12-20-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1135	33.19	280	6.89	0.999	47.7	9.73	12.7	-37	Initial
1140	33.25	280	6.06	1.39	41.2	0.56	12.2	4	
1145	33.26	280	6.01	1.42	46.1	0.03	10.9	4	
1150	33.28	280	5.97	1.41	37.0	0.05	13.5	0	
1155	33.30	280	5.96	1.41	38.6	0.00	13.7	-2	
1200	33.30	280	5.97	1.41	38.6	0.00	13.6	-4	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in non-haz drum

Sample Method: *Low Flow*	**Total Depth:** 85.42 **ft TIC**
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 33.19 **ft TIC**
Well Casing Diameter: *2" or 4" (circle one)*	**Total Purge Time:** 25 **min**
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 2 **gal (approx.)**

Sample Collection Information

Sample ID: MW-3D

Collection Time: 1205

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 **of** 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-3S

Date: 12-20-16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1135	25.88	360	6.40	7999	7999	5.07	14.53	-55	Initial
1140	27.45	360	6.27	7999	836	0.00	14.41	-62	
1145	28.00	360	6.22	7999	701	0.00	14.84	-57	
1150	28.60	360	6.13	7999	247	0.00	14.89	-37	
1155	28.65	360	6.02	7999	183	0.00	15.83	-31	
1200 ~~1158~~	29.49	360	5.98	7999	184	0.00	15.63	-32	
1205	29.88	360	6.00	7999	186	0.00	15.22	-32	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water put into a HAZ drum.

Sample Method: *Low Flow*	Total Depth: 34.85 ft TIC
Sampling Equipment: *2" Submersible Pump*	Static Water Level: 25.88 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	Total Purge Time: 30 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 3 gal (approx.)

Sample Collection Information

Sample ID: MW-3S

Collection Time: 1210

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 7

Intitials SLE

Page: ______ of ______

leidos

PGW

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)* **Well ID:** MW-4S

Date: 12-21-16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1035	23.06	275	7.03	7999	165	2.66	13.57	-116	Initial
1040	—	275	6.55	7999	363	0.00	14.71	-120	
1045	—	275	6.66	>999	392	0.00	14.63	-127	
1050	—	275	6.61	>999	379	0.00	15.05	-134	
1055	—	275	6.57	>999	377	0.00	15.56	-141	
1100	—	275	6.67	>999	325	0.00	15.92	-146	
1105	—	275	6.70	7999	271	0.00	15.65	-149	
1110	—	275	6.71	7999	274	0.00	15.56	-150	
1115	—	275	6.70	7999	274	0.00	15.49	-150	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water put into a HAZ drum.
DTW measurements were not collected during purge because water tape is unavailable - being used team member.

Sample Method: *Low Flow*	Total Depth: 36.25 ft TIC
Sampling Equipment: *2" Submersible Pump*	Static Water Level: 23.06 ft TIC
Well Casing Diameter: *2" or 4"* *(circle one)*	Total Purge Time: 40 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 2.75 gal (approx.)

Sample Collection Information

Sample ID: MW-4S

Collection Time: 1120 DUP sample time: 1125

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ______ of ______

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-5S

Date: 12-21-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0750	25.74	300	6.82	7999	333	2.70	13.86	164	Initial
0755	—	300	6.29	7999	667	0.39	14.66	164	
0800	—	300	6.30	7999	7999	0.10	15.35	169	
0805	—	300	6.29	7999	7999	0.00	15.61	170	
0810	—	300	6.22	7999	7999	0.00	15.75	170	
0815	—	300	6.22	7999	7999	0.00	15.92	169	
0820	—	300	6.22	7999	7999	0.00	15.84	169	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments:

Purge water put into a HAZ drum (non-HAZ water)
DTW measurements during purge were not collected. watertape not available.

Sample Method: *Low Flow*	**Total Depth:** 37.52 **ft TIC**
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 25.74 **ft TIC**
Well Casing Diameter: *2" or 4" (circle one)*	**Total Purge Time:** 30 **min**
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 2.50 **gal (approx.)**

Sample Collection Information

Sample ID: MW-5S

Collection Time: 0825

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ______ **of** _______

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-6S

Date: 12/21/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0914	—	266	7.18	1.91	503	10.24	10.2	-71	Initial
0919	27.74	266	6.70	1.85	560	0.00	13.5	-116	
0924	27.86	266	6.68	1.84	601	0.00	13.6	-118	
0929	28.02	266	6.72	1.86	650	0.00	13.2	-119	
0934	28.47	266	6.68	1.77	607	0.00	13.8	-119	
0939	28.98	266	6.67	1.78	540	0.00	13.8	-123	
0944	29.46	266	6.67	1.80	547	0.00	14.2	-125	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in haz drum

Sample Method: *Low Flow*	Total Depth: 33.40 ft TIC
Sampling Equipment: *2" Submersible Pump*	Static Water Level: 24.43 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	Total Purge Time: 30 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 2 gal (approx.)

Sample Collection Information

Sample ID: MW-6S

Collection Time: 0945

Analysis: VOC SVOC Metals *(circle all that apply)*

Preservatives: HCL HNO3 none *(circle all that apply)*

Number of Bottles: 6

Intitials DEM

Page: 1 of 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)* **Well ID:** MW-75

Date: 12-21-16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0910	21.95	171	7.06	0.98	241	3.74	12.59	-100	Initial
0915	–	171	6.65	0.97	203	0.00	12.77	-96	
0920	–	171	6.53	0.96	200	0.00	13.90	-100	
0925	–	171	6.52	1.01	208	0.00	13.75	-106	
0930	–	171	6.53	0.99	209	0.00	13.65	-106	
0935	–	171	6.51	0.99	205	0.00	11.16	-117	
0940	–	171	6.52	0.99	206	0.00	11.31	-118	
0945	–	171	6.52	0.99	207	0.00	11.45	-117	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water put into a HAZ drum.
DTW measurements not collected during purge because watertape is unavailable, used by other team member.

Sample Method: *Low Flow*	**Total Depth:** 34.70 ft TIC
Sampling Equipment: 2" *Submersible Pump*	**Static Water Level:** 21.95 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 35 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 1.50 gal (approx.)

Sample Collection Information

Sample ID: MW-75

Collection Time: 0950

Analysis: VOC SVOC Metals *(circle all that apply)*

Preservatives: HCL HNO3 none *(circle all that apply)*

Number of Bottles: 6

Intitials SLE **Page:** ____ of ____

leidos PGW

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-105

Date: 12/21/16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1042	—	333	7.52	2.00	3999	8.58	13.9	-102	Initial
1047	25.33	333	6.79	1.16	847	0.00	15.4	-104	
1052	25.33	333	6.66	1.03	437	0.00	15.4	-110	
1057	25.34	333	6.62	0.98	261	0.00	15.5	-110	
1102	25.34	333	6.59	0.92	148	0.00	16.6	-113	
1107	25.34	333	6.60	0.90	123	0.00	16.4	-117	
1112	25.34	333	6.59	0.90	114	0.00	16.5	-119	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in haz drum

Sample Method: *Low Flow*	Total Depth: 33.42 ft TIC
Sampling Equipment: *2" Submersible Pump*	Static Water Level: 25.32 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	Total Purge Time: 30 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 2.5 gal (approx.)

Sample Collection Information

Sample ID: MW-105

Collection Time: 1115

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 of 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-11S

Date: 12/21/16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0756	—	257	6.20	1.34	259	9.45	11.4	-63	Initial
0801	22.42		6.59	1.29	187	0.37	15.0	-119	
0806	22.45		6.64	1.29	148	0.02	14.8	-125	
0811	22.46		6.66	1.29	127	0.00	16.9	-130	
0816	22.44		6.67	1.29	68.4	0.00	17.4	-136	
0821	22.44		6.70	1.30	50.7	0.00	16.5	-140	
0826	22.44		6.72	1.30	46.6	0.00	16.4	-140	
0831	22.45		6.67	1.30	50.3	0.00	16.1	-138	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in haz drum

Sample Method: *Low Flow*	**Total Depth:** 28.84 ft TIC
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 22.43 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 35 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 2.5 gal (approx.)

Sample Collection Information

Sample ID: MW-11S

Collection Time: 0835

Analysis: VOC SVOC Metals *(circle all that apply)*

Preservatives: HCL HNO3 none *(circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 of 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)* **Well ID:** MW-12D

Date: 12-20-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1352	28.74	380	7.11	0.999	1,650	1.32	8.5	-11	Initial
1357	28.83	380	6.65	1.82	43.0	1.71	13.0	-64	
1402	28.76	380	6.48	1.88	35.1	0.84	12.4	-57	
1407	28.95	380	6.40	1.95	41.2	8.98	14.8	-32	removed ~10 feet tubing
1412	28.84	380	6.31	1.93	32.8	1.89	14.7	-58	
1417	28.80	380	6.25	1.93	33.7	0.01	14.7	-54	
1422	28.79	380	6.15	1.95	33.2	0.80	14.9	-50	
1427	28.82	380	6.09	2.01	35.8	0.00	14.7	-46	
1432	28.82	380	5.99	2.03	36.4	0.12	14.9	-40	
1437	28.77	380	5.95	2.11	34.6	0.00	14.8	-37	
1442	28.78	380	5.92	2.13	35.2	0.06	15.2	-34	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of, in non-haz drum

Sample Method: *Low Flow*	**Total Depth:** 75.68 **ft TIC**
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 28.74 **ft TIC**
Well Casing Diameter: *2" or 4"* *(circle one)*	**Total Purge Time:** 50 **min**
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 5 **gal (approx.)**

Sample Collection Information

Sample ID: MW-12D

Collection Time: 1445

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 **of** 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-12S

Date: 12-20-16

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
1353	21.88	171	7.31	1.05	442	7.23	13.27	-128	Initial
1358	21.89	171	6.85	1.09	424	3.30	13.37	-127	
1403	21.90	171	6.76	1.13	400	1.23	12.98	-135	
1408	21.95	171	6.76	1.19	340	1.11	14.70	-145	
1413	21.90	171	6.77	1.19	343	0.71	15.80	-152	
1418	21.88	171	6.77	1.29	483	0.00	15.33	-155	
1423	21.90	171	6.78	1.30	480	0.00	14.81	-155	
1428	21.89	171	6.78	1.30	483	0.00	14.84	-156	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water put into a HAZ drum.

Sample Method: *Low Flow*	**Total Depth:** 33.06 ft TIC
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 21.88 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 35 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 1.50 gal (approx.)

Sample Collection Information

Sample ID: MW-12S

Collection Time: 1430

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ____ of ____

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-42R

Date: 12/20/22

Time (5 min.)	Water Level (ft TIC)	Flow (ml/min)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0918		266	7.15	0.802	736	3.53	14.2	-103	Initial
0923	23.68	266	6.58	0.761	686	0.31	12.5	-98	
0928	23.70	266	6.40	0.941	745	0.00	12.7	-110	
0933	23.67	266	6.38	0.996	608	0.00	13.9	-120	
0938	23.65	266	6.44	0.999	298	0.00	16.6	-135	
0943	23.74	266	6.52	0.999	209	0.00	16.3	-141	
0948	23.76	266	6.50	0.999	190	0.00	15.9	-143	End purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments: Purge water disposed of in non-haz drum

Sample Method: *Low Flow*	**Total Depth:** 29.55 ft TIC
Sampling Equipment: *2" Submersible Pump*	**Static Water Level:** 23.65 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	**Total Purge Time:** 30 min
Casing Material: PVC or Steel *(circle one)*	**Total Purge Volume:** 2 gal (approx.)

Sample Collection Information

Sample ID: MW-42R

Collection Time: 0950

Analysis: *VOC SVOC Metals (circle all that apply)*

Preservatives: *HCL HNO3 none (circle all that apply)*

Number of Bottles: 6

Intitials TEM

Page: 1 **of** 1

leidos

PGW Safe. Reliable. Service.

Low Flow Purge Data Sheet

Project Site Name: Richmond, Tioga, Passyunk, 9th and Diamond *(circle one)*

Well ID: MW-42D

Date: 12-20-16

Time (5 min.)	Water Level (*ft TIC*)	Flow (*ml/min*)	pH (S.U.)	Cond (ms/cm)	Turb (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	Cumulative Purge Volume (Gal)
0918	31.75	333	7.69	7999	76.2	6.98	11.43	-144	Initial
0923	31.76	333	6.62	7999	85.6	0.26	12.80	-119	
0928	31.77	333	6.38	7999	70.0	0.00	13.09	-128	
0933	31.77	333	6.43	7999	67.9	0.00	13.27	-133	
0938	31.78	333	6.41	7999	~~312~~ 68.2	0.00	13.38	-133	
0943	31.76	333	6.40	7999	67.4	0.00	13.59	-133	
0948	31.76	333	6.41	7999	67.2	0.00	13.51	-133	end purge
-	-	200-500 ml	+/- 0.1	+/- 10%	+/-10% & <50	+/- 10%	+/- 1 °C	+/- 10	Sampling Requirements

Comments:

Purge water put into a non-HAZ drum.

Sample Method: *Low Flow*	Total Depth: 71.00 ft TIC
Sampling Equipment: 2" *Submersible Pump*	Static Water Level: 31.75 ft TIC
Well Casing Diameter: 2" or 4" *(circle one)*	Total Purge Time: 30 min
Casing Material: PVC or Steel *(circle one)*	Total Purge Volume: 3 gal (approx.)

Sample Collection Information

Sample ID: MW-42D

Collection Time: 0950

Analysis: VOC SVOC Metals *(circle all that apply)*

Preservatives: HCL HNO3 none *(circle all that apply)*

Number of Bottles: 6

Intitials SLE

Page: ______ of ______

leidos

PGW

APPENDIX B

Laboratory Data

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601	Leidos Engineering, LLC 6310 Allentown Blvd. Harrisburg PA 17112

Report Date: January 16, 2017

Project: PGW - Passyunk

Submittal Date: 12/21/2016
Group Number: 1747321
PO Number: PO10160257
State of Sample Origin: PA

Client Sample Description	Lancaster Labs (LL) #
MW-1D Grab Groundwater	8758028
MW-1S Grab Groundwater	8758029
MW-2D Grab Groundwater	8758030
MW-2S Grab Groundwater	8758031
MW-3D Grab Groundwater	8758032
MW-3S Grab Groundwater	8758033
MW-4S Grab Groundwater	8758034
MW-4S DUP Grab Groundwater	8758035
MW-5S Grab Groundwater	8758036
MW-6S Grab Groundwater	8758037
MW-7S Grab Groundwater	8758038
MW-10S Grab Groundwater	8758039
MW-11S Grab Groundwater	8758040
MW-12D Grab Groundwater	8758041
MW-12S Grab Groundwater	8758042
MW-42D Grab Groundwater	8758043
MW-42R Grab Groundwater	8758044
Rinse Blank #4 Grab Water	8758045
Trip Blank Water	8758046

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 current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Leidos Engineering, LLC Attn: Matt Machusick

Respectfully Submitted,

Lynn M. Frederiksen
Principal Specialist Group Leader

(717) 556-7255

Lancaster Laboratories Environmental

Case Narrative

Project Name: PGW - Passyunk
LL Group #: 1747321

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if 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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8270C, GC/MS Semivolatiles

Sample #s: 8758028, 8758030, 8758032, 8758041

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Sufficient sample was not available to repeat the analysis.

Sample #s: 8758040

The recovery for the sample surrogate(s) is 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.

Batch #: 16357WAH026 (Sample number(s): 8758028-8758033, 8758041-8758042, 8758044-8758045)

The relative percent difference(s) for the following analyte(s) in the LCS/LCSD were outside acceptance windows: 2,4-Dinitrophenol, Dimethylphthalate

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8758028, 8758030, 8758032, 8758041

Batch #: 16359WAK026 (Sample number(s): 8758034-8758040 UNSPK: P758334)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: 2,4,5-Trichlorophenol, 2,6-Dinitrotoluene, 4-Chloro-3-methylphenol

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Phenol, 2,4-Dimethylphenol, Dimethylphthalate, 2-Methylphenol, 4-Methylphenol

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8758040

SW-846 6010B, Metals Dissolved

Sample #s: 8758041

Reporting limits were raised due to interference from the sample matrix.

Batch #: 170031848001 (Sample number(s): 8758041-8758045 UNSPK: P762860 BKG: P762860)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Copper, Lead, Zinc

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Arsenic

SW-846 7470A, Metals Dissolved

Batch #: 170035713001 (Sample number(s): 8758041-8758045 UNSPK: P762860 BKG: P762860)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Mercury

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Mercury

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-1D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758028
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	110		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	1		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	0.7	J	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	3		0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	22		0.1	0.5	1
14240	Acenaphthylene	208-96-8	0.3	J	0.1	0.5	1
14240	Anthracene	120-12-7	0.5	J	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	N.D.		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758028
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	N.D.		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	0.8	J	0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	0.2	J	0.1	0.5	1
14240	Fluorene	86-73-7	5		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	0.5		0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	1		0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758028
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**		**ug/l**	**ug/l**	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	1		0.1	0.5	1
14240	Phenol	108-95-2	0.6	J	0.5	1	1
14240	Pyrene	129-00-0	0.2	J	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.		0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Sufficient sample was not available to repeat the analysis.						
Metals Dissolved		**SW-846 6010B**	**mg/l**		**mg/l**	**mg/l**	
07044	Antimony	7440-36-0	0.0077	J	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.		0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	0.0310		0.0041	0.0100	1
07055	Lead	7439-92-1	0.0077	J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.		0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.		0.0054	0.0200	1
		SW-846 7470A	**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.		0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	N163641AA	12/29/2016 14:15	Nicole S Lamoreaux	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N163641AA	12/29/2016 14:15	Nicole S Lamoreaux	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758028
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	01:52	Anthony P Bauer	1
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016	08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017	22:12	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017	00:04	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017	09:25	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017	05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017	00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-1S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758029
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	35	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	7	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	1	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	13	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	Acenaphthene	83-32-9	110	0.1	0.5	1
14240	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
14240	Anthracene	120-12-7	4	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	5	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758029
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:25 by TM

Submitted: 12/21/2016 15:56

Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.	2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
14240	Chrysene	218-01-9	N.D.	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
14240	Dibenzofuran	132-64-9	16	0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.	2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D. Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D. Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
14240	Fluoranthene	206-44-0	0.4 J	0.1	0.5	1
14240	Fluorene	86-73-7	46	0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
14240	Hexachloroethane	67-72-1	N.D.	1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.	0.5	1	1
14240	2-Methylnaphthalene	91-57-6	5	0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.	0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
14240	Naphthalene	91-20-3	8	0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.	0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.	10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-1S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758029
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS1S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	8	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	0.3 J	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0105 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	N163641AA	12/29/2016 14:39	Nicole S Lamoreaux	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N163641AA	12/29/2016 14:39	Nicole S Lamoreaux	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 02:21	Anthony P Bauer	1
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758029
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 13:25 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS1S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:07	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:27	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758030
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	0.9	J	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	5		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	N.D.		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.		0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	Acenaphthene	83-32-9	5		0.1	0.5	1
14240	Acenaphthylene	208-96-8	0.1	J	0.1	0.5	1
14240	Anthracene	120-12-7	N.D.		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	N.D.		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758030
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	N.D.		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	N.D.		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	N.D.		0.1	0.5	1
14240	Fluorene	86-73-7	0.3	J	0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	2		0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	12		0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-2D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758030
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	0.4 J	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	0.6	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Sufficient sample was not available to repeat the analysis.					
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	0.0017 J	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0171	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0139 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 12:21	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 12:21	Linda C Pape	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 02:51	Anthony P Bauer	1

*=This limit was used in the evaluation of the final result

eurofins | Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-2D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758030
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:10	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:30	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-2S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758031
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	70		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	1,000		5	10	10
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	2		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	79		0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	Acenaphthene	83-32-9	23		0.1	0.5	1
14240	Acenaphthylene	208-96-8	6		0.1	0.5	1
14240	Anthracene	120-12-7	3		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	1		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	1		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	1		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.6		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.4	J	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	15		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	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: MW-2S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758031
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	1		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	0.1	J	0.1	0.5	1
14240	Dibenzofuran	132-64-9	4		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	2		0.1	0.5	1
14240	Fluorene	86-73-7	11		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.4	J	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	5		0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	320		1	5	10
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758031
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	11	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	4	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0099 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 12:43	Linda C Pape	1
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 13:06	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 12:43	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4170031AA	01/03/2017 13:06	Linda C Pape	10

*=This limit was used in the evaluation of the final result

Sample Description: MW-2S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758031
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 10:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS2S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	03:21	Anthony P Bauer	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	10:32	Catherine E Bachman	10
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016	08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017	22:16	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017	00:14	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017	09:32	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017	05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017	00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758032
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:05 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	1		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	N.D.		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.		0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	0.3	J	0.1	0.5	1
14240	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
14240	Anthracene	120-12-7	N.D.		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	N.D.		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758032
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:05 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.	2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
14240	Chrysene	218-01-9	N.D.	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
14240	Dibenzofuran	132-64-9	N.D.	0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.	2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D. Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D. Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
14240	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
14240	Fluorene	86-73-7	0.1 J	0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
14240	Hexachloroethane	67-72-1	N.D.	1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.	0.5	1	1
14240	2-Methylnaphthalene	91-57-6	0.7	0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.	0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
14240	Naphthalene	91-20-3	3	0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.	0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.	10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758032
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:05 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	0.1 J	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	0.1 J	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Sufficient sample was not available to repeat the analysis.					
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0165	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0126 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	0.0040 J	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	0.0102 J	0.0094	0.0300	1
07072	Zinc	7440-66-6	0.0171 J	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 13:28	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 13:28	Linda C Pape	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 03:50	Anthony P Bauer	1

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-3D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758032
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:05 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:23	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:42	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-3S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758033
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:10 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles		**SW-846 8260B**	**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		60	200	10
10335	Benzene	71-43-2	13,000		50	100	100
10335	Bromodichloromethane	75-27-4	N.D.		5	10	10
10335	Bromoform	75-25-2	N.D.		5	40	10
10335	Bromomethane	74-83-9	N.D.		5	10	10
10335	2-Butanone	78-93-3	N.D.		30	100	10
10335	Carbon Disulfide	75-15-0	N.D.		10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.		5	10	10
10335	Chlorobenzene	108-90-7	N.D.		5	10	10
10335	Chloroethane	75-00-3	N.D.		5	10	10
10335	Chloroform	67-66-3	N.D.		5	10	10
10335	Chloromethane	74-87-3	N.D.		5	10	10
10335	Dibromochloromethane	124-48-1	N.D.		5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.		5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.		5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.		5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.		5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		5	10	10
10335	Ethylbenzene	100-41-4	1,600		5	10	10
10335	2-Hexanone	591-78-6	N.D.		30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.		30	100	10
10335	Methylene Chloride	75-09-2	N.D.		20	40	10
10335	Styrene	100-42-5	N.D.		10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5	10	10
10335	Tetrachloroethene	127-18-4	N.D.		5	10	10
10335	Toluene	108-88-3	8	J	5	10	10
10335	1,1,1-Trichloroethane	71-55-6	N.D.		5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.		5	10	10
10335	Trichloroethene	79-01-6	N.D.		5	10	10
10335	Vinyl Chloride	75-01-4	N.D.		5	10	10
10335	Xylene (Total)	1330-20-7	470		5	10	10
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	48		0.1	0.5	1
14240	Acenaphthylene	208-96-8	6		0.1	0.5	1
14240	Anthracene	120-12-7	5		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	1		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	0.5		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	0.6		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.2	J	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.2	J	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	56		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-3S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758033
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:10 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS3S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.	2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
14240	Chrysene	218-01-9	1	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
14240	Dibenzofuran	132-64-9	14	0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.	2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D. Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D. Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
14240	Fluoranthene	206-44-0	4	0.1	0.5	1
14240	Fluorene	86-73-7	27	0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
14240	Hexachloroethane	67-72-1	N.D.	1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.2 J	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.	0.5	1	1
14240	2-Methylnaphthalene	91-57-6	390	1	5	10
14240	2-Methylphenol	95-48-7	N.D.	0.5	1	1
14240	4-Methylphenol	106-44-5	0.8 J	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
14240	Naphthalene	91-20-3	4,900	10	51	100
14240	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.	0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.	10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-3S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758033
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:10 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	26	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	4	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0062	0.0150	1
07061	Nickel	7440-02-0	0.0036 J	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 13:51	Linda C Pape	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 14:13	Linda C Pape	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 13:51	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4170031AA	01/03/2017 14:13	Linda C Pape	100

*=This limit was used in the evaluation of the final result

Sample Description: MW-3S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758033
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 12:10 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS3S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	04:20	Anthony P Bauer	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	11:01	Catherine E Bachman	10
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	11:31	Catherine E Bachman	100
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016	08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/03/2017	23:11	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017	09:02	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017	05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017	00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-4S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758034
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		60	200	10
10335	Benzene	71-43-2	8,600		50	100	100
10335	Bromodichloromethane	75-27-4	N.D.		5	10	10
10335	Bromoform	75-25-2	N.D.		5	40	10
10335	Bromomethane	74-83-9	N.D.		5	10	10
10335	2-Butanone	78-93-3	N.D.		30	100	10
10335	Carbon Disulfide	75-15-0	N.D.		10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.		5	10	10
10335	Chlorobenzene	108-90-7	N.D.		5	10	10
10335	Chloroethane	75-00-3	N.D.		5	10	10
10335	Chloroform	67-66-3	N.D.		5	10	10
10335	Chloromethane	74-87-3	N.D.		5	10	10
10335	Dibromochloromethane	124-48-1	N.D.		5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.		5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.		5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.		5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	9	J	5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.		5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		5	10	10
10335	Ethylbenzene	100-41-4	6,700		50	100	100
10335	2-Hexanone	591-78-6	N.D.		30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.		30	100	10
10335	Methylene Chloride	75-09-2	N.D.		20	40	10
10335	Styrene	100-42-5	N.D.		10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5	10	10
10335	Tetrachloroethene	127-18-4	N.D.		5	10	10
10335	Toluene	108-88-3	5,500		50	100	100
10335	1,1,1-Trichloroethane	71-55-6	N.D.		5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.		5	10	10
10335	Trichloroethene	79-01-6	11		5	10	10
10335	Vinyl Chloride	75-01-4	N.D.		5	10	10
10335	Xylene (Total)	1330-20-7	8,000		50	100	100
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	93		0.1	0.5	1
14240	Acenaphthylene	208-96-8	20		0.1	0.5	1
14240	Anthracene	120-12-7	3		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	0.8		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	0.6		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	0.6		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.3	J	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.2	J	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	51		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-4S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758034
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	1		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	11		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	9	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	3		0.1	0.5	1
14240	Fluorene	86-73-7	21		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.2	J	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	710		5	25	50
14240	2-Methylphenol	95-48-7	4	Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	10	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	9,100		25	130	250
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-4S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758034
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	18	0.1	0.5	1
14240	Phenol	108-95-2	N.D. Q9	0.5	1	1
14240	Pyrene	129-00-0	2	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D. Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0109 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 01:48	Sara E Johnson	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 02:09	Sara E Johnson	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 01:48	Sara E Johnson	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 02:09	Sara E Johnson	100

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-4S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758034
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:20 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016 16:06	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 03:03	Anthony P Bauer	50
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 09:15	Catherine E Bachman	250
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016 08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:26	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:44	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-4S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758035
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	N.D.		60	200	10
10335	Benzene	71-43-2	7,700		50	100	100
10335	Bromodichloromethane	75-27-4	N.D.		5	10	10
10335	Bromoform	75-25-2	N.D.		5	40	10
10335	Bromomethane	74-83-9	N.D.		5	10	10
10335	2-Butanone	78-93-3	N.D.		30	100	10
10335	Carbon Disulfide	75-15-0	N.D.		10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.		5	10	10
10335	Chlorobenzene	108-90-7	N.D.		5	10	10
10335	Chloroethane	75-00-3	N.D.		5	10	10
10335	Chloroform	67-66-3	N.D.		5	10	10
10335	Chloromethane	74-87-3	N.D.		5	10	10
10335	Dibromochloromethane	124-48-1	N.D.		5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.		5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.		5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.		5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	8	J	5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.		5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		5	10	10
10335	Ethylbenzene	100-41-4	6,000		50	100	100
10335	2-Hexanone	591-78-6	N.D.		30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.		30	100	10
10335	Methylene Chloride	75-09-2	N.D.		20	40	10
10335	Styrene	100-42-5	N.D.		10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5	10	10
10335	Tetrachloroethene	127-18-4	N.D.		5	10	10
10335	Toluene	108-88-3	4,600		50	100	100
10335	1,1,1-Trichloroethane	71-55-6	N.D.		5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.		5	10	10
10335	Trichloroethene	79-01-6	10	J	5	10	10
10335	Vinyl Chloride	75-01-4	N.D.		5	10	10
10335	Xylene (Total)	1330-20-7	7,600		5	10	10
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	Acenaphthene	83-32-9	82		0.1	0.5	1
14240	Acenaphthylene	208-96-8	17		0.1	0.5	1
14240	Anthracene	120-12-7	4		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	0.9		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	0.7		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	0.7		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.3	J	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.3	J	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	46		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-4S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758035
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	1		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	12		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	9	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	3		0.1	0.5	1
14240	Fluorene	86-73-7	19		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.3	J	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	650		5	25	50
14240	2-Methylphenol	95-48-7	4	Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	9	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	7,800		25	130	250
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-4S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758035
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	17	0.1	0.5	1
14240	Phenol	108-95-2	N.D. Q9	0.5	1	1
14240	Pyrene	129-00-0	3	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D. Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07044	Antimony	7440-36-0	0.0078 J	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0134 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 02:29	Sara E Johnson	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 02:50	Sara E Johnson	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 02:29	Sara E Johnson	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 02:50	Sara E Johnson	100

*=This limit was used in the evaluation of the final result

Sample Description: MW-4S DUP Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758035
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS4D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016 16:36	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 03:32	Anthony P Bauer	50
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 09:45	Catherine E Bachman	250
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016 08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 22:20	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:30	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:47	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758036
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles		**SW-846 8260B**	**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
14240	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
14240	Anthracene	120-12-7	N.D.	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	N.D.	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D. Q4	0.5	1	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: MW-5S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758036
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.	2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
14240	Chrysene	218-01-9	N.D.	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
14240	Dibenzofuran	132-64-9	N.D.	0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.	2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D. Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D. Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D. Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
14240	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
14240	Fluorene	86-73-7	N.D.	0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
14240	Hexachloroethane	67-72-1	N.D.	1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
14240	Isophorone	78-59-1	N.D.	0.5	1	1
14240	2-Methylnaphthalene	91-57-6	0.1 J	0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D. Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	N.D. Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
14240	Naphthalene	91-20-3	0.9	0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.	0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.	10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-5S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758036
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:25 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS5S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
14240	Phenol	108-95-2	N.D. Q9	0.5	1	1
14240	Pyrene	129-00-0	N.D.	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D. Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0143	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/03/2017 22:02	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/03/2017 22:02	Sara E Johnson	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016 17:06	Catherine E Bachman	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758036
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:25 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS5S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016 08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 22:24	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:33	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:49	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758037
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS6S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	60	200	10
10335	Benzene	71-43-2	6,300	50	100	100
10335	Bromodichloromethane	75-27-4	N.D.	5	10	10
10335	Bromoform	75-25-2	N.D.	5	40	10
10335	Bromomethane	74-83-9	N.D.	5	10	10
10335	2-Butanone	78-93-3	N.D.	30	100	10
10335	Carbon Disulfide	75-15-0	N.D.	10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.	5	10	10
10335	Chlorobenzene	108-90-7	N.D.	5	10	10
10335	Chloroethane	75-00-3	N.D.	5	10	10
10335	Chloroform	67-66-3	N.D.	5	10	10
10335	Chloromethane	74-87-3	N.D.	5	10	10
10335	Dibromochloromethane	124-48-1	N.D.	5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.	5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.	5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.	5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.	5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	5	10	10
10335	Ethylbenzene	100-41-4	4,800	50	100	100
10335	2-Hexanone	591-78-6	N.D.	30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.	30	100	10
10335	Methylene Chloride	75-09-2	N.D.	20	40	10
10335	Styrene	100-42-5	N.D.	10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	5	10	10
10335	Tetrachloroethene	127-18-4	N.D.	5	10	10
10335	Toluene	108-88-3	5,100	50	100	100
10335	1,1,1-Trichloroethane	71-55-6	N.D.	5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.	5	10	10
10335	Trichloroethene	79-01-6	N.D.	5	10	10
10335	Vinyl Chloride	75-01-4	N.D.	5	10	10
10335	Xylene (Total)	1330-20-7	8,100	5	10	10
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	75	0.1	0.5	1
14240	Acenaphthylene	208-96-8	52	0.1	0.5	1
14240	Anthracene	120-12-7	7	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	3	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	2	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	2	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.9	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.8	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	53	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D. Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758037
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:45 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS6S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	4		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	0.2	J	0.1	0.5	1
14240	Dibenzofuran	132-64-9	11		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	9	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
14240	2,4-Dinitrotoluene	121-14-2	1	J	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	9		0.1	0.5	1
14240	Fluorene	86-73-7	27		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.6		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	820		5	25	50
14240	2-Methylphenol	95-48-7	5	Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	5	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	8,100		25	130	250
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758037
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS6S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	5	1	5	1
14240	Phenanthrene	85-01-8	35	0.1	0.5	1
14240	Phenol	108-95-2	N.D. Q9	0.5	1	1
14240	Pyrene	129-00-0	8	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D. Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	0.0018 J	0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0141 J	0.0062	0.0150	1
07061	Nickel	7440-02-0	0.0257	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 03:10	Sara E Johnson	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 03:31	Sara E Johnson	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 03:10	Sara E Johnson	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 03:31	Sara E Johnson	100

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-6S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758037
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:45 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS6S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016	17:36	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016	04:02	Anthony P Bauer	50
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016	10:15	Catherine E Bachman	250
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016	08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017	22:28	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017	00:36	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017	09:52	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017	05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017	00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

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

**Sample Description: MW-7S Grab Groundwater
PGW - Passyunk**

**LL Sample # WW 8758038
LL Group # 1747321
Account # 02732**

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:50 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS7S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		30	100	5
10335	Benzene	71-43-2	3,700		25	50	50
10335	Bromodichloromethane	75-27-4	N.D.		3	5	5
10335	Bromoform	75-25-2	N.D.		3	20	5
10335	Bromomethane	74-83-9	N.D.		3	5	5
10335	2-Butanone	78-93-3	N.D.		15	50	5
10335	Carbon Disulfide	75-15-0	N.D.		5	25	5
10335	Carbon Tetrachloride	56-23-5	N.D.		3	5	5
10335	Chlorobenzene	108-90-7	N.D.		3	5	5
10335	Chloroethane	75-00-3	N.D.		3	5	5
10335	Chloroform	67-66-3	N.D.		3	5	5
10335	Chloromethane	74-87-3	N.D.		3	5	5
10335	Dibromochloromethane	124-48-1	N.D.		3	5	5
10335	1,1-Dichloroethane	75-34-3	N.D.		3	5	5
10335	1,2-Dichloroethane	107-06-2	N.D.		3	5	5
10335	1,1-Dichloroethene	75-35-4	N.D.		3	5	5
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		3	5	5
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		3	5	5
10335	1,2-Dichloropropane	78-87-5	N.D.		3	5	5
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		3	5	5
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		3	5	5
10335	Ethylbenzene	100-41-4	2,600		25	50	50
10335	2-Hexanone	591-78-6	N.D.		15	50	5
10335	4-Methyl-2-pentanone	108-10-1	N.D.		15	50	5
10335	Methylene Chloride	75-09-2	N.D.		10	20	5
10335	Styrene	100-42-5	N.D.		5	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		3	5	5
10335	Tetrachloroethene	127-18-4	N.D.		3	5	5
10335	Toluene	108-88-3	38		3	5	5
10335	1,1,1-Trichloroethane	71-55-6	N.D.		3	5	5
10335	1,1,2-Trichloroethane	79-00-5	N.D.		3	5	5
10335	Trichloroethene	79-01-6	N.D.		3	5	5
10335	Vinyl Chloride	75-01-4	N.D.		3	5	5
10335	Xylene (Total)	1330-20-7	4,100		3	5	5
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	49		0.1	0.5	1
14240	Acenaphthylene	208-96-8	7		0.1	0.5	1
14240	Anthracene	120-12-7	3		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	54		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-7S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758038
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS7S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	N.D.		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	13		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	6	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	1		0.1	0.5	1
14240	Fluorene	86-73-7	25		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	480		2	10	20
14240	2-Methylphenol	95-48-7	0.6	J Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	1	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	4,700		20	100	200
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-7S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758038
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS7S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**		**ug/l**	**ug/l**	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	18		0.1	0.5	1
14240	Phenol	108-95-2	N.D.	Q9	0.5	1	1
14240	Pyrene	129-00-0	0.9		0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1
Metals Dissolved		**SW-846 6010B**	**mg/l**		**mg/l**	**mg/l**	
07044	Antimony	7440-36-0	0.0080 J		0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.		0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	0.0053 J		0.0041	0.0100	1
07055	Lead	7439-92-1	0.0098 J		0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.		0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.		0.0054	0.0200	1
		SW-846 7470A	**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.		0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 03:51	Sara E Johnson	5
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 04:12	Sara E Johnson	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 03:51	Sara E Johnson	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 04:12	Sara E Johnson	50

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-7S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758038
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 09:50 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS7S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016	18:07	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016	04:31	Anthony P Bauer	20
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016	10:45	Catherine E Bachman	200
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016	08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017	00:39	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017	09:54	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017	05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017	00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758039
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:15 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	300	1,000	50
10335	Benzene	71-43-2	18,000	250	500	500
10335	Bromodichloromethane	75-27-4	N.D.	25	50	50
10335	Bromoform	75-25-2	N.D.	25	200	50
10335	Bromomethane	74-83-9	N.D.	25	50	50
10335	2-Butanone	78-93-3	N.D.	150	500	50
10335	Carbon Disulfide	75-15-0	N.D.	50	250	50
10335	Carbon Tetrachloride	56-23-5	N.D.	25	50	50
10335	Chlorobenzene	108-90-7	N.D.	25	50	50
10335	Chloroethane	75-00-3	N.D.	25	50	50
10335	Chloroform	67-66-3	N.D.	25	50	50
10335	Chloromethane	74-87-3	N.D.	25	50	50
10335	Dibromochloromethane	124-48-1	N.D.	25	50	50
10335	1,1-Dichloroethane	75-34-3	N.D.	25	50	50
10335	1,2-Dichloroethane	107-06-2	N.D.	25	50	50
10335	1,1-Dichloroethene	75-35-4	N.D.	25	50	50
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	25	50	50
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	25	50	50
10335	1,2-Dichloropropane	78-87-5	N.D.	25	50	50
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	25	50	50
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	25	50	50
10335	Ethylbenzene	100-41-4	2,300	25	50	50
10335	2-Hexanone	591-78-6	N.D.	150	500	50
10335	4-Methyl-2-pentanone	108-10-1	N.D.	150	500	50
10335	Methylene Chloride	75-09-2	N.D.	100	200	50
10335	Styrene	100-42-5	N.D.	50	250	50
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	25	50	50
10335	Tetrachloroethene	127-18-4	N.D.	25	50	50
10335	Toluene	108-88-3	12,000	25	50	50
10335	1,1,1-Trichloroethane	71-55-6	N.D.	25	50	50
10335	1,1,2-Trichloroethane	79-00-5	N.D.	25	50	50
10335	Trichloroethene	79-01-6	N.D.	25	50	50
10335	Vinyl Chloride	75-01-4	N.D.	25	50	50
10335	Xylene (Total)	1330-20-7	6,400	25	50	50
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	72	0.1	0.5	1
14240	Acenaphthylene	208-96-8	30	0.1	0.5	1
14240	Anthracene	120-12-7	11	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	4	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	3	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	3	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	1	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	1	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	18	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D. Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758039
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:15 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS10

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	5		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	0.4	J	0.1	0.5	1
14240	Dibenzofuran	132-64-9	16		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	5	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	16	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		11	32	1
14240	2,4-Dinitrotoluene	121-14-2	3	J	1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	13		0.1	0.5	1
14240	Fluorene	86-73-7	36		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	16	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	1		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	820		2	11	20
14240	2-Methylphenol	95-48-7	6	Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	7	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	4,700		21	110	200
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		11	32	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758039
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:15 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	57	0.1	0.5	1
14240	Phenol	108-95-2	26 Q9	0.5	1	1
14240	Pyrene	129-00-0	13	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D. Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	0.0081 J	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0105	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0167	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	0.0615	0.0054	0.0200	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 04:33	Sara E Johnson	50
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 04:53	Sara E Johnson	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 04:33	Sara E Johnson	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 04:53	Sara E Johnson	500

*=This limit was used in the evaluation of the final result

Sample Description: MW-10S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758039
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:15 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016 18:37	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 05:01	Anthony P Bauer	20
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 11:14	Catherine E Bachman	200
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016 08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:42	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:57	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758040
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:35 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS11

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	N.D.		30	100	5
10335	Benzene	71-43-2	4,500		25	50	50
10335	Bromodichloromethane	75-27-4	N.D.		3	5	5
10335	Bromoform	75-25-2	N.D.		3	20	5
10335	Bromomethane	74-83-9	N.D.		3	5	5
10335	2-Butanone	78-93-3	N.D.		15	50	5
10335	Carbon Disulfide	75-15-0	N.D.		5	25	5
10335	Carbon Tetrachloride	56-23-5	N.D.		3	5	5
10335	Chlorobenzene	108-90-7	N.D.		3	5	5
10335	Chloroethane	75-00-3	N.D.		3	5	5
10335	Chloroform	67-66-3	N.D.		3	5	5
10335	Chloromethane	74-87-3	N.D.		3	5	5
10335	Dibromochloromethane	124-48-1	N.D.		3	5	5
10335	1,1-Dichloroethane	75-34-3	N.D.		3	5	5
10335	1,2-Dichloroethane	107-06-2	N.D.		3	5	5
10335	1,1-Dichloroethene	75-35-4	N.D.		3	5	5
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		3	5	5
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		3	5	5
10335	1,2-Dichloropropane	78-87-5	N.D.		3	5	5
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		3	5	5
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		3	5	5
10335	Ethylbenzene	100-41-4	170		3	5	5
10335	2-Hexanone	591-78-6	N.D.		15	50	5
10335	4-Methyl-2-pentanone	108-10-1	N.D.		15	50	5
10335	Methylene Chloride	75-09-2	N.D.		10	20	5
10335	Styrene	100-42-5	N.D.		5	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		3	5	5
10335	Tetrachloroethene	127-18-4	N.D.		3	5	5
10335	Toluene	108-88-3	10		3	5	5
10335	1,1,1-Trichloroethane	71-55-6	N.D.		3	5	5
10335	1,1,2-Trichloroethane	79-00-5	N.D.		3	5	5
10335	Trichloroethene	79-01-6	N.D.		3	5	5
10335	Vinyl Chloride	75-01-4	3	J	3	5	5
10335	Xylene (Total)	1330-20-7	23		3	5	5
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	Acenaphthene	83-32-9	47		0.1	0.5	1
14240	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
14240	Anthracene	120-12-7	1		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	0.2	J	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	0.1	J	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	0.1	J	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	35		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	Q4	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758040
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:35 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS11

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	0.3	J	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	9		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.	Q9	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q9	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.	Q4	0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	1		0.1	0.5	1
14240	Fluorene	86-73-7	18		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	71		0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.	Q9	0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.	Q9	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	550		1	5	10
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758040
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:35 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSS11

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	4		0.1	0.5	1
14240	Phenol	108-95-2	N.D.	Q9	0.5	1	1
14240	Pyrene	129-00-0	1		0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	Q4	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1

The recovery for the sample surrogate(s) is 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.

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0106	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0152	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-11S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758040
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 08:35 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSS11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 05:14	Sara E Johnson	5
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/04/2017 05:34	Sara E Johnson	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/04/2017 05:14	Sara E Johnson	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E170034AA	01/04/2017 05:34	Sara E Johnson	50
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/29/2016 19:07	Catherine E Bachman	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16359WAK026	12/30/2016 05:30	Anthony P Bauer	10
00813	BNA Water Extraction	SW-846 3510C	1	16359WAK026	12/27/2016 08:00	Bradley W VanLeuven	1
07044	Antimony	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07035	Arsenic	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07047	Beryllium	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07049	Cadmium	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07053	Copper	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07061	Nickel	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07036	Selenium	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07022	Thallium	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
07072	Zinc	SW-846 6010B	1	163651848005	01/04/2017 00:46	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	163655713004	01/04/2017 09:59	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	163651848005	01/03/2017 05:24	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	163655713004	01/04/2017 00:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758041
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	N.D.		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	1		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.		0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	0.7		0.1	0.5	1
14240	Acenaphthylene	208-96-8	0.1	J	0.1	0.5	1
14240	Anthracene	120-12-7	N.D.		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	0.1	J	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	0.1	J	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	N.D.		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758041
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	0.1	J	0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	N.D.		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	0.7	J	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	0.2	J	0.1	0.5	1
14240	Fluorene	86-73-7	N.D.		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	0.3	J	0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	2		0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758041
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
14240	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
14240	Pentachlorophenol	87-86-5	N.D.	1	5	1
14240	Phenanthrene	85-01-8	0.1 J	0.1	0.5	1
14240	Phenol	108-95-2	N.D.	0.5	1	1
14240	Pyrene	129-00-0	0.2 J	0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Sufficient sample was not available to repeat the analysis.					
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.	0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D. Q8	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.	0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0018	0.0150	1
07053	Copper	7440-50-8	0.0052 J Q4	0.0041	0.0100	1
07055	Lead	7439-92-1	0.0079 J Q4	0.0062	0.0150	1
07061	Nickel	7440-02-0	0.0070 J	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.	0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0095	0.0250	5
	Reporting limits were raised due to interference from the sample matrix.					
07022	Thallium	7440-28-0	0.0217 J	0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D. Q4	0.0054	0.0200	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D. Q4Q8	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 14:36	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 14:36	Linda C Pape	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758041
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:45 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12D

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 04:50	Anthony P Bauer	1
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07061	Nickel	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	170031848001	01/05/2017 09:06	Eric L Eby	5
07022	Thallium	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	170031848001	01/04/2017 05:38	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	170035713001	01/04/2017 10:21	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	170031848001	01/03/2017 15:35	JoElla L Rice	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	170035713001	01/03/2017 17:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

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

Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758042
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:30 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12S

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	30	100	5
10335	Benzene	71-43-2	2,100	25	50	50
10335	Bromodichloromethane	75-27-4	N.D.	3	5	5
10335	Bromoform	75-25-2	N.D.	3	20	5
10335	Bromomethane	74-83-9	N.D.	3	5	5
10335	2-Butanone	78-93-3	N.D.	15	50	5
10335	Carbon Disulfide	75-15-0	N.D.	5	25	5
10335	Carbon Tetrachloride	56-23-5	N.D.	3	5	5
10335	Chlorobenzene	108-90-7	N.D.	3	5	5
10335	Chloroethane	75-00-3	N.D.	3	5	5
10335	Chloroform	67-66-3	N.D.	3	5	5
10335	Chloromethane	74-87-3	N.D.	3	5	5
10335	Dibromochloromethane	124-48-1	N.D.	3	5	5
10335	1,1-Dichloroethane	75-34-3	N.D.	3	5	5
10335	1,2-Dichloroethane	107-06-2	N.D.	3	5	5
10335	1,1-Dichloroethene	75-35-4	N.D.	3	5	5
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	3	5	5
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	3	5	5
10335	1,2-Dichloropropane	78-87-5	N.D.	3	5	5
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	3	5	5
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	3	5	5
10335	Ethylbenzene	100-41-4	2,300	25	50	50
10335	2-Hexanone	591-78-6	N.D.	15	50	5
10335	4-Methyl-2-pentanone	108-10-1	N.D.	15	50	5
10335	Methylene Chloride	75-09-2	N.D.	10	20	5
10335	Styrene	100-42-5	N.D.	5	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	3	5	5
10335	Tetrachloroethene	127-18-4	N.D.	3	5	5
10335	Toluene	108-88-3	23	3	5	5
10335	1,1,1-Trichloroethane	71-55-6	N.D.	3	5	5
10335	1,1,2-Trichloroethane	79-00-5	N.D.	3	5	5
10335	Trichloroethene	79-01-6	N.D.	3	5	5
10335	Vinyl Chloride	75-01-4	N.D.	3	5	5
10335	Xylene (Total)	1330-20-7	1,300	3	5	5
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
14240	Acenaphthene	83-32-9	100	0.1	0.5	1
14240	Acenaphthylene	208-96-8	4	0.1	0.5	1
14240	Anthracene	120-12-7	9	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	3	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	2	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	2	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.8	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.8	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	75	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758042
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:30 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	3		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	0.2	J	0.1	0.5	1
14240	Dibenzofuran	132-64-9	22		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	0.5	J	0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	7		0.1	0.5	1
14240	Fluorene	86-73-7	41		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.6		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	1,000		10	50	100
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	7,200		10	50	100
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758042
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:30 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PS12S

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**		**ug/l**	**ug/l**	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	44		0.1	0.5	1
14240	Phenol	108-95-2	N.D.		0.5	1	1
14240	Pyrene	129-00-0	6		0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.		0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1
Metals Dissolved		**SW-846 6010B**	**mg/l**		**mg/l**	**mg/l**	
07044	Antimony	7440-36-0	N.D.		0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	Q8	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	0.0116	Q4	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	Q4	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.		0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	Q4	0.0054	0.0200	1
		SW-846 7470A	**mg/l**		**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	Q4Q8	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 14:59	Linda C Pape	5
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 15:21	Linda C Pape	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 14:59	Linda C Pape	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4170031AA	01/03/2017 15:21	Linda C Pape	50

*=This limit was used in the evaluation of the final result

Sample Description: MW-12S Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758042
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 14:30 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS12S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	05:19	Anthony P Bauer	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016	12:01	Catherine E Bachman	100
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016	08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07061	Nickel	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	170031848001	01/05/2017	09:09	Eric L Eby	1
07022	Thallium	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	170031848001	01/04/2017	05:42	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	170035713001	01/04/2017	10:24	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	170031848001	01/03/2017	15:35	JoElla L Rice	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	170035713001	01/03/2017	17:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-42D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758043
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PS42D

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles		**SW-846 8260B**	**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	3		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	N.D.		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	0.8	J	0.5	1	1
Metals Dissolved		**SW-846 6010B**	**mg/l**		**mg/l**	**mg/l**	
07044	Antimony	7440-36-0	N.D.		0.0077	0.0200	1
07035	Arsenic	7440-38-2	0.0121	J Q8	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	Q4	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	Q4	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.		0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	Q4	0.0054	0.0200	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: MW-42D Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758043
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS42D

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 7470A**		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D. Q4Q8	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 15:44	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 15:44	Linda C Pape	1
07044	Antimony	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07061	Nickel	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	170031848001	01/05/2017 09:19	Eric L Eby	1
07022	Thallium	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	170031848001	01/04/2017 05:52	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	170035713001	01/04/2017 10:26	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	170031848001	01/03/2017 15:35	JoElla L Rice	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	170035713001	01/03/2017 17:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758044
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS42R

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	60	200	10
10335	Benzene	71-43-2	200	5	10	10
10335	Bromodichloromethane	75-27-4	N.D.	5	10	10
10335	Bromoform	75-25-2	N.D.	5	40	10
10335	Bromomethane	74-83-9	N.D.	5	10	10
10335	2-Butanone	78-93-3	N.D.	30	100	10
10335	Carbon Disulfide	75-15-0	N.D.	10	50	10
10335	Carbon Tetrachloride	56-23-5	N.D.	5	10	10
10335	Chlorobenzene	108-90-7	N.D.	5	10	10
10335	Chloroethane	75-00-3	N.D.	5	10	10
10335	Chloroform	67-66-3	N.D.	5	10	10
10335	Chloromethane	74-87-3	N.D.	5	10	10
10335	Dibromochloromethane	124-48-1	N.D.	5	10	10
10335	1,1-Dichloroethane	75-34-3	N.D.	5	10	10
10335	1,2-Dichloroethane	107-06-2	N.D.	5	10	10
10335	1,1-Dichloroethene	75-35-4	N.D.	5	10	10
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	5	10	10
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	5	10	10
10335	1,2-Dichloropropane	78-87-5	N.D.	5	10	10
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	5	10	10
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	5	10	10
10335	Ethylbenzene	100-41-4	4,900	50	100	100
10335	2-Hexanone	591-78-6	N.D.	30	100	10
10335	4-Methyl-2-pentanone	108-10-1	N.D.	30	100	10
10335	Methylene Chloride	75-09-2	N.D.	20	40	10
10335	Styrene	100-42-5	N.D.	10	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	5	10	10
10335	Tetrachloroethene	127-18-4	N.D.	5	10	10
10335	Toluene	108-88-3	11	5	10	10
10335	1,1,1-Trichloroethane	71-55-6	N.D.	5	10	10
10335	1,1,2-Trichloroethane	79-00-5	N.D.	5	10	10
10335	Trichloroethene	79-01-6	N.D.	5	10	10
10335	Vinyl Chloride	75-01-4	N.D.	5	10	10
10335	Xylene (Total)	1330-20-7	390	5	10	10
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	120	0.1	0.5	1
14240	Acenaphthylene	208-96-8	7	0.1	0.5	1
14240	Anthracene	120-12-7	10	0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	2	0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	2	0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	2	0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	0.6	0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	0.6	0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
14240	Carbazole	86-74-8	53	0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758044
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS42R

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	3		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	0.1	J	0.1	0.5	1
14240	Dibenzofuran	132-64-9	17		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	30	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	10		0.1	0.5	1
14240	Fluorene	86-73-7	31		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	0.5		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	550		10	51	100
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	5,900		10	51	100
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	30	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758044
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS42R

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	ug/l		ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	51		0.1	0.5	1
14240	Phenol	108-95-2	N.D.		0.5	1	1
14240	Pyrene	129-00-0	8		0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.		0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1
Metals Dissolved		**SW-846 6010B**	mg/l		mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.		0.0077	0.0200	1
07035	Arsenic	7440-38-2	0.0338	Q8	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	0.0065 J	Q4	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	Q4	0.0062	0.0150	1
07061	Nickel	7440-02-0	0.0029	J	0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	Q4	0.0054	0.0200	1
		SW-846 7470A	mg/l		mg/l	mg/l	
00259	Mercury	7439-97-6	N.D. Q4Q8		0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 16:07	Linda C Pape	10
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	4170031AA	01/03/2017 16:29	Linda C Pape	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4170031AA	01/03/2017 16:07	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4170031AA	01/03/2017 16:29	Linda C Pape	100

*=This limit was used in the evaluation of the final result

Sample Description: MW-42R Grab Groundwater
PGW - Passyunk

LL Sample # WW 8758044
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 09:50 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PS42R

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 05:49	Anthony P Bauer	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 12:31	Catherine E Bachman	100
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07035	Arsenic	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07061	Nickel	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	170031848001	01/05/2017 09:22	Eric L Eby	1
07022	Thallium	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	170031848001	01/04/2017 05:56	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	170035713001	01/04/2017 10:29	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	170031848001	01/03/2017 15:35	JoElla L Rice	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	170035713001	01/03/2017 17:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: Rinse Blank #4 Grab Water
PGW - Passyunk

LL Sample # WW 8758045
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSRB4

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.		0.5	1	1
10335	Bromoform	75-25-2	N.D.		0.5	4	1
10335	Bromomethane	74-83-9	N.D.		0.5	1	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.		0.5	1	1
10335	Chloroethane	75-00-3	N.D.		0.5	1	1
10335	Chloroform	67-66-3	N.D.		0.5	1	1
10335	Chloromethane	74-87-3	N.D.		0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.		0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.		0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.		0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.		0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.		0.5	1	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	4	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.		0.5	1	1
10335	Toluene	108-88-3	N.D.		0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	1	1
10335	Trichloroethene	79-01-6	N.D.		0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.		0.5	1	1
10335	Xylene (Total)	1330-20-7	0.7	J	0.5	1	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	**ug/l**	
14240	Acenaphthene	83-32-9	N.D.		0.1	0.5	1
14240	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
14240	Anthracene	120-12-7	N.D.		0.1	0.5	1
14240	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
14240	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
14240	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
14240	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
14240	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
14240	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1
14240	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
14240	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
14240	Carbazole	86-74-8	N.D.		0.5	1	1
14240	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: Rinse Blank #4 Grab Water
PGW - Passyunk

LL Sample # WW 8758045
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSRB4

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
14240	4-Chloroaniline	106-47-8	N.D.		2	4	1
14240	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
14240	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
14240	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
14240	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
14240	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
14240	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.						
14240	Chrysene	218-01-9	N.D.		0.1	0.5	1
14240	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
14240	Dibenzofuran	132-64-9	N.D.		0.5	1	1
14240	1,2-Dichlorobenzene	95-50-1	N.D.		0.5	1	1
14240	1,3-Dichlorobenzene	541-73-1	N.D.		0.5	1	1
14240	1,4-Dichlorobenzene	106-46-7	N.D.		0.5	1	1
14240	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
14240	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
14240	Diethylphthalate	84-66-2	N.D.		2	5	1
14240	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
14240	Dimethylphthalate	131-11-3	N.D.	Q7	2	5	1
14240	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
14240	2,4-Dinitrophenol	51-28-5	N.D.	Q7	10	31	1
14240	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
14240	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
14240	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
14240	Fluoranthene	206-44-0	N.D.		0.1	0.5	1
14240	Fluorene	86-73-7	N.D.		0.1	0.5	1
14240	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
14240	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
14240	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
14240	Hexachloroethane	67-72-1	N.D.		1	5	1
14240	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
14240	Isophorone	78-59-1	N.D.		0.5	1	1
14240	2-Methylnaphthalene	91-57-6	N.D.		0.1	0.5	1
14240	2-Methylphenol	95-48-7	N.D.		0.5	1	1
14240	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14240	Naphthalene	91-20-3	0.3	J	0.1	0.5	1
14240	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
14240	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
14240	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
14240	Nitrobenzene	98-95-3	N.D.		0.5	1	1
14240	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
14240	4-Nitrophenol	100-02-7	N.D.		10	31	1
14240	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
14240	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins

Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: Rinse Blank #4 Grab Water
PGW - Passyunk

LL Sample # WW 8758045
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:40 by TM

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSRB4

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
14240	Di-n-octylphthalate	117-84-0	N.D.		2	5	1
14240	Pentachlorophenol	87-86-5	N.D.		1	5	1
14240	Phenanthrene	85-01-8	0.2	J	0.1	0.5	1
14240	Phenol	108-95-2	N.D.		0.5	1	1
14240	Pyrene	129-00-0	N.D.		0.1	0.5	1
14240	1,2,4-Trichlorobenzene	120-82-1	N.D.		0.5	1	1
14240	2,4,5-Trichlorophenol	95-95-4	N.D.		0.5	1	1
14240	2,4,6-Trichlorophenol	88-06-2	N.D.		0.5	1	1
Metals Dissolved	**SW-846 6010B**		mg/l		mg/l	mg/l	
07044	Antimony	7440-36-0	N.D.		0.0077	0.0200	1
07035	Arsenic	7440-38-2	N.D.	Q8	0.0097	0.0200	1
07047	Beryllium	7440-41-7	N.D.		0.00067	0.0050	1
07049	Cadmium	7440-43-9	N.D.		0.00049	0.0050	1
07051	Chromium	7440-47-3	N.D.		0.0018	0.0150	1
07053	Copper	7440-50-8	N.D.	Q4	0.0041	0.0100	1
07055	Lead	7439-92-1	N.D.	Q4	0.0062	0.0150	1
07061	Nickel	7440-02-0	N.D.		0.0028	0.0100	1
07036	Selenium	7782-49-2	N.D.		0.0097	0.0200	1
07066	Silver	7440-22-4	N.D.		0.0019	0.0050	1
07022	Thallium	7440-28-0	N.D.		0.0094	0.0300	1
07072	Zinc	7440-66-6	N.D.	Q4	0.0054	0.0200	1
	SW-846 7470A		mg/l		mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	Q4Q8	0.000050	0.00020	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/17.
This sample was field filtered 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
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	E170034AA	01/03/2017 21:42	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170034AA	01/03/2017 21:42	Sara E Johnson	1
14240	TCL SW846 8270C MINI	SW-846 8270C	1	16357WAH026	12/29/2016 06:18	Anthony P Bauer	1
00813	BNA Water Extraction	SW-846 3510C	1	16357WAH026	12/23/2016 08:00	David S Schrum	1
07044	Antimony	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1

*=This limit was used in the evaluation of the final result

Sample Description: Rinse Blank #4 Grab Water
PGW - Passyunk

LL Sample # WW 8758045
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/21/2016 11:40 by TM

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

PSRB4

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07047	Beryllium	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07049	Cadmium	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07051	Chromium	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07053	Copper	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07055	Lead	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07061	Nickel	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07036	Selenium	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07066	Silver	SW-846 6010B	1	170031848001	01/05/2017 09:25	Eric L Eby	1
07022	Thallium	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
07072	Zinc	SW-846 6010B	1	170031848001	01/04/2017 05:59	Joanne M Gates	1
00259	Mercury	SW-846 7470A	1	170035713001	01/04/2017 10:31	Damary Valentin	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	170031848001	01/03/2017 15:35	JoElla L Rice	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	170035713001	01/03/2017 17:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

eurofins
Lancaster Laboratories Environmental

Analysis Report

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

Sample Description: Trip Blank Water
PGW - Passyunk

LL Sample # WW 8758046
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 00:01

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSTB4

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	1	1
10335	Bromodichloromethane	75-27-4	N.D.	0.5	1	1
10335	Bromoform	75-25-2	N.D.	0.5	4	1
10335	Bromomethane	74-83-9	N.D.	0.5	1	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	0.5	1	1
10335	Chlorobenzene	108-90-7	N.D.	0.5	1	1
10335	Chloroethane	75-00-3	N.D.	0.5	1	1
10335	Chloroform	67-66-3	N.D.	0.5	1	1
10335	Chloromethane	74-87-3	N.D.	0.5	1	1
10335	Dibromochloromethane	124-48-1	N.D.	0.5	1	1
10335	1,1-Dichloroethane	75-34-3	N.D.	0.5	1	1
10335	1,2-Dichloroethane	107-06-2	N.D.	0.5	1	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.5	1	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	1	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	1	1
10335	1,2-Dichloropropane	78-87-5	N.D.	0.5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	1	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	1	1
10335	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	4	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	1	1
10335	Tetrachloroethene	127-18-4	N.D.	0.5	1	1
10335	Toluene	108-88-3	N.D.	0.5	1	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	1	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	1	1
10335	Trichloroethene	79-01-6	N.D.	0.5	1	1
10335	Vinyl Chloride	75-01-4	N.D.	0.5	1	1
10335	Xylene (Total)	1330-20-7	N.D.	0.5	1	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.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	PPL/TCL Volatiles in Water	SW-846 8260B	1	N170032AA	01/03/2017 17:32	Linda C Pape	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip Blank Water
PGW - Passyunk

LL Sample # WW 8758046
LL Group # 1747321
Account # 02732

Project Name: PGW - Passyunk

Collected: 12/20/2016 00:01

Submitted: 12/21/2016 15:56
Reported: 01/16/2017 11:43

Leidos Engineering, LLC
6310 Allentown Blvd.
Harrisburg PA 17112

PSTB4

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N170032AA	01/03/2017 17:32	Linda C Pape	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

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 ug/l**	**MDL** ug/l**	**LOQ ug/l**
Batch number: 4170031AA	Sample number(s): 8758030-8758033,8758041-8758044		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: E170034AA	Sample number(s): 8758034-8758040,8758045		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: N163641AA	Sample number(s): 8758028-8758029		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: N170032AA	Sample number(s): 8758046		
Acetone	N.D.	6	20
Benzene	N.D.	0.5	1
Bromodichloromethane	N.D.	0.5	1
Bromoform	N.D.	0.5	4
Bromomethane	N.D.	0.5	1
2-Butanone	N.D.	3	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	0.5	1
Chlorobenzene	N.D.	0.5	1
Chloroethane	N.D.	0.5	1
Chloroform	N.D.	0.5	1
Chloromethane	N.D.	0.5	1
Dibromochloromethane	N.D.	0.5	1
1,1-Dichloroethane	N.D.	0.5	1
1,2-Dichloroethane	N.D.	0.5	1
1,1-Dichloroethene	N.D.	0.5	1
cis-1,2-Dichloroethene	N.D.	0.5	1
trans-1,2-Dichloroethene	N.D.	0.5	1
1,2-Dichloropropane	N.D.	0.5	1
cis-1,3-Dichloropropene	N.D.	0.5	1
trans-1,3-Dichloropropene	N.D.	0.5	1
Ethylbenzene	N.D.	0.5	1
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	4
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	0.5	1
Tetrachloroethene	N.D.	0.5	1
Toluene	N.D.	0.5	1
1,1,1-Trichloroethane	N.D.	0.5	1
1,1,2-Trichloroethane	N.D.	0.5	1

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
Trichloroethene	N.D.	0.5	1
Vinyl Chloride	N.D.	0.5	1
Xylene (Total)	N.D.	0.5	1
Batch number: 16357WAH026	Sample number(s): 8758028-8758033,8758041-8758042,8758044-8758045		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result ug/l	MDL** ug/l	LOQ ug/l
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
Batch number: 16359WAK026	Sample number(s): 8758034-8758040		
Acenaphthene	N.D.	0.1	0.5
Acenaphthylene	N.D.	0.1	0.5
Anthracene	N.D.	0.1	0.5
Benzo(a)anthracene	N.D.	0.1	0.5
Benzo(a)pyrene	N.D.	0.1	0.5
Benzo(b)fluoranthene	N.D.	0.1	0.5
Benzo(g,h,i)perylene	N.D.	0.1	0.5
Benzo(k)fluoranthene	N.D.	0.1	0.5
4-Bromophenyl-phenylether	N.D.	0.5	1
Butylbenzylphthalate	N.D.	2	5
Di-n-butylphthalate	N.D.	2	5
Carbazole	N.D.	0.5	1
4-Chloro-3-methylphenol	N.D.	0.5	1
4-Chloroaniline	N.D.	2	4
bis(2-Chloroethoxy)methane	N.D.	0.5	1
bis(2-Chloroethyl)ether	N.D.	0.5	1
2-Chloronaphthalene	N.D.	0.4	1
2-Chlorophenol	N.D.	0.5	1
4-Chlorophenyl-phenylether	N.D.	0.5	1
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1
Chrysene	N.D.	0.1	0.5
Dibenz(a,h)anthracene	N.D.	0.1	0.5
Dibenzofuran	N.D.	0.5	1
1,2-Dichlorobenzene	N.D.	0.5	1
1,3-Dichlorobenzene	N.D.	0.5	1
1,4-Dichlorobenzene	N.D.	0.5	1
3,3'-Dichlorobenzidine	N.D.	2	5

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC — Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
2,4-Dichlorophenol	N.D.	0.5	1
Diethylphthalate	N.D.	2	5
2,4-Dimethylphenol	N.D.	0.5	1
Dimethylphthalate	N.D.	2	5
4,6-Dinitro-2-methylphenol	N.D.	5	15
2,4-Dinitrophenol	N.D.	10	30
2,4-Dinitrotoluene	N.D.	1	5
2,6-Dinitrotoluene	N.D.	0.5	1
bis(2-Ethylhexyl)phthalate	N.D.	2	5
Fluoranthene	N.D.	0.1	0.5
Fluorene	N.D.	0.1	0.5
Hexachlorobenzene	N.D.	0.1	0.5
Hexachlorobutadiene	N.D.	0.5	1
Hexachlorocyclopentadiene	N.D.	5	15
Hexachloroethane	N.D.	1	5
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5
Isophorone	N.D.	0.5	1
2-Methylnaphthalene	N.D.	0.1	0.5
2-Methylphenol	N.D.	0.5	1
4-Methylphenol	N.D.	0.5	1
Naphthalene	N.D.	0.1	0.5
2-Nitroaniline	N.D.	0.5	1
3-Nitroaniline	N.D.	0.5	1
4-Nitroaniline	N.D.	0.5	1
Nitrobenzene	N.D.	0.5	1
2-Nitrophenol	N.D.	0.5	1
4-Nitrophenol	N.D.	10	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1
N-Nitrosodiphenylamine	N.D.	0.5	1
Di-n-octylphthalate	N.D.	2	5
Pentachlorophenol	N.D.	1	5
Phenanthrene	N.D.	0.1	0.5
Phenol	N.D.	0.5	1
Pyrene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.5	1
2,4,5-Trichlorophenol	N.D.	0.5	1
2,4,6-Trichlorophenol	N.D.	0.5	1
	mg/l	mg/l	mg/l
Batch number: 163651848005	Sample number(s): 8758028-8758040		
Antimony	N.D.	0.0077	0.0200
Arsenic	N.D.	0.0097	0.0200
Beryllium	N.D.	0.00067	0.0050
Cadmium	N.D.	0.00049	0.0050
Chromium	N.D.	0.0018	0.0150
Copper	N.D.	0.0041	0.0100
Lead	N.D.	0.0062	0.0150
Nickel	N.D.	0.0028	0.0100
Selenium	N.D.	0.0097	0.0200

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

Method Blank (continued)

Analysis Name	Result mg/l	MDL** mg/l	LOQ mg/l
Silver	N.D.	0.0019	0.0050
Thallium	N.D.	0.0094	0.0300
Zinc	N.D.	0.0054	0.0200
Batch number: 163655713004	Sample number(s): 8758028-8758040		
Mercury	N.D.	0.000050	0.00020
Batch number: 170031848001	Sample number(s): 8758041-8758045		
Antimony	N.D.	0.0077	0.0200
Arsenic	N.D.	0.0097	0.0200
Beryllium	N.D.	0.00067	0.0050
Cadmium	N.D.	0.00049	0.0050
Chromium	N.D.	0.0018	0.0150
Copper	N.D.	0.0041	0.0100
Lead	N.D.	0.0062	0.0150
Nickel	N.D.	0.0028	0.0100
Selenium	N.D.	0.0097	0.0200
Silver	N.D.	0.0019	0.0050
Thallium	N.D.	0.0094	0.0300
Zinc	N.D.	0.0054	0.0200
Batch number: 170035713001	Sample number(s): 8758041-8758045		
Mercury	N.D.	0.000050	0.00020

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: 4170031AA	Sample number(s): 8758030-8758033,8758041-8758044								
Acetone	150	148.29	150	139.87	99	93	50-168	6	30
Benzene	20	19.55	20	19.54	98	98	78-120	0	30
Bromodichloromethane	20	19.63	20	19.24	98	96	80-120	2	30
Bromoform	20	18.97	20	18.11	95	91	59-120	5	30
Bromomethane	20	23.18	20	21.09	116	105	55-123	9	30
2-Butanone	150	134.25	150	133.29	90	89	57-145	1	30
Carbon Disulfide	20	19.77	20	19.11	99	96	58-120	3	30
Carbon Tetrachloride	20	20.62	20	20.02	103	100	74-130	3	30
Chlorobenzene	20	19.76	20	19.59	99	98	80-120	1	30
Chloroethane	20	20.4	20	19.41	102	97	56-120	5	30
Chloroform	20	20.03	20	19.69	100	98	80-120	2	30
Chloromethane	20	21.71	20	21.29	109	106	59-127	2	30
Dibromochloromethane	20	19.1	20	18.97	96	95	78-120	1	30
1,1-Dichloroethane	20	19.49	20	19.41	97	97	80-120	0	30
1,2-Dichloroethane	20	20.05	20	19.58	100	98	66-128	2	30
1,1-Dichloroethene	20	20.79	20	20.96	104	105	76-124	1	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

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
cis-1,2-Dichloroethene	20	20.05	20	19.93	100	100	80-120	1	30
trans-1,2-Dichloroethene	20	20.42	20	19.89	102	99	80-120	3	30
1,2-Dichloropropane	20	19.26	20	18.68	96	93	80-120	3	30
cis-1,3-Dichloropropene	20	19.23	20	19.12	96	96	80-120	1	30
trans-1,3-Dichloropropene	20	19.96	20	19.8	100	99	76-120	1	30
Ethylbenzene	20	20.26	20	19.95	101	100	78-120	2	30
2-Hexanone	100	82.8	100	81.92	83	82	49-146	1	30
4-Methyl-2-pentanone	100	84.6	100	84.29	85	84	55-141	0	30
Methylene Chloride	20	19.83	20	19.99	99	100	80-120	1	30
Styrene	20	20.76	20	20.51	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	20	19.18	20	19.01	96	95	72-120	1	30
Tetrachloroethene	20	20.01	20	19.52	100	98	80-129	3	30
Toluene	20	19.68	20	19.37	98	97	80-120	2	30
1,1,1-Trichloroethane	20	17.92	20	17.65	90	88	66-126	1	30
1,1,2-Trichloroethane	20	19.67	20	18.97	98	95	80-120	4	30
Trichloroethene	20	20.11	20	19.97	101	100	80-120	1	30
Vinyl Chloride	20	22.38	20	22.23	112	111	63-121	1	30
Xylene (Total)	60	60.26	60	59.58	100	99	80-120	1	30
Batch number: E170034AA	Sample number(s): 8758034-8758040,8758045								
Acetone	150	128.82	150	129.28	86	86	50-168	0	30
Benzene	20	18.22	20	18.11	91	91	78-120	1	30
Bromodichloromethane	20	16.47	20	16.33	82	82	80-120	1	30
Bromoform	20	15.55	20	14.86	78	74	59-120	5	30
Bromomethane	20	18.6	20	18.64	93	93	55-123	0	30
2-Butanone	150	126.51	150	123.66	84	82	57-145	2	30
Carbon Disulfide	20	19.24	20	19.35	96	97	58-120	1	30
Carbon Tetrachloride	20	16.69	20	17.1	83	85	74-130	2	30
Chlorobenzene	20	17.96	20	17.95	90	90	80-120	0	30
Chloroethane	20	20.15	20	19.75	101	99	56-120	2	30
Chloroform	20	17.91	20	17.46	90	87	80-120	3	30
Chloromethane	20	17.96	20	17.52	90	88	59-127	2	30
Dibromochloromethane	20	16.75	20	16.11	84	81	78-120	4	30
1,1-Dichloroethane	20	18.69	20	18.2	93	91	80-120	3	30
1,2-Dichloroethane	20	16.85	20	16.42	84	82	66-128	3	30
1,1-Dichloroethene	20	19.76	20	19.1	99	95	76-124	3	30
cis-1,2-Dichloroethene	20	17.94	20	17.88	90	89	80-120	0	30
trans-1,2-Dichloroethene	20	18.67	20	18.84	93	94	80-120	1	30
1,2-Dichloropropane	20	18.29	20	17.84	91	89	80-120	3	30
cis-1,3-Dichloropropene	20	16.86	20	16.69	84	83	80-120	1	30
trans-1,3-Dichloropropene	20	16.89	20	16.49	84	82	76-120	2	30
Ethylbenzene	20	18.16	20	18.52	91	93	78-120	2	30
2-Hexanone	100	88.71	100	86.41	89	86	49-146	3	30
4-Methyl-2-pentanone	100	85.5	100	84.42	85	84	55-141	1	30
Methylene Chloride	20	18.28	20	18.19	91	91	80-120	1	30
Styrene	20	17.33	20	17.33	87	87	80-120	0	30
1,1,2,2-Tetrachloroethane	20	18.82	20	18.63	94	93	72-120	1	30
Tetrachloroethene	20	18.06	20	17.95	90	90	80-129	1	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

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
Toluene	20	18.1	20	18.28	91	91	80-120	1	30
1,1,1-Trichloroethane	20	14.94	20	15.18	75	76	66-126	2	30
1,1,2-Trichloroethane	20	18.1	20	17.62	90	88	80-120	3	30
Trichloroethene	20	17.85	20	18.01	89	90	80-120	1	30
Vinyl Chloride	20	19.59	20	19.42	98	97	63-121	1	30
Xylene (Total)	60	53.92	60	53.58	90	89	80-120	1	30
Batch number: N163641AA	Sample number(s): 8758028-8758029								
Acetone	150	122.72	150	121.29	82	81	50-168	1	30
Benzene	20	20.43	20	20.35	102	102	78-120	0	30
Bromodichloromethane	20	19.01	20	19.02	95	95	80-120	0	30
Bromoform	20	17.49	20	17.21	87	86	59-120	2	30
Bromomethane	20	12.4	20	12.65	62	63	55-123	2	30
2-Butanone	150	132.23	150	130.17	88	87	57-145	2	30
Carbon Disulfide	20	17.63	20	17.61	88	88	58-120	0	30
Carbon Tetrachloride	20	19.3	20	19.53	97	98	74-130	1	30
Chlorobenzene	20	20.52	20	20.26	103	101	80-120	1	30
Chloroethane	20	13.08	20	13.12	65	66	56-120	0	30
Chloroform	20	19.09	20	19	95	95	80-120	0	30
Chloromethane	20	15.82	20	15.64	79	78	59-127	1	30
Dibromochloromethane	20	18.21	20	17.89	91	89	78-120	2	30
1,1-Dichloroethane	20	18.25	20	18.16	91	91	80-120	0	30
1,2-Dichloroethane	20	16.19	20	16.29	81	81	66-128	1	30
1,1-Dichloroethene	20	20.24	20	20.23	101	101	76-124	0	30
cis-1,2-Dichloroethene	20	21.43	20	21.46	107	107	80-120	0	30
trans-1,2-Dichloroethene	20	21.27	20	21.12	106	106	80-120	1	30
1,2-Dichloropropane	20	19.34	20	19.12	97	96	80-120	1	30
cis-1,3-Dichloropropene	20	20.13	20	20.11	101	101	80-120	0	30
trans-1,3-Dichloropropene	20	18.21	20	18.22	91	91	76-120	0	30
Ethylbenzene	20	20.14	20	19.98	101	100	78-120	1	30
2-Hexanone	100	81.2	100	79.91	81	80	49-146	2	30
4-Methyl-2-pentanone	100	86.22	100	85.28	86	85	55-141	1	30
Methylene Chloride	20	19.47	20	19.75	97	99	80-120	1	30
Styrene	20	20.55	20	20.53	103	103	80-120	0	30
1,1,2,2-Tetrachloroethane	20	19.51	20	19.46	98	97	72-120	0	30
Tetrachloroethene	20	20.05	20	19.62	100	98	80-129	2	30
Toluene	20	20.34	20	20.02	102	100	80-120	2	30
1,1,1-Trichloroethane	20	17.36	20	17.52	87	88	66-126	1	30
1,1,2-Trichloroethane	20	19.74	20	19.62	99	98	80-120	1	30
Trichloroethene	20	21.02	20	20.83	105	104	80-120	1	30
Vinyl Chloride	20	19.09	20	19.2	95	96	63-121	1	30
Xylene (Total)	60	62	60	61.55	103	103	80-120	1	30
Batch number: N170032AA	Sample number(s): 8758046								
Acetone	150	122.46	150	116.77	82	78	50-168	5	30
Benzene	20	22.67	20	22.58	113	113	78-120	0	30
Bromodichloromethane	20	20.23	20	20.15	101	101	80-120	0	30
Bromoform	20	16.24	20	15.51	81	78	59-120	5	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

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
Bromomethane	20	18	20	18.42	90	92	55-123	2	30
2-Butanone	150	139.74	150	107.78	93	72	57-145	26	30
Carbon Disulfide	20	20.62	20	20.52	103	103	58-120	0	30
Carbon Tetrachloride	20	21.37	20	21.41	107	107	74-130	0	30
Chlorobenzene	20	20.77	20	20.53	104	103	80-120	1	30
Chloroethane	20	17.08	20	16.85	85	84	56-120	1	30
Chloroform	20	21	20	21.07	105	105	80-120	0	30
Chloromethane	20	17.6	20	17.83	88	89	59-127	1	30
Dibromochloromethane	20	17.67	20	16.96	88	85	78-120	4	30
1,1-Dichloroethane	20	20.39	20	20.2	102	101	80-120	1	30
1,2-Dichloroethane	20	17.97	20	17.71	90	89	66-128	1	30
1,1-Dichloroethene	20	23.52	20	23.17	118	116	76-124	1	30
cis-1,2-Dichloroethene	20	23.8	20	23.63	119	118	80-120	1	30
trans-1,2-Dichloroethene	20	23.92	20	23.78	120	119	80-120	1	30
1,2-Dichloropropane	20	21.18	20	20.88	106	104	80-120	1	30
cis-1,3-Dichloropropene	20	21.72	20	21.55	109	108	80-120	1	30
trans-1,3-Dichloropropene	20	18.23	20	18	91	90	76-120	1	30
Ethylbenzene	20	20.38	20	20.16	102	101	78-120	1	30
2-Hexanone	100	80.03	100	65.57	80	66	49-146	20	30
4-Methyl-2-pentanone	100	92.59	100	79.23	93	79	55-141	16	30
Methylene Chloride	20	22.21	20	21.96	111	110	80-120	1	30
Styrene	20	20.44	20	20.2	102	101	80-120	1	30
1,1,2,2-Tetrachloroethane	20	18.98	20	17.31	95	87	72-120	9	30
Tetrachloroethene	20	20.31	20	20.25	102	101	80-129	0	30
Toluene	20	20.63	20	20.28	103	101	80-120	2	30
1,1,1-Trichloroethane	20	19.48	20	19.26	97	96	66-126	1	30
1,1,2-Trichloroethane	20	19.88	20	19.27	99	96	80-120	3	30
Trichloroethene	20	23.11	20	22.79	116	114	80-120	1	30
Vinyl Chloride	20	20.94	20	20.65	105	103	63-121	1	30
Xylene (Total)	60	62.96	60	62.41	105	104	80-120	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16357WAH026	Sample number(s): 8758028-8758033,8758041-8758042,8758044-8758045								
Acenaphthene	50	42.34	50	38.49	85	77	64-121	10	30
Acenaphthylene	50	43.13	50	39.86	86	80	63-120	8	30
Anthracene	50	42.08	50	43.65	84	87	70-125	4	30
Benzo(a)anthracene	50	48.53	50	46.39	97	93	74-124	5	30
Benzo(a)pyrene	50	42.9	50	42.14	86	84	71-119	2	30
Benzo(b)fluoranthene	50	43.15	50	41.54	86	83	72-124	4	30
Benzo(g,h,i)perylene	50	44.15	50	44.11	88	88	58-129	0	30
Benzo(k)fluoranthene	50	41.94	50	43.17	84	86	72-126	3	30
4-Bromophenyl-phenylether	50	48.98	50	46.14	98	92	69-123	6	30
Butylbenzylphthalate	50	39.77	50	29.98	80	60	44-129	28	30
Di-n-butylphthalate	50	38.85	50	38.02	78	76	69-117	2	30
Carbazole	50	42.16	50	43.78	84	88	77-122	4	30
4-Chloro-3-methylphenol	50	43.1	50	39.53	86	79	63-112	9	30
4-Chloroaniline	50	31.26	50	28.95	63	58	41-94	8	30
bis(2-Chloroethoxy)methane	50	40.93	50	32.53	82	65	47-127	23	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

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
bis(2-Chloroethyl)ether	50	35.57	50	28.52	71	57	50-111	22	30
2-Chloronaphthalene	50	43.35	50	35.04	87	70	56-116	21	30
2-Chlorophenol	50	37.04	50	29.88	74	60	51-106	21	30
4-Chlorophenyl-phenylether	50	43.34	50	42.02	87	84	65-117	3	30
2,2'-oxybis(1-Chloropropane)	50	38.18	50	30.58	76	61	42-108	22	30
Chrysene	50	48.46	50	46.91	97	94	75-129	3	30
Dibenz(a,h)anthracene	50	44.51	50	42.78	89	86	65-126	4	30
Dibenzofuran	50	42.82	50	40	86	80	69-115	7	30
1,2-Dichlorobenzene	50	33.94	50	28.39	68	57	50-99	18	30
1,3-Dichlorobenzene	50	31.35	50	26.89	63	54	45-95	15	30
1,4-Dichlorobenzene	50	32.36	50	27.76	65	56	41-104	15	30
3,3'-Dichlorobenzidine	50	29.47	50	30.59	59	61	37-102	4	30
2,4-Dichlorophenol	50	44.87	50	37.44	90	75	62-112	18	30
Diethylphthalate	50	33.34	50	32.24	67	64	47-122	3	30
2,4-Dimethylphenol	50	38.67	50	32.05	77	64	46-85	19	30
Dimethylphthalate	50	32.51	50	19.57	65	39	10-134	50*	30
4,6-Dinitro-2-methylphenol	50	40.45	50	41.19	81	82	48-134	2	30
2,4-Dinitrophenol	100	80.55	100	50.85	81	51	26-146	45*	30
2,4-Dinitrotoluene	50	42.37	50	41.4	85	83	76-122	2	30
2,6-Dinitrotoluene	50	45.83	50	43.66	92	87	80-120	5	30
bis(2-Ethylhexyl)phthalate	50	42.98	50	40.99	86	82	64-126	5	30
Fluoranthene	50	44.75	50	44.78	90	90	74-126	0	30
Fluorene	50	42.47	50	39.96	85	80	67-120	6	30
Hexachlorobenzene	50	47.35	50	42.98	95	86	67-125	10	30
Hexachlorobutadiene	50	30.72	50	31.19	61	62	28-110	2	30
Hexachlorocyclopentadiene	100	59.64	100	62.13	60	62	10-81	4	30
Hexachloroethane	50	26.21	50	24.64	52	49	28-103	6	30
Indeno(1,2,3-cd)pyrene	50	43.63	50	43.26	87	87	63-122	1	30
Isophorone	50	41.84	50	34.67	84	69	54-117	19	30
2-Methylnaphthalene	50	37.98	50	33.44	76	67	54-111	13	30
2-Methylphenol	50	36.65	50	30.16	73	60	44-112	19	30
4-Methylphenol	50	32.49	50	27.54	65	55	41-109	17	30
Naphthalene	50	37.97	50	31.47	76	63	54-109	19	30
2-Nitroaniline	50	45.48	50	43.46	91	87	77-115	5	30
3-Nitroaniline	50	40.91	50	39.33	82	79	61-114	4	30
4-Nitroaniline	50	34.74	50	37.95	69	76	57-114	9	30
Nitrobenzene	50	38.23	50	30.64	76	61	53-119	22	30
2-Nitrophenol	50	42.52	50	33.82	85	68	56-125	23	30
4-Nitrophenol	50	20.6	50	23.36	41	47	22-78	13	30
N-Nitroso-di-n-propylamine	50	36.58	50	30.47	73	61	52-115	18	30
N-Nitrosodiphenylamine	50	38.46	50	42.64	77	85	75-116	10	30
Di-n-octylphthalate	50	38.37	50	37.79	77	76	61-133	2	30
Pentachlorophenol	50	42.38	50	44.76	85	90	59-134	5	30
Phenanthrene	50	43.62	50	42.34	87	85	70-122	3	30
Phenol	50	17.85	50	15.75	36	31	21-68	13	30
Pyrene	50	40.88	50	41.25	82	82	69-119	1	30
1,2,4-Trichlorobenzene	50	36.45	50	32.52	73	65	52-98	11	30
2,4,5-Trichlorophenol	50	47.48	50	44.52	95	89	69-122	6	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC — Group Number: 1747321
Reported: 01/16/2017 11:43

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
2,4,6-Trichlorophenol	50	46.12	50	42.37	92	85	68-125	8	30
Batch number: 16359WAK026	Sample number(s): 8758034-8758040								
Acenaphthene	50	45.02			90		64-121		
Acenaphthylene	50	46.44			93		63-120		
Anthracene	50	45.72			91		70-125		
Benzo(a)anthracene	50	46.73			93		74-124		
Benzo(a)pyrene	50	43.23			86		71-119		
Benzo(b)fluoranthene	50	43.78			88		72-124		
Benzo(g,h,i)perylene	50	44.55			89		58-129		
Benzo(k)fluoranthene	50	43.2			86		72-126		
4-Bromophenyl-phenylether	50	47.06			94		69-123		
Butylbenzylphthalate	50	41.79			84		44-129		
Di-n-butylphthalate	50	44.15			88		69-117		
Carbazole	50	47.12			94		77-122		
4-Chloro-3-methylphenol	50	42.84			86		63-112		
4-Chloroaniline	50	36.36			73		41-94		
bis(2-Chloroethoxy)methane	50	43.3			87		47-127		
bis(2-Chloroethyl)ether	50	40.07			80		50-111		
2-Chloronaphthalene	50	42.02			84		56-116		
2-Chlorophenol	50	38			76		51-106		
4-Chlorophenyl-phenylether	50	46.12			92		65-117		
2,2'-oxybis(1-Chloropropane)	50	42.96			86		42-108		
Chrysene	50	46.43			93		75-129		
Dibenz(a,h)anthracene	50	45.7			91		65-126		
Dibenzofuran	50	45.74			91		69-115		
1,2-Dichlorobenzene	50	38.86			78		50-99		
1,3-Dichlorobenzene	50	36.28			73		45-95		
1,4-Dichlorobenzene	50	37.51			75		41-104		
3,3'-Dichlorobenzidine	50	33.68			67		37-102		
2,4-Dichlorophenol	50	44.93			90		62-112		
Diethylphthalate	50	41.33			83		47-122		
2,4-Dimethylphenol	50	39.85			80		46-85		
Dimethylphthalate	50	37.21			74		10-134		
4,6-Dinitro-2-methylphenol	50	43.97			88		48-134		
2,4-Dinitrophenol	100	83.15			83		26-146		
2,4-Dinitrotoluene	50	44.51			89		76-122		
2,6-Dinitrotoluene	50	49.13			98		80-120		
bis(2-Ethylhexyl)phthalate	50	41.87			84		64-126		
Fluoranthene	50	46.69			93		74-126		
Fluorene	50	44.35			89		67-120		
Hexachlorobenzene	50	44.86			90		67-125		
Hexachlorobutadiene	50	39.51			79		28-110		
Hexachlorocyclopentadiene	100	79.61			80		10-81		
Hexachloroethane	50	33.13			66		28-103		
Indeno(1,2,3-cd)pyrene	50	44.42			89		63-122		
Isophorone	50	44.97			90		54-117		
2-Methylnaphthalene	50	41.51			83		54-111		

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

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
2-Methylphenol	50	36.32			73		44-112		
4-Methylphenol	50	32.13			64		41-109		
Naphthalene	50	40.45			81		54-109		
2-Nitroaniline	50	48.56			97		77-115		
3-Nitroaniline	50	41.74			83		61-114		
4-Nitroaniline	50	39.8			80		57-114		
Nitrobenzene	50	40.47			81		53-119		
2-Nitrophenol	50	42.77			86		56-125		
4-Nitrophenol	50	19.89			40		22-78		
N-Nitroso-di-n-propylamine	50	40.64			81		52-115		
N-Nitrosodiphenylamine	50	44.66			89		75-116		
Di-n-octylphthalate	50	39.38			79		61-133		
Pentachlorophenol	50	51.06			102		59-134		
Phenanthrene	50	44.7			89		70-122		
Phenol	50	15.55			31		21-68		
Pyrene	50	41.91			84		69-119		
1,2,4-Trichlorobenzene	50	41.97			84		52-98		
2,4,5-Trichlorophenol	50	48.18			96		69-122		
2,4,6-Trichlorophenol	50	48.18			96		68-125		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 163651848005	Sample number(s): 8758028-8758040								
Antimony	0.500	0.524			105		80-120		
Arsenic	0.150	0.150			100		80-120		
Beryllium	0.0500	0.0527			105		80-120		
Cadmium	0.0500	0.0522			104		80-120		
Chromium	0.200	0.206			103		80-120		
Copper	0.250	0.277			111		80-120		
Lead	0.150	0.158			105		80-120		
Nickel	0.500	0.533			107		80-120		
Selenium	0.150	0.155			104		80-120		
Silver	0.0500	0.0436			87		80-120		
Thallium	0.150	0.180			120		80-120		
Zinc	0.500	0.517			103		80-120		
Batch number: 163655713004	Sample number(s): 8758028-8758040								
Mercury	0.00100	0.000854			85		80-120		
Batch number: 170031848001	Sample number(s): 8758041-8758045								
Antimony	0.500	0.502			100		80-120		
Arsenic	0.150	0.139			92		80-120		
Beryllium	0.0500	0.0476			95		80-120		
Cadmium	0.0500	0.0490			98		80-120		
Chromium	0.200	0.192			96		80-120		
Copper	0.250	0.242			97		80-120		
Lead	0.150	0.147			98		80-120		
Nickel	0.500	0.492			98		80-120		
Selenium	0.150	0.146			97		80-120		

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Silver	0.0500	0.0489			98		80-120		
Thallium	0.150	0.141			94		80-120		
Zinc	0.500	0.478			96		80-120		
Batch number: 170035713001	Sample number(s): 8758041-8758045								
Mercury	0.00100	0.000862			86		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: 16359WAK026	Sample number(s): 8758034-8758040 UNSPK: P758334									
Acenaphthene	2.41	51.65	41.91	51.23	40.56	76	74	64-121	3	30
Acenaphthylene	N.D.	51.65	40.02	51.23	41.74	77	81	63-120	4	30
Anthracene	1.05	51.65	43.15	51.23	44.76	81	85	70-125	4	30
Benzo(a)anthracene	0.404	51.65	44.29	51.23	45.44	85	88	74-124	3	30
Benzo(a)pyrene	0.224	51.65	38.34	51.23	39.14	74	76	71-119	2	30
Benzo(b)fluoranthene	0.280	51.65	38	51.23	39.09	73	76	72-124	3	30
Benzo(g,h,i)perylene	0.177	51.65	37.67	51.23	38.24	73	74	58-129	2	30
Benzo(k)fluoranthene	0.124	51.65	37.82	51.23	37.84	73	74	72-126	0	30
4-Bromophenyl-phenylether	N.D.	51.65	40.27	51.23	41.91	78	82	69-123	4	30
Butylbenzylphthalate	N.D.	51.65	38.29	51.23	42.12	74	82	44-129	10	30
Di-n-butylphthalate	N.D.	51.65	42.77	51.23	45.02	83	88	69-117	5	30
Carbazole	1.62	51.65	48.36	51.23	51.62	90	98	77-122	7	30
4-Chloro-3-methylphenol	N.D.	51.65	28.8	51.23	35.85	56*	70	63-112	22	30
4-Chloroaniline	N.D.	51.65	29.07	51.23	32.21	56	63	41-94	10	30
bis(2-Chloroethoxy)methane	N.D.	51.65	41.11	51.23	40.98	80	80	47-127	0	30
bis(2-Chloroethyl)ether	N.D.	51.65	39.4	51.23	38.78	76	76	50-111	2	30
2-Chloronaphthalene	N.D.	51.65	56.93	51.23	55.8	110	109	56-116	2	30
2-Chlorophenol	N.D.	51.65	30.2	51.23	30.15	58	59	51-106	0	30
4-Chlorophenyl-phenylether	N.D.	51.65	36.76	51.23	37.2	71	73	65-117	1	30
2,2'-oxybis(1-Chloropropane)	N.D.	51.65	41.62	51.23	41.39	81	81	42-108	1	30
Chrysene	0.604	51.65	44.1	51.23	45.34	84	87	75-129	3	30
Dibenz(a,h)anthracene	N.D.	51.65	38.65	51.23	38.65	75	75	65-126	0	30
Dibenzofuran	1.29	51.65	39.45	51.23	39.27	74	74	69-115	0	30
1,2-Dichlorobenzene	N.D.	51.65	35.8	51.23	34.53	69	67	50-99	4	30
1,3-Dichlorobenzene	N.D.	51.65	33.33	51.23	31.98	65	62	45-95	4	30
1,4-Dichlorobenzene	N.D.	51.65	34.16	51.23	32.93	66	64	41-104	4	30
3,3'-Dichlorobenzidine	N.D.	51.65	19.43	51.23	22.2	38	43	37-102	13	30
2,4-Dichlorophenol	N.D.	51.65	35.25	51.23	34.98	68	68	62-112	1	30
Diethylphthalate	N.D.	51.65	34.23	51.23	39.27	66	77	47-122	14	30
2,4-Dimethylphenol	N.D.	51.65	23.56	51.23	41.46	46	81	46-85	55*	30

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

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
Dimethylphthalate	N.D.	51.65	26.14	51.23	36.82	51	72	10-134	34*	30
4,6-Dinitro-2-methylphenol	N.D.	51.65	35.53	51.23	31.95	69	62	48-134	11	30
2,4-Dinitrophenol	N.D.	103.31	60.57	102.46	59.29	59	58	26-146	2	30
2,4-Dinitrotoluene	N.D.	51.65	41.42	51.23	41.02	80	80	76-122	1	30
2,6-Dinitrotoluene	N.D.	51.65	41.84	51.23	40.63	81	79*	80-120	3	30
bis(2-Ethylhexyl)phthalate	N.D.	51.65	40.52	51.23	40.85	78	80	64-126	1	30
Fluoranthene	0.895	51.65	46.28	51.23	48.2	88	92	74-126	4	30
Fluorene	2.47	51.65	40.34	51.23	38.5	73	70	67-120	5	30
Hexachlorobenzene	N.D.	51.65	37.65	51.23	38.35	73	75	67-125	2	30
Hexachlorobutadiene	N.D.	51.65	34.51	51.23	31.6	67	62	28-110	9	30
Hexachlorocyclopentadiene	N.D.	103.31	68.52	102.46	71	66	69	10-81	4	30
Hexachloroethane	N.D.	51.65	32.69	51.23	30.38	63	59	28-103	7	30
Indeno(1,2,3-cd)pyrene	N.D.	51.65	38.08	51.23	38.62	74	75	63-122	1	30
Isophorone	N.D.	51.65	44.54	51.23	45.17	86	88	54-117	1	30
2-Methylnaphthalene	8.03	51.65	47.71	51.23	48.61	77	79	54-111	2	30
2-Methylphenol	N.D.	51.65	27.23	51.23	39.28	53	77	44-112	36*	30
4-Methylphenol	N.D.	51.65	24.96	51.23	36.51	48	71	41-109	38*	30
Naphthalene	2.03	51.65	41.51	51.23	41.56	76	77	54-109	0	30
2-Nitroaniline	N.D.	51.65	43.33	51.23	43.35	84	85	77-115	0	30
3-Nitroaniline	N.D.	51.65	31.3	51.23	36.28	61	71	61-114	15	30
4-Nitroaniline	N.D.	51.65	32.05	51.23	34.06	62	66	57-114	6	30
Nitrobenzene	N.D.	51.65	41.63	51.23	42.53	81	83	53-119	2	30
2-Nitrophenol	N.D.	51.65	36.95	51.23	33.89	72	66	56-125	9	30
4-Nitrophenol	N.D.	51.65	23.78	51.23	19.67	46	38	22-78	19	30
N-Nitroso-di-n-propylamine	N.D.	51.65	41.33	51.23	42.11	80	82	52-115	2	30
N-Nitrosodiphenylamine	N.D.	51.65	40.78	51.23	42.62	79	83	75-116	4	30
Di-n-octylphthalate	N.D.	51.65	35.2	51.23	35.05	68	68	61-133	0	30
Pentachlorophenol	N.D.	51.65	47.81	51.23	47.89	93	93	59-134	0	30
Phenanthrene	4.29	51.65	50.08	51.23	52.19	89	94	70-122	4	30
Phenol	N.D.	51.65	15.75	51.23	23.79	31	46	21-68	41*	30
Pyrene	1.05	51.65	39.25	51.23	39.34	74	75	69-119	0	30
1,2,4-Trichlorobenzene	N.D.	51.65	38.44	51.23	37.27	74	73	52-98	3	30
2,4,5-Trichlorophenol	N.D.	51.65	35.66	51.23	32.54	69	64*	69-122	9	30
2,4,6-Trichlorophenol	N.D.	51.65	46.51	51.23	44.12	90	86	68-125	5	30
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 163651848005	Sample number(s): 8758028-8758040 UNSPK: 8758033									
Antimony	N.D.	0.500	0.538	0.500	0.528	108	106	75-125	2	20
Arsenic	N.D.	0.150	0.156	0.150	0.158	104	105	75-125	1	20
Beryllium	N.D.	0.0500	0.0549	0.0500	0.0541	110	108	75-125	1	20
Cadmium	N.D.	0.0500	0.0525	0.0500	0.0511	105	102	75-125	3	20
Chromium	N.D.	0.200	0.209	0.200	0.205	104	103	75-125	2	20
Copper	N.D.	0.250	0.280	0.250	0.275	112	110	75-125	2	20
Lead	N.D.	0.150	0.164	0.150	0.160	110	107	75-125	3	20
Nickel	0.00359	0.500	0.531	0.500	0.520	105	103	75-125	2	20
Selenium	N.D.	0.150	0.163	0.150	0.154	108	103	75-125	5	20

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

MS/MSD (continued)

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

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Silver	N.D.	0.0500	0.0449	0.0500	0.0443	90	89	75-125	1	20
Thallium	N.D.	0.150	0.184	0.150	0.176	122	117	75-125	4	20
Zinc	N.D.	0.500	0.523	0.500	0.513	105	103	75-125	2	20
Batch number: 163655713004	Sample number(s): 8758028-8758040 UNSPK: 8758033									
Mercury	N.D.	0.00100	0.000835	0.00100	0.000833	84	83	80-120	0	20
Batch number: 170031848001	Sample number(s): 8758041-8758045 UNSPK: P762860									
Antimony	N.D.	0.500	0.491	0.500	0.498	98	100	75-125	1	20
Arsenic	0.0169	0.150	0.153	0.150	0.156	90	93	75-125	3	20
Beryllium	0.000990	0.0500	0.0481	0.0500	0.0482	94	94	75-125	0	20
Cadmium	0.00286	0.0500	0.0480	0.0500	0.0479	90	90	75-125	0	20
Chromium	0.0488	0.200	0.215	0.200	0.215	83	83	75-125	0	20
Copper	0.180	0.250	0.337	0.250	0.342	63*	65*	75-125	2	20
Lead	0.304	0.150	0.307	0.150	0.286	2*	-12*	75-125	7	20
Nickel	0.0342	0.500	0.484	0.500	0.483	90	90	75-125	0	20
Selenium	N.D.	0.150	0.122	0.150	0.131	82	87	75-125	7	20
Silver	N.D.	0.0500	0.0488	0.0500	0.0490	98	98	75-125	0	20
Thallium	N.D.	0.150	0.142	0.150	0.141	95	94	75-125	1	20
Zinc	0.861	0.500	1.00	0.500	0.929	28*	14*	75-125	7	20
Batch number: 170035713001	Sample number(s): 8758041-8758045 UNSPK: P762860									
Mercury	0.000389	0.00100	0.00137	0.00100	0.00116	98	77*	80-120	16	20

Laboratory Duplicate

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

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 163651848005	Sample number(s): 8758028-8758040 BKG: 8758033			
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	N.D.	N.D.	0 (1)	20
Beryllium	N.D.	N.D.	0 (1)	20
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	N.D.	N.D.	0 (1)	20
Copper	N.D.	N.D.	0 (1)	20
Lead	N.D.	N.D.	0 (1)	20
Nickel	0.00359	0.00417	15 (1)	20
Selenium	N.D.	N.D.	0 (1)	20
Silver	N.D.	N.D.	0 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Zinc	N.D.	N.D.	0 (1)	20

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

Laboratory Duplicate (continued)

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

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 163655713004	Sample number(s): 8758028-8758040 BKG: 8758033			
Mercury	N.D.	N.D.	0 (1)	20
Batch number: 170031848001	Sample number(s): 8758041-8758045 BKG: P762860			
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	0.0169	0.0127	29* (1)	20
Beryllium	0.000990	0.000970	2 (1)	20
Cadmium	0.00286	0.00297	4 (1)	20
Chromium	0.0488	0.0495	1 (1)	20
Copper	0.180	0.184	2	20
Lead	0.304	0.306	1	20
Nickel	0.0342	0.0356	4 (1)	20
Selenium	N.D.	N.D.	0 (1)	20
Silver	N.D.	N.D.	0 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Zinc	0.861	0.866	1	20
Batch number: 170035713001	Sample number(s): 8758041-8758045 BKG: P762860			
Mercury	0.000389	0.000485	22* (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: PPL/TCL Volatiles in Water
Batch number: 4170031AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8758030	104	101	100	99
8758031	101	101	99	102
8758032	104	101	98	100
8758033	100	98	99	103
8758041	103	101	99	99
8758042	101	100	99	104
8758043	103	102	99	102
8758044	103	100	100	104
Blank	103	101	99	98
LCS	102	101	100	101
LCSD	100	99	100	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PPL/TCL Volatiles in Water
Batch number: E170034AA

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC Group Number: 1747321
Reported: 01/16/2017 11:43

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.

Analysis Name: PPL/TCL Volatiles in Water
Batch number: E170034AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8758034	93	96	100	97
8758035	95	100	100	96
8758036	96	97	100	93
8758037	94	98	100	97
8758038	94	98	100	96
8758039	95	97	100	95
8758040	94	98	100	95
8758045	94	96	101	94
Blank	94	98	101	95
LCS	96	98	101	96
LCSD	98	101	102	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PPL/TCL Volatiles in Water
Batch number: N163641AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8758028	96	102	93	95
8758029	99	105	94	96
Blank	97	104	94	97
LCS	97	102	95	96
LCSD	97	103	95	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PPL/TCL Volatiles in Water
Batch number: N170032AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8758046	101	107	89	96
Blank	100	106	89	96
LCS	100	103	92	97
LCSD	100	107	91	97
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 8270C MINI
Batch number: 16357WAH026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8758028	4*	7*	25	71	79	78
8758029	25	27	43	71	76	80
8758030	5*	13	19	80	89	94
8758031	14	12	35	62	66	65
8758032	8*	21	19	75	82	78
8758033	12	17	22	67	67	65
8758041	44	36	100	5*	80	78

*- 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.
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.

Quality Control Summary

Client Name: Leidos Engineering, LLC   Group Number: 1747321
Reported: 01/16/2017 11:43

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.

Analysis Name: TCL SW846 8270C MINI
Batch number: 16357WAH026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8758042	36	26	86	77	72	82
8758044	39	28	78	72	71	80
8758045	42	29	111	78	83	98
Blank	52	39	108	83	90	105
LCS	49	36	86	75	78	88
LCSD	41	32	95	57	64	84
Limits:	10-90	10-74	13-149	29-119	41-112	38-125

Analysis Name: TCL SW846 8270C MINI
Batch number: 16359WAK026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
8758034	36	32	78	77	75	83
8758035	33	30	76	64	65	78
8758036	46	34	95	75	82	87
8758037	22	21	60	76	73	86
8758038	25	25	70	73	73	81
8758039	30	23	54	67	70	82
8758040	7*	5*	64	64	71	84
Blank	47	33	105	81	89	95
LCS	46	33	95	80	88	90
MS	38	31	72	77	88	67
MSD	37	44	70	77	92	66
Limits:	10-90	10-74	13-149	29-119	41-112	38-125

*- 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.
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.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 2732 Group # 1747321 Sample # 8758028-46

Client:	LEIDOS, INC
Project Name/#: PGW - Passyunk	Site ID #:
Project Manager: Matt Machusick	P.O. #: PO10160257
Sampler: T. Messing & S. Erway	PWSID #:
Phone #: 610-594-4310	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Tissue ☐ Sediment ☐ Soil ☐ Water: Ground ☑ Surface ☐ Potable ☐ NPDES ☐ Other:

For Lab Use Only: SF #: ____ SCR #: ____

Preservation Codes: H = HCl, T = Thiosulfate, N = HNO_3, B = NaOH, S = H_2SO_4, P = H_3PO_4, O = Other

Sample Identification	Collection Date	Collection Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TCL VOC via 8260B	TCL SVOC via 8260B	PPL Metals w/ Hg via 6010B/7470A	Remarks
MW-1D	12-20-16	1320	X					6	X	X	X	Metals sample field filtered
MW-1S	12-20-16	1325	X					6	X	X	X	
MW-2D	12-20-16	1045	X					6	X	X	X	
MW-2S	12-20-16	1040	X					6	X	X	X	
MW-3D	12-20-16	1205	X					6	X	X	X	
MW-3S	12-20-16	1210	X					7	X	X	X	
MW-4S	12-21-16	1120	X					6	X	X	X	
MW-4S DUP	12-21-16	1125	X					6	X	X	X	
MW-5S	12-21-16	0825	X					6	X	X	X	
MW-6S	12-21-16	0945	X					6	X	X	X	

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☐ Phone ☐

E-mail Address: machusickm@leidos.com

Phone:

Relinquished by	Date	Time	Received by	Date	Time
Shauna L Erway	12-21-16	1445	P. Lefever	12/21/16	14:45
P. Lefever	12/21/16	15:56			
			[signature]	12-21-16	1556

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.7-1.2 °C

Data Package Options (please check if required)

Type I (Validation/non-CLP)	☐	MA MCP	☐
Type III (Reduced non-CLP)	☐	CT RCP	☐
Type VI (Raw Data Only)	☐	TX TRRP-13	☐
NJ DKQP	☐	NYSDEC Category ☐ A or ☐ B	

EDD Required? Yes ☑ No ☐ If yes, format: project standard

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 2732 Group # 1747321 Sample # 8758028-46

Client:	LEIDOS, INC		
Project Name/#:	PGW - Passyunk	Site ID #:	
Project Manager:	Matt Machusick	P.O. #:	PO10160257
Sampler:	T. Messing & S. Erway	PWSID #:	
Phone #:	610-594-4310	Quote #:	
State where samples were collected:	PA	For Compliance: Yes ☐ No ☐	

Matrix: Soil ☐ Sediment ☐ Tissue ☐ Water: Ground ☑ Surface ☐ Potable ☐ NPDES ☐ Other:

Analyses Requested / Preservation Codes

Sample Identification	Collection Date	Collection Time	Grab	Composite	Soil	Water	Other:	Total # of Containers	TCL VOC via 8260B	TCL SVOC via 8260B	PPL Metals w/ Hg via 6010B/7470A	Remarks
MW-7S	12-21-16	0950	X			X		6	X	X	X	Metals sample field filtered
MW-10S	12-21-16	1115	X			X		6	X	X	X	
MW-11S	12-21-16	0835	X			X		6	X	X	X	
MW-12D	12-20-16	1445	X			X		6	X	X	X	
MW-12S	12-20-16	1430	X			X		6	X	X	X	
MW-42D	12-20-16	0950	X			X		6	X	X	X	42D - both SVOC
MW-42R	12-20-16	0950	X			X		6	X	X	X	bottles received
Rinse Blank #4	12-21-16	1140	X					6	X	X	X	broken. LF 12/22/16
TRIP BLANK	12-20-16	00:01						3	X			

For Lab Use Only
SF #: ____
SCR #: ____

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
O = Other

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☐ Phone ☐

E-mail Address: machusickm@leidos.com

Phone:

Data Package Options (please check if required)

Type I (Validation/non-CLP) ☐ MA MCP ☐
Type III (Reduced non-CLP) ☐ CT RCP ☐
Type VI (Raw Data Only) ☐ TX TRRP-13 ☐
NJ DKQP ☐ NYSDEC Category ☐ A or ☐ B

EDD Required? Yes ☑ No ☐ If yes, format: project standard

Relinquished by:	Date	Time	Received by:	Date	Time
Shauna L Erway	12-21-16	1445	P. Lefever	12/21/16	14:45
P. Lefever	12/21/16	15:56			
			[signature]	12-21-16	1556

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.7-1.2 °C

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 171428

Group Number(s): 1747321

Client: Leidos

Delivery and Receipt Information

Delivery Method:	ELLE Courier	Arrival Timestamp:	12/21/2016 15:56
Number of Packages:	3	Number of Projects:	2
State/Province of Origin:	PA		

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:	No
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	2
Samples Intact:	No	Trip Blank Type:	HCl
Missing Samples:	No	Air Quality Samples Present:	No
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

Unpacked by Cory Jeremiah (10469) at 16:59 on 12/21/2016

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	0.7	DT	Wet	Y	Loose	N
2	DT121	0.8	DT	Wet	Y	Loose	N
3	DT121	1.2	DT	Wet	Y	Loose	N

Samples Not Intact Details

Sample ID on Label	Bottle Code	Bottle Quantity	Container Salvageable?	Comments
MW-42D	250 ml round amber glass - None	2	N	Received Frozen which caused jars to break. LF 12/22/16
MW-3S	250 ml round amber glass - None	1	N	

Container Quantity Discrepancy Details

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
Tripblank	2	3	

2425 New Holland Pike
Lancaster, PA 17605-2425

T 717-656-2300
F 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

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

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

< 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:

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…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

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.

Additional Data Qualifiers

Qualifier	Definition
B	Detection in the Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q4	MS/MSD Out of Range
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD