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Subject:

Former BP Facility No. WA-11060 (NW2463) - 2018 Annual Site Status Report

ENVIRONMENT

Date:

December 21, 2018

Site Address: 4580 Fauntleroy Way Southwest, Seattle, WA 98126

On behalf of BP West Coast Products, LLC. (BP), Arcadis U.S., Inc. is pleased to submit this annual summary of site activities conducted at the Former BP Facility No. 11060 (Site) in 2018. Results and findings from work completed at the Site are summarized below and in the attached data tables and figures.

Current Site Use: Active Station

Contact

Ross LaGrandeur

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206-726-4754

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Ross.LaGrandeur
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Our ref:

GP18BPWC.WA48

2018 Groundwater Monitoring Summary

Groundwater Monitoring Schedule: Semi-annual

Sample Methodology:

First Quarter:	No purge (Bailer) and sample
Second Quarter:	No event conducted
Third Quarter:	No event conducted
Fourth Quarter:	Low flow purge and sample

Note: Third quarter sampling moved to the fourth quarter to include newly installed groundwater monitoring wells MW-11 and MW-12.

Non-aqueous Phase Liquid Present at Site: Yes (thicknesses listed below)

First Quarter: 0.48 foot (MW-4)– 3/13/2018

Fourth Quarter 0.06 foot (GMW-1) and 0.28 foot (MW-4) – 10/25/2018

Site Constituents of Concern (COCs) above Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) during reporting period:

- Total Petroleum Hydrocarbons (TPH) as gasoline range organics (GRO):
  First Quarter (Q1) – GWM-1, MW-2;
  Fourth Quarter (Q4) – GMW-1, MW-12.
- TPH as diesel range organics (DRO):
  Q1 – MW-2, MW-5;
  Q4 – GMW-1, MW-2, MW-12.
- TPH as heavy oil range organics (HO):
  Q1 – MW-2;
- Benzene:
  Q1 – MW-2.
- Total Lead:
  Q4 – GMW-1, MW-2.

Observed Depth to Water per Event:

First Quarter: 21.78 (MW-9) to 26.39 (MW-5) feet below top of casing (btoc) – 3/13/2018

Fourth Quarter: 24.61 (MW-9) to 27.81 (EW-3) feet btoc – 10/25/2018

Groundwater Elevations and Flow Direction:

Event	Elevation Range	Interpreted Groundwater Flow Direction
First Quarter:	241.57 (MW-9) to 243.42 (MW-4) feet above North American Vertical Datum 88 (NAVD 88)	Northeast
Fourth Quarter:	238.74 (MW-9) to 241.32 (MW-5) feet above NAVD 88	Northeast

First quarter groundwater elevations from monitoring wells MW-1 and MW-5 are anomalous when compared to historical data, including the data collected from the fourth quarter event. The validity of this data cannot be confirmed; therefore, these wells were not used in groundwater contour development. Groundwater elevations for these two wells could have been abnormal due to system operations at the Site or user error. Groundwater elevations at this Site will be further evaluated during the next field event.

2018 Remediation System Operation and Maintenance (O&M) Summary

System Startup Date:	April 20, 2016
Remedial Technology:	Air Sparge and Soil Vapor Extraction
System Operation:	Yes
System O&M Schedule:	Monthly
Total Operational Time in 2018:	6,562 hours
Operational Percentage in 2018:	78.12 percent
Permit Conditions Met:	Yes, Puget Sound Clean Air Agency (PSCAA)

Calculated Mass Removal Totals:

Calendar Year (2018)	Cumulative
VOC: 719.19 pounds (lbs)	VOC: 2129.28 lbs
GRO: No Analytical Samples Collected in 2018	GRO: 1584.1 lbs

Note:

- System operational data is presented in Table 3 and Table 4.
- Estimated volatile organic compound (VOC) mass removed using photoionization detector (PID) field measurements.
- Estimated GRO mass removed using analytical results from 2016.
- Air Sparge portion of system is not currently in use.

2018 Additional Site Activities

On October 19, 2018, two soil borings were advanced and completed as monitoring wells MW-11 and MW-12. Borings were advanced by a licensed driller from Cascade Environmental (Cascade). Soil samples were collected during drilling activities. The purpose of these wells is to delineate and characterize soil and groundwater conditions downgradient from the historical impacts observed at the Site.

The borings were cleared to a depth of 6.5 feet below ground surface (bgs) using an air knife and vacuum truck to reduce the potential for damage to subsurface utilities. The boring was then advanced, via hollow-stem auger rig, from 6.5 feet bgs to a total depth of 31.5 feet bgs at MW-11 and 34 feet bgs at MW-12. Field screening of soil samples was performed using a PID and visual inspection methods.

After reaching total depth at both locations, Cascade installed a 2-inch diameter well casing with a 15-foot section of 0.020-inch slotted, schedule 40 polyvinyl chloride (PVC) screen, extending from 15 feet to 30 feet bgs, and a 15-foot section of blank schedule 40 PVC casing extending from 0.5 to 15 feet bgs. The annular space was filled with 2/12 silica sand from total depth to 13.5 feet bgs, bentonite chips from 4 to 13.5 feet bgs and concrete from 1 to 4 feet bgs. An 8-inch well box was set in concrete to match the existing grade. Soil lithology, field readings and well construction details are detailed in the boring logs, which are included in Appendix D.

Six soil samples were collected during the installation of MW-11 and MW-12 and submitted for laboratory analysis to Pace Analytical, under standard chain-of-custody protocols. Soil from boring MW-11 was analyzed from depths of 22.5- 24 feet bgs and 30-31.5 feet bgs. Soil from boring MW-12 was analyzed from depths of 17.5-19 feet bgs, 22.5-24 feet bgs, 25-26.5 feet bgs and 32.5-34 feet bgs. Soil samples were analyzed for the following COCs:

- GRO by Ecology Northwest Method NWTPH-Gx;
- DRO and HO by Ecology Northwest Method NWTPH-Dx;
- BTEX, Ethylene dibromide (EDB), 1,2-Dichloroethane (EDC), and MTBE by EPA Method 8260C;
- Lead by EPA Method 6020B; and
- Total Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) and Total Naphthalenes by EPA 8270 SIM

GRO was detected above the MTCA Method A CUL of 100 mg/kg in the sample collected from MW-12 at a depth of 22.5-24 feet bgs. Analytical results from the other soil samples collected from MW-11 and MW-12 did not contain COC concentrations greater than MTCA Method A CULs. Soil analytical results are summarized in **Table 5** and **Figure 6**. The boring logs for MW-11 and MW-12 are included in **Appendix D**. The full analytical report is included in **Appendix E**.

If you have any questions, please contact Ross LaGrandeur at 206-726-4754 or Ross.LaGrandeur@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Ross LaGrandeur
Project Manager

Grayson Fish, LG
Task Manager

Copies:

Richard Wright, Property Owner

Enclosures:

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Appendices

Appendix A	Groundwater Monitoring Field Data Sheets
Appendix B	Groundwater Analytical Laboratory Report and Chain-of-Custody Documentation
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Appendix D	New Soil Boring Logs
Appendix E	Soil Analytical Laboratory Report and Chain of-Custody-Documentation

TABLES

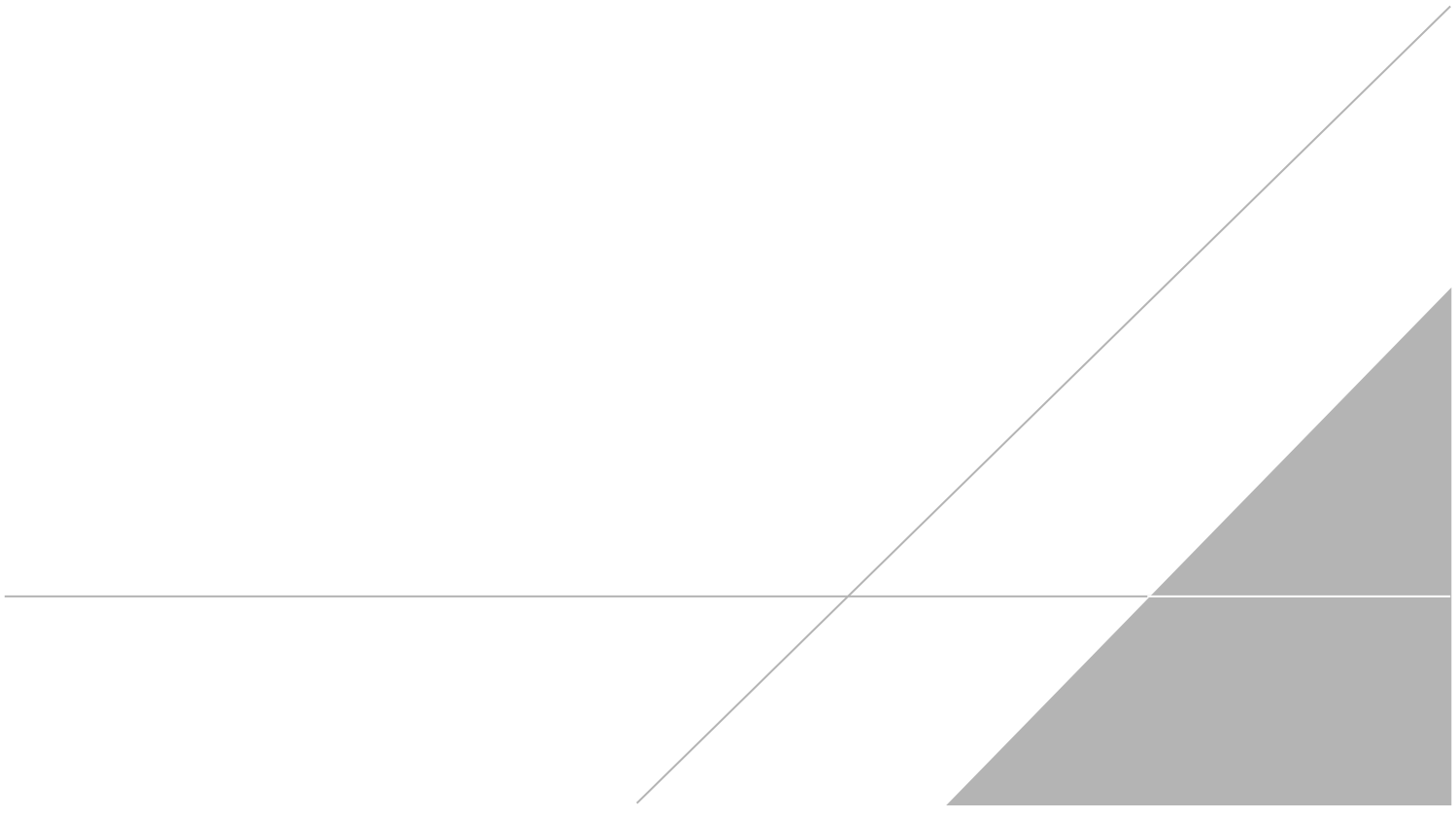

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
AS-1	5/7/2015	(NS)	--	23.30	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-1	3/2/2016	(NS)	--	23.31	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-2	3/2/2016	(NS)	--	21.18	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-3	3/2/2016	(NS)	--	21.63	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-4	3/2/2016	(NS)	--	21.65	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-5	3/2/2016	(DRY)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS-6	3/2/2016	(NS)	--	25.61	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
CW-2	3/2/2016	(NS)	--	19.53	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
CW-3	3/2/2016	(NS)	--	21.57	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
CW-4	3/2/2016	(NS)	--	20.61	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	5/9/2013	(NAPL)	268.20	24.49	0.17	243.85	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	5/7/2015	(NAPL)	268.20	25.75	1.02	243.27	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	3/2/2016	(NS)	268.20	24.81	0.0	243.39	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	6/6/2016	(NAPL)	268.20	25.94	0.66	242.79	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	9/12/2016	(NAPL)	268.20	26.89	0.73	241.89	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	12/12/2016	(NAPL)	268.20	25.49	0.79	243.34	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	2/22/2017	(NAPL)	268.20	24.98	0.78	243.84	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	8/29/2017	(NS)	268.20	26.28	0.60	242.40	--	--	--	--	--	--	--	--	--	--	--	--
EW-1	10/25/2018	(NS)	268.20	27.52	0.0	240.68	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	5/9/2013	(NS)	267.93	24.11	0.0	243.82	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	5/7/2015	(NS)	267.93	24.78	0.0	243.15	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	3/2/2016	(NS)	267.93	24.80	0.0	243.13	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	6/6/2016	(NS)	267.93	25.17	0.0	242.76	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	9/12/2016	(NS)	267.93	26.22	0.0	241.71	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	12/12/2016	(NS)	267.93	24.64	0.0	243.29	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	2/22/2017	(NS)	267.93	24.10	0.0	243.83	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	8/29/2017	(NS)	267.93	25.56	0.0	242.37	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	10/25/2018	(NS)	267.93	27.30	0.0	240.62	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	5/9/2013	(NAPL)	268.50	24.90	0.31	243.85	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	5/7/2015	(NAPL)	268.50	25.77	2.54	244.76	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	3/2/2016	(NAPL)	268.50	25.44	0.25	243.26	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	9/12/2016	(NAPL)	268.50	27.17	1.54	242.56	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	12/12/2016	(NAPL)	268.50	25.58	0.83	243.58	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	2/22/2017	(NAPL)	268.50	25.06	0.84	244.11	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	8/29/2017	(NS)	268.50	26.75	0.76	242.36	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	10/25/2018	(NS)	268.50	27.81	0.0	240.69	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	5/10/2011	(NP)	--	22.08	0.0	--	**5,930**	**1,900**	<420	2.4	<1.0	69.7	94.8	<1.0	--	--	**28.4**	--
GMW-1	11/29/2011	(NP)	--	23.83	0.0	--	**6,080**	**610**	<380	<1.0	<1.0	86.9	113	--	--	--	<10.0	--
GMW-1	6/1/2012	(NM)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	11/29/2012	(NM)	265.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	5/9/2013	(NP)	265.63	22.58	0.0	243.05	**1,010**	<420	<420	<1.0	<1.0	4.4	4.6	<1.0	--	--	<10.0	<10.0
GMW-1	11/19/2013	(NP)	265.63	24.00	0.0	241.63	**1,400**	**2,500**	<73	<0.50	<0.70	6.6	6.8	<0.50	--	--	**16.7**	1.2
GMW-1	5/13/2014	(NS)	265.63	22.83	0.0	242.80	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	5/14/2014	(NP)	265.63	--	--	--	590	**560**	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7

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Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
GMW-1	5/7/2015	(NP)	265.63	23.48	0.0	242.15	**1,600**	480	<66	<0.50	<0.50	10	10	<0.50	--	--	<4.7	<4.7
GMW-1	3/2/2016	(NP)	265.63	22.48	0.0	243.15	**1,400**	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
GMW-1	6/6/2016	(NP)	265.63	23.51	0.0	242.12	**3,300**	130	<100	<0.50	<0.50	5.3	4.0	<0.50	--	--	--	--
GMW-1	9/12/2016	(NP)	265.63	24.89	0.0	240.74	**4,600**	210	<67	<0.50	<0.50	32	34	<0.50	--	--	--	--
GMW-1	9/12/2016	(Dup)(NP)	265.63	24.89	0.0	240.74	**4,400**	310	120(J)	<0.50	<0.50	32	34	<0.50	--	--	--	--
GMW-1	12/12/2016	(NP)	265.63	22.95	0.0	242.68	350	<50	400	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
GMW-1	2/22/2017	(NP)	265.63	22.02	0.0	243.61	82.2(J)	<82.5	<165	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
GMW-1	8/29/2017	(NP)	265.63	23.86	0.0	241.77	**2,070**	216	104(J)	<0.331	0.480(J)	2.45	2.66(J)	<0.367	--	--	--	--
GMW-1	3/13/2018	(NP)	265.63	23.20	0.0	242.43	**2,500**	99.7(J)	<250	<1.00	<1.00	0.394(J)	<3.00	<1.00	--	--	--	--
GMW-1	10/25/2018	(LFP)	265.63	26.22	0.06	239.45	**4,200**	**9,050**	346(J)	<1.00	<1.00	9.58	12.8	<1.00	<0.0100	<1.00	**16.2**	14.5
GMW-1	10/25/2018	(Dup)(LFP)	265.63	26.22	0.06	239.45	**3,760**	**8,430**	306	<1.00	<1.00	12.4	13.2	<1.00	<0.0100	<1.00	12.3	9.21
MW-1	5/11/1993		99.89	23.02	--	76.87	**3,300**	--	--	**82**	11	8	14	--	--	--	--	--
MW-1	3/4/1994		99.89	24.32	--	75.57	**830**	**580**	--	**6**	3	3	11	--	--	--	**38**	<3
MW-1	7/6/1994		99.89	24.60	--	75.29	**900**	<250	--	5	<0.5	2	10	--	--	--	--	--
MW-1	10/7/1994		99.89	24.97	--	74.92	**1,500**	--	--	**6**	<0.5	3	11	--	--	--	--	--
MW-1	12/28/1994		99.89	24.86	--	75.03	**1,400**	--	--	5	<0.5	2	7	--	--	--	--	--
MW-1	3/13/1995		99.89	24.16	--	75.73	**1,400**	--	--	**16**	<0.5	3	9	--	--	--	--	--
MW-1	6/30/1995		99.89	23.98	--	75.91	**1,400**	--	--	4	<0.5	3	7	--	--	--	--	--
MW-1	9/6/1995		99.89	24.30	--	75.59	**1,300**	--	--	5	<0.5	3	6	--	--	--	--	--
MW-1	12/8/1995		99.89	24.41	--	75.48	**1,300**	--	--	**7**	2	2	7	--	--	--	--	--
MW-1	3/11/1996		99.89	23.11	--	76.78	**900**	--	--	3	<0.5	<0.5	1	--	--	--	--	--
MW-1	6/18/1996		99.89	22.80	--	77.09	400	--	--	1	1	<0.5	2	--	--	--	--	--
MW-1	9/9/1996		99.89	23.11	--	76.78	600	--	--	2	<0.5	1	1	13	--	--	--	--
MW-1	12/11/1996		99.89	23.07	--	76.82	710	--	--	4	2	2	4	<10	--	--	--	--
MW-1	3/13/1997		99.89	22.12	--	77.77	100	--	--	<0.5	<0.5	<0.5	<1.0	<5	--	--	--	--
MW-1	6/5/1997		99.89	21.75	--	78.14	250	--	--	2	2	<0.5	<1.5	5	--	--	--	--
MW-1	9/5/1997		99.89	22.03	--	77.86	300	--	--	**8**	4	2	6	8	--	--	--	--
MW-1	4/2/1998		99.89	21.27	--	78.62	210	--	--	1	3	<0.5	<1.5	<5	--	--	--	--
MW-1	6/8/1998		99.89	21.53	--	78.36	300	--	--	<0.5	3	1	4	6	--	--	--	--
MW-1	12/9/1998		99.89	22.22	--	77.67	<500	--	--	<0.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--
MW-1	6/26/1999		99.89	21.08	--	78.81	<100	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--
MW-1	9/28/1999		99.89	21.88	--	78.01	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	1/19/2000		99.89	21.46	--	78.43	<50	--	--	<0.5	4	1	3	<0.5	--	--	--	--
MW-1	3/24/2000		99.89	21.40	--	78.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/2/2000		99.89	21.92	--	77.97	120	--	--	1	<0.5	1	2	2	--	--	--	--
MW-1	9/14/2000		99.89	22.54	--	77.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/14/2000		99.89	22.81	--	77.08	**1,700**	--	--	**<10**	19	<10	<30	**<40**	--	--	--	--
MW-1	9/22/2001		99.89	23.55	--	76.34	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/9/2001		99.89	23.63	--	76.26	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/20/2002		99.89	22.88	--	77.01	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/11/2002		99.89	23.02	--	76.87	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/21/2002	(NS)	99.89	24.54	--	75.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/19/2003	(NS)	99.89	24.50	--	75.39	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/18/2003	(NS)	99.89	24.36	--	75.53	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	9/23/2003	(NS)	99.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	10/21/2003	(P)	99.89	25.04	--	74.85	**3,270**	--	--	**32.5**	4.61	17.3	19.2	<1.00	--	--	--	--
MW-1	6/29/2004	(NS)	99.89	24.22	--	75.67	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/15/2004	(NS)	99.89	25.11	--	74.78	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	4/14/2005	(NS)	99.89	25.10	--	74.79	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/18/2005	(NP)	99.89	25.46	--	74.43	**2,960**	--	--	**10.8**	2.04	1.23	2.76	<1.00	--	--	--	--
MW-1	6/11/2006	(NP)	99.89	24.54	--	75.35	**1,840**	--	--	**11.4**	1.12	1.6	2.34	19.8	--	--	--	--
MW-1	11/5/2006	(NP)	99.89	25.59	--	74.30	**3,880**	--	--	**73.2**	6.12	2.04	<6.00	--	--	--	--	--
MW-1	9/25/2007	(NP)	99.89	25.08	--	74.81	**1,640**	--	--	**27.8**	1.67	0.86	<3.00	--	--	--	--	--
MW-1	12/31/2007	(NP)	99.89	25.23	--	74.66	**1,970**	--	--	**22.7**	1.34	1.03	<3.00	--	--	--	--	--
MW-1	5/29/2008	(NP)	99.89	25.01	--	74.88	**2,370**	--	--	3.58	0.58	<0.500	<3.00	--	--	--	--	--
MW-1	10/28/2008	(NP)	99.89	25.80	--	74.09	**1,450**	--	--	2.8	1.07	<0.500	<3.00	--	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-1	6/22/2009	(NP)	99.89	26.11	--	73.78	**2,200**	--	--	**30**	5.7	24	30.5	--	--	--	4.9	<2.00
MW-1	12/15/2009	(NP)	99.89	26.31	--	73.58	**1,500**	--	--	**11**	2	4.8	3.6	--	--	--	3.8	<2.00
MW-1	5/24/2010	(NP)	267.43	25.20	--	242.23	**940**	--	--	**18**	<2.5	<2.5	6.4	--	--	--	--	--
MW-1	5/24/2010	(Dup)(NP)	267.43	25.20	--	242.23	**940**	--	--	**22**	<2.5	<2.5	6.8	--	--	--	--	--
MW-1	10/12/2010	(NP)	267.43	25.09	0.0	242.34	**849**	--	--	2.8	<1.0	1.2	<3.0	5.2	--	--	<10.0	--
MW-1	5/10/2011	(NP)	267.43	23.60	0.0	243.83	642	**840**	<420	**17.8**	6.6	1.8	10.9	2.5	--	--	<10.0	--
MW-1	11/29/2011	(NP)	267.43	24.84	0.0	242.59	**815**	<75	<380	**5.5**	<1.0	<1.0	<3.0	--	--	--	10.3	--
MW-1	6/1/2012	(NP)	267.43	23.67	0.0	243.76	544	362	<396	3.6	<1.0	<1.0	3.0	7.4	--	--	<10.0	<10.0
MW-1	11/29/2012	(NP)	267.43	24.00	0.0	243.43	**1,320**	<430	<430	1.2	<1.0	<1.0	<3.0	<1.0	--	--	11.3	<3.0
MW-1	5/9/2013	(NP)	267.43	23.79	0.0	243.64	557	**620**	<430	**6.3**	<1.0	<1.0	4.1	1.6	--	--	<10.0	<10.0
MW-1	11/19/2013	(NP)	267.43	25.30	0.0	242.13	470	400	320	1.9(J)	<0.70	<0.80	1.7(J)	1.5(J)	--	--	4.8	0.15(J)
MW-1	5/13/2014	(NP)	267.43	24.12	0.0	243.31	490	250	110(J)	1.4	<0.50	<0.50	0.57(J)	0.67(J)	--	--	6.9(J)	<4.7
MW-1	5/7/2015	(NP)	267.43	24.26	0.0	243.17	610	270	190(J)	1.2	<0.50	<0.50	<0.50	<0.50	--	--	**18.7**	7.1(J)
MW-1	3/2/2016	(NP)	267.43	24.53	0.0	242.90	460	140	<110	1.2	<0.50	0.77(J)	3.0	<0.50	--	--	--	--
MW-1	6/6/2016	(NS)	267.43	24.82	0.0	242.61	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	9/12/2016	(NS, IW)	267.43	26.88	0.0	240.55	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/12/2016	(NS)	267.43	24.76	0.0	242.67	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	2/22/2017	(NP)	267.43	24.11	0.0	243.32	212	447	222(J)	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-1	8/29/2017	(NP)	267.43	25.20	0.0	242.23	526	**611**	450	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-1	3/13/2018	(NP)	267.43	25.35	0.0	242.08	298(B)	369	352	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	--	--
MW-1	10/25/2018	(NS)	267.43	26.43	0.0	240.99	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	5/11/1993		99.05	22.98	--	76.07	**17,000**	--	--	**2,500**	48	100	240	--	--	--	--	--
MW-2	3/4/1994		99.05	24.30	--	74.75	**4,300**	**1,300**	--	**1,500**	20	130	180	--	--	--	5	<3
MW-2	7/6/1994		99.05	24.54	--	74.51	**4,400**	390	--	**1,100**	16	53	97	--	--	--	--	--
MW-2	10/7/1994		99.05	24.94	--	74.11	**4,400**	--	--	**1,100**	18	57	82	--	--	--	--	--
MW-2	12/28/1994		99.05	24.60	--	74.45	**2,100**	--	--	**250**	5	13	14	--	--	--	--	--
MW-2	3/13/1995		99.05	23.84	--	75.21	**2,700**	--	--	**200**	12	29	50	--	--	--	--	--
MW-2	6/30/1995		99.05	23.72	--	75.33	**3,400**	--	--	**400**	8	50	39	--	--	--	--	--
MW-2	9/6/1995		99.05	23.97	--	75.08	**3,400**	--	--	**350**	8	50	35	--	--	--	--	--
MW-2	12/8/1995		99.05	23.97	--	75.08	**3,100**	--	--	**610**	5	29	36	--	--	--	--	--
MW-2	3/11/1996		99.05	22.66	--	76.39	**5,400**	--	--	**280**	12	100	120	--	--	--	--	--
MW-2	6/18/1996		99.05	22.18	--	76.87	**4,500**	--	--	**280**	12	130	56	--	--	--	--	--
MW-2	9/9/1996		99.05	22.72	--	76.33	**4,100**	--	--	**790**	5	78	35	<1.0	--	--	--	--
MW-2	12/11/1996		99.05	22.67	--	76.38	**3,700**	--	--	**460**	13	65	41	**43**	--	--	--	--
MW-2	3/13/1997		99.05	21.91	--	77.14	**3,200**	--	--	**140**	12	130	48	**<50**	--	--	--	--
MW-2	6/5/1997		99.05	21.06	--	77.99	**3,400**	--	--	**160**	22	180	79	**<100**	--	--	--	--
MW-2	9/5/1997		99.05	21.74	--	77.31	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	4/2/1998		99.05	20.71	--	78.34	**4,700**	--	--	**170**	51	35	210	**<50**	--	--	--	--
MW-2	6/8/1998		99.05	21.25	--	77.80	**3,800**	--	--	**420**	26	150	75	**140**	--	--	--	--
MW-2	9/17/1998		99.05	22.10	--	76.95	**2,900**	--	--	**720**	15	79	44	<5.0	--	--	--	--
MW-2	12/9/1998		99.05	21.99	--	77.06	**4,500**	--	--	**520**	8	100	62	<5.0	--	--	--	--
MW-2	3/17/1999		99.05	19.67	--	79.38	**5,000**	--	--	**19**	27	300	230	<5.0	--	--	--	--
MW-2	6/26/1999		99.05	21.26	--	77.79	**3,400**	--	--	**400**	29	160	130	13	--	--	--	--
MW-2	9/28/1999		99.05	21.75	--	77.30	**7,300**	--	--	**690**	20	23	110	**87**	--	--	--	--
MW-2	1/19/2000		99.05	21.12	--	77.93	**8,700**	--	--	**920**	20	260	74	<0.5	--	--	--	--
MW-2	3/24/2000		99.05	20.74	--	78.31	**10,000**	--	--	**310**	79	240	97	<5	--	--	--	--
MW-2	7/2/2000		99.05	21.51	--	77.54	**8,200**	--	--	**520**	35	190	85	**49**	--	--	--	--
MW-2	9/14/2000		99.05	22.31	--	76.74	**14,000**	--	--	**1,100**	100	110	100	<5	--	--	--	--
MW-2	12/14/2000		99.05	22.97	--	76.08	**15,000**	--	--	**740**	<10	68	<30	**<40**	--	--	--	--
MW-2	9/22/2001		99.05	23.59	--	75.46	**12,000**	--	--	**180**	9	240	110	20	--	--	--	--
MW-2	12/9/2001		99.05	23.27	--	75.78	**14,000**	--	--	**310**	9.5	100	96	<4.0	--	--	--	--
MW-2	3/20/2002		99.05	22.41	--	76.64	**15,000**	--	--	**250**	<5.0	220	98	**280**	--	--	--	--
MW-2	6/11/2002		99.05	22.61	--	76.44	**13,000**	--	--	**290**	<10	160	57	**<40**	--	--	--	--
MW-2	12/21/2002	(P)	99.05	24.30	--	74.75	**5,970**	--	--	**111**	13.4	211	70.3	**148**	--	--	--	--
MW-2	3/19/2003	(P)	99.05	23.90	0.0	75.15	**5,270**	--	--	**79.9**	8.71	156	55	**<25.0**	--	--	--	--
MW-2	6/18/2003	(P)	99.05	23.87	--	75.18	**6,770**	--	--	**36.7**	14.7	245	119	**143**	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-2	9/23/2003	(P)	99.05	24.33	0.0	74.72	**6,490**	--	--	**40.5**	15.8	179	103	<20.0	--	--	--	--
MW-2	10/21/2003	(P)	99.05	24.38	--	74.67	**4,600**	--	--	**31.1**	9.38	86	61	<1.00	--	--	--	--
MW-2	6/29/2004	(NP)	99.05	23.74	--	75.31	**5,550**	--	--	**17.8**	11.2	228	76.5	**95.2**	--	--	--	--
MW-2	11/15/2004	(NP)	99.05	24.70	--	74.35	**5,670**	--	--	**12.3**	6.11	135	63.3	<2.00	--	--	--	--
MW-2	4/14/2005	(NP)	99.05	24.69	--	74.36	**4,680**	--	--	**130**	2.8	41.8	26.6	<2.00	--	--	--	--
MW-2	12/18/2005	(NP)	99.05	25.15	--	73.90	**5,700**	--	--	**122**	3.5	43.9	27.8	<5.00	--	--	--	--
MW-2	6/11/2006	(NP)	99.05	24.01	--	75.04	**5,450**	--	--	4.48	5.8	118	56.7	<2.00	--	--	--	--
MW-2	11/5/2006	(NP)	99.05	25.40	--	73.65	**7,490**	--	--	**263**	<5.00	46.2	<30.0	--	--	--	--	--
MW-2	9/25/2007	(NP)	99.05	24.72	--	74.33	**7,530**	--	--	**715**	9.74	50.8	64	--	--	--	--	--
MW-2	12/31/2007	(NP)	99.05	24.67	--	74.38	**6,000**	--	--	**477**	10.6	69.3	76.3	--	--	--	--	--
MW-2	5/29/2008	(NP)	99.05	24.73	--	74.32	**9,600**	--	--	**648**	11.1	55.9	48.4	--	--	--	--	--
MW-2	10/28/2008	(NP)	99.05	25.74	--	73.31	**10,300**	--	--	**1,430**	16	194	145	--	--	--	--	--
MW-2	6/22/2009	(NP)	99.05	25.91	--	73.14	**4,800**	--	--	**1,200**	40	100	130	--	--	--	<2.00	<2.00
MW-2	12/15/2009	(NP)	99.05	25.87	--	73.18	**4,300**	--	--	**1,600**	8.2	66	82	--	--	--	<2.00	<2.00
MW-2	5/24/2010	(NP)	266.69	24.64	--	242.05	**4,200**	--	--	**320**	7.7	69	84	--	--	--	--	--
MW-2	10/12/2010	(NP)	266.69	25.03	0.0	241.66	**3,590**	--	--	**1,890**	14.8	54.8	39.7	15.5	--	--	<10.0	--
MW-2	5/10/2011	(NP)	266.69	23.23	0.0	243.46	**5,520**	**1,000**	**2,000**	**281**	4.2	69.9	49.9	7.3	--	--	<10.0	--
MW-2	5/10/2011	(Dup)(NP)	266.69	23.23	0.0	243.46	**5,000**	**850**	**1,600**	**156**	3.9	76.3	53.2	5.6	--	--	<10.0	--
MW-2	11/29/2011	(NP)	266.69	24.82	0.0	241.87	**5,640**	98	<380	**549**	7.0	82.6	61.6	--	--	--	<10.0	--
MW-2	6/1/2012	(NP)	266.69	23.60	0.0	243.09	**2,940**	**2,240**	**3,080**	**107**	12.7	64.2	46.1	5.0	--	--	10.0	<10.0
MW-2	11/29/2012	(NP)	266.69	23.86	0.0	242.83	**10,400**	**2,100**	**760**	**399**	10.2	187	154	14.7	--	--	7.7	3.2
MW-2	5/9/2013	(NP)	266.69	23.41	0.0	243.28	**3,660**	**1,700**	<400	**42.9**	6.2	115	35.4	<5.0	--	--	12.3	<10.0
MW-2	5/9/2013	(Dup)(NP)	266.69	23.41	0.0	243.28	**4,210**	**2,700**	420	**63.4**	8.5	124	47.7	<5.0	--	--	12.4	<10.0
MW-2	11/19/2013	(NP)	266.69	24.40	0.0	242.99	**1,400**	280	100(J)	**7.3**	4.4(J)	17	40	6.3	--	--	9.8	3.2
MW-2	11/19/2013	(Dup)(NP)	266.69	24.40	0.0	242.99	**1,700**	--	--	**8.8**	6.4	17	46	6.4	--	--	--	--
MW-2	5/13/2014	(NP)	266.69	23.74	0.0	242.95	**3,100**	**1,800**	**880**	**79**	3.3(J)	58	20	6.0	--	--	6.6(J)	<4.7
MW-2	5/7/2015	(NP)	266.69	24.14	0.0	242.55	**2,700**	**1,900**	**690**	**33**	6.1	91	32	2.4	--	--	**34.1**	<4.7
MW-2	5/7/2015	(Dup)(NP)	266.69	24.14	0.0	242.55	**2,100**	--	--	**27**	5.1	74	25	1.9(J)	--	--	--	--
MW-2	3/2/2016	(NP)	266.69	23.79	0.0	242.90	**5,100**	**1,600**	<100	**54**	5.3(J)	94	26	<5.0	--	--	--	--
MW-2	6/6/2016	(NP)	266.69	24.49	0.0	242.20	**5,000**	**880**	**790**	**43**	4.9	92	21	1.1(J)	--	--	--	--
MW-2	6/6/2016	(Dup)(NP)	266.69	24.49	0.0	242.20	**4,900**	**1,300**	**810**	**28**	5.3	94	26	<1.0	--	--	--	--
MW-2	9/12/2016	(NP)	266.69	26.69	0.0	240.00	**5,000**	**710**	**660**	**130**	6.5	83	20	2.2	--	--	--	--
MW-2	12/12/2016	(NP)	266.69	23.96	0.0	242.73	**1,000**	**590**	<110	4.1	0.74(J)	12	10	<0.50	--	--	--	--
MW-2	12/12/2016	(Dup)(NP)	266.69	23.96	0.0	242.73	**1,900**	400	**860**	0.80(J)	<0.50	6.7	1.9	<0.50	--	--	--	--
MW-2	2/22/2017	(NP)	266.69	23.18	0.0	243.51	**1,310**	**1,370**	321(J)	<0.331	<0.412	2.06	2.08(J)	<0.367	--	--	--	--
MW-2	8/29/2017	(NP)	266.69	24.86	0.0	241.83	**10,000**	**1,070**	242(J)	**27.4**	10.7	90.9	29.4	<0.367	--	--	--	--
MW-2	8/29/2017	(Dup)(NP)	266.69	24.86	0.0	241.83	**12,200**	**1,420**	423	**31.4**	8.19	98.2	30.5	<0.367	--	--	--	--
MW-2	3/13/2018	(NP)	266.69	24.45	0.0	242.24	**3,110**	**2,360**	**742**	**7.65**	11.5	90.0	14.6	<1.00	--	--	--	--
MW-2	3/13/2018	(Dup)(NP)	266.69	24.45	0.0	242.24	**5,340**	**693**	247(B J J3)	**7.00**	13.7	88.4	14.5	<1.00	--	--	--	--
MW-2	10/25/2018	(LFP)	266.69	26.85	0.0	239.84	171(B)	**788**	444	<1.00	<1.00	<1.00	<3.00	<1.00	<0.0100	<1.00	**25.5**	0.623(J)
MW-3	6/7/1993		98.53	22.28	--	76.25	**2,200**	--	--	**140**	7	13	14	--	--	--	--	--
MW-3	3/4/1994		98.53	23.62	--	74.91	**1,200**	**590**	--	**99**	2	11	10	--	--	--	4	<3
MW-3	7/6/1994		98.53	23.84	--	74.69	**1,500**	270	--	**44**	6	26	27	--	--	--	--	--
MW-3	10/7/1994		98.53	24.21	--	74.32	**1,500**	--	--	**63**	4	16	13	--	--	--	--	--
MW-3	12/28/1994		98.53	23.91	--	74.62	**1,800**	--	--	**77**	3	13	9	--	--	--	--	--
MW-3	3/13/1995		98.53	23.12	--	75.41	**1,700**	--	--	**87**	4	18	10	--	--	--	--	--
MW-3	6/30/1995		98.53	23.87	--	74.66	**1,800**	--	--	**90**	3	52	13	--	--	--	--	--
MW-3	9/6/1995		98.53	23.14	--	75.39	**1,700**	--	--	**96**	3	41	14	--	--	--	--	--
MW-3	12/8/1995		98.53	23.20	--	75.33	**1,800**	--	--	**73**	4	23	15	--	--	--	--	--
MW-3	3/11/1996		98.53	21.63	--	76.90	**2,800**	--	--	**120**	11	170	36	--	--	--	--	--
MW-3	6/18/1996		98.53	21.20	--	77.33	**3,500**	--	--	**150**	18	320	59	--	--	--	--	--
MW-3	9/9/1996		98.53	21.67	--	76.86	**3,500**	--	--	**62**	16	220	96	15	--	--	--	--
MW-3	12/11/1996		98.53	21.87	--	76.66	**2,100**	--	--	**96**	9	<0.5	34	<10	--	--	--	--
MW-3	3/13/1997		98.53	20.67	--	77.86	**3,100**	--	--	**97**	13	250	65	**<50**	--	--	--	--
MW-3	6/5/1997		98.53	19.83	--	78.70	**3,900**	--	--	**46**	19	250	130	**<100**	--	--	--	--
MW-3	9/5/1997		98.53	20.72	--	77.81	**4,400**	--	--	**98**	29	270	140	<5	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-3	4/2/1998		98.53	19.63	--	78.90	**3,700**	--	--	**80**	25	320	150	**<50**	--	--	--	--
MW-3	6/8/1998		98.53	20.26	--	78.27	**3,500**	--	--	**60**	22	240	96	**<50**	--	--	--	--
MW-3	9/17/1998		98.53	21.21	--	77.32	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/9/1998		98.53	21.06	--	77.47	**3,200**	--	--	**63**	9	170	59	<5.0	--	--	--	--
MW-3	3/17/1999		98.53	18.72	--	79.81	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/26/1999		98.53	19.92	--	78.61	**3,100**	--	--	**72**	16	270	52	**56**	--	--	--	--
MW-3	9/28/1999		98.53	20.79	--	77.74	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	1/19/2000		98.53	20.19	--	78.34	**5,700**	--	--	**72**	29	430	110	<0.5	--	--	--	--
MW-3	3/24/2000		98.53	19.64	--	78.89	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	7/2/2000		98.53	20.53	--	78.00	**3,300**	--	--	**35**	18	230	64	7	--	--	--	--
MW-3	9/14/2000		98.53	21.34	--	77.19	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/14/2000		98.53	21.90	--	76.63	**5,500**	--	--	**40**	<10	210	<30	**<40**	--	--	--	--
MW-3	9/22/2001		98.53	22.82	--	75.71	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/9/2001		98.53	22.50	--	76.03	**4,200**	--	--	**42**	4.1	77	22	<4.0	--	--	--	--
MW-3	3/20/2002		98.53	21.55	--	76.98	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/11/2002		98.53	21.69	--	76.84	**8,400**	--	--	**77**	<5.0	320	54	<20	--	--	--	--
MW-3	12/21/2002		98.53	24.37	--	74.16	**3,440**	--	--	**37.7**	3.31	68.6	18.3	**39.3**	--	--	--	--
MW-3	3/19/2003	(NS)	98.53	23.17	--	75.36	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/18/2003		98.53	22.82	--	75.71	**4,020**	--	--	**39.1**	4.22	113	30.3	**62.6**	--	--	--	--
MW-3	9/23/2003	(NS)	98.53	23.55	--	74.98	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/21/2003		98.53	23.52	--	75.01	**3,190**	--	--	**19.8**	2.92	31.2	16.3	<1.00	--	--	--	--
MW-3	6/29/2004	(NS)	98.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/15/2004	(NP)	98.53	23.95	--	74.58	**3,170**	--	--	**15.8**	2.36	20.9	11.1	2.36	--	--	--	--
MW-3	4/14/2005	(NP)	98.53	23.90	--	74.63	**3,340**	--	--	**17.1**	5.21	14.3	11.2	<2.00	--	--	--	--
MW-3	12/18/2005	(NP)	98.53	24.42	--	74.11	**4,150**	--	--	**15.1**	2.92	20.7	15.1	<1.00	--	--	--	--
MW-3	6/11/2006	(NP)	98.53	23.48	--	75.05	**4,000**	--	--	**20.9**	3.6	30	21.3	1.11	--	--	--	--
MW-3	11/5/2006	(NP)	98.53	24.59	--	73.94	**4,970**	--	--	**16.8**	2.85	19	16.6	--	--	--	--	--
MW-3	9/25/2007	(NP)	98.53	23.84	--	74.69	**4,530**	--	--	**18.2**	2.34	17.1	13.8	--	--	--	--	--
MW-3	12/31/2007	(NP)	98.53	23.83	--	74.70	**4,490**	--	--	**16.5**	2.38	32.7	16.1	--	--	--	--	--
MW-3	5/29/2008	(NP)	98.53	23.90	--	74.63	**5,350**	--	--	**16.5**	1.83	14.4	15	--	--	--	--	--
MW-3	10/28/2008	(NP)	98.53	24.97	--	73.56	**3,250**	--	--	**14.4**	1.86	13.8	10.3	--	--	--	--	--
MW-3	6/22/2009	(NP)	98.53	25.29	--	73.24	**2,000**	--	--	**15**	1.7	35	7.3	--	--	--	<2.00	<2.00
MW-3	12/15/2009	(NP)	98.53	25.14	--	73.39	**2,100**	--	--	**13**	1.5	28	7.3	--	--	--	7.7	<2.00
MW-3	5/24/2010	(NP)	266.00	24.10	--	241.90	**2,300**	--	--	**29**	6.2	28	19	--	--	--	--	--
MW-3	10/12/2010	(NP)	266.00	24.40	0.0	241.60	**2,380**	--	--	**31.1**	<1.0	16.6	4.7	<1.0	--	--	<10.0	--
MW-3	5/10/2011	(NP)	266.00	22.55	0.0	243.45	**3,280**	**820**	**840**	**33.6**	1.2	57.5	7.9	2.4	--	--	<10.0	--
MW-3	11/29/2011	(NP)	266.00	24.19	0.0	241.81	**3,130**	<76	<380	**30.4**	<1.0	21.0	6.9	--	--	--	<10.0	--
MW-3	6/1/2012	(NP)	266.00	22.94	0.0	243.06	**2,360**	**512**	446	**29.0**	<1.0	35.9	7.6	2.6	--	--	<10.0	<10.0
MW-3	11/29/2012	(NP)	266.00	22.90	0.0	243.10	**2,320**	**670**	500	3.2	1.9	40.7	10.6	1.8	--	--	4.1	<3.0
MW-3	5/9/2013	(NP)	266.00	22.72	0.0	243.28	**2,850**	**610**	<420	**32.8**	4.2	98.3	13.9	2.7	--	--	<10.0	<10.0
MW-3	11/19/2013	(NP)	266.00	24.30	0.0	241.70	380	**620**	340	3.5(J)	<0.70	3.4(J)	1.3(J)	0.68(J)	--	--	3.2	0.47(J)
MW-3	5/13/2014	(NP)	266.00	22.95	0.0	243.05	**1,100**	**710**	**700**	**8.4**	0.94(J)	17	3.7	1.1	--	--	<4.7	<4.7
MW-3	5/7/2015	(NP)	266.00	23.52	0.0	242.48	**1,800**	430	440	**9.9**	<0.50	10	2.1	1.2	--	--	<4.7	<4.7
MW-3	3/2/2016	(NP)	266.00	22.12	0.0	243.88	<50	<48	150(J)	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-3	6/6/2016	(NP)	266.00	23.76	0.0	242.24	500	110	180(J)	1.4	<0.50	0.78(J)	<0.50	<0.50	--	--	--	--
MW-3	9/12/2016	(NP)	266.00	25.08	0.0	240.92	**1,200**	100	<67	4.3	<0.50	2.1	<0.50	<0.50	--	--	--	--
MW-3	12/12/2016	(NP)	266.00	22.42	0.0	243.58	53(J)	210	140(J)	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-3	2/22/2017	(NP)	266.00	20.02	0.0	245.98	245	254	<165	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-3	8/29/2017	(NP)	266.00	24.09	0.0	241.91	**1,310**	383	238(J)	3.87	0.434(J)	3.82	1.78(J)	<0.367	--	--	--	--
MW-3	3/13/2018	(NP)	266.00	23.22	0.0	242.78	52.8(B J)	79.1(J)	115(J)	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	--	--
MW-3	10/25/2018	(LFP)	266.00	26.11	0.0	239.89	35.6(B J)	69.3(J)	<250	<1.00	<1.00	<1.00	<3.00	<1.00	<0.0100	<1.00	0.868(B J)	0.602(J)
MW-4	5/11/1993		100.26	23.03	--	77.23	**31,000**	--	--	**8,700**	**4,000**	57	**3,200**	--	--	--	--	--
MW-4	3/4/1994		100.26	26.83	4.00	76.63	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/6/1994		100.26	25.63	1.43	75.77	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/7/1994		100.26	26.07	1.63	75.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/28/1994		100.26	25.85	1.43	75.55	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-4	3/13/1995		100.26	25.59	1.88	76.17	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/30/1995		100.26	24.64	1.11	76.51	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/6/1995		100.26	24.78	1.05	76.32	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/8/1995		100.26	24.94	1.05	76.16	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/11/1996		100.26	24.68	2.38	77.48	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/18/1996		100.26	24.04	2.11	77.91	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/9/1996		100.26	24.08	1.85	77.66	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/11/1996		100.26	23.07	0.38	77.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/17/1999		100.26	--	--	--	**100,000**	--	--	**12,000**	**17,000**	**1,800**	**10,000**	**<50**	--	--	--	--
MW-4	9/28/1999		100.26	--	--	--	**97,000**	--	--	**27,000**	**65,000**	**18,000**	**100,000**	**<1,000**	--	--	--	--
MW-4	1/19/2000		100.26	--	--	--	**100,000**	--	--	**22,000**	**18,000**	**2,400**	**15,000**	<5	--	--	--	--
MW-4	3/24/2000		100.26	--	--	--	**100,000**	--	--	**13,000**	**18,000**	**2,200**	**13,000**	<5	--	--	--	--
MW-4	7/2/2000		100.26	--	--	--	**92,000**	--	--	**13,000**	**17,000**	**1,800**	**10,000**	**220**	--	--	--	--
MW-4	9/14/2000		100.26	--	--	--	**160,000**	--	--	**22,000**	**27,000**	**6,900**	**23,000**	<5	--	--	--	--
MW-4	9/14/2000	(Dup)	100.26	--	--	--	**160,000**	--	--	**16,000**	**22,000**	<500	**7,800**	**<2,000**	--	--	--	--
MW-4	9/22/2001		100.26	26.60	3.27	76.28	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/9/2001		100.26	25.50	2.37	76.66	**110,000**	--	--	**12,000**	**10,000**	**1,900**	**8,800**	**<40**	--	--	--	--
MW-4	3/20/2002		100.26	26.50	3.73	76.74	**100,000**	--	--	**13,000**	**19,000**	**2,500**	**13,000**	**360**	--	--	--	--
MW-4	6/11/2002		100.26	24.25	1.10	76.89	**95,000**	--	--	**13,000**	**17,000**	**2,300**	**12,000**	**<400**	--	--	--	--
MW-4	12/21/2002	(NS)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/19/2003	(NS)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/18/2003	(NS)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/23/2003		100.26	22.31	0.07	78.01	**75,900**	--	--	**7,140**	**8,980**	**1,270**	**8,820**	**<50.0**	--	--	--	--
MW-4	10/21/2003		100.26	21.79	--	78.47	**44,700**	--	--	**3,190**	**6,370**	**779**	**6,160**	**<500**	--	--	--	--
MW-4	6/29/2004	(NP)	100.26	22.88	0.0	77.38	**378,000**	--	--	**11,200**	**16,300**	**3,550**	**22,600**	**2,500**	--	--	--	--
MW-4	11/15/2004	(NAPL)	100.26	23.07	1.45	78.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	4/14/2005	(NAPL)	100.26	23.82	1.89	77.95	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/18/2005	(NP)	100.26	23.43	0.08	76.89	**214,000**	--	--	**9,430**	**12,800**	**2,000**	**13,500**	**<100**	--	--	--	--
MW-4	6/11/2006	(NP)	100.26	21.87	0.01	78.40	**117,000**	--	--	**13,000**	**18,200**	**2,300**	**14,000**	**<1,000**	--	--	--	--
MW-4	11/5/2006	(NP)	100.26	22.92	0.01	77.35	**120,000**	--	--	**6,950**	**10,500**	**2,070**	**13,500**	--	--	--	--	--
MW-4	9/25/2007	(NAPL)	100.26	22.15	0.02	78.13	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/31/2007	(NS)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/29/2008	(NM)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/28/2008	(DRY)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/22/2009	(NAPL)	100.26	24.21	0.04	76.08	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/15/2009	(NAPL)	100.26	24.04	0.28	76.44	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/24/2010	(NM)	267.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/10/2011	(NM)	267.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/29/2011	(NM)	267.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/1/2012	(NM)	267.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/29/2012	(NAPL)	267.78	24.00	0.10	243.86	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/9/2013	(NAPL)	267.78	26.48	3.83	244.36	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/19/2013	(NAPL)	267.78	26.61	1.81	242.62	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/13/2014	(NAPL)	267.78	25.80	2.50	243.98	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/7/2015	(NAPL)	267.78	26.50	2.95	243.64	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/2/2016	(NAPL)	267.78	24.67	1.40	244.23	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/6/2016	(NAPL)	267.78	25.86	1.53	243.14	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/12/2016	(NAPL)	267.78	26.51	1.11	242.16	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/12/2016	(NP)	267.78	23.27	0.0	244.51	**25,000**	**2,100**	380	**120**	37	57	1,000	<2.5	--	--	--	--
MW-4	2/22/2017	(NAPL)	267.78	22.63	0.07	245.21	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/29/2017	(NS)	267.78	26.50	1.68	242.62	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/13/2018	(NS)	267.78	24.74	0.48	243.42	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/25/2018	(NS)	267.78	26.76	0.28	241.24	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	5/11/1993		100.88	22.97	--	77.91	**1,800**	--	--	**130**	25	23	22	--	--	--	--	--
MW-5	3/4/1994		100.88	24.35	--	76.53	710	420	--	**26**	6	11	8	--	--	--	**27**	<3
MW-5	7/6/1994		100.88	24.72	--	76.16	400	<250	--	**11**	3	1	4	--	--	--	--	--

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WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

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Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-5	10/7/1994		100.88	25.02	--	75.86	510	--	--	**13**	4	2	4	--	--	--	--	--
MW-5	12/28/1994		100.88	24.98	--	75.90	**1,300**	--	--	**46**	13	20	22	--	--	--	--	--
MW-5	3/13/1995		100.88	24.41	--	76.47	**2,800**	--	--	**34**	8	40	28	--	--	--	--	--
MW-5	6/30/1995		100.88	24.06	--	76.82	**1,100**	--	--	**50**	11	12	15	--	--	--	--	--
MW-5	9/6/1995		100.88	24.27	--	76.61	**1,100**	--	--	**42**	14	30	18	--	--	--	--	--
MW-5	12/8/1995		100.88	24.49	--	76.39	**1,700**	--	--	**32**	7	42	62	--	--	--	--	--
MW-5	3/11/1996		100.88	23.33	--	77.55	**8,100**	--	--	**85**	9	210	140	--	--	--	--	--
MW-5	6/18/1996		100.88	22.91	--	77.97	**2,700**	--	--	**100**	17	88	25	--	--	--	--	--
MW-5	9/9/1996		100.88	23.07	--	77.81	**2,200**	--	--	**180**	29	100	27	<1.0	--	--	--	--
MW-5	12/11/1996		100.88	23.13	--	77.75	**4,900**	--	--	**110**	18	96	250	12	--	--	--	--
MW-5	3/13/1997		100.88	22.28	--	78.60	**5,500**	--	--	**190**	35	190	73	**<50**	--	--	--	--
MW-5	6/5/1997		100.88	21.78	--	79.10	**4,100**	--	--	**290**	42	200	37	**<100**	--	--	--	--
MW-5	9/5/1997		100.88	21.92	--	78.96	**3,100**	--	--	**420**	83	190	730	**<50**	--	--	--	--
MW-5	4/2/1998		100.88	21.35	--	79.53	**5,400**	--	--	**470**	89	340	83	**<50**	--	--	--	--
MW-5	6/8/1998		100.88	21.48	--	79.40	**4,200**	--	--	**360**	110	220	66	**71**	--	--	--	--
MW-5	9/17/1998		100.88	22.12	--	78.76	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/9/1998		100.88	22.33	--	78.55	**4,900**	--	--	**170**	41	120	120	<1.0	--	--	--	--
MW-5	3/17/1999		100.88	20.93	--	79.95	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	6/26/1999		100.88	21.02	--	79.86	**3,300**	--	--	**180**	82	210	24	8	--	--	--	--
MW-5	9/28/1999		100.88	21.76	--	79.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	1/19/2000		100.88	21.65	--	79.23	**6,500**	--	--	**480**	350	370	87	<0.5	--	--	--	--
MW-5	3/24/2000		100.88	21.48	--	79.40	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	7/2/2000		100.88	22.01	--	78.87	**6,100**	--	--	**390**	110	290	54	20	--	--	--	--
MW-5	9/14/2000		100.88	22.59	--	78.29	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/14/2000		100.88	22.95	--	77.93	**4,000**	--	--	**26**	<10	<10	<30	**<40**	--	--	--	--
MW-5	9/22/2001		100.88	23.86	--	77.02	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/9/2001		100.88	23.90	--	76.98	**12,000**	--	--	**51**	<10	120	140	<10	--	--	--	--
MW-5	3/20/2002		100.88	23.13	--	77.75	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	6/11/2002		100.88	23.09	--	77.79	**5,700**	--	--	**94**	21	110	24	<20	--	--	--	--
MW-5	12/21/2002		100.88	24.65	--	76.23	**1,300**	--	--	**6.32**	2.95	6.59	11.1	5.88	--	--	--	--
MW-5	3/19/2003		100.88	24.68	--	76.20	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	6/18/2003		100.88	24.37	--	76.51	**1,950**	--	--	**7.18**	1.95	12	24.7	6	--	--	--	--
MW-5	9/23/2003		100.88	24.88	--	76.00	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	10/21/2003		100.88	24.99	--	75.89	322	--	--	1.18	2.19	0.732	3.38	<1.00	--	--	--	--
MW-5	6/29/2004	(NP)	100.88	24.22	--	76.66	**1,180**	--	--	**5.4**	3.24	4.79	14.1	6.95	--	--	--	--
MW-5	11/15/2004	(NP)	100.88	24.97	--	75.91	399	--	--	0.74	<0.500	<0.500	<1.00	<2.00	--	--	--	--
MW-5	4/14/2005	(NP)	100.88	25.08	--	75.80	**2,900**	--	--	**14.3**	13.4	33.9	40	<2.00	--	--	--	--
MW-5	12/18/2005	(NP)	100.88	25.47	--	75.41	661	--	--	2.49	2.43	3.58	5.11	<1.00	--	--	--	--
MW-5	6/11/2006	(NP)	100.88	24.43	--	76.45	**2,830**	--	--	**6.08**	1.05	2.78	3.1	<1.00	--	--	--	--
MW-5	11/5/2006	(NP)	100.88	25.55	--	75.33	723	--	--	1.41	0.78	1.29	<3.00	--	--	--	--	--
MW-5	9/25/2007	(NP)	100.88	24.95	--	75.93	712	--	--	1.86	0.53	0.77	<3.00	--	--	--	--	--
MW-5	12/31/2007	(NP)	100.88	25.16	--	75.72	**7,190**	--	--	**9.4**	11.3	38.1	75.7	--	--	--	--	--
MW-5	5/29/2008	(NP)	100.88	25.01	--	75.87	**2,740**	--	--	**7.47**	9.12	15.7	23.7	--	--	--	--	--
MW-5	10/28/2008	(NP)	100.88	25.89	--	74.99	516	--	--	2.01	1.46	<0.500	3.48	--	--	--	--	--
MW-5	6/22/2009	(NP)	100.88	26.95	--	73.93	**4,800**	--	--	**36**	24	87	49.9	--	--	--	**23**	--
MW-5	12/15/2009	(NP)	100.88	26.57	--	74.31	**2,300**	--	--	**24**	19	29	23	--	--	--	12	11
MW-5	5/24/2010	(NP)	100.88	25.55	--	75.33	**4,200**	--	--	**59**	8.4	96	41	--	--	--	--	--
MW-5	10/12/2010	(NP)	268.46	25.74	0.0	242.72	**2,320**	--	--	**31.4**	2.6	12.7	4.8	<1.0	--	--	<10.0	--
MW-5	10/12/2010	(Dup)(NP)	268.46	25.74	0.0	242.72	**2,260**	--	--	**31.6**	2.6	12.6	4.8	<1.0	--	--	--	--
MW-5	5/10/2011	(NP)	268.46	24.61	0.0	243.85	**4,710**	470	<400	**12.4**	4.1	39.3	25.5	<1.0	--	--	<10.0	--
MW-5	11/29/2011	(NP)	268.46	25.55	0.0	242.91	**2,210**	95	<380	**12.3**	2.2	6.4	3.1	--	--	--	10.5	--
MW-5	6/1/2012	(NP)	268.46	24.60	0.0	243.86	**1,620**	**1,040**	<392	**13.3**	3.0	9.6	10.7	<1.0	--	--	<10.0	<10.0
MW-5	6/1/2012	(Dup)(NP)	268.46	24.60	0.0	243.86	**1,520**	**1,030**	<388	**12.8**	2.8	8.8	10	<1.0	--	--	<10.0	<10.0
MW-5	11/29/2012	(NP)	268.46	25.31	0.0	243.15	**4,160**	**1,100**	<440	**18.0**	8.0	61.7	28.2	<1.0	--	--	**42.5**	<3.0
MW-5	5/9/2013	(NP)	268.46	24.52	0.0	243.94	**3,470**	<400	<400	**19.0**	6.7	48.3	18.5	<1.0	--	--	<10.0	<10.0
MW-5	11/19/2013	(NP)	268.46	26.35	0.0	242.11	**1,800**	240	**660**	**24**	5.7	17	6.3	<0.50	--	--	6.7	1.3
MW-5	5/13/2014	(NP)	268.46	25.18	0.0	243.28	**4,400**	440	370	**17**	7.5	69	23	<0.50	--	--	**16.2**	9.2(J)

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-5	5/13/2014	(Dup)(NP)	268.46	25.18	0.0	243.28	**2,500**	--	--	**22**	2.5(J)	47	18	2.6(J)	--	--	--	--
MW-5	5/7/2015	(NP)	268.46	25.22	0.0	243.24	**2,800**	240	260	**11**	4.8	32	12	<0.50	--	--	**18.4**	5.2(J)
MW-5	3/2/2016	(NP)	268.46	25.55	0.0	242.91	**4,100**	320	**530**	4.5	2.8	24	13	<0.50	--	--	--	--
MW-5	6/6/2016	(NP)	268.46	25.74	0.0	242.72	**5,300**	310	**620**	**6.9**	4.4	23	15	<0.50	--	--	--	--
MW-5	9/12/2016	(NS, IW)	268.46	27.43	0.0	241.03	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/12/2016	(NP)	268.46	25.36	0.0	243.10	**4,300**	**17,000**	**<540**	1.7	1.8	9.0	4.5	<0.50	--	--	--	--
MW-5	2/22/2017	(NP)	268.46	25.00	0.0	243.46	**3,440**	**9,890**	204(J)	0.572(J)	<0.412	1.39	1.10(J)	<0.367	--	--	--	--
MW-5	2/22/2017	(Dup)(NP)	268.46	25.00	0.0	243.46	**3,570**	**7,910**	194(J)	0.719(J)	<0.412	1.73	1.18(J)	<0.367	--	--	--	--
MW-5	8/29/2017	(NP)	268.46	26.20	0.0	242.26	**1,810**	**7,040**	432	**7.48**	1.60	6.01	11.1	<0.367	--	--	--	--
MW-5	3/13/2018	(NP)	268.46	26.39	0.0	242.07	356(B)	**1,440**	216(J)	<1.00	<1.00	0.544(J)	<3.00	<1.00	--	--	--	--
MW-5	10/25/2018	(NS)	268.46	27.13	0.0	241.32	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/5/1997		98.62	21.20	--	77.42	930	--	--	<0.5	19	6	15	**32**	--	--	--	--
MW-6	4/2/1998		98.62	19.70	--	78.92	600	--	--	<0.5	10	3	11	6	--	--	--	--
MW-6	6/8/1998		98.62	20.58	--	78.04	430	--	--	<0.5	6	2	5	10	--	--	--	--
MW-6	9/17/1998		98.62	21.87	--	76.75	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/9/1998		98.62	21.20	--	77.42	260	--	--	<1.0	<1.0	1	3	2	--	--	--	--
MW-6	3/17/1999		98.62	18.49	--	80.13	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/26/1999		98.62	18.49	--	80.13	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/28/1999		98.62	21.40	--	77.22	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/19/2000		98.62	20.39	--	78.23	330	--	--	<0.5	<0.5	6	10	7	--	--	--	--
MW-6	3/24/2000		98.62	19.63	--	78.99	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/14/2000		98.62	21.92	--	76.70	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/14/2000		98.62	22.51	--	76.11	1,000	--	--	**<10**	<10	<10	<30	**<40**	--	--	--	--
MW-6	9/22/2001		98.62	23.31	--	75.31	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/9/2001		98.62	22.24	--	76.38	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/20/2002		98.62	21.44	--	77.18	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/11/2002		98.62	21.90	--	76.72	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/21/2002	(NS)	98.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/19/2003	(NS)	98.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/18/2003	(NS)	98.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/23/2003	(NS)	98.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/21/2003	(P)	98.62	22.69	--	75.93	254	--	--	**10**	3.66	0.898	5.03	<1.00	--	--	--	--
MW-6	6/29/2004	(NP)	98.62	22.88	--	75.74	540	--	--	**6.8**	1.73	<0.500	5.65	6.35	--	--	--	--
MW-6	11/15/2004	(NP)	98.62	24.12	--	74.50	370	--	--	**43.5**	14.5	0.58	10.4	<2.00	--	--	--	--
MW-6	4/14/2005	(NP)	98.62	23.75	--	74.87	443	--	--	**6.39**	0.95	<0.500	3.75	<2.00	--	--	--	--
MW-6	12/18/2005	(NP)	98.62	24.79	--	73.83	694	--	--	<0.500	<0.500	<0.500	3.01	<1.00	--	--	--	--
MW-6	6/11/2006	(NP)	98.62	23.09	--	75.53	601	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-6	11/5/2006	(NP)	98.62	25.80	--	72.82	444	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-6	9/25/2007	(NP)	98.62	24.13	--	74.49	321	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-6	12/31/2007	(NP)	98.62	23.59	--	75.03	168	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-6	5/29/2008	(NP)	98.62	24.21	--	74.41	**1,620**	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-6	10/28/2008	(NP)	98.62	25.47	--	73.15	481	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-6	6/22/2009	(NP)	98.62	25.32	--	73.30	<50.0	--	--	<1.00	<1.00	<1.00	<3.00	--	--	--	<2.00	<2.00
MW-6	12/15/2009	(NP)	98.62	23.33	--	75.29	190	--	--	<1.00	<1.00	<1.00	<2.00	--	--	--	<2.00	<2.00
MW-6	5/24/2010	(NP)	266.06	22.90	--	243.16	280	--	--	**8.1**	<2.5	<2.5	<5.0	--	--	--	--	--
MW-6	10/12/2010	(NP)	266.06	23.06	0.0	243.00	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-6	5/10/2011	(NP)	266.06	22.01	0.0	244.05	96.0	180	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-6	11/29/2011	(NP)	266.06	23.42	0.0	242.64	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	--	--	--	<10.0	--
MW-6	11/29/2011	(Dup)(NP)	266.06	23.42	0.0	242.64	<50.0	<77	<380	<1.0	<1.0	<1.0	<3.0	--	--	--	<10.0	--
MW-6	6/1/2012	(NP)	266.06	22.75	0.0	243.31	124	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-6	11/29/2012	(NM)	266.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/9/2013	(NP)	266.06	22.82	0.0	243.24	216	<400	<400	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-6	11/19/2013	(NP)	266.06	24.00	0.0	242.06	130(J)	31(J)	<71	<0.50	<0.70	<0.80	<0.80	<0.50	--	--	0.97(J)	0.12(J)
MW-6	5/13/2014	(NP)	266.06	22.76	0.0	243.30	120(J)	80(J)	180(J)	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7
MW-6	5/7/2015	(NP)	266.06	23.71	0.0	242.35	<50	<28	<65	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7
MW-6	6/6/2016	(NP)	266.06	23.82	0.0	242.24	<50	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-6	9/12/2016	(NP)	266.06	25.22	0.0	240.84	<50	140	280	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-6	12/12/2016	(NP)	266.06	22.66	0.0	243.40	<50	<47	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-6	2/22/2017	(NP)	266.06	21.24	0.0	244.82	33.5(J)	<82.5	<165	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-6	8/29/2017	(NP)	266.06	24.16	0.0	241.90	160	<139	183(J)	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-6	3/13/2018	(NP)	265.97	23.04	0.0	242.93	40.0(B J)	<200	<250	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	--	--
MW-6	10/25/2018	(NP)	265.97	26.28	0.0	239.69	<100	73.4(J)	<250	<1.00	<1.00	<1.00	<3.00	<1.00	<0.0100	<1.00	<2.00	<2.00
MW-7	4/2/1998		97.32	18.79	--	78.53	**13,100**	--	--	<5	35	480	**1,100**	**<50**	--	--	--	--
MW-7	6/8/1998		97.32	19.60	--	77.72	**12,000**	--	--	<5.0	40	420	810	**63**	--	--	--	--
MW-7	9/17/1998		97.32	20.82	--	76.50	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/9/1998		97.32	20.21	--	77.11	**9,600**	--	--	<5.0	26	360	610	11	--	--	--	--
MW-7	3/17/1999		97.32	17.61	--	79.71	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/26/1999		97.32	19.29	--	78.03	**8,300**	--	--	**11**	24	410	600	<5.0	--	--	--	--
MW-7	12/14/2000		97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/9/2001		97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/20/2002		97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/11/2002		97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/18/2003	(ABANDONED)	97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	4/2/1998		98.49	19.99	--	78.50	<100	--	--	<0.5	1	<0.5	<1.5	<5	--	--	--	--
MW-8	6/8/1998		98.49	20.39	--	78.10	<100	--	--	<0.5	1	2	<1.5	<5.0	--	--	--	--
MW-8	9/17/1998		98.49	21.21	--	77.28	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/9/1998		98.49	21.03	--	77.46	<500	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--
MW-8	3/17/1999		98.49	19.03	--	79.46	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/26/1999		98.49	20.02	--	78.47	<500	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--
MW-8	12/14/2000		98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/9/2001		98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/20/2002		98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/11/2002		98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/18/2003	(ABANDONED)	98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/12/2010	(NP)	263.35	23.89	0.0	239.46	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-9	5/10/2011	(NP)	263.35	20.70	0.0	242.65	<50.0	160	<420	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-9	11/29/2011	(NP)	263.35	22.64	0.0	240.71	<50.0	<76	<380	<1.0	<1.0	<1.0	<3.0	--	--	--	<10.0	--
MW-9	6/1/2012	(NM)	263.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/29/2012	(NM)	263.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/9/2013	(NP)	263.35	21.09	0.0	240.55	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-9	11/19/2013	(NP)	263.35	22.80	0.0	--	<50	49(J)	<75	<0.50	<0.70	<0.80	<0.80	<0.50	--	--	1.0	0.090(J)
MW-9	5/13/2014	(NP)	263.35	21.39	0.0	241.96	<50	<29	<67	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7
MW-9	5/7/2015	(NP)	263.35	22.04	0.0	241.31	<50	28(J)	<65	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7
MW-9	3/2/2016	(NS)	263.35	22.29	0.0	241.06	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/6/2016	(NS)	263.35	22.01	0.0	241.34	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/12/2016	(NP)	263.35	23.43	0.0	239.92	<50	190	170(J)	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-9	2/22/2017	(NS)	263.35	21.71	0.0	241.64	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	8/29/2017	(NP)	263.35	22.47	0.0	240.88	52.9(J)	115(J)	101(J)	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--
MW-9	3/13/2018	(NS)	263.35	21.78	0.0	241.57	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/25/2018	(LFP)	263.35	24.61	0.0	238.74	78.3(B J)	217	140(J)	<1.00	<1.00	<1.00	<3.00	<1.00	**<0.0101**	<1.00	0.299(B J)	<2.00
MW-10	6/1/2012	(NP)	268.30	24.20	0.0	244.10	<50.0	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	11/29/2012	(NP)	268.30	25.00	0.0	243.30	<100	<420	<420	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	**20.4**	<3.0
MW-10	11/29/2012	(Dup)(NP)	268.30	25.00	0.0	243.30	146	<470	<470	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	**22.6**	<3.0
MW-10	5/9/2013	(NP)	268.30	24.25	0.0	244.05	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	11/19/2013	(NP)	268.30	25.80	0.0	242.50	66(J)	<34	<78	<0.50	<0.70	<0.80	<0.80	<0.50	--	--	12.8	<0.085
MW-10	5/13/2014	(NP)	268.30	24.78	0.0	243.52	<50	<28	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	<4.7	<4.7
MW-10	5/7/2015	(NP)	268.30	24.84	0.0	243.46	150(J)	75(J)	150(J)	<0.50	<0.50	0.81(J)	7.1	<0.50	--	--	6.3(J)	<4.7
MW-10	9/12/2016	(NP)	268.30	26.52	0.0	241.78	130(J)	<29	<68	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-10	8/29/2017	(NP)	268.30	25.93	0.0	242.37	<31.6	78.2(J)	126(J)	<0.331	<0.412	<0.384	<1.06	<0.367	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-11	10/25/2018	(LFP)	266.38	26.40	0.0	239.98	170(B)	343	419	<1.00	<1.00	<1.00	<3.00	<1.00	<0.0100	<1.00	1.09(B J)	0.582(J)
MW-12	10/25/2018	(LFP)	266.51	27.39	0.0	239.12	**867**	**705**	189(J)	1.17	<1.00	<1.00	<3.00	<1.00	<0.0100	<1.00	1.00(B J)	<2.00
VE-1	4/2/1998		--	--	--	--	**60,500**	--	--	**3,900**	**2,300**	**820**	**4,500**	**<2,500**	--	--	--	--
VE-1	9/17/1998		--	--	--	--	**240,000**	--	--	**2,700**	**2,000**	**1,400**	**7,700**	**<100**	--	--	--	--
VE-1	12/9/1998		--	--	--	--	**73,000**	--	--	**2,200**	**1,400**	**770**	**3,700**	**<25**	--	--	--	--
VE-1	3/17/1999		--	--	--	--	**42,000**	--	--	**4,000**	**2,400**	**790**	**4,100**	**<25**	--	--	--	--
VE-1	6/26/1999		--	--	--	--	**42,000**	--	--	**3,800**	**2,600**	670	**3,500**	**<100**	--	--	--	--
VE-1	9/28/1999		--	--	--	--	**25,000**	--	--	**3,400**	**2,000**	630	**3,000**	**<25**	--	--	--	--
VE-1	3/24/2000		--	--	--	--	**31,000**	--	--	**3,200**	610	27	**3,600**	<5	--	--	--	--
VE-1	7/2/2000		--	--	--	--	**27,000**	--	--	**3,200**	**1,900**	620	**3,000**	**130**	--	--	--	--
VE-1	9/14/2000		--	--	--	--	**29,000**	--	--	**3,200**	**2,200**	**920**	**3,000**	<5	--	--	--	--
VE-1	12/14/2000		--	23.02	--	--	**28,000**	--	--	**2,400**	**1,300**	580	**2,600**	**<40**	--	--	--	--
VE-1	9/22/2001		--	24.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	12/9/2001		--	23.90	0.07	--	**24,000**	--	--	**1,300**	880	510	**2,400**	**<40**	--	--	--	--
VE-1	3/20/2002		--	23.30	0.05	--	**52,000**	--	--	**1,800**	**1,300**	560	**2,400**	**280**	--	--	--	--
VE-1	6/11/2002		--	23.25	0.11	--	**26,000**	--	--	**2,800**	**1,600**	650	**2,900**	**<80**	--	--	--	--
VE-1	12/21/2002	(P)	--	24.89	0.0	--	**25,900**	--	--	**1,630**	**1,150**	**741**	**3,660**	**<200**	--	--	--	--
VE-1	3/19/2003	(P)	--	24.71	0.0	--	**27,100**	--	--	**1,590**	**1,450**	**743**	**3,640**	**<250**	--	--	--	--
VE-1	6/18/2003	(P)	--	24.50	0.05	--	**37,000**	--	--	**2,190**	**1,710**	**929**	**5,230**	**79.8**	--	--	--	--
VE-1	9/23/2003	(P)	--	25.01	0.03	--	**28,300**	--	--	**1,620**	**1,270**	**704**	**3,500**	<20.0	--	--	--	--
VE-1	10/22/2003	(P)	--	24.98	0.17	--	**36,700**	--	--	**3,360**	**1,850**	**847**	**4,130**	**<50.0**	--	--	--	--
VE-1	6/29/2004	(NP)	--	25.12	0.0	--	**192,000**	--	--	**8,070**	**7,030**	**2,230**	**10,400**	**820**	--	--	--	--
VE-1	11/15/2004	(NP)	--	25.40	0.61	--	**99,900**	--	--	**5,680**	**6,280**	**3,430**	**17,600**	**<100**	--	--	--	--
VE-1	4/14/2005	(NP)	--	26.15	1.31	--	**39,600**	--	--	**3,120**	**3,300**	**1,210**	**5,560**	**<40.0**	--	--	--	--
VE-1	12/18/2005	(NP)	--	26.00	0.35	--	**142,000**	--	--	**6,140**	**5,850**	**1,400**	**6,750**	**<100**	--	--	--	--
VE-1	6/11/2006	(NP)	--	26.53	--	--	**68,300**	--	--	**7,200**	**8,100**	**3,900**	**25,100**	**<500**	--	--	--	--
VE-1	11/5/2006	(NP)	--	26.33	0.45	--	**60,500**	--	--	**3,780**	**4,320**	**1,190**	**6,390**	--	--	--	--	--
VE-1	9/25/2007	(NAPL)	--	25.02	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	12/31/2007	(NS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/29/2008	(NAPL)	--	25.63	0.84	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	10/28/2008	(NAPL)	--	26.07	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	6/22/2009	(DRY)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	12/15/2009	(NAPL)	--	26.56	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/24/2010	(NS)	268.17	26.70	0.0	241.47	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/10/2011	(NM)	268.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	11/29/2012	(NAPL)	268.17	24.05	0.10	244.20	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/9/2013	(NS)	268.17	24.23	0.0	243.94	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	11/19/2013	(NAPL)	268.17	26.35	0.55	242.26	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/13/2014	(NAPL)	268.17	25.20	0.40	243.29	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/7/2015	(NAPL)	268.17	25.40	0.61	243.26	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	3/2/2016	(NS)	268.17	24.99	0.0	243.18	--	--	--	--	--	--	--	--	--	--	--	--
VE-2	5/7/2015	(DRY)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-2	3/2/2016	(NS)	--	13.84	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-3	3/2/2016	(NS)	--	12.99	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-4	3/2/2016	(NS)	--	14.45	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-5	3/2/2016	(NS)	--	14.15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**

Notes:
TOC = Top of casing in feet North American Vertical Datum of 1988 (NAVD 88)
DTW = Depth to water in feet below TOC
NAPL = Non-aqueous phase liquid thickness in feet
GWE = Groundwater elevation in feet NAVD 88
GRO = Total petroleum hydrocarbons - gasoline range organics
DRO = Total petroleum hydrocarbons - diesel range organics
HO = Total petroleum hydrocarbons - heavy oil range organics
MTBE = Methyl tertiary butyl ether
EDB = Ethylene dibromide
EDC = 1,2-Dichloroethane
800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L
NS = Not sampled
-- = Not analyzed/not applicable
IW = Insufficient volume of water in the well to collect representative sample
NP = No purge sample
< = Analytical result is less than reporting limit shown
NM = Not measured
P = Purge sample
DUP = Duplicate sample
J = estimated value – The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)
Wells were resurveyed in 2010 and are referenced to vertical datum NAVD 88 and horizontal datum NAD 83/98
Monitoring wells MW-6, MW-11, and MW-12 were surveyed on 10/25/2018 by Otak
If NAPL is present, the GWE is corrected according to the following formula (TOC elevation - depth to water) + (0.8 x NAPL thickness)
Data collected prior to 2010 have been provided by previous consultants and are included as historical reference only
GRO, DRO, HO analyzed by Ecology Northwest Methods; Benzene, toluene, ethylbenzene, and total xylenes (BTEX), MTBE, and EDB by 8260B; Lead by U.S. Environmental
BOLD constituent detected above MTCA Cleanup Levels

Table 2
Polycyclic Aromatic Hydrocarbons Analytical Results
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well ID	Date	Notes	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Total Naphthalenes	Total cPAHs
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L			--	--	--	--	--	--	--	--	--	--	**160**	**0.1**
GMW-1	5/7/2015	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	1.8	4.0	7.4	13.2	ND < 0.00755
MW-1	5/7/2015	(NP)	0.025 J	0.026 J	0.044 J	0.020 J	0.032 J	0.018 J	0.033 J	0.023 J	0.026 J	ND < 0.031	0.065	0.04032
MW-2	5/7/2015	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	1.1	0.35	4.3	5.75	ND < 0.00755
MW-3	5/7/2015	(NP)	0.016 J	0.015 J	0.025 J	ND < 0.010	0.018 J	ND < 0.010	0.016 J	0.76	0.041	ND < 0.030	0.816	0.02188
MW-5	5/7/2015	(NP)	ND < 0.010	ND < 0.010	0.014 J	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	3.0	2.5	11	16.5	0.00845
MW-6	5/7/2015	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	0.011 J	0.012 J	ND < 0.030	0.038	ND < 0.00755
MW-9	5/7/2015	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	0.015 J	ND < 0.031	0.036	ND < 0.00755
MW-10	5/7/2015	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	0.23	0.35	0.77	1.35	ND < 0.00755
GMW-1	3/2/2016	(NP)	0.043 J	0.029 J	0.022 J	0.031 J	0.071	0.061	0.032 J	0.079	0.17	ND < 0.030	0.264	0.04861
MW-1	3/2/2016	(NP)	ND < 0.011	ND < 0.011	ND < 0.011	ND < 0.011	ND < 0.011	ND < 0.011	ND < 0.011	0.12	0.20	0.40	0.72	ND < 0.008305
MW-2	3/2/2016	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	1.7	0.34	4.3	6.34	ND < 0.00755
MW-3	3/2/2016	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.030	ND < 0.025	ND < 0.00755
MW-5	3/2/2016	(NP)	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	ND < 0.010	2.7	2.8	9.9	15.4	ND < 0.00755
MW-6	3/2/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/2/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/2/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	6/6/2016	(NP)	--	--	--	--	--	--	--	0.53	1.1	2.2	3.83	--
MW-1	6/6/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	6/6/2016	(NP)	--	--	--	--	--	--	--	2.5	0.29	4.6	7.39	--
MW-2	6/6/2016	(NP), (DUP)	--	--	--	--	--	--	--	1.9	0.17	4.5	6.57	--
MW-3	6/6/2016	(NP)	--	--	--	--	--	--	--	0.032 J	ND <0.010	ND <0.031	0.05	--
MW-5	6/6/2016	(NP)	--	--	--	--	--	--	--	2.3	2.3	7.3	11.9	--
MW-6	6/6/2016	(NP)	--	--	--	--	--	--	--	ND <0.010	ND <0.010	ND <0.031	ND < 0.026	--
MW-9	6/6/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	6/6/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	9/12/2016	(NP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	1.4	2.8	6.8	11	ND < 0.00717
GMW-1	9/12/2016	(NP), (DUP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	1.4	2.8	7.1	11.3	ND < 0.00717
MW-1	9/12/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	9/12/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	9/12/2016	(NP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	0.19	ND < 0.0095	ND < 0.029	0.20925	ND < 0.00717
MW-5	9/12/2016	(NS)	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/12/2016	(NP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.028	ND < 0.0235	ND < 0.00717
MW-9	9/12/2016	(NP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.028	ND < 0.0235	ND < 0.00717
MW-10	9/12/2016	(NP)	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.0095	ND < 0.029	ND < 0.024	ND < 0.00717

Table 2
Polycyclic Aromatic Hydrocarbons Analytical Results
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

All analytical results are presented in micrograms per liter (µg/L)

Well ID	Date	Notes	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Total Naphthalenes	Total cPAHs
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L			--	--	--	--	--	--	--	--	--	--	**160**	**0.1**

Notes:
-- = Not analyzed/not applicable
NP = No purge sample
ND < = Analytical result is less than reporting limit shown
NS = Not sampled for polycyclic aromatic hydrocarbons (PAHs)
DUP = Duplicate sample
J = estimated value – The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)
Carcinogenic PAHs (cPAHs) and Naphthalenes analyzed by U.S. Environmental Protection Agency (EPA) 8270C SIM
cPAHs adjusted for toxicity according to Washington State Administrative Code 173-340-708(8). If one or more adjusted cPAH constituents were reported as non-detect, half of the reporting limit was used in calculations.
Naphthalenes is a sum total of 1-methyl-naphthalene, 2-methyl-naphthalene, and naphthalene. If one or more constituents were reported as non-detect, half of the reporting limit was used in calculations.
BOLD concentration greater than the MTCA Method A cleanup level

Table 3
Air sparge and Soil Vapor Extraction - Operational Data
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

Date	SVE Operation (on or off) Arrival / Departure	SVE Hour Meter (Hours)	SVE Period Operation (Hours)	SVE Percent Uptime (%)	AS Operation (on or off) Arrival / Departure	AS Hour Meter (Hours)	AS Period Operation (Hours)	AS Percent Uptime (%)	Cat Ox Inlet Temperature (°F)	Post-Dilution[1]						Effluent PID (ppmv)	Destruction Efficiency (%)	VOC Mass Removal Rate (lbs/day)	VOC Mass Removal Rate (lbs/period)	Cumulative VOC Removal (lbs)
										Presure (in. Wc)	Influent Temperature (°F)	Influent Velocity (fpm)	Influent Flowrate (acfm)	Influent Flowrate (scfm)	Influent PID (ppmv)				
Permit Requirements		--	--	--		--	--	--	**> 625**	--	--		--	**<120**	--	**<200**	**>98% [2]**			
04/20/16	off / on	6021.5	--	--	on / on	37.8	--	--	633.0	3.0	83.0	1080.0	36.8	35.5	316.0	0.9	100%	3.61	--	--
04/22/16	on / on	6064.0	42.5	88.5%	on / on	37.8	0.0	0.0%	649.0	2.0	89.0	1110.0	37.9	36.0	283.7	2.1	99%	3.29	5.83	5.83
04/27/16	on / on	6189.6	125.6	100.0%	off / off	37.8	0.0	0.0%	626.0	3.0	88.0	840.0	28.6	27.4	367.5	6.0	98%	3.24	16.96	22.78
05/04/16	on / on	6354.2	164.6	100.0%	on / on	37.8	0.0	0.0%	626.0	3.0	91.0	920.0	31.4	29.8	245.5	1.4	99%	2.36	16.17	38.95
05/10/16	on / on	6496.4	142.2	100.0%	on / on	37.8	0.0	0.0%	647.6	3.0	99.0	760.0	25.9	24.3	211.0	1.5	99%	1.65	9.78	48.73
06/13/16	off / on	7131.0	634.6	77.8%	off / on	37.8	0.0	0.0%	649.4	2.0	90.0	897.0	30.6	29.1	586.0	2.5	100%	5.48	177.48	226.21
7/12/16[3]	on / on	--	--	--	off / off	--	--	--	--	--	--	--	--	--	--	0.0	--	--	--	--
08/24/16	on / on	7492.0	361.0	20.9%	on / on	37.8	0.0	0.0%	644.0	5.0	86.5	1650.0	56.3	54.2	288.9	0.4	100%	5.04	75.83	302.03
09/20/16	on / on	8141.5	649.5	100.2%	on / on	37.8	0.0	0.0%	662.0	4.0	84.0	1029.0	35.1	33.9	398.0	1.1	100%	4.34	117.46	419.50
10/27/16	off / on	8721.0	579.5	65.3%	off / on	37.8	0.0	0.0%	662.0	1.0	75.0	120.0	4.1	4.0	135.0	0.0	100%	0.17	4.18	423.68
11/16/16	off / on	8831.1	110.1	22.9%	off / on	37.8	0.0	0.0%	719.6	1.0	59.0	290.0	9.9	9.9	451.8	5.2	99%	1.44	6.63	430.31
12/15/16	off / on	8989.1	158.0	22.7%	off / on	37.8	0.0	0.0%	645.8	0.5	65.0	280.0	9.5	9.5	388.0	6.4	98%	1.18	7.79	438.10
01/31/17	on / on	10005.0	1015.9	90.1%	on / on	38.2	0.4	0.0%	662.0	1.0	62.0	480.0	16.4	16.3	159.6	2.5	98%	0.84	35.55	473.65
02/13/17	off / on	10104.9	99.9	32.0%	off / on	38.2	0.0	0.0%	625.8	1.0	94.5	745.0	25.4	23.9	182.8	0.0	100%	1.41	5.85	479.51
03/01/17	off / on	10112.1	7.2	1.9%	off / on	38.3	0.1	0.0%	663.8	3.0	120.0	885.0	30.2	27.3	215.0	0.5	100%	1.89	0.57	480.07
04/26/17	on / on	11208.2	1096.1	81.6%	on / on	38.3	0.0	0.0%	645.8	5.0	78.0	1800.0	61.4	60.1	64.4	0.9	99%	1.25	56.87	536.94
06/06/17	off / on	11250.7	42.5	4.3%	off / on	38.4	0.1	0.0%	665.6	9.0	152.7	2290.0	78.1	67.7	198.8	3.0	98%	4.34	7.68	544.62
07/07/17	on / on	11967.3	716.6	96.3%	on / on	38.4	0.0	0.0%	663.8	9.0	122.4	1460.0	49.8	45.4	160.0	3.2	98%	2.34	69.89	614.51
08/30/17	on / on	13184.3	1217.0	93.9%	off / on	38.4	0.0	0.0%	663.8	10.0	85.0	1900.0	64.8	63.3	395.0	4.5	99%	8.06	408.47	1022.98
09/21/17	on / on	13708.3	524.0	99.2%	on / on	38.4	0.0	0.0%	663.8	8.0	127.5	2105.0	71.8	64.8	385.5	1.3	100%	8.04	175.56	1198.54
10/05/17	off / on	13903.3	195.0	58.0%	off / on	38.4	0.0	0.0%	665.6	12.0	127.0	2502.0	85.3	77.8	402.0	2.4	99%	10.07	81.83	1280.37
11/02/17	on / on	14536.5	633.2	94.2%	on / on	38.4	0.0	0.0%	676.4	8.0	84.2	1882.0	64.2	62.5	230.0	0.2	100%	4.63	122.17	1402.54
12/27/17	on / on	15330.2	793.7	60.1%	on / on	38.5	0.0	0.0%	663.8	2.0	72.0	860.0	29.3	28.8	24.6	0.1	100%	0.23	7.55	1410.09
01/30/18	on / on	16147.3	817.1	100.1%	on / on	38.5	0.0	0.0%	663.8	3.0	93.5	980.0	33.4	31.6	13.4	0.2	99%	0.14	4.65	1414.73
02/21/18	on / on	16675.8	528.5	100.1%	on / on	38.5	0.0	0.0%	663.8	1.9	58.9	819.0	27.9	28.1	19.6	0.0	100%	0.18	3.91	1418.64
03/13/18	on / on	17135.6	459.8	95.8%	on / on	39.6	1.1	0.2%	662.0	15.0	65.0	2297.0	78.3	80.4	60.9	1.3	98%	1.58	30.22	1448.86
04/18/18	off / on	17399.9	264.3	30.6%	off / on	281.4	241.8	28.0%	667.0	20.0	68.0	2875.0	98.0	101.3	263.7	2.9	99%	8.60	17.37	1466.23
05/21/18	on / on	18190.8	790.9	100.0%	on / on	999.2	717.8	90.6%	694.4	1.0	145.0	840.0	28.6	24.7	148.0	3.1	98%	1.18	283.43	1749.66
06/19/18	off / on	--	--	--	off / on	--	--	--	690.0	--	--	--	--	105.0	140.0	2.0	99%	4.73	--	--
07/18/18	off / on	19156.4	965.6	69.4%	off / on	1548.9	549.7	39.5%	674.6	12.0	90.0	3105.0	105.9	103.1	49.0	1.0	98%	1.63	190.43	1940.09
08/23/18	off / on	20019.6	863.2	99.9%	off / on	1548.9	0	0.0%	671.0	30.0	88.0	2234.0	76.2	77.6	104.0	1.0	99%	2.60	58.48	1998.57
09/13/18	on / on	20523.2	503.6	99.9%	on / on	1548.9	0	0.0%	671.0	5.0	91.5	1730.0	59.0	56.3	102.4	2.3	98%	1.86	54.53	2053.10
10/05/18	on / on	21048.9	525.7	99.6%	on / on	1548.9	0	0.0%	671.0	5.0	73.0	778.0	26.53	26.2	68.0	0.8	99%	0.57	40.66	2093.77
11/06/18	off / on	21197.4	148.5	19.3%	off / on	1548.9	0	0.0%	678.2	10.0	108.0	724.0	24.69	23.2	148.0	1.9	99%	1.10	3.55	2097.32
12/13/18	off / on	21892.5	695.1	78.3%	off / on	1548.9	0	0.0%	789.8	2.0	77.7	758.0	25.85	25.1	578.2	11.7	98%	4.68	31.96	2129.28

2018 Annual Operational Hours	**6,562**
2018 Average Uptime Percentage	**78.12%**
2018 Average SVE flow rate (scfm):	**56.9**

SVE = Soil Vapor Extraction
AS = Air Sparge
Air Sparge and Soil Vapor Extraction = Ambient air is pressurized and pumped into the subsurface to volatilize constituents for extraction by the SVE System. Vapor is extracted by vacuum and is treated by combustion before discharging to the atmosphere.

Table 3
Air sparge and Soil Vapor Extraction - Operational Data
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

PSCAA Permit = Puget Sound Clean Air Agency (PSCAA) emission discharge permit #29642

< = Operation data must be less than the permit requirement

> = Operation data must be greater than the permit requirement

Period = Length of time since the previous date that operational data was collected

% = Percentage

Uptime = Calculated percentage of operation during the period. (Hours of operation per period / total hours per period)

Cat Ox = Catalytic Oxidizer, the system component that catalyzes combustion of extracted Volatile Organic Compounds (VOCs)

°F = Fahrenheit

in Wc = Inches of water column

fpm = feet per minute

acfm = Actual cubic feet per minute measured by anemometer

scfm = Standard cubic feet per minute. scfm = acfm * (Pactual / Pstandard) * (Tstandard / Tactual)

$$scfm = acfm \cdot \frac{(14.7\ [psi] + (influent\ pressure\ \cdot\ 0.0361\ [\frac{psi}{in.WC}])}{14.7\ [psi]} \frac{68\ °\mathrm{F} + 460\ °R}{(460°R + influent\ temperature\ °\mathrm{F})}$$

Pstandard = Standard pressure = 1 atmosphere (14.7 pounds per square inch [psi])

Tstandard = Standard temperature = 68 °F, as used by the National Institute of Standards and Technology (NIST)

Pactual = Influent vacuum. Units converted in the formula from in.Hg to psi.

Tactual = Influent temperature. Units converted in the formula from °F to °R (degrees Rankine)

PID = Photoionization Detector

ppmv = Parts per million volume

Destruction Efficiency = (influent VOCs - effluent VOCs) / (influent VOCs). VOCs measured by PID

Mass Removal Rate= Flowrate * time * Concentration * Molecular Weight * Molar Density of Air

VOC molecular weight = 86 lb / [lb mol]

Molar density of air = P/RT = 1 atm / (0.7302 [ft^3 * atm] / [lb mol * ºR]) / (68 + 459.67)ºR = 0.00260 lb mol / ft^3

Molar density of air based on standard pressure of 1 atm and standard temperature of 68ºF, as used by the National Institute of Standards and Technology (NIST).

P = pressure

R = gas constant

ºR = degrees Rankine

T = temperature

atm = atmosphere

lb mol = Pound per Mole

ft^3 = cubic feet

$$Mass\ Removal\ Rate = (flowrate\ [scfm] * 60\ [min] x\ 24\ [hr]) x\ (VOCs\ [ppmv] * 10^6 x\ 86\ \left[\frac{lbs}{mol}\right] x\ .0026\ [\frac{lbmol}{ft^3}])$$

lbs = Pounds

lbs/day = Pounds per day

lbs/period = Pounds per period

Cumulative mass removed = Previous mass removed + Removal rate * Elapsed time

-- = Not collected/ not available

1 = Influent sample port is located post-dilution thus flow rate through cat ox is equal to exhaust flowrate and compliant with Puget Sound Clean Air Agency (PSCAA) permit #29664 subpart 7b.

2= Destruction Efficiency must be >97% when TPH influent is greater than 200 ppmv per PSCAA permit # 29664 subpart 5.

3=System shut down on 7/13/16 before O&M measurements were collected for the month. System restarted on 8/19/19. Effluent PID collected on 7/12/16 on system visit.

4=Post dilution flow rate is taken in a 2.5-inch pipe. Flow rate on field forms may differ from final table due to flow calculation based on a 2-inch pipe.

5= Flow rate for the 6/19/18 O&M Event was collected from the PLC Screen.

Table 4
Air Sparge and Soil Vapor Extraction - Analytical Data
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

Date	Influent Flowrate (scfm) [1]	Laboratory Analytical Influent Concentrations					Laboratory Analytical Effluent Concentrations					GRO Mass Removal		
		GRO (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	GRO (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)	Mass Removal Rate (lbs/day)	Mass Removal Rate (lbs/period)	Cumulative Mass Removal (lbs)
Permit Requirements	**<350**	**--**	**--**	**--**	**--**	**--**	**<200**	**<200**	**<200**	**<200**	**<200**	**--**	**--**	**--**
04/20/16	36	760	0.82 J	0.93 J	0.68 J	1.8 J	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	8.7	5.6	5.6
04/22/16	36	--	--	--	--	--	--	--	--	--	--	--	--	--
04/27/16	27	--	--	--	--	--	--	--	--	--	--	--	--	--
05/04/16	30	--	--	--	--	--	--	--	--	--	--	--	--	--
05/10/16	24	590.0	< 0.5	< 0.8	< 0.4	< 0.7	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	4.6	92.3	97.8
06/13/16	29	1,100	0.93 J	< 0.8	1.0	2.1	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	10.3	350.0	447.8
08/25/16	54	560	< 0.5	< 0.8	0.77 J	1.60 J	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	9.8	713.3	1161.1
09/20/16	34	670	< 0.5	< 0.8	< 0.4	0.88 J	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	7.3	190.0	1351.1
10/27/16	4	280	< 0.5	< 0.8	0.54 J	1.80 J	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	0.4	13.3	1364.4
11/16/16	10	1,500	< 0.5	< 0.8	2.6	3.3	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	4.8	95.9	1460.3
12/15/16	9	1,400	< 0.5	< 0.8	2.3	< 0.7	< 5.0	< 0.5	< 0.8	< 0.4	< 0.7	4.3	123.8	1584.1

SVE = Soil Vapor Extraction

AS = Air Sparge

Air Sparge and Soil Vapor Extraction = Ambient air is pressurized and pumped into the subsurface to volatilize constituents for extraction by the SVE System. Vapor is extracted by vacuum and is treated by combustion before discharging to the atmosphere.

PSCAA Permit = Puget Sound Clean Air Agency (PSCAA) emission discharge permit #29642

< = Operation data must be less than the permit requirement

> = Operation data must be greater than the permit requirement

scfm = Standard cubic feet per minute. scfm = acfm * (Pactual / Pstandard) * (Tstandard / Tactual)

Pstandard = Standard pressure = 1 atmosphere (14.7 pounds per square inch [psi])

Tstandard = Standard temperature = 68 ^{o}F, as used by the National Institute of Standards and Technology (NIST)

Pactual = Influent vacuum. Units converted in the formula from in.Hg to psi.

01/30/18	on / on	16147.3	off / off	38.5	0	0.0	663.8	3.0	93.5	980.0 J

Tactual = Influent temperature. Units converted in the formula from ^{o}F to ^{o}R (degrees Rankine)

GRO = Total petroleum hydrocarbons - gasoline range organics GRO (C-4-C10 hydrocarbons hexane) by EPA method 25 modified

EPA = Environmetal Protection Agency

ppmv = Parts per million volume

Benzene, Toluene, Ethylbenzene and Xylenes by EPA method 18 modified

Mass Removal Rate= Flowrate * time * Concentration * Molecular Weight * Molar Density of Air

VOC molecular weight = 86 lb / [lb mol]

Molar density of air = P/RT = 1 atm / (0.7302 [ft^3 * atm] / [lb mol * ºR]) / (68 + 459.67)ºR = 0.00260 lb mol / ft^3

Molar density of air based on standard pressure of 1 atm and standard temperature of 68ºF, as used by the National Institute of Standards and Technology (NIST).

Table 4
Air Sparge and Soil Vapor Extraction - Analytical Data
WA-11060

4580 Fauntleroy Way SW, Seattle, WA 98126

P = pressure
R = gas constant
ºR = degrees Rankine
T = temperature
atm = atmosphere
lb mol = Pound per Mole
ft^3 = cubic feet

$$Mass\ Removal\ Rate = (flowrate\ [scfm] * 60\ [min] x\ 24\ [hr]) x\ (VOCs\ [ppmv] * 10^6 x\ 86\ \left[\frac{lbs}{mol}\right] x\ .0026\ [\frac{lbmol}{ft^3}])$$

lbs = Pounds
lbs/day = pounds per day
Period = Length of time since the previous date that operational data was collected
lbs/period = Pounds per period
Cumulative mass removed = Previous mass removed + Removal rate * Elapsed time per period
J = estimated value – The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)
-- = Not collected/ not available
< = Analytical sample results below laboratory method detection limits
1 = Influent sample port is located post-dilution thus flow rate through cat ox is equal to exhaust flowrate and compliant with Puget Sound Clean Air Agency (PSCAA) permit #29664 subpart 7c

Table 5
Soil Samples Analytical Results
Former BP Facility No. 11060
4580 Fauntleroy Way SW, Seattle, Washington

All Concentrations are in milligrams per Kilogram (mg/kg)

Boring	Date	Depth	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Total cPAHs	Total Naphthalenes
Model Toxics Control Act (MTCA) Method A Cleanup Levels			**30/100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**0.1**	**0.005**	**--**	**250**	**0.1**	**5**
MW-3	3/23/1992	13-13.5	**43**	ND < 34	ND < 100	**ND < 0.34**	ND < 0.34	0.11	0.24	--	--	--	6.3	--	--
MW-3	3/23/1992	18.5-19	**140**	ND< 29	ND < 88	**0.94**	ND < 2.9	5.1	8.8	--	--	--	2.6	--	--
MW-3 (Dup)	3/23/1992	13.5-14	16	ND < 32	ND < 96	**ND < 0.32**	ND < 0.32	ND < 0.32	ND < 0.32	--	--	--	5.1	--	--
MW-1	5/6/1993	3	ND < 1	--	--	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	--	--	--	--	--	--
MW-2	5/7/1993	18	**190**	--	--	**0.48**	0.7	0.5	1.9	--	--	--	--	--	--
MW-4	5/7/1993	23	**1,200**	--	--	**6.6**	**26**	**11**	**71**	--	--	--	--	--	--
MW-5	5/7/1993	18	7	--	--	ND < 0.005	0.02	0.036	0.14	--	--	--	--	--	--
VW-1	4/26/1995	10	**3,500**	--	--	**ND < 0.63**	ND < 0.63	**24**	**160**	--	--	--	--	--	--
VW-1	4/26/1995	25	**1,300**	--	--	**1.7**	3.4	**8.2**	**40**	--	--	--	--	--	--
MW-6	--	15	ND < 5.0	--	--	ND < 0.025	ND < 0.025	ND < 0.025	ND < 0.025	--	--	--	--	--	--
MW-6	--	21	ND < 5.0	--	--	ND < 0.025	ND < 0.025	ND < 0.025	ND < 0.025	--	--	--	--	--	--
B-1	10/24/2002	4	**210**	--	--	ND < 0.020	ND < 0.05	0.88	3	--	--	--	--	--	--
B-2	10/24/2002	12	**240**	--	--	ND < 0.020	ND < 0.05	ND < 0.05	0.59	--	--	--	--	--	--
B-3	10/24/2002	15	ND < 5.0	--	--	ND < 0.020	ND < 0.05	ND < 0.05	ND < 0.05	--	--	--	--	--	--
GMW-1	12/21/2007	16	ND < 10	--	--	ND < 0.02	ND < 0.05	ND < 0.05	ND < 0.15	--	--	--	--	--	--
GMW-1	12/21/2007	21	10	--	--	ND < 0.02	ND < 0.05	ND < 0.05	ND < 0.15	--	--	--	--	--	--
GMW-1	12/21/2007	26	ND < 10	--	--	ND < 0.02	ND < 0.05	ND < 0.05	ND < 0.15	--	--	--	--	--	--
GMW-1	12/21/2007	36	ND < 10	--	--	ND < 0.02	ND < 0.05	ND < 0.05	ND < 0.15	--	--	--	--	--	--
MW-9	8/24/2010	13.5-14	ND < 6.2	ND < 19.8	ND < 79.2	ND < 0.0031	ND < 0.0031	ND < 0.0031	ND < 0.0094	--	--	--	1.9	--	--
MW-9	8/24/2010	21-21.5	ND < 5.2	ND < 20.5	ND < 81.9	ND < 0.0026	ND < 0.0026	ND < 0.0026	ND < 0.0078	--	--	--	1.4	--	--
MW-9	8/24/2010	35.5-36	ND < 6.2	ND < 21.5	ND < 85.9	ND < 0.0034	ND < 0.0034	ND < 0.0034	ND < 0.00101	--	--	--	1.7	--	--
MW-10-15'	1/23/2012	15	ND < 6.3	ND < 17.9	ND < 71.6	ND < 0.0034	ND < 0.0034	ND < 0.0034	ND < 0.0103	ND < 0.0034	--	--	1.9	--	--
MW-10-20'	1/23/2012	20	ND < 6.7	ND < 19.3	ND < 77.1	ND < 0.0044	ND < 0.0044	ND < 0.0044	ND < 0.0133	ND < 0.0044	--	--	2.4	--	--
MW-10-25'	1/23/2012	25	ND < 6.7	ND < 19.2	ND < 76.8	ND < 0.0034	ND < 0.0034	ND < 0.0034	ND < 0.0103	ND < 0.0034	--	--	1.9	--	--
MW-10-35'	1/23/2012	35	ND < 6.1	ND < 19.0	ND < 75.8	ND < 0.0030	ND < 0.0030	ND < 0.0030	ND < 0.0089	ND < 0.0030	--	--	2.7	--	--
SB-1-15'	1/23/2012	15	**555**	ND < 17.3	ND < 69.2	0.0057	0.0092	0.488	0.135	ND < 0.0027	--	--	5..3	--	--
SB-1-25'	1/23/2012	25	ND < 6.4	ND < 19.3	ND < 77.1	ND < 0.0031	ND < 0.0031	ND < 0.0031	ND < 0.0093	ND < 0.0031	--	--	1.6	--	--
SB-1-35'	1/23/2012	35	ND < 6.7	ND < 19.6	ND < 78.2	ND < 0.0033	ND < 0.0033	ND < 0.0033	ND < 0.0098	ND < 0.0033	--	--	2.2	--	--
SB-1-40'	1/23/2012	40	ND < 6.4	ND < 19.4	ND < 77.7	ND < 0.0031	ND < 0.0031	ND < 0.0031	ND < 0.0094	ND < 0.0031	--	--	2.2	--	--
SB-2-20'	1/24/2012	20	**1,500**	ND < 18.1	ND < 72.2	ND < 0.0034	ND < 0.0034	0.848	0.0178	ND < 0.0034	--	--	2.9	--	--
SB-2-35'	1/24/2012	35	ND < 6.5	ND < 19.0	ND < 75.8	ND < 0.0030	ND < 0.0030	ND < 0.0030	ND < 0.0090	ND < 0.0030	--	--	2.7	--	--
SB-3-5'	1/23/2012	5	**392**	**2,710**	**9,400**	0.0088	ND < 0.0035	0.0071	ND < 0.0106	ND < 0.0035	--	--	11.4	--	--
SB-3-10'	1/24/2012	10	**111**	68.4	330	ND < 0.0031	ND < 0.0031	ND < 0.0031	ND < 0.0093	ND < 0.0031	--	--	11.4	--	--
SB-3-20'	1/24/2012	20	**4,390**	102	ND < 68.4	**0.0956**	5.14	**13.2**	**50.8**	ND < 0.0558	--	--	4.4	--	--
SB-3-50'	1/24/2012	50	ND < 6.6	ND < 19.5	ND < 77.8	**0.589**	ND < 0.0035	0.0368	ND < 0.0105	ND < 0.0035	--	--	4.4	--	--
SB-4-15'	1/25/2012	15	**109**	ND < 17.0	ND < 68.2	ND < 0.0031	ND < 0.0031	ND < 0.0031	ND < 0.0092	ND < 0.0031	--	--	3.0	--	--
SB-4-20'	1/25/2012	20	5.7	ND < 16.8	ND < 67.1	ND < 0.0029	ND < 0.0029	ND < 0.0029	ND < 0.0086	ND < 0.0029	--	--	2.5	--	--
SB-4-35'	1/25/2012	35	ND < 6.5	ND < 19.6	ND < 78.4	ND < 0.0029	ND < 0.0029	ND < 0.0029	ND < 0.0087	ND < 0.0029	--	--	4.5	--	--
EW-1-15'	1/25/2012	15	**2,160**	59.9	ND < 70.8	**0.177**	0.53	**9.15**	**11.5**	ND < 0.0598	--	--	3.9	--	--
EW-1-25'	1/26/2012	25	**3,270**	123	ND < 71.7	**2.54**	**12.7**	**10.5**	**51.8**	ND < 2.66	--	--	6.7	--	--
EW-1-30'	1/26/2012	30	**97.6**	ND < 18.8	ND < 75.4	**0.259**	0.0942	0.0849	1.85	ND < 0.0031	--	--	3.2	--	--
EW-2-10'	1/26/2012	10	**38.1**	ND < 19.6	ND < 78.4	0.0042	0.0054	0.0055	0.031	ND < 0.0030	--	--	8.3	--	--
EW-2-15'	1/26/2012	15	**2,270**	25.5	ND < 73.9	**0.129**	0.0142	2.01	0.103	ND < 0.0027	--	--	5.1	--	--
EW-2-30'	1/26/2012	30	9.8	ND < 19.0	ND < 76.0	0.005	ND <0.0027	ND <0.0027	ND < 0.0081	ND <0.0027	--	--	3.3	--	--
EW-3-15'	1/25/2012	15	30.1	ND < 19.0	ND < 75.9	ND < 0.0035	ND < 0.0035	ND < 0.0035	ND < 0.0105	ND < 0.0035	--	--	6.6	--	--
EW-3-20'	1/25/2012	20	**621**	29.7	ND < 64.5	**0.069**	0.0923	0.232	0.699	ND < 0.0031	--	--	2.9	--	--
EW-3-30'	1/25/2012	30	ND < 6.8	ND < 18.7	ND < 74.8	0.0201	0.0101	0.0113	0.036	ND < 0.0031	--	--	3.2	--	--
MW-11	10/19/2018	22.5-24	1	ND < 1.57	ND < 3.92	ND < 0.000471	0.0015	0.00118	ND < 0.00563	ND < 0.000347	ND < 0.000618	ND < 0.000559	0.462	0.000534	0.00354
MW-11 DUP	10/19/2018	22.5-24	1	ND < 1.59	ND < 3.98	ND < 0.000478	0.00238	0.00109	ND < 0.00571	ND < 0.000352	ND < 0.000627	ND < 0.000567	0.316	0.000541	0.00478
MW-11	10/19/2018	30-31.5	2	1.67	ND < 4.16	ND < 0.000500	0.00178	0.000696	ND < 0.00597	ND < 0.000369	ND < 0.000656	ND < 0.000594	1.28	0.000566	0.00375
MW-12	10/19/2018	17.5-19	54	ND < 1.46	ND < 3.65	ND < 0.000443	0.023	0.00183	0.00787	ND < 0.000327	ND < 0.000581	ND < 0.000526	1.03	0.000497	0.003285
MW-12	10/19/2018	22.5-24	**106**	13.8	ND < 3.79	ND < 0.000456	ND < 0.00142	0.0502	0.0314	ND < 0.000336	ND < 0.000598	ND < 0.000541	1.42	0.000516	0.1033
MW-12	10/19/2018	25-26.5	3	ND < 1.54	ND < 3.85	ND < 0.000462	ND < 0.00144	0.00412	ND < 0.00552	ND < 0.000341	ND < 0.000607	ND < 0.000549	1.47	0.000523	0.00468
MW-12	10/19/2018	32.5-34	4	ND < 1.66	ND < 4.16	ND < 0.000500	ND < 0.00156	0.000733	ND < 0.00597	ND < 0.000368	ND < 0.000656	ND < 0.000593	1.39	0.000565	0.00375

Table 5
Soil Samples Analytical Results
Former BP Facility No. 11060
4580 Fauntleroy Way SW, Seattle, Washington

All Concentrations are in milligrams per Kilogram (mg/kg)

Boring	Date	Depth	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Total cPAHs	Total Naphthalenes
Model Toxics Control Act (MTCA) Method A Cleanup Levels			**30/100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**0.1**	**0.005**	**--**	**250**	**0.1**	**5**

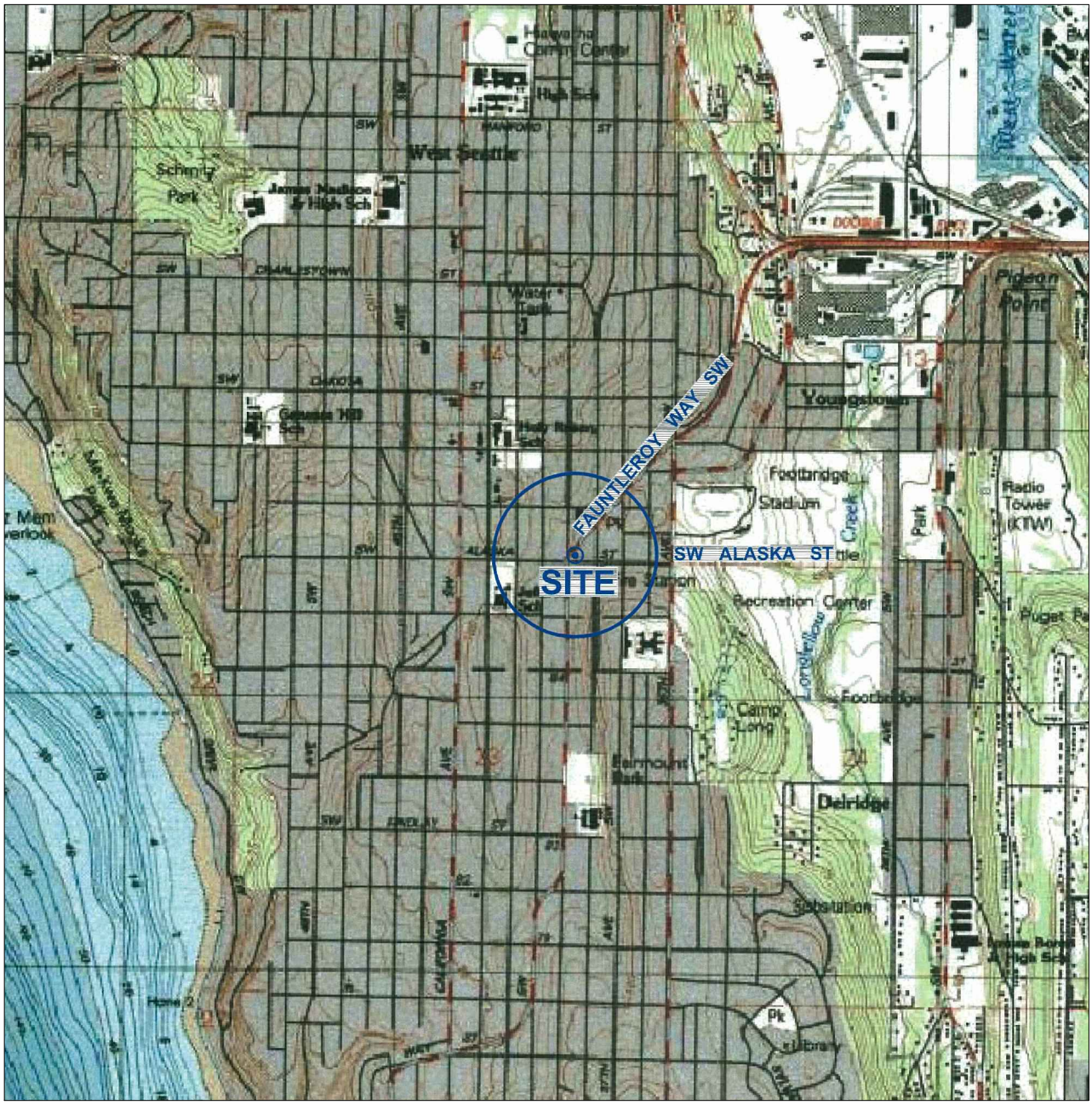
Notes:

MTCA Method A CULs
30/100 = GRO MTCA cleanup levels with benzene present is 30 mg/kg and without is 100 mg/kg
BOLD and highlighted values are greater than their respective MTCA Method A cleanup level
BOLD values are non-detect below the laboratory detection limit where the detection limit is higher than the MTCA Method A cleanup level
Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for Soil, WAC Chapter 173-340-900, Table 740-1

Abbreviations:
-- = Not applicable or not analyzed
ND < = Not detected above the reporting limit
Depth = feet below ground surface
GRO = Total petroleum hydrocarbons (TPH) - Gasoline range Organics analyzed by Ecology Method NWTPH-Gx
DRO = TPH - Diesel Range Organics analyzed by Ecology Method NWTPH-Dx
HO = TPH - Heavy Oil Range Organics analyzed by Ecology Method NWTPH-Dx
BTEX = benzene, toluene, ethylbenzene and total xylenes - collectively by Environmental Protection Agency (EPA) Method 8260C
EDB = 1,2-Dibromoethane by EPA Method 8260C
EDC= 1,2-Dichloroethane by EPA Method 8260C
Lead by EPA 6000/7000 Series
cPAHs (Carcinogenic Polycyclic Aromatic Hydrocarbons) by EPA Method 8270, Total cPAHs are derived according to MTCA Cleanup Regulation Table 740-1 [d]
Naphthalenes samples by EPA Method 8270, total naphthalenes are derived according to the MTCA Cleanup Regulation Table 740-1 [o]

Laboratory Qualifiers
ND < = Not detected greater than laboratory detection limit. Value listed is laboratory detection limit.

FIGURES



REFERENCE: BASE MAP USGS 7.5X15. MIN. TOPO. QUAD.,SEATTLE SOUTH, WA, 1983.

0 2000' 4000'

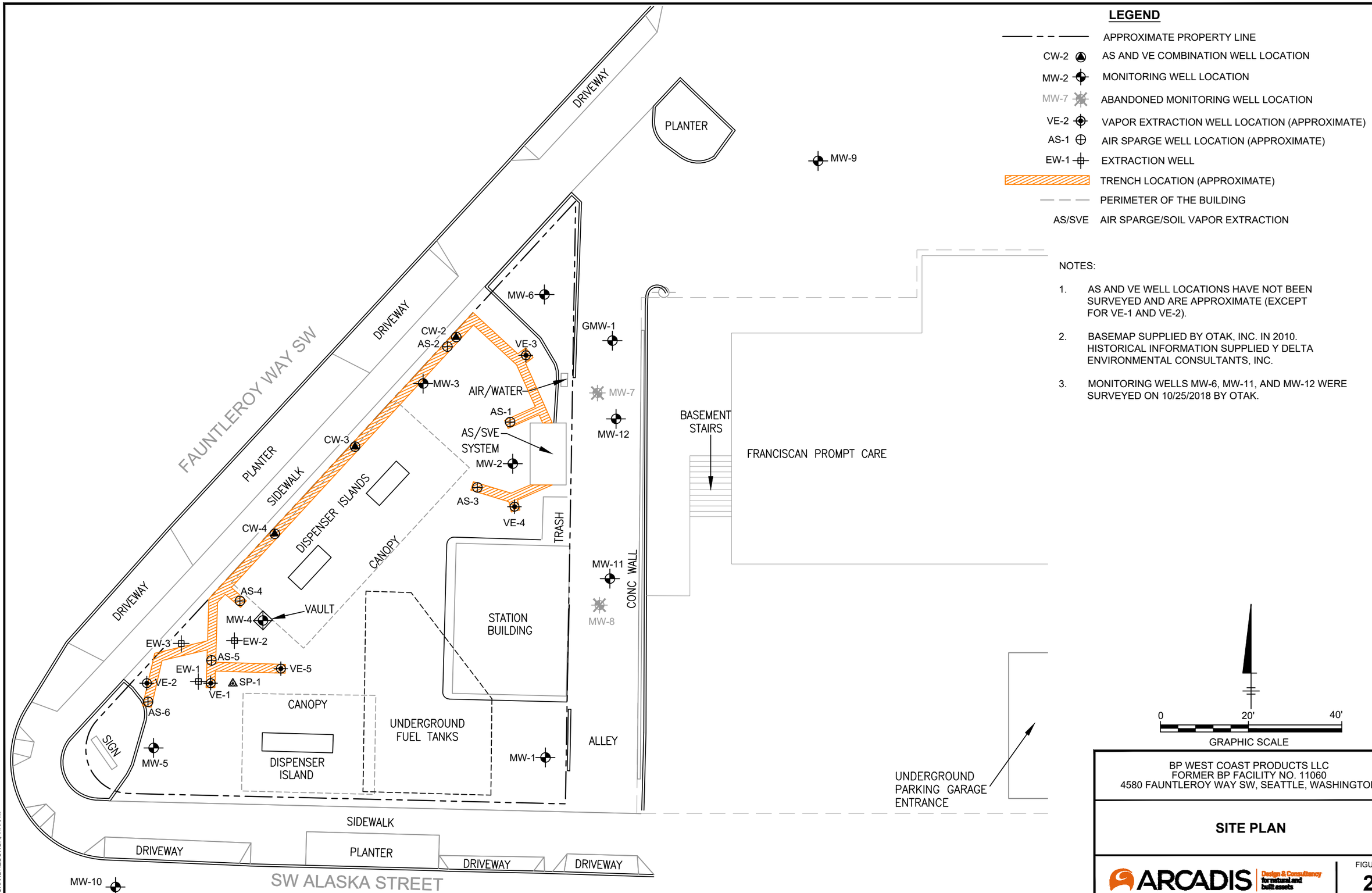
Approximate Scale: 1 in. = 2000 ft.

BP WEST COAST PRODUCTS LLC
FORMER BP FACILITY NO. 11060
4580 FAUNTLEROY WAY SW, SEATTLE, WASHINGTON
2018 ANNUAL SITE STATUS REPORT

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1



LEGEND

- APPROXIMATE PROPERTY LINE
- CW-2 — AS AND VE COMBINATION WELL LOCATION
- MW-2 — MONITORING WELL LOCATION
- MW-7 — ABANDONED MONITORING WELL LOCATION
- VE-2 — VAPOR EXTRACTION WELL LOCATION (APPROXIMATE)
- AS-1 — AIR SPARGE WELL LOCATION (APPROXIMATE)
- EW-1 — EXTRACTION WELL
- TRENCH LOCATION (APPROXIMATE)
- PERIMETER OF THE BUILDING
- AS/SVE — AIR SPARGE/SOIL VAPOR EXTRACTION

NOTES:

1. AS AND VE WELL LOCATIONS HAVE NOT BEEN SURVEYED AND ARE APPROXIMATE (EXCEPT FOR VE-1 AND VE-2).
2. BASEMAP SUPPLIED BY OTAK, INC. IN 2010. HISTORICAL INFORMATION SUPPLIED Y DELTA ENVIRONMENTAL CONSULTANTS, INC.
3. MONITORING WELLS MW-6, MW-11, AND MW-12 WERE SURVEYED ON 10/25/2018 BY OTAK.

0 20' 40'

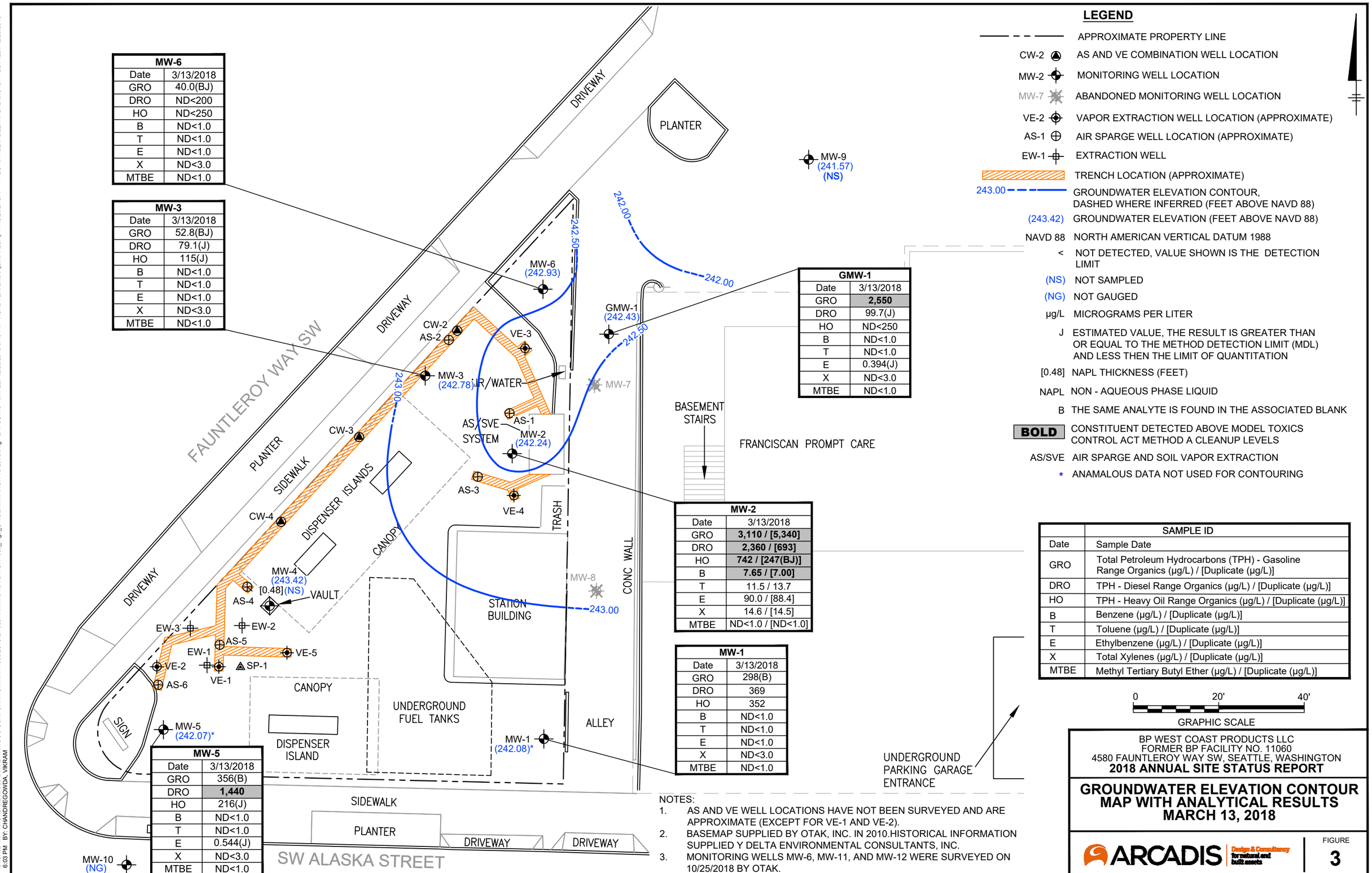
GRAPHIC SCALE

BP WEST COAST PRODUCTS LLC
FORMER BP FACILITY NO. 11060
4580 FAUNTLEROY WAY SW, SEATTLE, WASHINGTON

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2



MW-6	
Date	3/13/2018
GRO	40.0(BJ)
DRO	ND<200
HO	ND<250
B	ND<1.0
T	ND<1.0
E	ND<1.0
X	ND<3.0
MTBE	ND<1.0

MW-3	
Date	3/13/2018
GRO	52.8(BJ)
DRO	79.1(J)
HO	115(J)
B	ND<1.0
T	ND<1.0
E	ND<1.0
X	ND<3.0
MTBE	ND<1.0

GMW-1	
Date	3/13/2018
GRO	**2,550**
DRO	99.7(J)
HO	ND<250
B	ND<1.0
T	ND<1.0
E	0.394(J)
X	ND<3.0
MTBE	ND<1.0

MW-2	
Date	3/13/2018
GRO	**3,110 / [5,340]**
DRO	**2,360 / [693]**
HO	**742 / [247(BJ)]**
B	**7.65 / [7.00]**
T	11.5 / 13.7
E	90.0 / [88.4]
X	14.6 / [14.5]
MTBE	ND<1.0 / [ND<1.0]

MW-1	
Date	3/13/2018
GRO	298(B)
DRO	369
HO	352
B	ND<1.0
T	ND<1.0
E	ND<1.0
X	ND<3.0
MTBE	ND<1.0

MW-5	
Date	3/13/2018
GRO	356(B)
DRO	**1,440**
HO	216(J)
B	ND<1.0
T	ND<1.0
E	0.544(J)
X	ND<3.0
MTBE	ND<1.0

LEGEND

- APPROXIMATE PROPERTY LINE
- CW-2 — AS AND VE COMBINATION WELL LOCATION
- MW-2 — MONITORING WELL LOCATION
- MW-7 — ABANDONED MONITORING WELL LOCATION
- VE-2 — VAPOR EXTRACTION WELL LOCATION (APPROXIMATE)
- AS-1 — AIR SPARGE WELL LOCATION (APPROXIMATE)
- EW-1 — EXTRACTION WELL
- TRENCH LOCATION (APPROXIMATE)
- 243.00 — GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED (FEET ABOVE NAVD 88)
- (243.42) — GROUNDWATER ELEVATION (FEET ABOVE NAVD 88)
- NAVD 88 — NORTH AMERICAN VERTICAL DATUM 1988
- < — NOT DETECTED, VALUE SHOWN IS THE DETECTION LIMIT
- (NS) — NOT SAMPLED
- (NG) — NOT GAUGED
- µg/L — MICROGRAMS PER LITER
- J — ESTIMATED VALUE, THE RESULT IS GREATER THAN OR EQUAL TO THE METHOD DETECTION LIMIT (MDL) AND LESS THEN THE LIMIT OF QUANTITATION
- [0.48] — NAPL THICKNESS (FEET)
- NAPL — NON - AQUEOUS PHASE LIQUID
- B — THE SAME ANALYTE IS FOUND IN THE ASSOCIATED BLANK
- **BOLD** — CONSTITUENT DETECTED ABOVE MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVELS
- AS/SVE — AIR SPARGE AND SOIL VAPOR EXTRACTION
- * — ANAMALOUS DATA NOT USED FOR CONTOURING

	SAMPLE ID
Date	Sample Date
GRO	Total Petroleum Hydrocarbons (TPH) - Gasoline Range Organics (µg/L) / [Duplicate (µg/L)]
DRO	TPH - Diesel Range Organics (µg/L) / [Duplicate (µg/L)]
HO	TPH - Heavy Oil Range Organics (µg/L) / [Duplicate (µg/L)]
B	Benzene (µg/L) / [Duplicate (µg/L)]
T	Toluene (µg/L) / [Duplicate (µg/L)]
E	Ethylbenzene (µg/L) / [Duplicate (µg/L)]
X	Total Xylenes (µg/L) / [Duplicate (µg/L)]
MTBE	Methyl Tertiary Butyl Ether (µg/L) / [Duplicate (µg/L)]

0 20' 40'

GRAPHIC SCALE

NOTES:
1. AS AND VE WELL LOCATIONS HAVE NOT BEEN SURVEYED AND ARE APPROXIMATE (EXCEPT FOR VE-1 AND VE-2).
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BP WEST COAST PRODUCTS LLC
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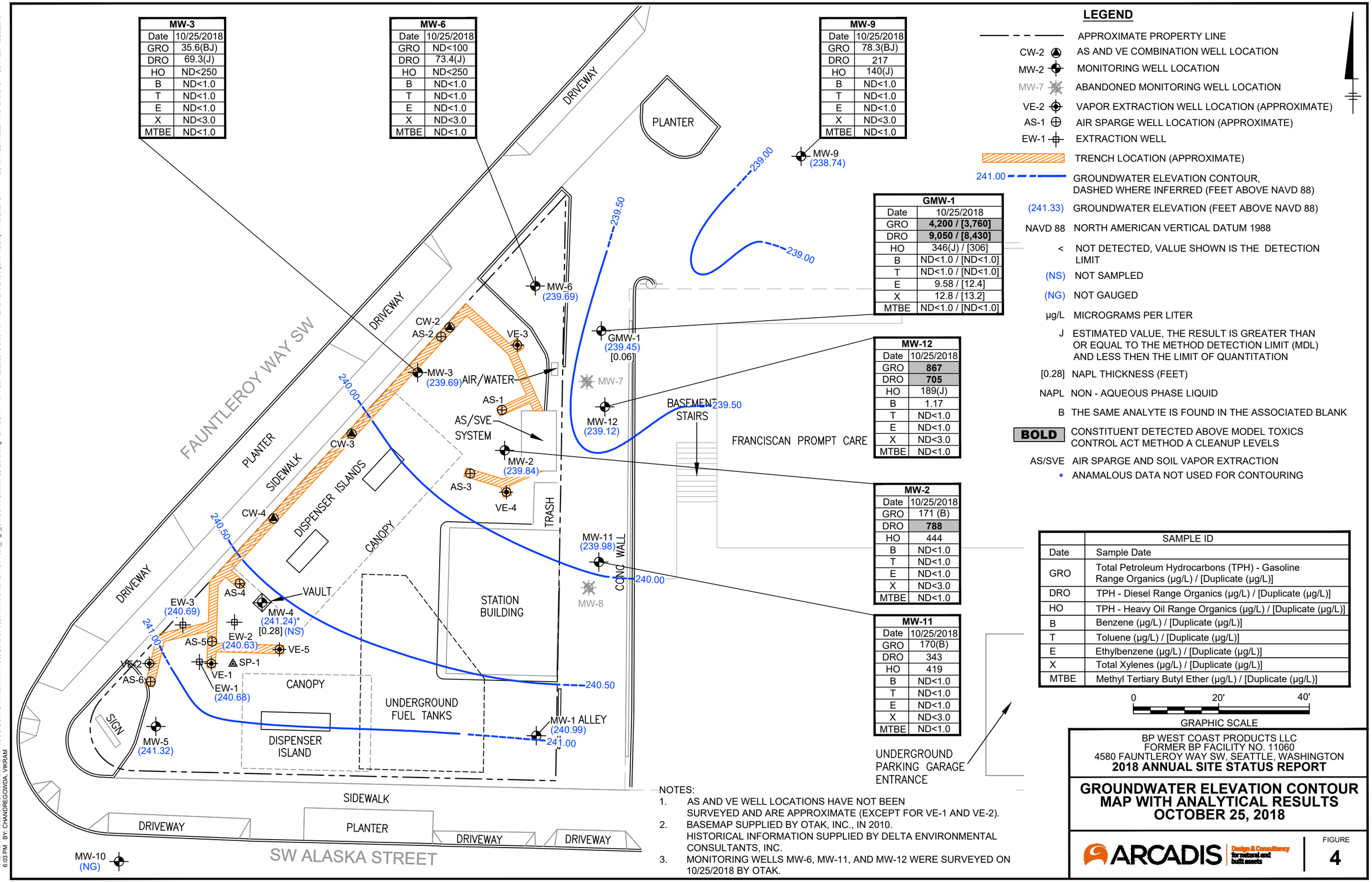
2018 ANNUAL SITE STATUS REPORT

GROUNDWATER ELEVATION CONTOUR MAP WITH ANALYTICAL RESULTS MARCH 13, 2018

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

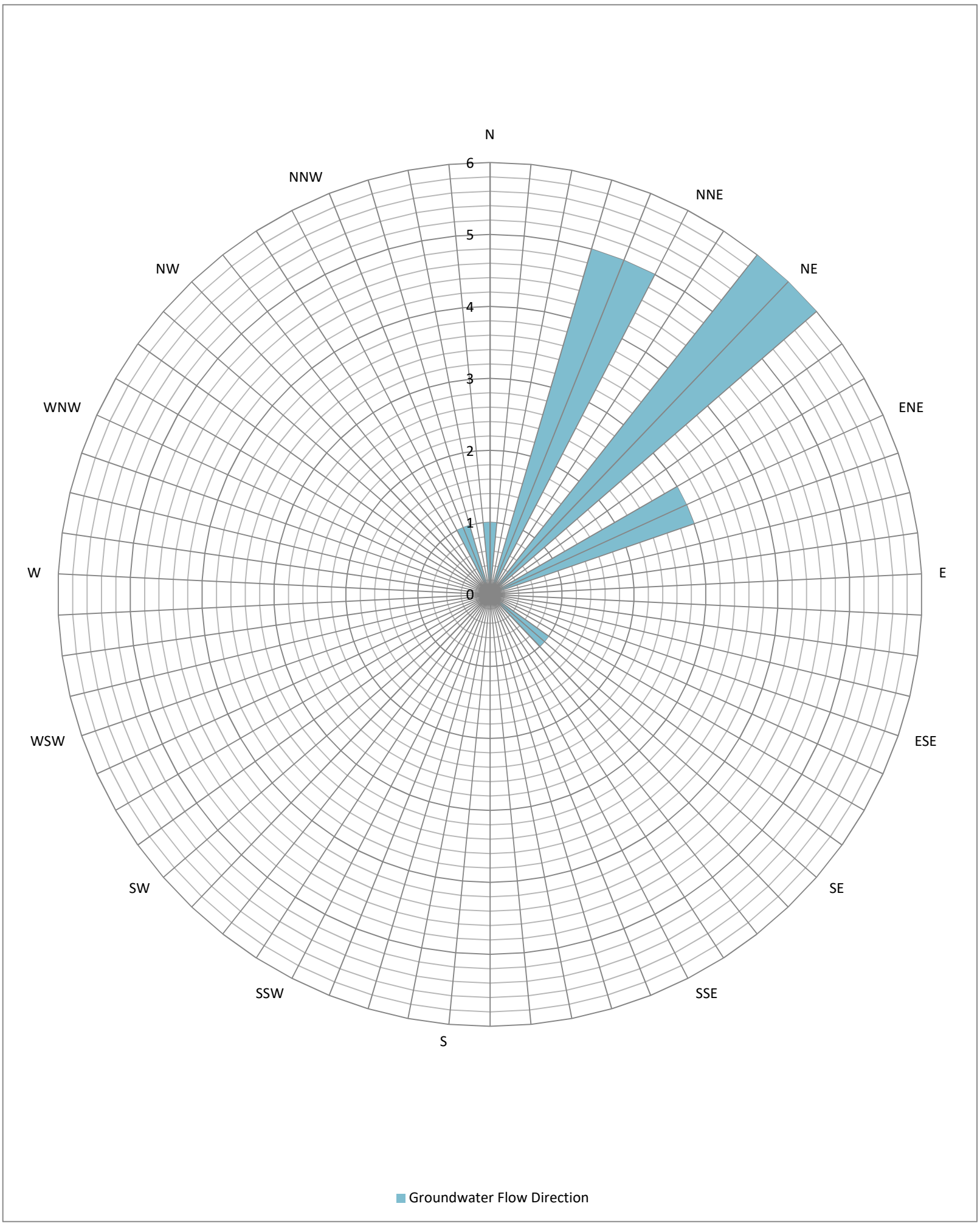


BP WEST COAST PRODUCTS LLC
FORMER BP FACILITY NO. 11060
4580 FAUNTLEROY WAY SW, SEATTLE, WASHINGTON
2018 ANNUAL SITE STATUS REPORT

GROUNDWATER ELEVATION CONTOUR MAP WITH ANALYTICAL RESULTS OCTOBER 25, 2018

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4



Legend

N=North
NNE= North Northeast
NE= Northeast
ENE= East Northeast
E= East
ESE= East Southeast
SE=Southeast
SSE= South Southeast
S= South
SW= Southwest
SSW= South Southwest
WSW= West South West
W= West
WNW= West Northwest
NW=Northwest
NNW= North Northwest

Note

Rose diagram based on gradient directions from groundwater monitoring events conducted by ARCADIS since top of casing survey in March 2010.

Number of Events Observed = 17

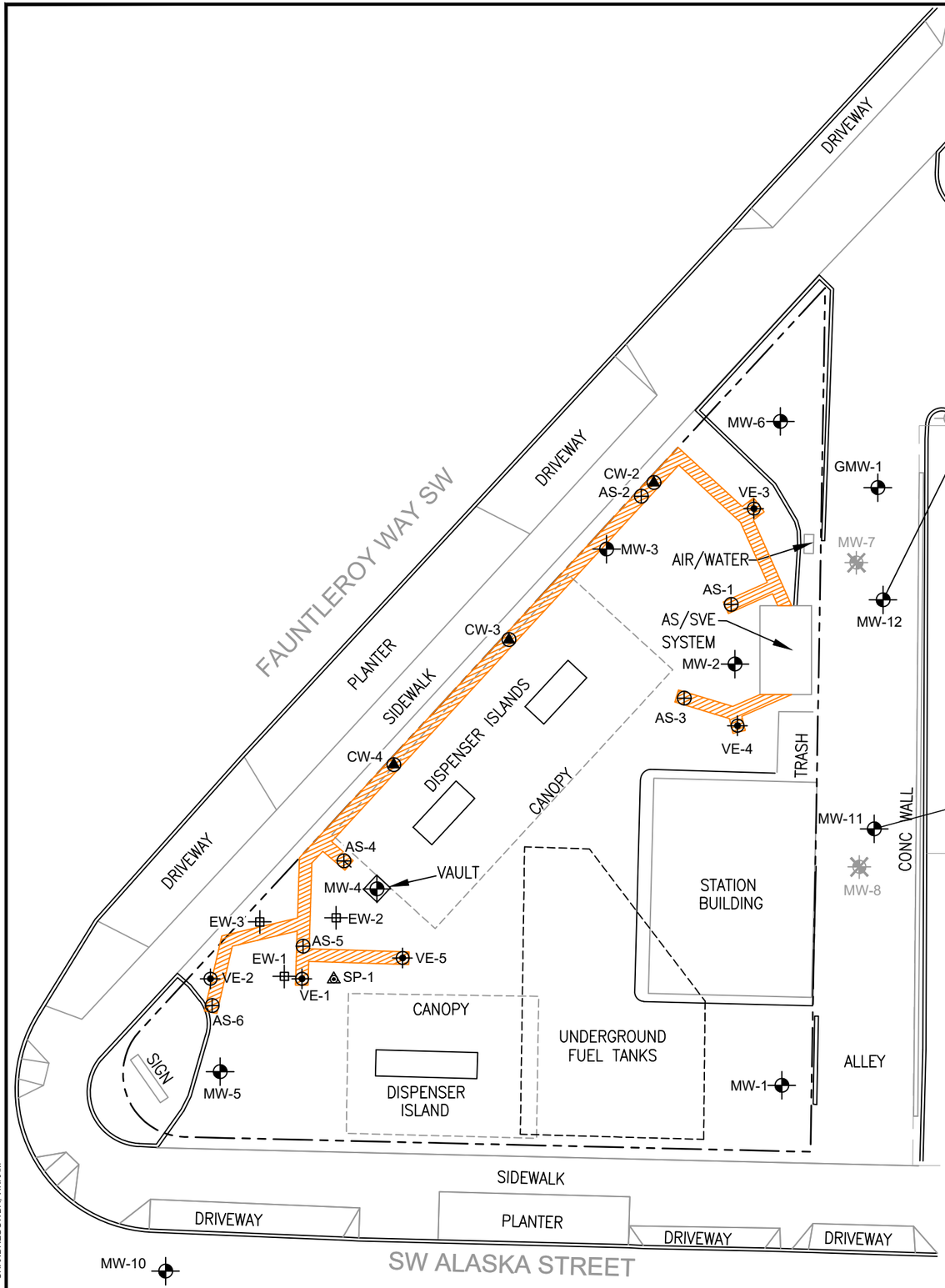
BP WEST COAST PRODUCTS LLC
FORMER BP FACILITY NO. 11060
4580 FAUNTLEROY WAY SW, SEATTLE, WASHINGTON

2018 ANNUAL SITE STATUS REPORT

HISTORICAL GROUNDWATER GRADIENT DIRECTION ROSE DIAGRAM

ARCADIS Design & Consultancy for natural and built assets

FIGURE 5



LEGEND

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- EW-1 — EXTRACTION WELL
- TRENCH LOCATION (APPROXIMATE)
- PERIMETER OF THE BUILDING
- AS/SVE — AIR SPARGE/SOIL VAPOR EXTRACTION
- < — NOT DETECTED, VALUE SHOWN IS THE DETECTION LIMIT
- **BOLD** — CONSTITUENT DETECTED ABOVE MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVELS

NOTES:

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3. MONITORING WELLS MW-6, MW-11, AND MW-12 WERE SURVEYED ON 10/25/2018 BY OTAK.

MW-12				
Depth(feet)	17.5-19	22.5-24	25-26.5	32.5-34
Date	10/19/18	10/19/18	10/19/18	10/19/18
GRO	54.2	**106**	3.06	3.67
DRO	ND < 1.46	13.8	ND < 1.54	ND < 1.66
HO	ND < 3.65	ND < 3.79	ND < 3.85	ND < 4.16
B	ND < 0.000443	ND < 0.000456	ND < 0.000462	ND < 0.000500
T	0.023	ND < 0.00142	ND < 0.00144	ND < 0.00156
E	0.00183	0.0502	0.00412	0.000733
X	0.00787	0.0314	ND < 0.00552	ND < 0.00597
MTBE	ND < 0.000327	ND < 0.000336	ND < 0.000341	ND < 0.000368
EDB	ND < 0.000581	ND < 0.000598	ND < 0.000607	ND < 0.000656
EDC	ND < 0.000526	ND < 0.000541	ND < 0.000549	ND < 0.000593
Total Lead	1.03	1.42	1.47	1.39
Total cPAHs	0.000497	0.000516	0.000523	0.000565
Total Naph	0.003285	0.1033	0.00468	0.00375

MW-11		
Depth(feet)	22.5-24	30-31.5
Date	10/19/2018	10/19/2018
GRO	1.37 / [1.41]	1.62
DRO	ND < 1.57 / [ND < 1.59]	1.67
HO	ND < 3.92 / [ND < 3.98]	ND < 4.16
B	ND < 0.000471 / [ND < 0.000478]	ND < 0.000500
T	0.0015 / [0.00238]	0.00178
E	0.00118 / [0.00109]	0.000696
X	ND < 0.00563 / [ND < 0.00571]	ND < 0.00597
MTBE	ND < 0.000347 / [ND < 0.000352]	ND < 0.000369
EDB	ND < 0.000618 / [ND < 0.000627]	ND < 0.000656
EDC	ND < 0.000559 / [ND < 0.000567]	ND < 0.000594
Total Lead	0.462 / [0.316]	1.28
Total cPAHs	0.000534 / [0.000541]	0.000566
Total Naph	0.00354 / [0.00478]	0.00375

UNDERGROUND PARKING GARAGE ENTRANCE

	SAMPLE ID
Depth(feet)	Sample Depth in feet
Date	Sample Date
GRO	Total Petroleum Hydrocarbons (TPH) - Gasoline Range Organics (mg/kg) / [Duplicate (mg/kg)]
DRO	TPH - Diesel Range Organics (mg/kg) / [Duplicate (mg/kg)]
HO	TPH - Heavy Oil Range Organics (mg/kg) / [Duplicate (mg/kg)]
B	Benzene (mg/kg) / [Duplicate (mg/kg)]
T	Toluene (mg/kg) / [Duplicate (mg/kg)]
E	Ethylbenzene (mg/kg) / [Duplicate (mg/kg)]
X	Total Xylenes (mg/kg) / [Duplicate (mg/kg)]
MTBE	Methyl Tertiary Butyl Ether (mg/kg) / [Duplicate (mg/kg)]
EDB	Ethylene dibromide (mg/kg) / [Duplicate (mg/kg)]
EDC	1,2-Dichloroethane (mg/kg) / [Duplicate (mg/kg)]
Total cPAHs	Total Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg) / [Duplicate (mg/kg)]
Total Naph	Total Naphthalenes (mg/kg) / [Duplicate (mg/kg)]

0 20' 40'

GRAPHIC SCALE

BP WEST COAST PRODUCTS LLC
FORMER BP FACILITY NO. 11060
4580 FAUNTLEROY WAY SW, SEATTLE, WASHINGTON
2018 ANNUAL SITE STATUS REPORT

SOIL BORING ANALYTICAL MAP

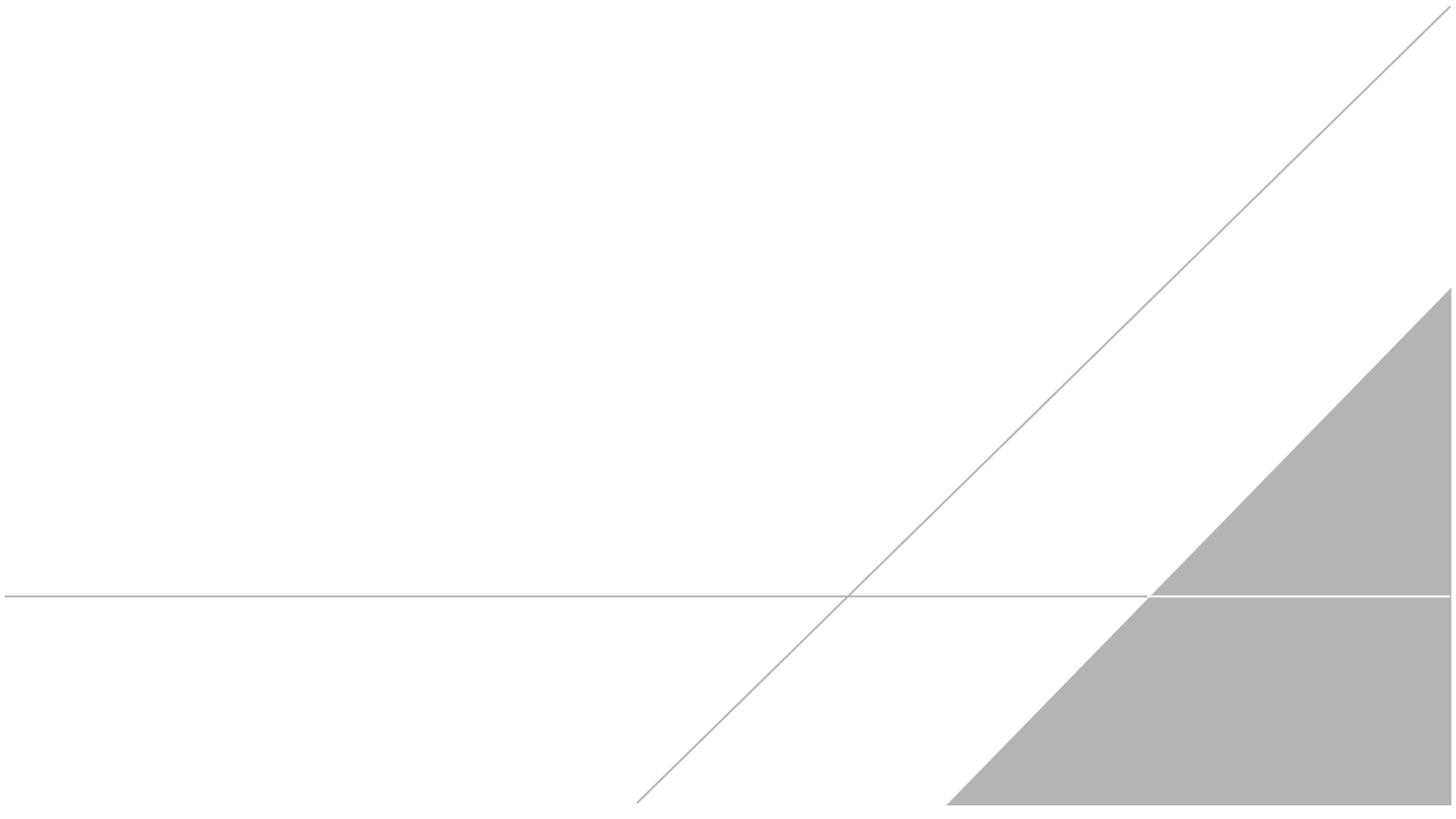
ARCADIS Design & Consultancy for natural and built assets

FIGURE 6

APPENDICES

APPENDIX A

Groundwater Monitoring Field Data Sheets



ARCADIS Design & Co for natural a built assets

Groundwater Gauging Form

Project No.: GP18BPWC-WA1

Site Location:

Page 1 of

Prepared By: AP

Date: 10/25/18

Gauging Equipment: Water Probe / (Oil-Water Interface Probe) Other

Well ID	Time	Sheen or Odor	LNAPL Depth	LNAPL Thickness	DTW	TD	PID	Notes
MW-5	0838	—	—	—	27.13	—	0.7	
MW-1	0848	—	—	—	26.98	—	35.9	
MW-11	0853	—	—	—	26.40	—	1.4	
MW-12	0858	slight HCLO	—	—	27.39	—	211.0	
GMW-1	0903	slight HCLO	26.16	0.06	26.22	—	289.1	
MW-6	0909	—	—	—	26.28	—	1.2	
MW-2	0914	—	—	—	26.85	—	2.3	
MW-3	0920	—	—	—	26.11	—	0.3	
MW-9	0925	—	—	—	24.61	—	0.5	
EW-1	0930	—	—	—	27.52	—	3.7	
EW-3	0934	—	—	—	27.81	—	10.3	
EW-2	0939	—	—	—	27.30	—	1.4	
MW-4	0945	HCLO	26.48	0.28	26.76 AP	—	1.9	

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. BP18WC.WA48 Well ID GMW-1 Date 10/25/08

Project Name/Location 11060 Weather rain

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 20 | Casing Diameter (in.) 2 | Well Material PVC / SS

Static Water Level (ft-bmp) 26.22 | Total Depth (ft-bmp) 34 | Water Column/ Gallons in Well

MP Elevation | Pump Intake (ft-bmp) 31 | Purge Method: Centrifugal / Submersible / Other peristaltic pump | Sample Method Grab

Pump On/Off 1622 | Volumes Purged

Sample Time: Label 1640 Start 1643 End 1709 | Replicate/ Code No. DUP-1 | Sampled by KF

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1625	3	150	27.02		6.27	826	—	0.86	16.2	9.1		
1628	6	150	27.40		6.27	816	—	0.60	16.2	3.5		
1631	9	150	27.60		6.27	813	—	0.56	16.0	1.2		
1634	12	150	27.70		6.29	819	—	0.57	16.1	-2.2		
1637	15	150	27.78		6.29	821	—	0.54	16.1	-4.6		
1640	18	150	27.80		6.29	823	—	0.55	16.0	-6.4		
1643	21	150	27.80		6.30	826	—	0.54	16.1	-8.4		

Constituents Sampled	Container	Number	Preservative
GRO	HCl VOA	3	HCl
DRO/HO	HCl VOA	2	HCl
BTEX / MTBE / EDC	HCl VOA	3	HCl
Total Pb	250 mL poly	1	HNO_3
Diss. Pb	250 mL poly	1	none
cPAHs / Naph.	VOA	2	none
EDB	VOA	3	$Na_2S_2O_3$

Well Casing Volumes

Gallons/Foot 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: ~~Road~~ alley

Condition of Well: good

Well Completion: (Flush Mount) / Stick Up

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well:

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP18WC.WA48 Well ID MW-1 Date 10/25/18

Project Name/Location 11060 Weather rain

Measuring Pt. Description TOC Screen Setting (ft-bmp) 17 Casing Diameter (in.) ____ Well Material ✓ PVC ____ SS

Static Water Level (ft-bmp) 26.93 Total Depth (ft-bmp) 27.21 Water Column/ Gallons in Well ____

MP Elevation ____ Pump Intake (ft-bmp) ____ Purge Method: ____ Centrifugal ____ Submersible ____ Other ____ Sample Method ____

Pump On/Off ____ Volumes Purged ____

Sample Time: Label ____ Start ____ End ____ Replicate/ Code No. ____ Sampled by ____

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
		insufficient water										

Constituents Sampled	Container	Number	Preservative

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: ____ Well Locked at Arrival: Yes / No

Condition of Well: ____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: ____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. [redacted] BP18WC.WA48 Well ID MW-2

Date 10/25/18

Project Name/Location 11060

Weather Cloudy / rainy

Measuring Pt. Description TOC

Screen Setting (ft-bmp) 18

Casing Diameter (in.) 4

Well Material X PVC ___ SS

Static Water Level (ft-bmp) 26.85

Total Depth (ft-bmp) 27.85

Water Column/ Gallons in Well

MP Elevation

Pump Intake (ft-bmp) 27'

Purge Method: LFP ___ Centrifugal ___ Submersible ___ Other

Sample Method Grab

Pump On/Off 1539

Volumes Purged

Sample Time: Label 1600 Start ___ End ___

Replicate/ Code No.

Sampled by KF

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH ±0.1	Cond. (mMhos) (mS/cm) ±10%	Turbidity (NTU)	Dissolved Oxygen (mg/L) ± 10%	Temp. (°C) (°F) ± 1.0	Redox (mV) ± 10%	Appearance Color	Appearance Odor
1543	4	100	26.85		6.71	552	—	0.72	16.3	24.0		
1546	7	100			6.70	551	—	0.69	16.4	22.3		
1549	10	100			6.69	548	—	0.70	16.4	21.4		
1552	13	100			6.69	546	—	0.70	16.4	20.7		
~~1555~~	~~16~~	~~100~~			6.69	545	—	0.70	16.4	20.5		
1555	16	100										

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO/HO	VOA	2	HCl
BTEX/MTBE/EDC	VOA	2	HCl
Total Pb	250 mL poly	1	HNO_3
Diss. Pb	250 mL poly	1	none
cPAHs / Naph.	VOA	2	none
EDB	VOA	3	NaThio

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location:

Condition of Well:

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well:

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GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP18WC.WA48 Well ID MW-3 Date 10/25/18

Project Name/Location 11060 Weather overcast, ~60°F

Measuring Pt. Description TOC Screen Setting (ft-bmp) 15-30 Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 26.10 Total Depth (ft-bmp) 30 Water Column/ Gallons in Well

MP Elevation ____ Pump Intake (ft-bmp) 28 Purge Method: LFP Centrifugal Submersible Other peri Sample Method Grab

Pump On/Off 1417 Volumes Purged ____

Sample Time: Label 1435 Start ____ End ____ Replicate/ Code No. ____ Sampled by AP

Time	Minutes Elapsed	Rate (gpm) (~~mL/min~~)	Depth to Water (ft)	~~Gallons~~ mL Purged	pH	Cond. (~~mMhos~~ µS/cm) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1422	5	200	26.32	1000	6.57	390.1	—	1.89	16.1	60.0	clear	no
1425	8	200	26.40	1600	6.54	386.3	—	1.83	16.1	60.9	"	"
1428	11	200	26.46	2200	6.53	386.0	—	1.68	16.1	61.7	"	"
1431	14	200	26.53	2800	6.52	385.7	—	1.72	16.1	62.4	"	"

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO/HO	VOA	2	HCl
BTEX/MTBE/EDC	VOA	2	HCl
Total Pb	250 mL poly	1	HNO_3
Diss. Pb	250 mL poly	1	none
cPAHs/Naph.	VOA	2	none
EDB	VOA	3	NaThio

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: ____ Well Locked at Arrival: Yes / No

Condition of Well: ____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: ____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP18WC.WA48 Well ID MW-5 Date 10/25/18

Project Name/Location 11060 Weather rain

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 17 | Casing Diameter (in.) ____ | Well Material ____ PVC ____ SS

Static Water Level (ft-bmp) 27.1 | Total Depth (ft-bmp) 27.75 | Water Column/ Gallons in Well ____

MP Elevation ____ | Pump Intake (ft-bmp) ____ | Purge Method: GRP; Centrifugal ____; Submersible ____; Other ____ | Sample Method Grab

Pump On/Off 133 | Volumes Purged ____

Sample Time: Label ____ Start ____ End ____ | Replicate/ Code No. ____ | Sampled by ____

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
insufficient water												

Constituents Sampled	Container	Number	Preservative

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ____ Well Locked at Arrival: Yes / No

Condition of Well: ____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: ____

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GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP18WC.WA48 Well ID MW-6

Date 10/25/18

Project Name/Location 11060

Weather overcast, 40°s

Measuring Pt. Description TOC

Screen Setting (ft-bmp) 15-30

Casing Diameter (in.) 2

Well Material X PVC ___ SS

Static Water Level (ft-bmp) 26.26

Total Depth (ft-bmp) 29.20

Water Column/ Gallons in Well

MP Elevation

Pump Intake (ft-bmp) 27.50

Purge Method: ~~LFP~~ Centrifugal ___ Submersible ___ Other peri.

Sample Method Grab

Pump On/Off 1538

Volumes Purged

Sample Time: Label 1605 Start ___ End ___

Replicate/ Code No.

Sampled by AP

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ mL Purged	pH	Cond. (~~mMhos~~) (mS/cm) µS/cm	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1543	5	200	27.35	1000	6.75	366.6	—	0.88	15.6	70.3	clear	no
		– well	pumped	dry	will	take	grab					
		sample	when	recharged								

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO/HO	VOA	2	HCl
BTEX/MTBE/EDC	VOA	2	HCl
Total Pb	250mL poly	1	HNO_3
Diss. Pb.	250mL poly	1	none
cPAHs / Napth.	VOA	2	none
EDB	VOA	3	NaThio

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: ___ Well Locked at Arrival: Yes / No

Condition of Well: ___ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well:

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP18 WC. WA48 Well ID MW-9 Date 10/25/18

Project Name/Location 11060 Weather rain

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 15 | Casing Diameter (in.) ____ | Well Material ✓ PVC ____ SS

Static Water Level (ft-bmp) 24.62 | Total Depth (ft-bmp) 35.61 | Water Column/ Gallons in Well ____

MP Elevation ____ | Pump Intake (ft-bmp) 30 | Purge Method: LFP Centrifugal ____ Submersible ____ Other ____ | Sample Method Grab

Pump On/Off 1420/ | Volumes Purged ____

Sample Time: Label 1440 Start 1447 End ____ | Replicate/ Code No. ____ | Sampled by KF

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ Purged	pH (mL ±0.1)	Cond. (mMhos) (mS/cm) ±10%	Turbidity (NTU)	Dissolved Oxygen (mg/L) ±10%	Temp. (°C) (°F) ±1.0	Redox (mV) ±10%	Appearance Color	Appearance Odor
1425	5	200	24.62		6.44	640	—	0.63	15.9	20.4		
1428	8	200			6.95	648	—	0.58	15.8	15.9		
1431	11	200			6.45	644	—	0.59	15.8	13.1		
1434	14	200			6.45	642	—	0.57	15.8	11.9		
1437	17	200			6.45	641	—	0.56	15.8	11.0		
1440	20	200			6.45	639	—	0.56	15.8	10.1		
1443	23	200			6.44	640	—	0.53	15.8	10.0		
1446	26	200			6.44	640	—	0.54	15.8	9.9		

Constituents Sampled	Container	Number	Preservative
GRO	~~HCl~~ VOA	3	HCl
DRO/HO	VOA	2	HCl
BTEX/MTBE/EDC	VOA	2	HCl
Total Pb	250 mL poly	1	HNO_3
Diss. Pb	250 mL poly	1	none
cPAHs / Napth.	VOA	2	none
EDB	VOA	3	NaThio

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ____ Well Locked at Arrival: Yes / No

Condition of Well: ____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: ____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page ____ of ____

Project No. BP #BWC.WA48 Well ID MW-11 Date 10/25/18

Project Name/Location 11060 Weather rain

Measuring Pt. Description TOC Screen Setting (ft-bmp) 15 - 30.50 Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 26.48 Total Depth (ft-bmp) 31.50 Water Column/ Gallons in Well

MP Elevation ____ Pump Intake (ft-bmp) 28 Purge Method: LFP Centrifugal Submersible Other peristaltic Sample Method Grab

Pump On/Off 1245 Volumes Purged ____

Sample Time: Label 1305 Start ____ End ____ Replicate/ Code No. ____ Sampled by AP

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ mL Purged	pH	Cond. (~~mMhos~~) (~~mS/cm~~) µS/cm	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
1250	5	200	26.63	1000	6.32	1441	—	4.22	16.4	87.3	clear	no
1253	8	200	26.70	1600	6.47	1449	—	3.70	16.5	85.4	"	"
1256	11	200	26.77	2200	6.55	1457	—	3.52	16.5	84.8	"	"
1259	14	200	26.85	2800	6.60	1458	—	3.52	16.6	84.7	"	"
1302	17	200	26.92	3400	6.62	1465	—	3.45	16.5	84.8	"	"

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO/HO	VOA	2	HCl
BTEX/MTBE/EDC	VOA	2	HCl
Total Pb	250mL poly	1	HNO_3
Dissolved Pb	250 mL poly	1	none
cPAHs / Naph.	VOA	2	none
EDB	VOA	3	NaThio

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ____ Well Locked at Arrival: Yes / No

Condition of Well: ____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: ____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. BP18WC-WA48 Well ID MW-12 Date 10/25/18

Project Name/Location 1060 Weather rain

Measuring Pt. Description ~~30'~~ TOC Screen Setting (ft-bmp) 15 Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 27.40 Total Depth (ft-bmp) 34.00 Water Column/ Gallons in Well

MP Elevation ___ Pump Intake (ft-bmp) ___ Purge Method: LFP Centrifugal ___ Submersible ___ Other peri pump Sample Method Grab

Pump On/Off 1227 Volumes Purged ___

Sample Time: Label 1240 Start 1227 End 1305 Replicate/ Code No. ___ Sampled by KF

					±0.1	±10%	X	10%	1.0	±10%		
Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH ~~Field~~	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1227	0	200	27.40		6.82	2792	—	4.84	16.0	175.0	—	—
1230	3	200			6.90	2379	—	4.99	16.1	167.4		
1233	6	200			6.87	2227	—	4.99	16.2	164.6		
1236	9	200			~~6.80~~	2186	—	5.06	16.1	162.9		
1239	12	200	28.25		6.77	2155	—	~~5.08~~	16.1	161.0		
	~~15~~						—					

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO / HO	VOA	2	HCl
BTEX / MTBE / EDC	VOA	2	HCl
Total Pb	250 mL poly	1	HNO_3
Diss. Pb	250 mL poly	1	none
cPAHs / Naph.	VOA	2	none
EDB	VOA	3	$Na_2S_2O_3$

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: alley Well Locked at Arrival: (Yes) / No

Condition of Well: good/new Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well:

ARCADIS Design & Consultancy for natural and built assets

Groundwater Monitoring Field Data Form
Site: WA-11060

Gauging Data

Date 03/13/2018

Sampler Joe Latham

Well	Date/Time	Depth To Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	Remarks
GMW-1	03/13/2018 09:09	23.20	34.12		
MW-1	03/13/2018 10:02	25.35	27.29		
MW-2	03/13/2018 09:48	24.45	27.87		
MW-3	03/13/2018 09:39	23.22	34.20		
MW-4	03/13/2018 10:23	24.74		24.26	
MW-5	03/13/2018 10:06	26.39	27.70		
MW-6	03/13/2018 09:29	23.04	29.38		
MW-9	03/13/2018 08:57	21.78	34.92		

ARCADIS Design & Consultancy for natural and built assets

Groundwater Monitoring Field Data Form
Site: WA-11060

GMW-1

Date	03/13/2018	Weather Conditions	Cloudy	Depth to Water (ft bmp)	23.20
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	34.12
Location	Vandenberg AFB	Sampler	Pcollins|jlatham	Water Column in Well	10.92
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	7.12
Purge Method	No Purge Device	Casing Diameter (in)	4	Total Volume to Remove	
Purge Volume Units	ml	Pump Intake Depth (ft bmp)			
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:51		750	14.7	6.03	1009		1.37		23.20

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	11:45	Ferrous Iron	
Sample ID	WA-11060-GMW-1(1Q18)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	Clear	EB Sample ID	
Odor	None	Remarks	
Appearance			

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

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Groundwater Monitoring Field Data Form
Site: WA-11060

MW-1

Date	03/13/2018	Weather Conditions	Cloudy	Depth to Water (ft bmp)	25.35
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	27.29
Location	Vandenberg AFB	Sampler	Pcollins|jlatham	Water Column in Well	1.94
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	
Purge Method	No Purge Device	Casing Diameter (in)		Total Volume to Remove	
Purge Volume Units	ml	Pump Intake Depth (ft bmp)			
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature ºC	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:33		1000	15.1	0.95	994	382.3	0.95		25.35

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	11:20	Ferrous Iron	
Sample ID	WA-11060-MW-1(1Q18)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	Clear	EB Sample ID	
Odor	None	Remarks	
Appearance			

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required		X		
Well Secured on initial inspection		X		
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

Groundwater Monitoring Field Data Form
Site: WA-11060

MW-2

Date	03/13/2018	Weather Conditions	Cloudy|Cold	Depth to Water (ft bmp)	24.45
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	27.87
Location	Vandenberg AFB	Sampler	Jlatham|jlittle	Water Column in Well	3.42
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	2.23
Purge Method	No Purge Device	Casing Diameter (in)	4	Total Volume to Remove	
Purge Volume Units	ml	Pump Intake Depth (ft bmp)			
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature ºC	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:05		1500	14.9	6.49	841	269.9	1.06		24.45

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	13:00	Ferrous Iron	
Sample ID	WA-11060-MW-2(1Q18)	MS/MSD Sample Time	
Duplicate Sample ID	DUP-1	MS/MSD Sample ID	
Dup Sample Time	13:10	EB Time	
Color	Clear	EB Sample ID	
Odor	Slight hclo	Remarks	
Appearance			

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required		X		
Well Secured on initial inspection		X		
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

Groundwater Monitoring Field Data Form
Site: WA-11060

MW-3

Date	03/13/2018	Weather Conditions	Cloudy	Depth to Water (ft bmp)	23.22
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	34.20
Location	Vandenberg AFB	Sampler	Jlittle|pcollins	Water Column in Well	10.98
Gauge or Sample	Gauge and Sample	Casing Material	PVC	Gallons in Well	7.16
Purge Method	No Purge Device	Casing Diameter (in)	4	Total Volume to Remove	
Purge Volume Units	ml	Pump Intake Depth (ft bmp)			
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature ºC	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
12:53		800	14.4	6.44	592.3		4.26		23.22

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	12:40	Ferrous Iron	
Sample ID	WA-11060-MW-3(1Q18)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	Clear	EB Sample ID	
Odor	None	Remarks	
Appearance			

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition			X	
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

Groundwater Monitoring Field Data Form
Site: WA-11060

MW-5

Date	03/13/2018	Weather Conditions	Cold|Rain	Depth to Water (ft bmp)	26.39
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	27.70
Location	Vandenberg AFB	Sampler		Water Column in Well	
Gauge or Sample	Gauge and Sample	Casing Material		Gallons in Well	
Purge Method	No Purge Device	Casing Diameter (in)		Total Volume to Remove	
Purge Volume Units	ml	Pump Intake Depth (ft bmp)			
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/ min or gal/min)	Cuml Vol Purged	Temperature ° C	pH	Conductivity (uS/ cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)

Sampling Summary

Did Well Dewater?		Alkalinity	
Sample Time		Ferrous Iron	
Sample ID		MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color		EB Sample ID	
Odor		Remarks	
Appearance			

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well Secured on initial inspection		X		
Well ID is Clearly Marked		X		
Is water present in well box		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)		X		
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		

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Groundwater Monitoring Field Data Form
Site: WA-11060

MW-6

Date	03/13/2018	Weather Conditions	Cloudy	Depth to Water (ft bmp)	23.04
Project Number	GP09BPNA.WA48	Water Quality Meter	YSI		
Location	Vandenberg AFB	Sampler	Pcollins|jlatham	Measured Well Depth (ft bmp)	29.38
Gauge or Sample	Gauge and Sample	Casing Material		Water Column in Well	6.34
Purge Method	No Purge Device	Casing Diameter (in)	2	Gallons in Well	1.03
Purge Volume Units	ml	Pump Intake Depth (ft bmp)		Total Volume to Remove	
Sampling Type	Volume Purge – Hand Bail	Casing Volume to Remove			
Comments					

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cuml Vol Purged	Temperature ° C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
10:48		1000	15.0	6.09	206.6	410.0	5.55		

Sampling Summary

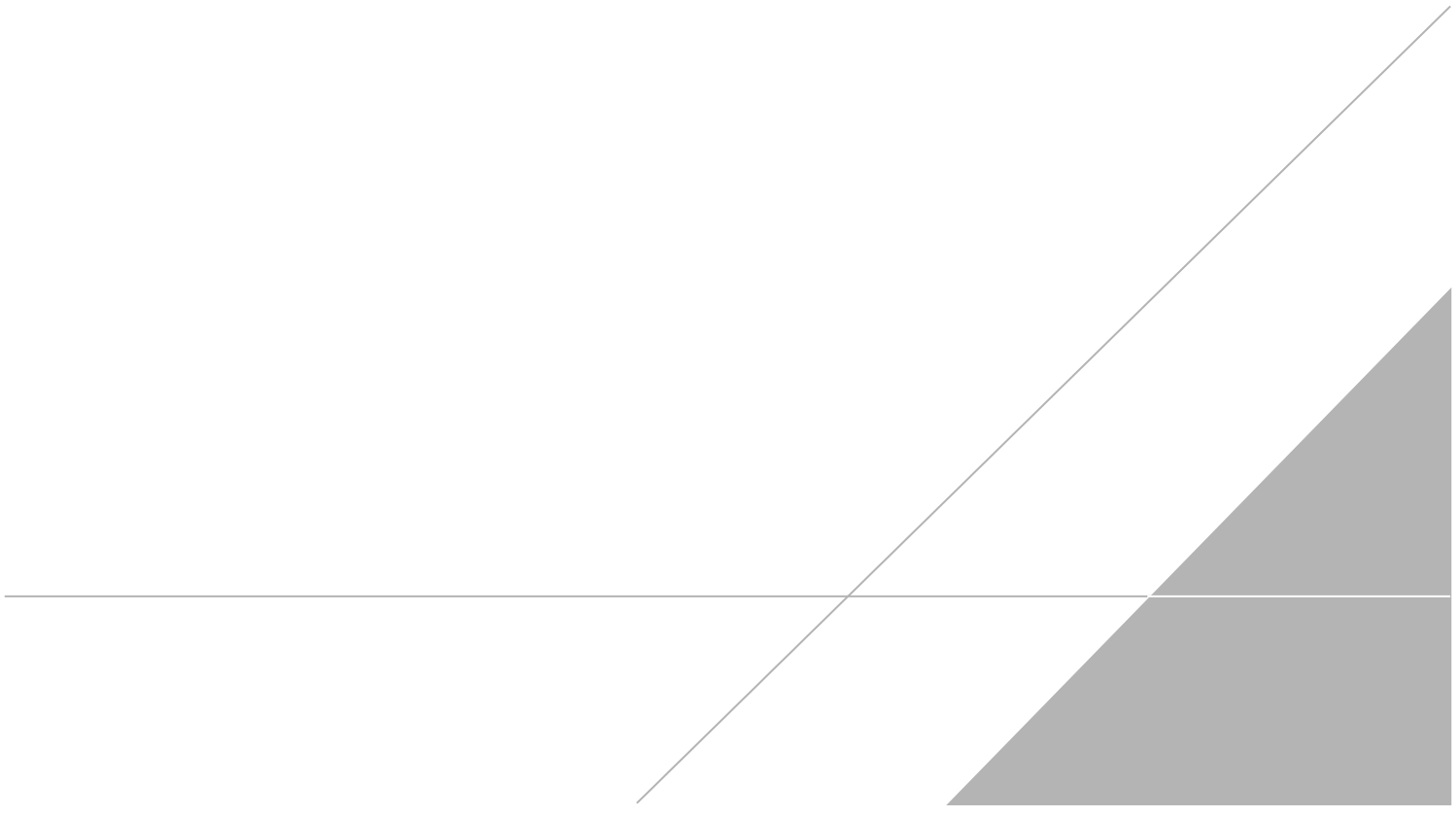
Did Well Dewater?	No	Alkalinity	
Sample Time	11:00	Ferrous Iron	
Sample ID	WA-11060-MW-6(1Q18)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	Brown	EB Sample ID	
Odor	None	Remarks	
Appearance	Solids in water		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required		X		
Well Secured on initial inspection	X			
Well ID is Clearly Marked		X		
Is water present in well box	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned		X		
J-plug present and in good condition	X			
Lock present		X		
Other action performed (explain)	X			
Additional actions needed (explain)		X		
Picture taken of well with Well ID visible		X		
Remarks				Cleared vegitation

APPENDIX B

Groundwater Analytical Laboratory Report and Chain-of-Custody Documentation



Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 05, 2018

ARCADIS US - Seattle, WA

Sample Delivery Group:	L1038908
Samples Received:	10/27/2018
Project Number:	GP18BPWC.WA48
Description:	WA48
Site:	WA-11060
Report To:	Ross LaGrandeur 1100 Olive Way Suite 800 Seattle, WA 98101

Entire Report Reviewed By:

Brian Ford

Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

GMW-1 L1038908-01 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 16:22
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:17	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:24	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1191092	1	11/04/18 23:59	11/04/18 23:59	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1190023	1	11/01/18 17:41	11/01/18 17:41	JHH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1190673	1	11/02/18 19:56	11/02/18 19:56	JHH
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 20:42	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	10	10/29/18 17:30	10/31/18 21:14	TH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	2	10/29/18 17:30	10/30/18 20:48	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	2	10/31/18 14:47	11/01/18 03:22	CJR

MW-2 L1038908-02 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 16:00
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:21	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:28	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/01/18 20:33	11/01/18 20:33	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 06:21	10/30/18 06:21	TJJ
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 20:54	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 21:08	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 03:46	CJR

MW-3 L1038908-03 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 14:35
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:26	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:32	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/01/18 20:55	11/01/18 20:55	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 06:40	10/30/18 06:40	TJJ
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 21:06	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 21:28	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 04:09	CJR

MW-6 L1038908-04 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 16:05
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:30	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:36	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/01/18 21:18	11/01/18 21:18	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 07:00	10/30/18 07:00	TJJ
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 21:19	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 21:48	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 04:33	CJR

MW-9 L1038908-05 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 14:20
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:35	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:40	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/01/18 21:41	11/01/18 21:41	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 07:19	10/30/18 07:19	TJJ
EDB / DBCP by Method 8011	WG1188936	1.01	10/31/18 09:28	11/01/18 21:31	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 22:09	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 04:56	CJR

MW-11 L1038908-06 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 13:05
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:39	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:44	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/02/18 00:18	11/02/18 00:18	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 07:39	10/30/18 07:39	TJJ
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 21:43	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 22:29	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 05:20	CJR

MW-12 L1038908-07 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 12:27
Received date/time: 10/27/18 08:45

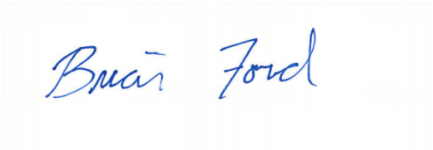
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:44	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:48	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/02/18 00:41	11/02/18 00:41	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1188147	1	10/30/18 07:59	10/30/18 07:59	TJJ
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 21:55	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 22:49	SHG
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1189151	1	10/31/18 14:47	11/01/18 05:43	CJR

DUP-1 L1038908-08 GW

Collected by: A.P./K.F.
Collected date/time: 10/25/18 00:00
Received date/time: 10/27/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICPMS) by Method 6020B	WG1188411	1	11/01/18 06:14	11/01/18 12:49	JPD
Metals (ICPMS) by Method 6020B	WG1188832	1	11/01/18 10:36	11/01/18 16:52	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1189621	1	11/02/18 01:04	11/02/18 01:04	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1190023	1	11/01/18 18:00	11/01/18 18:00	JHH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1190673	1	11/02/18 20:15	11/02/18 20:15	JHH
EDB / DBCP by Method 8011	WG1188936	1	10/31/18 09:28	11/01/18 22:08	HMH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	1	10/29/18 17:30	10/30/18 23:09	SHG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1188067	5	10/29/18 17:30	10/31/18 21:35	TH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	16.2		0.240	2.00	1	11/01/2018 12:17	WG1188411
Lead,Dissolved	14.5		0.240	2.00	1	11/01/2018 16:24	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	4200		31.6	100	1	11/04/2018 23:59	WG1191092
(S) a,a,a-Trifluorotoluene(FID)	*90.9*			*78.0-120*		*11/04/2018 23:59*	WG1191092

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	11/01/2018 17:41	WG1190023
Toluene	U		0.412	1.00	1	11/01/2018 17:41	WG1190023
Ethylbenzene	9.58		0.384	1.00	1	11/01/2018 17:41	WG1190023
Total Xylenes	12.8		1.06	3.00	1	11/01/2018 17:41	WG1190023
Methyl tert-butyl ether	U		0.367	1.00	1	11/01/2018 17:41	WG1190023
1,2-Dichloroethane	U		0.361	1.00	1	11/02/2018 19:56	WG1190673
(S) Toluene-d8	*74.6*	J2		*80.0-120*		*11/01/2018 17:41*	WG1190023
(S) Toluene-d8	*102*			*80.0-120*		*11/02/2018 19:56*	WG1190673
(S) Dibromofluoromethane	*90.0*			*75.0-120*		*11/01/2018 17:41*	WG1190023
(S) Dibromofluoromethane	*105*			*75.0-120*		*11/02/2018 19:56*	WG1190673
(S) a,a,a-Trifluorotoluene	*102*			*80.0-120*		*11/01/2018 17:41*	WG1190023
(S) a,a,a-Trifluorotoluene	*110*			*80.0-120*		*11/02/2018 19:56*	WG1190673
(S) 4-Bromofluorobenzene	*113*			*77.0-126*		*11/01/2018 17:41*	WG1190023
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*11/02/2018 19:56*	WG1190673

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 20:42	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	9050		667	2000	10	10/31/2018 21:14	WG1188067
Residual Range Organics (RRO)	346	J	167	500	2	10/30/2018 20:48	WG1188067
(S) o-Terphenyl	*80.5*			*52.0-156*		*10/31/2018 21:14*	WG1188067
(S) o-Terphenyl	*95.3*			*52.0-156*		*10/30/2018 20:48*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.00820	0.100	2	11/01/2018 03:22	WG1189151
Benzo(a)pyrene	U		0.0232	0.100	2	11/01/2018 03:22	WG1189151
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/01/2018 03:22	WG1189151
Benzo(k)fluoranthene	U		0.0272	0.100	2	11/01/2018 03:22	WG1189151
Chrysene	U		0.0216	0.100	2	11/01/2018 03:22	WG1189151
Dibenz(a,h)anthracene	U		0.00792	0.100	2	11/01/2018 03:22	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0296	0.100	2	11/01/2018 03:22	WG1189151
Naphthalene	1.29		0.0396	0.500	2	11/01/2018 03:22	WG1189151
1-Methylnaphthalene	0.482	J	0.0164	0.500	2	11/01/2018 03:22	WG1189151

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2-Methylnaphthalene	0.0670	J	0.0180	0.500	2	11/01/2018 03:22	WG1189151
(S) Nitrobenzene-d5	*43.6*			*31.0-160*		*11/01/2018 03:22*	WG1189151
(S) 2-Fluorobiphenyl	*72.6*			*48.0-148*		*11/01/2018 03:22*	WG1189151
(S) p-Terphenyl-d14	*77.4*			*37.0-146*		*11/01/2018 03:22*	WG1189151

Sample Narrative:

L1038908-01 WG1189151: Diluted due to extract emulsion.

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lead	25.5		0.240	2.00	1	11/01/2018 12:21	WG1188411
Lead,Dissolved	0.623	J	0.240	2.00	1	11/01/2018 16:28	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	171	B	31.6	100	1	11/01/2018 20:33	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*78.0-120*		*11/01/2018 20:33*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	10/30/2018 06:21	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 06:21	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 06:21	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 06:21	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 06:21	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 06:21	WG1188147
(S) Toluene-d8	*101*			*80.0-120*		*10/30/2018 06:21*	WG1188147
(S) Dibromofluoromethane	*92.5*			*75.0-120*		*10/30/2018 06:21*	WG1188147
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*		*10/30/2018 06:21*	WG1188147
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*		*10/30/2018 06:21*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 20:54	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	788		66.7	200	1	10/30/2018 21:08	WG1188067
Residual Range Organics (RRO)	444		83.3	250	1	10/30/2018 21:08	WG1188067
(S) o-Terphenyl	*73.2*			*52.0-156*		*10/30/2018 21:08*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 03:46	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 03:46	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 03:46	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 03:46	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 03:46	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 03:46	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 03:46	WG1189151
Naphthalene	0.0524	J	0.0198	0.250	1	11/01/2018 03:46	WG1189151
1-Methylnaphthalene	U		0.00821	0.250	1	11/01/2018 03:46	WG1189151
2-Methylnaphthalene	0.00952	J	0.00902	0.250	1	11/01/2018 03:46	WG1189151
(S) Nitrobenzene-d5	*71.1*			*31.0-160*		*11/01/2018 03:46*	WG1189151
(S) 2-Fluorobiphenyl	*104*			*48.0-148*		*11/01/2018 03:46*	WG1189151
(S) p-Terphenyl-d14	*98.9*			*37.0-146*		*11/01/2018 03:46*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	0.868	B J	0.240	2.00	1	11/01/2018 12:26	WG1188411
Lead,Dissolved	0.602	J	0.240	2.00	1	11/01/2018 16:32	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	35.6	B J	31.6	100	1	11/01/2018 20:55	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*97.2*			*78.0-120*		*11/01/2018 20:55*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	10/30/2018 06:40	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 06:40	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 06:40	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 06:40	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 06:40	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 06:40	WG1188147
(S) Toluene-d8	*102*			*80.0-120*		*10/30/2018 06:40*	WG1188147
(S) Dibromofluoromethane	*94.4*			*75.0-120*		*10/30/2018 06:40*	WG1188147
(S) a,a,a-Trifluorotoluene	*107*			*80.0-120*		*10/30/2018 06:40*	WG1188147
(S) 4-Bromofluorobenzene	*96.8*			*77.0-126*		*10/30/2018 06:40*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 21:06	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	69.3	J	66.7	200	1	10/30/2018 21:28	WG1188067
Residual Range Organics (RRO)	U		83.3	250	1	10/30/2018 21:28	WG1188067
(S) o-Terphenyl	*78.9*			*52.0-156*		*10/30/2018 21:28*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 04:09	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 04:09	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 04:09	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 04:09	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 04:09	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 04:09	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 04:09	WG1189151
Naphthalene	0.0378	J	0.0198	0.250	1	11/01/2018 04:09	WG1189151
1-Methylnaphthalene	0.00964	J	0.00821	0.250	1	11/01/2018 04:09	WG1189151
2-Methylnaphthalene	0.00991	J	0.00902	0.250	1	11/01/2018 04:09	WG1189151
(S) Nitrobenzene-d5	*72.1*			*31.0-160*		*11/01/2018 04:09*	WG1189151
(S) 2-Fluorobiphenyl	*109*			*48.0-148*		*11/01/2018 04:09*	WG1189151
(S) p-Terphenyl-d14	*105*			*37.0-146*		*11/01/2018 04:09*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		0.240	2.00	1	11/01/2018 12:30	WG1188411
Lead,Dissolved	U		0.240	2.00	1	11/01/2018 16:36	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	11/01/2018 21:18	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*97.1*			*78.0-120*		*11/01/2018 21:18*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	10/30/2018 07:00	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 07:00	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 07:00	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 07:00	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 07:00	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 07:00	WG1188147
(S) Toluene-d8	*101*			*80.0-120*		*10/30/2018 07:00*	WG1188147
(S) Dibromofluoromethane	*93.2*			*75.0-120*		*10/30/2018 07:00*	WG1188147
(S) a,a,a-Trifluorotoluene	*106*			*80.0-120*		*10/30/2018 07:00*	WG1188147
(S) 4-Bromofluorobenzene	*96.4*			*77.0-126*		*10/30/2018 07:00*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 21:19	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	73.4	J	66.7	200	1	10/30/2018 21:48	WG1188067
Residual Range Organics (RRO)	U		83.3	250	1	10/30/2018 21:48	WG1188067
(S) o-Terphenyl	*80.5*			*52.0-156*		*10/30/2018 21:48*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 04:33	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 04:33	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 04:33	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 04:33	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 04:33	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 04:33	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 04:33	WG1189151
Naphthalene	U		0.0198	0.250	1	11/01/2018 04:33	WG1189151
1-Methylnaphthalene	U		0.00821	0.250	1	11/01/2018 04:33	WG1189151
2-Methylnaphthalene	U		0.00902	0.250	1	11/01/2018 04:33	WG1189151
(S) Nitrobenzene-d5	*74.2*			*31.0-160*		*11/01/2018 04:33*	WG1189151
(S) 2-Fluorobiphenyl	*110*			*48.0-148*		*11/01/2018 04:33*	WG1189151
(S) p-Terphenyl-d14	*104*			*37.0-146*		*11/01/2018 04:33*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	0.299	B J	0.240	2.00	1	11/01/2018 12:35	WG1188411
Lead,Dissolved	U		0.240	2.00	1	11/01/2018 16:40	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	78.3	B J	31.6	100	1	11/01/2018 21:41	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*78.0-120*		*11/01/2018 21:41*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	10/30/2018 07:19	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 07:19	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 07:19	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 07:19	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 07:19	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 07:19	WG1188147
(S) Toluene-d8	*100*			*80.0-120*		*10/30/2018 07:19*	WG1188147
(S) Dibromofluoromethane	*93.8*			*75.0-120*		*10/30/2018 07:19*	WG1188147
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*		*10/30/2018 07:19*	WG1188147
(S) 4-Bromofluorobenzene	*98.8*			*77.0-126*		*10/30/2018 07:19*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00242	0.0101	1.01	11/01/2018 21:31	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	217		66.7	200	1	10/30/2018 22:09	WG1188067
Residual Range Organics (RRO)	140	J	83.3	250	1	10/30/2018 22:09	WG1188067
(S) o-Terphenyl	*81.6*			*52.0-156*		*10/30/2018 22:09*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 04:56	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 04:56	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 04:56	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 04:56	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 04:56	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 04:56	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 04:56	WG1189151
Naphthalene	0.0825	J	0.0198	0.250	1	11/01/2018 04:56	WG1189151
1-Methylnaphthalene	0.0224	J	0.00821	0.250	1	11/01/2018 04:56	WG1189151
2-Methylnaphthalene	0.00924	J	0.00902	0.250	1	11/01/2018 04:56	WG1189151
(S) Nitrobenzene-d5	*74.7*			*31.0-160*		*11/01/2018 04:56*	WG1189151
(S) 2-Fluorobiphenyl	*108*			*48.0-148*		*11/01/2018 04:56*	WG1189151
(S) p-Terphenyl-d14	*111*			*37.0-146*		*11/01/2018 04:56*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lead	1.09	B J	0.240	2.00	1	11/01/2018 12:39	WG1188411
Lead,Dissolved	0.582	J	0.240	2.00	1	11/01/2018 16:44	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	170	B	31.6	100	1	11/02/2018 00:18	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*11/02/2018 00:18*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	10/30/2018 07:39	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 07:39	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 07:39	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 07:39	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 07:39	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 07:39	WG1188147
(S) Toluene-d8	*103*			*80.0-120*		*10/30/2018 07:39*	WG1188147
(S) Dibromofluoromethane	*90.2*			*75.0-120*		*10/30/2018 07:39*	WG1188147
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*		*10/30/2018 07:39*	WG1188147
(S) 4-Bromofluorobenzene	*96.7*			*77.0-126*		*10/30/2018 07:39*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 21:43	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	343		66.7	200	1	10/30/2018 22:29	WG1188067
Residual Range Organics (RRO)	419		83.3	250	1	10/30/2018 22:29	WG1188067
(S) o-Terphenyl	*82.1*			*52.0-156*		*10/30/2018 22:29*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 05:20	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 05:20	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 05:20	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 05:20	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 05:20	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 05:20	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 05:20	WG1189151
Naphthalene	0.0272	J	0.0198	0.250	1	11/01/2018 05:20	WG1189151
1-Methylnaphthalene	U		0.00821	0.250	1	11/01/2018 05:20	WG1189151
2-Methylnaphthalene	U		0.00902	0.250	1	11/01/2018 05:20	WG1189151
(S) Nitrobenzene-d5	*71.6*			*31.0-160*		*11/01/2018 05:20*	WG1189151
(S) 2-Fluorobiphenyl	*107*			*48.0-148*		*11/01/2018 05:20*	WG1189151
(S) p-Terphenyl-d14	*110*			*37.0-146*		*11/01/2018 05:20*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	1.00	B J	0.240	2.00	1	11/01/2018 12:44	WG1188411
Lead,Dissolved	U		0.240	2.00	1	11/01/2018 16:48	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	867		31.6	100	1	11/02/2018 00:41	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*11/02/2018 00:41*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	1.17		0.331	1.00	1	10/30/2018 07:59	WG1188147
Toluene	U		0.412	1.00	1	10/30/2018 07:59	WG1188147
Ethylbenzene	U		0.384	1.00	1	10/30/2018 07:59	WG1188147
Total Xylenes	U		1.06	3.00	1	10/30/2018 07:59	WG1188147
Methyl tert-butyl ether	U		0.367	1.00	1	10/30/2018 07:59	WG1188147
1,2-Dichloroethane	U		0.361	1.00	1	10/30/2018 07:59	WG1188147
(S) Toluene-d8	*94.2*			*80.0-120*		*10/30/2018 07:59*	WG1188147
(S) Dibromofluoromethane	*90.5*			*75.0-120*		*10/30/2018 07:59*	WG1188147
(S) a,a,a-Trifluorotoluene	*102*			*80.0-120*		*10/30/2018 07:59*	WG1188147
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/30/2018 07:59*	WG1188147

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 21:55	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	705		66.7	200	1	10/30/2018 22:49	WG1188067
Residual Range Organics (RRO)	189	J	83.3	250	1	10/30/2018 22:49	WG1188067
(S) o-Terphenyl	*82.6*			*52.0-156*		*10/30/2018 22:49*	WG1188067

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.00410	0.0500	1	11/01/2018 05:43	WG1189151
Benzo(a)pyrene	U		0.0116	0.0500	1	11/01/2018 05:43	WG1189151
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/01/2018 05:43	WG1189151
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/01/2018 05:43	WG1189151
Chrysene	U		0.0108	0.0500	1	11/01/2018 05:43	WG1189151
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/01/2018 05:43	WG1189151
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/01/2018 05:43	WG1189151
Naphthalene	0.0529	J	0.0198	0.250	1	11/01/2018 05:43	WG1189151
1-Methylnaphthalene	U		0.00821	0.250	1	11/01/2018 05:43	WG1189151
2-Methylnaphthalene	0.0129	J	0.00902	0.250	1	11/01/2018 05:43	WG1189151
(S) Nitrobenzene-d5	*85.3*			*31.0-160*		*11/01/2018 05:43*	WG1189151
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*11/01/2018 05:43*	WG1189151
(S) p-Terphenyl-d14	*108*			*37.0-146*		*11/01/2018 05:43*	WG1189151

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	12.3		0.240	2.00	1	11/01/2018 12:49	WG1188411
Lead,Dissolved	9.21		0.240	2.00	1	11/01/2018 16:52	WG1188832

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	3760		31.6	100	1	11/02/2018 01:04	WG1189621
(S) a,a,a-Trifluorotoluene(FID)	*98.9*			*78.0-120*		*11/02/2018 01:04*	WG1189621

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	11/01/2018 18:00	WG1190023
Toluene	U		0.412	1.00	1	11/01/2018 18:00	WG1190023
Ethylbenzene	12.4		0.384	1.00	1	11/01/2018 18:00	WG1190023
Total Xylenes	13.2		1.06	3.00	1	11/01/2018 18:00	WG1190023
Methyl tert-butyl ether	U		0.367	1.00	1	11/01/2018 18:00	WG1190023
1,2-Dichloroethane	U		0.361	1.00	1	11/02/2018 20:15	WG1190673
(S) Toluene-d8	*80.6*			*80.0-120*		*11/01/2018 18:00*	WG1190023
(S) Toluene-d8	*108*			*80.0-120*		*11/02/2018 20:15*	WG1190673
(S) Dibromofluoromethane	*90.8*			*75.0-120*		*11/01/2018 18:00*	WG1190023
(S) Dibromofluoromethane	*99.7*			*75.0-120*		*11/02/2018 20:15*	WG1190673
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*		*11/01/2018 18:00*	WG1190023
(S) a,a,a-Trifluorotoluene	*102*			*80.0-120*		*11/02/2018 20:15*	WG1190673
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*11/01/2018 18:00*	WG1190023
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*11/02/2018 20:15*	WG1190673

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00240	0.0100	1	11/01/2018 22:08	WG1188936

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	8430		333	1000	5	10/31/2018 21:35	WG1188067
Residual Range Organics (RRO)	306		83.3	250	1	10/30/2018 23:09	WG1188067
(S) o-Terphenyl	*84.7*			*52.0-156*		*10/31/2018 21:35*	WG1188067
(S) o-Terphenyl	*73.2*			*52.0-156*		*10/30/2018 23:09*	WG1188067

Method Blank (MB)

(MB) R3355991-1 11/01/18 10:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lead	0.719	J	0.240	2.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3355991-2 11/01/18 10:41 • (LCSD) R3355991-3 11/01/18 10:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Lead	50.0	50.1	50.4	100	101	80.0-120			0.648	20

L1039059-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1039059-01 11/01/18 10:50 • (MS) R3355991-5 11/01/18 10:59 • (MSD) R3355991-6 11/01/18 11:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	50.0	5.07	54.6	53.1	99.1	96.1	1	75.0-125			2.78	20

Method Blank (MB)

(MB) R3356114-1 11/01/18 15:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Lead,Dissolved	U		0.240	2.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356114-2 11/01/18 15:23 • (LCSD) R3356114-3 11/01/18 15:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Lead,Dissolved	50.0	49.3	49.8	98.7	99.6	80.0-120			0.912	20

L1038802-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038802-18 11/01/18 15:31 • (MS) R3356114-5 11/01/18 15:39 • (MSD) R3356114-6 11/01/18 15:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lead,Dissolved	50.0	ND	49.3	48.7	98.7	97.5	1	75.0-125			1.24	20

Method Blank (MB)

(MB) R3356100-3 11/01/18 12:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	44.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*95.4*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356100-2 11/01/18 11:27 • (LCSD) R3356100-1 11/01/18 10:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6320	5470	115	99.4	70.0-124			14.4	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*101*	*78.0-120*				

Method Blank (MB)

(MB) R3356816-5 11/04/18 19:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356816-3 11/04/18 18:53 • (LCSD) R3356816-4 11/04/18 19:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5490	5280	99.9	96.0	70.0-124			3.99	20
(S) a,a,a-Trifluorotoluene(FID)				*98.5*	*98.4*	*78.0-120*				

Method Blank (MB)

(MB) R3356082-3 10/30/18 02:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*104*			*80.0-120*
(S) Dibromofluoromethane	*93.9*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.3*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356082-1 10/30/18 01:27 • (LCSD) R3356082-2 10/30/18 01:46

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	25.0	23.1	23.5	92.6	93.9	70.0-123			1.42	20
1,2-Dichloroethane	25.0	20.1	20.1	80.5	80.5	70.0-128			0.0285	20
Ethylbenzene	25.0	26.2	26.9	105	108	79.0-123			2.62	20
Methyl tert-butyl ether	25.0	21.8	22.1	87.3	88.2	68.0-125			1.13	20
Toluene	25.0	25.8	26.0	103	104	79.0-120			0.898	20
Xylenes, Total	75.0	79.1	79.6	105	106	79.0-123			0.630	20
(S) Toluene-d8				*102*	*101*	*80.0-120*				
(S) Dibromofluoromethane				*91.5*	*91.4*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*104*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*95.6*	*96.7*	*77.0-126*				

Method Blank (MB)

(MB) R3356346-3 11/01/18 10:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*105*			*80.0-120*
(S) Dibromofluoromethane	*90.8*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.3*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356346-1 11/01/18 08:47 • (LCSD) R3356346-2 11/01/18 09:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	25.0	22.3	22.4	89.1	89.5	70.0-123			0.357	20
Ethylbenzene	25.0	25.0	25.8	100	103	79.0-123			3.11	20
Methyl tert-butyl ether	25.0	21.5	21.3	86.0	85.4	68.0-125			0.743	20
Toluene	25.0	24.8	25.1	99.1	101	79.0-120			1.55	20
Xylenes, Total	75.0	75.7	77.5	101	103	79.0-123			2.35	20
(S) Toluene-d8				*99.8*	*103*	*80.0-120*				
(S) Dibromofluoromethane				*90.2*	*90.2*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*101*	*103*	*80.0-120*				
(S) 4-Bromofluorobenzene				*97.0*	*96.2*	*77.0-126*				

Method Blank (MB)

(MB) R3356712-3 11/02/18 10:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
1,2-Dichloroethane	U		0.361	1.00
(S) Toluene-d8	*112*			*80.0-120*
(S) Dibromofluoromethane	*105*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356712-1 11/02/18 09:24 • (LCSD) R3356712-2 11/02/18 09:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
1,2-Dichloroethane	25.0	23.3	23.1	93.3	92.4	70.0-128			0.989	20
(S) Toluene-d8				*113*	*114*	*80.0-120*				
(S) Dibromofluoromethane				*102*	*101*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*106*	*101*	*80.0-120*				
(S) 4-Bromofluorobenzene				*96.9*	*105*	*77.0-126*				

Method Blank (MB)

(MB) R3356406-1 11/01/18 19:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylene Dibromide	U		0.00240	0.0100

L1038837-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1038837-09 11/01/18 20:30 • (DUP) R3356406-3 11/01/18 20:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ethylene Dibromide	ND	0.000	1.01	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3356406-4 11/01/18 22:32 • (LCSD) R3356406-5 11/02/18 01:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylene Dibromide	0.250	0.246	0.254	98.4	102	60.0-140			3.20	20

L1038837-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1038837-10 11/01/18 20:05 • (MS) R3356406-2 11/01/18 19:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Ethylene Dibromide	0.0998	ND	0.132	132	1	64.0-159	

Method Blank (MB)

(MB) R3355534-1 10/30/18 17:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*76.5*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3355534-2 10/30/18 17:47 • (LCSD) R3355534-3 10/30/18 18:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	750	871	919	116	123	50.0-150			5.36	20
Residual Range Organics (RRO)	750	676	715	90.1	95.3	50.0-150			5.61	20
(S) o-Terphenyl				*88.5*	*88.5*	*52.0-156*				

Method Blank (MB)

(MB) R3355852-3 10/31/18 21:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzo(a)anthracene	0.00918	J	0.00410	0.0500
Benzo(a)pyrene	U		0.0116	0.0500
Benzo(b)fluoranthene	U		0.00212	0.0500
Benzo(k)fluoranthene	U		0.0136	0.0500
Chrysene	U		0.0108	0.0500
Dibenz(a,h)anthracene	U		0.00396	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500
Naphthalene	U		0.0198	0.250
1-Methylnaphthalene	U		0.00821	0.250
2-Methylnaphthalene	U		0.00902	0.250
(S) Nitrobenzene-d5	*77.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*105*			*48.0-148*
(S) p-Terphenyl-d14	*109*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3355852-1 10/31/18 21:08 • (LCSD) R3355852-2 10/31/18 21:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	2.00	2.03	1.96	102	98.0	61.0-140			3.51	20
Benzo(a)pyrene	2.00	1.99	1.97	99.5	98.5	60.0-143			1.01	20
Benzo(b)fluoranthene	2.00	1.94	1.86	97.0	93.0	58.0-141			4.21	20
Benzo(k)fluoranthene	2.00	2.12	2.07	106	103	58.0-148			2.39	20
Chrysene	2.00	2.05	2.00	102	100	64.0-144			2.47	20
Dibenz(a,h)anthracene	2.00	1.88	1.84	94.0	92.0	52.0-155			2.15	20
Indeno(1,2,3-cd)pyrene	2.00	1.93	1.92	96.5	96.0	54.0-153			0.519	20
Naphthalene	2.00	1.63	1.58	81.5	79.0	61.0-137			3.12	20
1-Methylnaphthalene	2.00	1.92	1.84	96.0	92.0	66.0-142			4.26	20
2-Methylnaphthalene	2.00	1.73	1.68	86.5	84.0	62.0-136			2.93	20
(S) Nitrobenzene-d5				*79.5*	*75.5*	*31.0-160*				
(S) 2-Fluorobiphenyl				*107*	*103*	*48.0-148*				
(S) p-Terphenyl-d14				*111*	*106*	*37.0-146*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

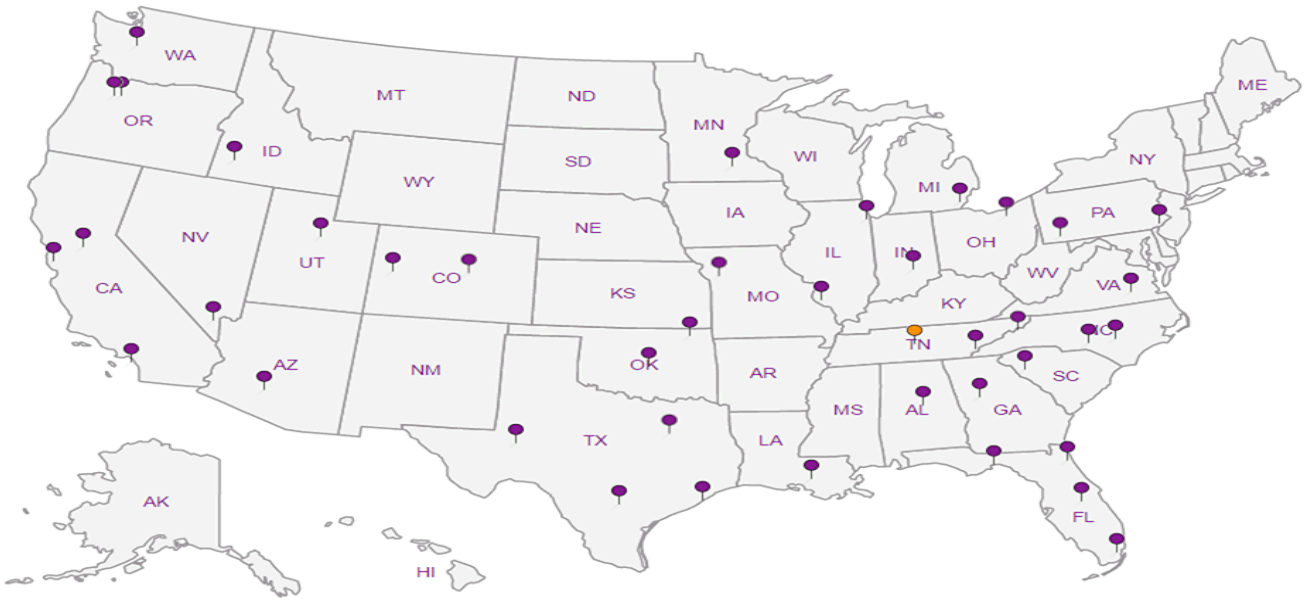
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ARCADIS US - Seattle, WA

1100 Olive Way
Suite 800
Seattle WA 98101

Billing Information:
Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres Chk

Report to: Ross LaGrandeur

Email To: Ross.LaGrandeur@arcadis.com; Ryan.Brauchla@arcadis.com;

Project Description: WA48

City/State Collected:

Phone: 509-438-9828
Fax:

Client Project # GP18BPWC.WA48

Lab Project # ARCABPWA-WA48

Collected by (print): Alex Pink + Kelsey Franz

Site/Facility ID # WA-11060

P.O. #

Collected by (signature): Alex Pink

Immediately Packed on ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard TAT

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM,EDC 8260C 40mlAmb-HCl	Diss Pb 6020 250mlHDPE-NoPres	EDB SV8011 40mlClr-NaThio	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	Total Pb 6020 250mlHDPE-HNO3	cPAHs PAHSIMLVID 40mlAmb-NoPres-WT	Remarks	Sample # (lab only)
GMW-1	G	GW	—	10/25/18	1622	14	X	X	X	X	X	X	X		-01
MW-2	G	GW	—	10/25/18	1600	14	X	X	X	X	X	X	X		-02
MW-3	G	GW	—	10/25/18	1435	14	X	X	X	X	X	X	X		-03
MW-6	G	GW	—	10/25/18	1605	14	X	X	X	X	X	X	X		-04
MW-9	G	GW	—	10/25/18	1420	14	X	X	X	X	X	X	X		-05
MW-11	G	GW	—	10/25/18	1305	14	X	X	X	X	X	X	X		-06
MW-12	G	GW	—	10/25/18	1227	14	X	X	X	X	X	X	X		-07
DUP-1	G	GW	—	10/25/18	—	~~12~~ 14	X	X	X	X	X	X			-08
		GW													
		GW													

Analysis / Container / Preservative: 12

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1038908

B123

Acctnum: ARCABPWA
Template: T141801
Prelogin: P676708
TSR: 110 - Brian Ford
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: questions or concerns call Alex Pink - 406-440-8344
RAD SCREEN: <0.5 mR/hr
pH ___ Temp ___
Flow ___ Other ___

Samples returned via: __ UPS ✓ FedEx __ Courier ___

Tracking # 4196 3255 9603

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/26/18	1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCl / MeoH TBR
3

Temp: 0.3+0.1=0.4 °C Bottles Received: 112

Date: 10/27/18 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

March 28, 2018

ARCADIS US - Seattle, WA

Sample Delivery Group:	L978252
Samples Received:	03/16/2018
Project Number:	GP09BPNA.WA48
Description:	WA-11060
Site:	4580 FAUNTLEROY WAY SW, SEATTL
Report To:	Ross LaGrandeur 1100 Olive Way Suite 800 Seattle, WA 98101

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

MW-6 L978252-01 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 11:00 | Received date/time: 03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 07:56	03/20/18 07:56	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 16:05	03/18/18 16:05	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 00:26	LM

MV-1 L978252-02 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 11:20 | Received date/time: 03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 08:18	03/20/18 08:18	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 16:25	03/18/18 16:25	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 00:43	LM

GMW-1 L978252-03 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 11:45 | Received date/time: 03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 08:40	03/20/18 08:40	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 16:44	03/18/18 16:44	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 01:00	LM

MW-3 L978252-04 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 12:40 | Received date/time: 03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 09:03	03/20/18 09:03	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 17:04	03/18/18 17:04	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 01:16	LM

MW-2 L978252-05 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 13:00 | Received date/time: 03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 09:25	03/20/18 09:25	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 17:23	03/18/18 17:23	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 01:33	LM

MW-5 L978252-06 GW

Collected by: Patrick Collins | Collected date/time: 03/13/18 13:25 | Received date/time: 03/16/18 08:45

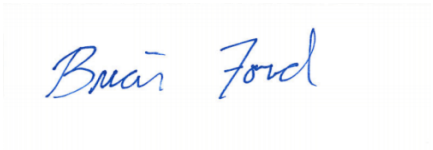
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1086519	1	03/20/18 09:47	03/20/18 09:47	JAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086181	1	03/18/18 17:43	03/18/18 17:43	RAS
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1085873	1	03/17/18 10:14	03/19/18 01:50	LM

DUP-1 L978252-07 GW

Collected by	Collected date/time	Received date/time
Patrick Collins	03/13/18 00:00	03/16/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1087153	1	03/21/18 01:18	03/21/18 01:18	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1086589	1	03/19/18 20:10	03/19/18 20:10	JHH
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1089579	1	03/26/18 19:57	03/27/18 12:24	TH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Technical Service Representative

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	40.0	B J	31.6	100	1	03/20/2018 07:56	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-122*		*03/20/2018 07:56*	WG1086519

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	03/18/2018 16:05	WG1086181
Toluene	U		0.412	1.00	1	03/18/2018 16:05	WG1086181
Ethylbenzene	U		0.384	1.00	1	03/18/2018 16:05	WG1086181
Total Xylenes	U		1.06	3.00	1	03/18/2018 16:05	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 16:05	WG1086181
(S) Toluene-d8	*109*			*80.0-120*		*03/18/2018 16:05*	WG1086181
(S) Dibromofluoromethane	*88.2*			*76.0-123*		*03/18/2018 16:05*	WG1086181
(S) a,a,a-Trifluorotoluene	*97.9*			*80.0-120*		*03/18/2018 16:05*	WG1086181
(S) 4-Bromofluorobenzene	*98.8*			*80.0-120*		*03/18/2018 16:05*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.0	200	1	03/19/2018 00:26	WG1085873
Residual Range Organics (RRO)	U		82.5	250	1	03/19/2018 00:26	WG1085873
(S) o-Terphenyl	*85.7*			*52.0-156*		*03/19/2018 00:26*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	298	B	31.6	100	1	03/20/2018 08:18	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-122*		*03/20/2018 08:18*	WG1086519

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	03/18/2018 16:25	WG1086181
Toluene	U		0.412	1.00	1	03/18/2018 16:25	WG1086181
Ethylbenzene	U		0.384	1.00	1	03/18/2018 16:25	WG1086181
Total Xylenes	U		1.06	3.00	1	03/18/2018 16:25	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 16:25	WG1086181
(S) Toluene-d8	*107*			*80.0-120*		*03/18/2018 16:25*	WG1086181
(S) Dibromofluoromethane	*86.4*			*76.0-123*		*03/18/2018 16:25*	WG1086181
(S) a,a,a-Trifluorotoluene	*99.7*			*80.0-120*		*03/18/2018 16:25*	WG1086181
(S) 4-Bromofluorobenzene	*103*			*80.0-120*		*03/18/2018 16:25*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	369		66.0	200	1	03/19/2018 00:43	WG1085873
Residual Range Organics (RRO)	352		82.5	250	1	03/19/2018 00:43	WG1085873
(S) o-Terphenyl	*89.2*			*52.0-156*		*03/19/2018 00:43*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	2500		31.6	100	1	03/20/2018 08:40	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*77.0-122*		*03/20/2018 08:40*	WG1086519

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.331	1.00	1	03/18/2018 16:44	WG1086181
Toluene	U		0.412	1.00	1	03/18/2018 16:44	WG1086181
Ethylbenzene	0.394	J	0.384	1.00	1	03/18/2018 16:44	WG1086181
Total Xylenes	U		1.06	3.00	1	03/18/2018 16:44	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 16:44	WG1086181
(S) Toluene-d8	*105*			*80.0-120*		*03/18/2018 16:44*	WG1086181
(S) Dibromofluoromethane	*89.6*			*76.0-123*		*03/18/2018 16:44*	WG1086181
(S) a,a,a-Trifluorotoluene	*101*			*80.0-120*		*03/18/2018 16:44*	WG1086181
(S) 4-Bromofluorobenzene	*99.2*			*80.0-120*		*03/18/2018 16:44*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	99.7	J	66.0	200	1	03/19/2018 01:00	WG1085873
Residual Range Organics (RRO)	U		82.5	250	1	03/19/2018 01:00	WG1085873
(S) o-Terphenyl	*89.2*			*52.0-156*		*03/19/2018 01:00*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	52.8	B J	31.6	100	1	03/20/2018 09:03	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-122*		*03/20/2018 09:03*	WG1086519

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	03/18/2018 17:04	WG1086181
Toluene	U		0.412	1.00	1	03/18/2018 17:04	WG1086181
Ethylbenzene	U		0.384	1.00	1	03/18/2018 17:04	WG1086181
Total Xylenes	U		1.06	3.00	1	03/18/2018 17:04	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 17:04	WG1086181
(S) Toluene-d8	*108*			*80.0-120*		*03/18/2018 17:04*	WG1086181
(S) Dibromofluoromethane	*90.3*			*76.0-123*		*03/18/2018 17:04*	WG1086181
(S) a,a,a-Trifluorotoluene	*98.2*			*80.0-120*		*03/18/2018 17:04*	WG1086181
(S) 4-Bromofluorobenzene	*99.5*			*80.0-120*		*03/18/2018 17:04*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	79.1	J	66.0	200	1	03/19/2018 01:16	WG1085873
Residual Range Organics (RRO)	115	J	82.5	250	1	03/19/2018 01:16	WG1085873
(S) o-Terphenyl	*88.2*			*52.0-156*		*03/19/2018 01:16*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3110		31.6	100	1	03/20/2018 09:25	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*67.8*	J2		*77.0-122*		*03/20/2018 09:25*	WG1086519

Sample Narrative:

L978252-05 WG1086519: Surrogate failure due to matrix interference.

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	7.65		0.331	1.00	1	03/18/2018 17:23	WG1086181
Toluene	11.5		0.412	1.00	1	03/18/2018 17:23	WG1086181
Ethylbenzene	90.0		0.384	1.00	1	03/18/2018 17:23	WG1086181
Total Xylenes	14.6		1.06	3.00	1	03/18/2018 17:23	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 17:23	WG1086181
(S) Toluene-d8	*90.8*			*80.0-120*		*03/18/2018 17:23*	WG1086181
(S) Dibromofluoromethane	*88.4*			*76.0-123*		*03/18/2018 17:23*	WG1086181
(S) a,a,a-Trifluorotoluene	*95.0*			*80.0-120*		*03/18/2018 17:23*	WG1086181
(S) 4-Bromofluorobenzene	*107*			*80.0-120*		*03/18/2018 17:23*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	2360		66.0	200	1	03/19/2018 01:33	WG1085873
Residual Range Organics (RRO)	742		82.5	250	1	03/19/2018 01:33	WG1085873
(S) o-Terphenyl	*92.8*			*52.0-156*		*03/19/2018 01:33*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	356	B	31.6	100	1	03/20/2018 09:47	WG1086519
(S) a,a,a-Trifluorotoluene(FID)	*93.5*			*77.0-122*		*03/20/2018 09:47*	WG1086519

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	03/18/2018 17:43	WG1086181
Toluene	U		0.412	1.00	1	03/18/2018 17:43	WG1086181
Ethylbenzene	0.544	J	0.384	1.00	1	03/18/2018 17:43	WG1086181
Total Xylenes	U		1.06	3.00	1	03/18/2018 17:43	WG1086181
Methyl tert-butyl ether	U		0.367	1.00	1	03/18/2018 17:43	WG1086181
(S) Toluene-d8	*103*			*80.0-120*		*03/18/2018 17:43*	WG1086181
(S) Dibromofluoromethane	*91.3*			*76.0-123*		*03/18/2018 17:43*	WG1086181
(S) a,a,a-Trifluorotoluene	*99.8*			*80.0-120*		*03/18/2018 17:43*	WG1086181
(S) 4-Bromofluorobenzene	*104*			*80.0-120*		*03/18/2018 17:43*	WG1086181

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1440		66.0	200	1	03/19/2018 01:50	WG1085873
Residual Range Organics (RRO)	216	J	82.5	250	1	03/19/2018 01:50	WG1085873
(S) o-Terphenyl	*87.5*			*52.0-156*		*03/19/2018 01:50*	WG1085873

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	5340		31.6	100	1	03/21/2018 01:18	WG1087153
(S) a,a,a-Trifluorotoluene(FID)	*114*			*77.0-122*		*03/21/2018 01:18*	WG1087153

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	7.00		0.331	1.00	1	03/19/2018 20:10	WG1086589
Toluene	13.7		0.412	1.00	1	03/19/2018 20:10	WG1086589
Ethylbenzene	88.4		0.384	1.00	1	03/19/2018 20:10	WG1086589
Total Xylenes	14.5		1.06	3.00	1	03/19/2018 20:10	WG1086589
Methyl tert-butyl ether	U		0.367	1.00	1	03/19/2018 20:10	WG1086589
(S) Toluene-d8	*90.0*			*80.0-120*		*03/19/2018 20:10*	WG1086589
(S) Dibromofluoromethane	*88.8*			*76.0-123*		*03/19/2018 20:10*	WG1086589
(S) a,a,a-Trifluorotoluene	*101*			*80.0-120*		*03/19/2018 20:10*	WG1086589
(S) 4-Bromofluorobenzene	*93.8*			*80.0-120*		*03/19/2018 20:10*	WG1086589

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	693		66.0	200	1	03/27/2018 12:24	WG1089579
Residual Range Organics (RRO)	247	B J J3	82.5	250	1	03/27/2018 12:24	WG1089579
(S) o-Terphenyl	*86.2*			*52.0-156*		*03/27/2018 12:24*	WG1089579

Method Blank (MB)

(MB) R3295369-3 03/20/18 01:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	37.0	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3295369-1 03/20/18 00:33 • (LCSD) R3295369-2 03/20/18 00:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5720	5160	104	93.8	72.0-134			10.3	20
(S) a,a,a-Trifluorotoluene(FID)				*104*	*102*	*77.0-122*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3294940-3 03/21/18 00:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*92.7*			*77.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3294940-1 03/20/18 22:55 • (LCSD) R3294940-2 03/20/18 23:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	4860	4770	88.4	86.8	72.0-134			1.89	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*108*	*77.0-122*				

L978893-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L978893-04 03/21/18 00:56 • (MS) R3294940-4 03/21/18 08:32 • (MSD) R3294940-5 03/21/18 08:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	1630	3620	3500	36.2	33.9	1	23.0-159			3.57	20
(S) a,a,a-Trifluorotoluene(FID)					*101*	*101*		*77.0-122*				

Method Blank (MB)

(MB) R3295526-2 03/18/18 14:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) a,a,a-Trifluorotoluene	*101*			*80.0-120*
(S) Toluene-d8	*110*			*80.0-120*
(S) Dibromofluoromethane	*88.8*			*76.0-123*
(S) 4-Bromofluorobenzene	*99.5*			*80.0-120*

Laboratory Control Sample (LCS)

(LCS) R3295526-1 03/18/18 09:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	25.0	21.5	85.9	69.0-123	
Ethylbenzene	25.0	23.4	93.6	77.0-120	
Methyl tert-butyl ether	25.0	21.3	85.2	64.0-123	
Toluene	25.0	22.4	89.7	77.0-120	
Xylenes, Total	75.0	65.5	87.3	77.0-120	
(S) a,a,a-Trifluorotoluene			*94.2*	*80.0-120*	
(S) Toluene-d8			*105*	*80.0-120*	
(S) Dibromofluoromethane			*92.1*	*76.0-123*	
(S) 4-Bromofluorobenzene			*98.1*	*80.0-120*	

Method Blank (MB)

(MB) R3295547-2 03/19/18 19:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*111*			*80.0-120*
(S) Dibromofluoromethane	*98.1*			*76.0-123*
(S) a,a,a-Trifluorotoluene	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*90.3*			*80.0-120*

Laboratory Control Sample (LCS)

(LCS) R3295547-1 03/19/18 18:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	25.0	20.6	82.3	69.0-123	
Ethylbenzene	25.0	28.2	113	77.0-120	
Methyl tert-butyl ether	25.0	19.6	78.2	64.0-123	
Toluene	25.0	26.7	107	77.0-120	
Xylenes, Total	75.0	80.0	107	77.0-120	
(S) Toluene-d8			*110*	*80.0-120*	
(S) Dibromofluoromethane			*87.4*	*76.0-123*	
(S) a,a,a-Trifluorotoluene			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*90.0*	*80.0-120*	

Method Blank (MB)

(MB) R3294780-1 03/18/18 15:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*78.2*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3294780-2 03/18/18 15:36 • (LCSD) R3294780-3 03/18/18 15:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	750	805	793	107	106	50.0-150			1.53	20
Residual Range Organics (RRO)	750	838	861	112	115	50.0-150			2.62	20
(S) o-Terphenyl				*93.0*	*92.8*	*52.0-156*				

Method Blank (MB)

(MB) R3296789-1 03/27/18 11:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	133	J	83.3	250
(S) o-Terphenyl	*89.0*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3296789-2 03/27/18 11:51 • (LCSD) R3296789-3 03/27/18 12:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	750	694	720	92.5	96.0	50.0-150			3.70	20
Residual Range Organics (RRO)	750	827	1100	110	147	50.0-150		J3	28.6	20
(S) o-Terphenyl				*96.0*	*103*	*52.0-156*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

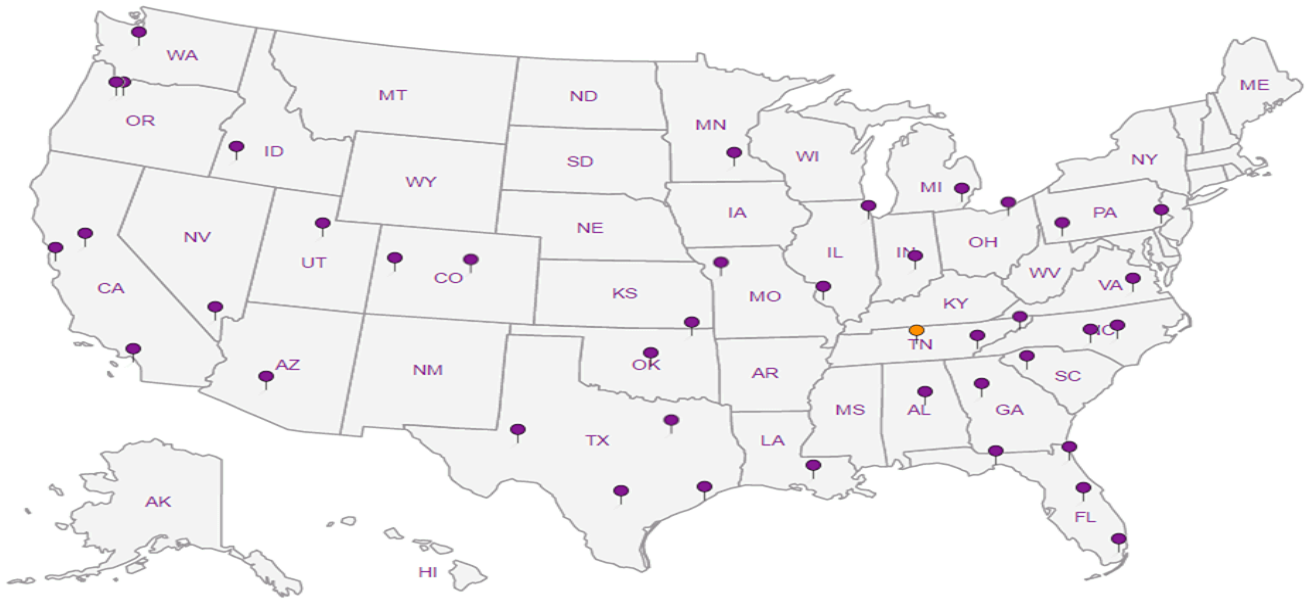
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



ARCADIS US - Seattle, WA

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Pres Chk

Report to: Ross LaGrandeur

Email To: Ross.LaGrandeur@arcadis.com; Ryan.Brauchla@arcadis.com;

Project Description: WA-11060

City/State Collected:

Phone: 509-438-9828
Fax:

Client Project # GP09BPNA.WA48

Lab Project # ARCABPWA-WA11060

Collected by (print): Patrick Collins

Site/Facility ID # 4580 FAUNTLEROY WAY SW,

P.O. # GP09BPNA.WA48

Collected by (signature):

Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ✓ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L976252

Table E179

Acctnum: ARCABPWA
Template: T133162
Prelogin: P640539
TSR: 110 - Brian Ford
PB: JB 2.23-18
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	V8260BTEXMC 40mlAmb-HCl	Remarks	Sample # (lab only)
MW-6	Grab	GW		3/13/18	1100	8	✓	✓	✓		-01
MW-1		GW			1120		✓	✓	✓		02
GMW-1		GW			1145		✓	✓	✓		03
MW-3		GW			1240		✓	✓	✓		04
MW-2		GW			1300		✓	✓	✓		05
MW-5	↓	GW		↓	1325	↓	✓	✓	✓		06
TRIP BLANK		GW				1					
		GW									
		GW									

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: Standard TAT

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking # 6777 0000 4057

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
S. M.	3/15/18	12:15		1
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C Bottles Received: 56
Michele Yatko	3/15/18	14:43		If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/16/18 Time: 0242
			Faith Bi	Hold: Condition: NCF / OK

C109

Andy Vann

ESC Lab Sciences
Non-Conformance Form

Login #: L978252	Client: ARCABPWA	Date: 3/16/18	Evaluated by: Jeremy

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Couri
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container	x	Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

1. **Trip Blank not marked**
2. **Received DUP-1 not on COC**

Client informed by:		Call		Email	x	Voice Mail		Date:03/19/18	Time:1045
TSR Initials:bjf	Client Contact: Ross LaGrandeur								

Login Instructions:

1) Place trip blank on hold.
2) Log DUP-1 for all analyses listed on the COC.

APPENDIX C

Puget Sound Clean Air Agency Permit

pscleanair.org
Puget Sound Clean Air Agency

Puget Sound Clean Air Agency

Notice of Construction No. **10813**

HEREBY ISSUES AN ORDER OF APPROVAL TO CONSTRUCT, INSTALL, OR ESTABLISH

Registration No. **29664**

Date

Soil remediation project at the former Atlantic Richfield Company (ARCO) Facility No. 11060. The project includes an air sparge and soil vapor extraction (AS/SVE) treatment unit equipped with a catalytic oxidizer.

APPLICANT

Arti Patel
ARCADIS U.S., Inc
2929 Briarpark Drive, Suite 300
Houston, TX 77042

OWNER

Arti Patel
ARCADIS U.S., Inc
2929 Briarpark Drive, Suite 300
Houston, TX 77042

INSTALLATION ADDRESS

Former Arco #11060 Remediation, 4580 Fauntleroy Way SW, Seattle, WA 98126-2740

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

3. All vapors from the remediation extraction system shall be vented to a catalytic oxidizer until the criteria in Condition No. 8 of this Order of Approval have been met.

4. The maximum influent flow rate to the catalytic oxidizer shall not exceed 120 standard cubic feet per minute.

5. The control efficiency of the catalytic oxidizer shall be maintained at a minimum of 98% by weight when the TPH influent concentration to the catalytic oxidizer is greater than or equal to 200 ppmv.

6. The catalyst inlet temperature shall be at least 625 degrees Fahrenheit.

7. To determine compliance with Conditions 4, 5 and 6 of this Order of Approval, the owner or operator shall conduct monthly monitoring on the catalytic oxidizer as specified below:

    a. Measure the catalyst inlet temperature;

    b. Analyze inlet gas stream to determine the flow rate and the concentration of total petroleum hydrocarbon (TPH);

    c. Analyze exhaust gas to determine the flow rate and the concentration of TPH; and

    d. Calculate the control efficiency based on the inlet and exhaust gas analysis.

Initial monitoring shall be performed no later than 15 days after start-up of the catalytic oxidizer. Gas concentration shall be determined using a photoionization detector (PID) or other equivalent method approved by the Agency.

8. The owner or operator may operate the air sparge and soil vapor extraction treatment unit without the catalytic oxidizer when sampling data for two or more consecutive months demonstrates the following criteria are met:

   a. The pre-control total petroleum hydrocarbon (TPH) emissions are less than 2.5 pounds per day; and

   b. The pre-control benzene emissions are less than 0.018 pounds per day.

   Written approval from the Puget Sound Clean Air Agency must be obtained prior to removal of the catalytic oxidizer. Approval is based on review of monitoring data submitted in writing to the Agency, including measured flow rate and concentrations of TPH and benzene and an estimate of daily emissions for TPH and benzene.

9. The owner or operator shall maintain the following records on-site for at least two years and shall make them available to Agency personnel upon request:

   a. All monitoring results showing the concentration of TPH at the inlet and outlet to the catalytic oxidizer, including the date monitoring was conducted;

   b. Calculations showing the control efficiency of the catalytic oxidizer based on monitoring results;

   c. All monitoring results showing the pre-control concentration of TPH and benzene are below the criteria in Condition 8 of this Order of Approval, including the date the monitoring was conducted;

   d. All measurements of the influent flow rate to the catalytic oxidizer; and

   e. All measurements of the catalyst inlet temperature.

10. The owner or operator shall report any non-compliance with Condition No. 5 of this Order of Approval to the Agency no later than 30 days after it is first discovered. The owner or operator shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal.

APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

Margaret L. Corbin
Reviewing Engineer

Carole Cenci
Compliance Manager

APPENDIX D

New Soil Boring Logs

ARCADIS Design & Consultancy for natural and built assets

Soil Boring Log

Boring No.: MW-11

Sheet: 1 of 1

Project Name: BP 11060
Project Number: GP18BPNA.TR00.WA000
Project Location: 4580 Fauntleroy Street, WA

Date Started: 10/19/2018
Date Completed: 10/19/2018
Weather Conditions: Sunny 60°F

Logger: E. Krueger
Editor: NA

Depth (feet)	Blow Counts	Recovery (in.)	Sample ID & Time	PID (ppm)	USCS Class	Description	Construction Details
1						(0.0-0.5') Concrete surface.	8 1/4 inch Diameter Borehole
2							
3	HA	6		0.0		(2.0-2.5') SANDY SILT (ML), low plasticity, with trace gravel, fine grain; small subrounded gravel; moist; loose; brown.	Concrete (0-4 ft)
4							
5	HA	6		0.0		(4.0-4.5') SILTY CLAY (CL/ML), medium plasticity; some sand, fine grain; moist; loose; brown; orangish staining.	
6							
7	HA	6		0.0		(6.0-6.5') SILTY CLAY (CL/ML), medium plasticity; some sand, fine grain; moist; loose; brown; orangish staining. wood debris, cleared to 6.5 ft bgs.	
8	12, 14, 16	18		0.3		(7.5-9.0') SILTY CLAY (CL/ML), medium plasticity; some sand, fine grain; moist; loose; olive green gray; wood debris.	Hydrated Bentonite Pellets (4-13.5 ft)
9							
10							
11	12, 20, 21	18		3.5		(10.0-11.5') SILTY CLAY (CL/ML), medium plasticity; some sand, fine grain; moist; loose; brown; orangish staining.	
12							
13	10, 14, 14	18		0.8		(12.5-14.0') SANDY SILT (ML), low plasticity; trace clay and gravel, fine grain; loose; moist; orange brown.	2 inch Diameter Well Casing (0-15 ft)
14							
15							
16	35, 50/6	18		0.8		(15.0-16.5') SANDY SILT (ML), low plasticity, fine grain; moist; loose; orange brown.	
17							
18	20, 50/6	18		0.9		(17.5-19.0') SILTY SAND (SM), fine grain; poorly graded; moist; loose; gray.	
19							
20							
21	24, 28, 29	18		1.5		(20.0-21.5') SILTY SAND (SM), fine grain; poorly graded; moist; loose; gray.	
22							Sand Pack 2/12 (13.5-30 ft)
23	27, 28, 30	18	MW-11 (22.5-24) 1320	10.6		(22.5-24.0') SILTY SAND (SM), fine grain; poorly graded; wet; wet, loose; gray.	
24							
25							Well Screen 2 inch diameter 0.020 slot (15-30 ft)
26	28, 30, 30	18		8.2		(25.0-26.5') SILTY SAND (SM), fine grain; poorly graded; wet; loose; gray.	
27							
28	30, 21, 34	18		2.5		(27.5.0-29.0') SILTY SAND (SM), fine grain; trace clay, poorly graded; moist; wet; dense; gray.	
29							
30							
31	27, 50/6	18	MW-11 (30-31.5) 1325	9.6		(30.0-31.5') SILTY SAND (SM), fine grain; some clay, poorly graded; moist; wet; dense; gray.	
32						End of boring at 31.5 ft bgs.	

Drilling Co.: Cascade Drilling
Driller: Wes
Drilling Method: Hand Auger / Hollow Stem Auger
Drilling Fluid: None
Remarks: ' / ft = feet; " / in = inch; bgs = below ground surface; ppm = parts per million; NA = not applicable / available. HA = hand auger.

Sampling Method: Hand Auger / Split Spoon
Sampling Interval: 2.5'
Water Level Start (ft. bgs.): 22.5
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor:
East Coor:

ARCADIS Design & Consultancy for natural and built assets

Soil Boring Log

Boring No.: MW-12

Sheet: 1 of 1

Project Name: BP 11060
Project Number: GP18BPNA.TR00.WA000
Project Location: 4580 Fauntleroy Street, WA

Date Started: 10/19/2018
Date Completed: 10/19/2018
Weather Conditions: Sunny 60°F

Logger: E. Krueger
Editor: NA

Depth (feet)	Blow Counts	Recovery (in.)	Sample ID & Time	PID (ppm)	USCS Class	Description	Construction Details
1						(0.0-8") Concrete.	8 1/4 inch Diameter Borehole
2	HA	6		0.2		(2.0-2.5') SAND (SW), with some gravel, fine to coarse grain; well sorted; loose; brown.	Concrete (0-4 ft)
3							
4	HA	6		0.6		(4.0-4.5') SANDY SILT (ML), low plasticity, fine grain; dry; loose; brown.	
5							
6	HA	6		1.0		(6.0-6.5') SANDY SILT (ML), low plasticity, fine grain; dry; loose; brown. Cleared to 6.5 ft bgs.	
7							
8	4, 8, 9	18		1.7		(7.5-9.0') SANDY SILT (ML), low plasticity, fine grain; dry; brown.	Hydrated Bentonite Pellets (4-13.5 ft)
9							
10							
11	10, 12, 14	18		2.6		(10.0-10.5') SANDY SILT (ML), low plasticity, fine grain; dry; brown.	
12						(10.5-11.5') SILTY CLAY (CL), low plasticity; moist; blue gray.	
13	4, 8, 8	18		11.0		(12.5-14.0') SILTY CLAY (CL), low plasticity; moist; blue gray. From 13-14 ft bgs, brown with black staining.	2 inch Diameter Well Casing (0-15 ft)
14							
15							
16	12, 13, 18	18		3.3		(15.0-16.5') SILTY CLAY (CL), low plasticity; moist; dense; orange brown.	
17							
18	18, 18, 20	18	MW-12 (17.5-19) 1520	600.3		(17.5-19.0') SILTY SAND (SM), fine grain; poorly graded; dry; loose; gray.	
19							
20							
21	17, 20, 21	18		999.6		(20.0-21.5') SILTY SAND (SM), fine grain; poorly graded; dry; loose; gray.	
22							Sand Pack 2/12 (13.5-30 ft)
23	19, 19, 20	18	MW-12 (22.5-24) 1525	1,625		(22.5-24.0') SILTY SAND (SM), fine grain; poorly graded; moist; loose; gray.	
24							
25							Well Screen 2 inch diameter 0.020 slot (15-30 ft)
26	21, 24, 26	18	MW-12 (25-26.5) 1530	153		(25.0-26.5') SILTY SAND (SM), fine grain; poorly graded; moist to wet; loose; gray.	
27							
28	20, 20, 24	18		39.5		(27.5-29.0') SILTY SAND (SM), fine grain; poorly graded; wet; dense; brown.	
29							
30							
31	24, 27, 28	18		34.5		(30.0-31.5') SANDY SILT (ML), with trace clay, low plasticity, fine grain; wet; dense; orangish brown.	
32							
33	18, 19, 18	18	MW-12 (32.5-34) 1535	29.7		(32.5-34.0') SANDY SILT (ML), with trace clay, low plasticity, fine grain; wet; dense; brown.	
34							
35						End of boring at 34.0 ft bgs.	

Drilling Co.: Cascade Drilling
Driller: Wes
Drilling Method: Hand Auger / Hollow Stem Auger
Drilling Fluid: None
Remarks: ' / ft = feet; " / in = inch; bgs = below ground surface; ppm = parts per million; NA = not applicable / available. HA = hand auger.

Sampling Method: Hand Auger / Split Spoon
Sampling Interval: 2.5'
Water Level Start (ft. bgs.): 27.58
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor:
East Coor:

APPENDIX E

Soil Analytical Laboratory Report and Chain-of-Custody Documentation

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 30, 2018

ARCADIS US - Seattle, WA

Sample Delivery Group:	L1037208
Samples Received:	10/23/2018
Project Number:	
Description:	WA48
Site:	WA48
Report To:	Ross LaGrandeur 1100 Olive Way Suite 800 Seattle, WA 98101

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

MW-11-22.5-24 L1037208-01 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 13:20 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 05:58	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 03:53	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 09:13	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 19:16	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186723	1	10/26/18 14:02	10/27/18 03:56	DMG

MW-11-30-31.5 L1037208-02 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 13:25 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 05:02	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 04:18	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 09:32	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 19:31	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186723	1	10/26/18 14:02	10/27/18 04:19	DMG

MW-12-17.5-19 L1037208-03 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 15:20 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 06:01	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25.25	10/23/18 23:51	10/27/18 04:42	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1.01	10/23/18 23:51	10/27/18 09:51	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 19:46	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186724	1	10/26/18 16:42	10/27/18 10:17	DMG

MW-12-22.5-24 L1037208-04 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 15:25 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 06:03	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 05:07	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 10:10	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 17:13	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186724	1	10/26/18 16:42	10/27/18 10:38	DMG

MW-12-25-26.5 L1037208-05 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 15:30 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 06:06	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 05:31	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 10:29	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 17:28	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186724	1	10/26/18 16:42	10/27/18 10:59	DMG

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

MW-12-32.5-34 L1037208-06 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 15:35 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 06:08	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 05:56	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 10:48	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 17:43	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186724	1	10/26/18 16:42	10/27/18 11:20	DMG

DUP-1 L1037208-07 Solid

Collected by: Eric Krueger | Collected date/time: 10/19/18 00:00 | Received date/time: 10/23/18 08:45

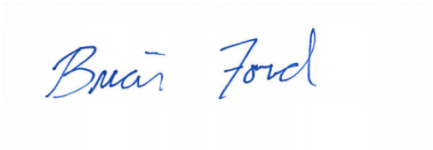
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1187000	1	10/26/18 15:18	10/26/18 15:27	JD
Metals (ICP) by Method 6010D	WG1185404	1	10/24/18 15:04	10/26/18 06:11	TRB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1187003	25	10/23/18 23:51	10/27/18 06:21	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1187209	1	10/23/18 23:51	10/27/18 11:07	ACG
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186709	1	10/26/18 06:56	10/26/18 18:00	MTJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1186724	1	10/26/18 16:42	10/27/18 11:41	DMG

TRIP BLANK L1037208-08 GW

Collected by: Eric Krueger | Collected date/time: 10/19/18 00:00 | Received date/time: 10/23/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1186690	1	10/26/18 03:50	10/26/18 03:50	LRL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1185596	1	10/24/18 11:51	10/24/18 11:51	PP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1186744	1	10/26/18 15:37	10/27/18 00:03	TH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.9		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	0.462	J	0.224	0.589	1	10/26/2018 05:58	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.37	J	0.999	2.94	25	10/27/2018 03:53	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*		*10/27/2018 03:53*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000471	0.00118	1	10/27/2018 09:13	WG1187209
Toluene	0.00150	J	0.00147	0.00589	1	10/27/2018 09:13	WG1187209
Ethylbenzene	0.00118	J	0.000624	0.00294	1	10/27/2018 09:13	WG1187209
Total Xylenes	U		0.00563	0.00766	1	10/27/2018 09:13	WG1187209
Methyl tert-butyl ether	U		0.000347	0.00118	1	10/27/2018 09:13	WG1187209
1,2-Dichloroethane	U		0.000559	0.00294	1	10/27/2018 09:13	WG1187209
1,2-Dibromoethane	U		0.000618	0.00294	1	10/27/2018 09:13	WG1187209
(S) Toluene-d8	*109*			*75.0-131*		*10/27/2018 09:13*	WG1187209
(S) Dibromofluoromethane	*91.6*			*65.0-129*		*10/27/2018 09:13*	WG1187209
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*		*10/27/2018 09:13*	WG1187209
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*10/27/2018 09:13*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.57	4.71	1	10/26/2018 19:16	WG1186709
Residual Range Organics (RRO)	U		3.92	11.8	1	10/26/2018 19:16	WG1186709
(S) o-Terphenyl	*68.1*			*18.0-148*		*10/26/2018 19:16*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Benzo(a)pyrene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Benzo(b)fluoranthene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Benzo(k)fluoranthene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Chrysene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Dibenz(a,h)anthracene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Indeno(1,2,3-cd)pyrene	U		0.000707	0.00707	1	10/27/2018 03:56	WG1186723
Naphthalene	U		0.00236	0.0236	1	10/27/2018 03:56	WG1186723
1-Methylnaphthalene	U		0.00236	0.0236	1	10/27/2018 03:56	WG1186723
2-Methylnaphthalene	U		0.00236	0.0236	1	10/27/2018 03:56	WG1186723
(S) Nitrobenzene-d5	*33.9*			*14.0-149*		*10/27/2018 03:56*	WG1186723
(S) 2-Fluorobiphenyl	*85.3*			*34.0-125*		*10/27/2018 03:56*	WG1186723
(S) p-Terphenyl-d14	*83.0*			*23.0-120*		*10/27/2018 03:56*	WG1186723

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.0		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.28		0.237	0.625	1	10/26/2018 05:02	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.62	J	1.06	3.12	25	10/27/2018 04:18	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*109*			*77.0-120*		*10/27/2018 04:18*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000500	0.00125	1	10/27/2018 09:32	WG1187209
Toluene	0.00178	J	0.00156	0.00625	1	10/27/2018 09:32	WG1187209
Ethylbenzene	0.000696	J	0.000662	0.00312	1	10/27/2018 09:32	WG1187209
Total Xylenes	U		0.00597	0.00812	1	10/27/2018 09:32	WG1187209
Methyl tert-butyl ether	U		0.000369	0.00125	1	10/27/2018 09:32	WG1187209
1,2-Dichloroethane	U		0.000594	0.00312	1	10/27/2018 09:32	WG1187209
1,2-Dibromoethane	U		0.000656	0.00312	1	10/27/2018 09:32	WG1187209
(S) Toluene-d8	*104*			*75.0-131*		*10/27/2018 09:32*	WG1187209
(S) Dibromofluoromethane	*94.4*			*65.0-129*		*10/27/2018 09:32*	WG1187209
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*		*10/27/2018 09:32*	WG1187209
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*10/27/2018 09:32*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	1.67	J	1.66	5.00	1	10/26/2018 19:31	WG1186709
Residual Range Organics (RRO)	U		4.16	12.5	1	10/26/2018 19:31	WG1186709
(S) o-Terphenyl	*70.9*			*18.0-148*		*10/26/2018 19:31*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Benzo(a)pyrene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Benzo(b)fluoranthene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Benzo(k)fluoranthene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Chrysene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Dibenz(a,h)anthracene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Indeno(1,2,3-cd)pyrene	U		0.000750	0.00750	1	10/27/2018 04:19	WG1186723
Naphthalene	U		0.00250	0.0250	1	10/27/2018 04:19	WG1186723
1-Methylnaphthalene	U		0.00250	0.0250	1	10/27/2018 04:19	WG1186723
2-Methylnaphthalene	U		0.00250	0.0250	1	10/27/2018 04:19	WG1186723
(S) Nitrobenzene-d5	*35.7*			*14.0-149*		*10/27/2018 04:19*	WG1186723
(S) 2-Fluorobiphenyl	*79.3*			*34.0-125*		*10/27/2018 04:19*	WG1186723
(S) p-Terphenyl-d14	*71.2*			*23.0-120*		*10/27/2018 04:19*	WG1186723

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.2		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.03		0.208	0.548	1	10/26/2018 06:01	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	54.2		0.938	2.77	25.25	10/27/2018 04:42	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*10/27/2018 04:42*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000443	0.00111	1.01	10/27/2018 09:51	WG1187209
Toluene	0.0230		0.00138	0.00553	1.01	10/27/2018 09:51	WG1187209
Ethylbenzene	0.00183	J	0.000586	0.00277	1.01	10/27/2018 09:51	WG1187209
Total Xylenes	0.00787		0.00529	0.00719	1.01	10/27/2018 09:51	WG1187209
Methyl tert-butyl ether	U		0.000327	0.00111	1.01	10/27/2018 09:51	WG1187209
1,2-Dichloroethane	U		0.000526	0.00277	1.01	10/27/2018 09:51	WG1187209
1,2-Dibromoethane	U		0.000581	0.00277	1.01	10/27/2018 09:51	WG1187209
(S) Toluene-d8	*106*			*75.0-131*		*10/27/2018 09:51*	WG1187209
(S) Dibromofluoromethane	*92.7*			*65.0-129*		*10/27/2018 09:51*	WG1187209
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*		*10/27/2018 09:51*	WG1187209
(S) 4-Bromofluorobenzene	*123*			*67.0-138*		*10/27/2018 09:51*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.46	4.38	1	10/26/2018 19:46	WG1186709
Residual Range Organics (RRO)	U		3.65	11.0	1	10/26/2018 19:46	WG1186709
(S) o-Terphenyl	*72.6*			*18.0-148*		*10/26/2018 19:46*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Benzo(a)pyrene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Benzo(b)fluoranthene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Benzo(k)fluoranthene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Chrysene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Dibenz(a,h)anthracene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Indeno(1,2,3-cd)pyrene	U		0.000658	0.00658	1	10/27/2018 10:17	WG1186724
Naphthalene	U		0.00219	0.0219	1	10/27/2018 10:17	WG1186724
1-Methylnaphthalene	U		0.00219	0.0219	1	10/27/2018 10:17	WG1186724
2-Methylnaphthalene	0.00251	J	0.00219	0.0219	1	10/27/2018 10:17	WG1186724
(S) Nitrobenzene-d5	*79.4*			*14.0-149*		*10/27/2018 10:17*	WG1186724
(S) 2-Fluorobiphenyl	*64.9*			*34.0-125*		*10/27/2018 10:17*	WG1186724
(S) p-Terphenyl-d14	*82.3*			*23.0-120*		*10/27/2018 10:17*	WG1186724

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.8		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.42		0.216	0.569	1	10/26/2018 06:03	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	106		0.966	2.85	25	10/27/2018 05:07	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*10/27/2018 05:07*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000456	0.00114	1	10/27/2018 10:10	WG1187209
Toluene	U		0.00142	0.00569	1	10/27/2018 10:10	WG1187209
Ethylbenzene	0.0502		0.000604	0.00285	1	10/27/2018 10:10	WG1187209
Total Xylenes	0.0314		0.00544	0.00740	1	10/27/2018 10:10	WG1187209
Methyl tert-butyl ether	U		0.000336	0.00114	1	10/27/2018 10:10	WG1187209
1,2-Dichloroethane	U		0.000541	0.00285	1	10/27/2018 10:10	WG1187209
1,2-Dibromoethane	U		0.000598	0.00285	1	10/27/2018 10:10	WG1187209
(S) Toluene-d8	*124*			*75.0-131*		*10/27/2018 10:10*	WG1187209
(S) Dibromofluoromethane	*91.9*			*65.0-129*		*10/27/2018 10:10*	WG1187209
(S) a,a,a-Trifluorotoluene	*99.9*			*80.0-120*		*10/27/2018 10:10*	WG1187209
(S) 4-Bromofluorobenzene	*128*			*67.0-138*		*10/27/2018 10:10*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	13.8		1.51	4.56	1	10/26/2018 17:13	WG1186709
Residual Range Organics (RRO)	U		3.79	11.4	1	10/26/2018 17:13	WG1186709
(S) o-Terphenyl	*72.5*			*18.0-148*		*10/26/2018 17:13*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Benzo(a)pyrene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Benzo(b)fluoranthene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Benzo(k)fluoranthene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Chrysene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Dibenz(a,h)anthracene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Indeno(1,2,3-cd)pyrene	U		0.000683	0.00683	1	10/27/2018 10:38	WG1186724
Naphthalene	0.0404		0.00228	0.0228	1	10/27/2018 10:38	WG1186724
1-Methylnaphthalene	0.0194	J	0.00228	0.0228	1	10/27/2018 10:38	WG1186724
2-Methylnaphthalene	0.0435		0.00228	0.0228	1	10/27/2018 10:38	WG1186724
(S) Nitrobenzene-d5	*45.2*			*14.0-149*		*10/27/2018 10:38*	WG1186724
(S) 2-Fluorobiphenyl	*52.6*			*34.0-125*		*10/27/2018 10:38*	WG1186724
(S) p-Terphenyl-d14	*72.8*			*23.0-120*		*10/27/2018 10:38*	WG1186724

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.5		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.47		0.220	0.578	1	10/26/2018 06:06	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	3.06		0.980	2.89	25	10/27/2018 05:31	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*10/27/2018 05:31*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000462	0.00116	1	10/27/2018 10:29	WG1187209
Toluene	U		0.00144	0.00578	1	10/27/2018 10:29	WG1187209
Ethylbenzene	0.00412		0.000612	0.00289	1	10/27/2018 10:29	WG1187209
Total Xylenes	U		0.00552	0.00751	1	10/27/2018 10:29	WG1187209
Methyl tert-butyl ether	U		0.000341	0.00116	1	10/27/2018 10:29	WG1187209
1,2-Dichloroethane	U		0.000549	0.00289	1	10/27/2018 10:29	WG1187209
1,2-Dibromoethane	U		0.000607	0.00289	1	10/27/2018 10:29	WG1187209
(S) Toluene-d8	*109*			*75.0-131*		*10/27/2018 10:29*	WG1187209
(S) Dibromofluoromethane	*91.4*			*65.0-129*		*10/27/2018 10:29*	WG1187209
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*		*10/27/2018 10:29*	WG1187209
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/27/2018 10:29*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.54	4.62	1	10/26/2018 17:28	WG1186709
Residual Range Organics (RRO)	U		3.85	11.6	1	10/26/2018 17:28	WG1186709
(S) o-Terphenyl	*76.1*			*18.0-148*		*10/26/2018 17:28*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Benzo(a)pyrene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Benzo(b)fluoranthene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Benzo(k)fluoranthene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Chrysene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Dibenz(a,h)anthracene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Indeno(1,2,3-cd)pyrene	U		0.000693	0.00693	1	10/27/2018 10:59	WG1186724
Naphthalene	0.00237	J	0.00231	0.0231	1	10/27/2018 10:59	WG1186724
1-Methylnaphthalene	U		0.00231	0.0231	1	10/27/2018 10:59	WG1186724
2-Methylnaphthalene	U		0.00231	0.0231	1	10/27/2018 10:59	WG1186724
(S) Nitrobenzene-d5	*61.0*			*14.0-149*		*10/27/2018 10:59*	WG1186724
(S) 2-Fluorobiphenyl	*63.5*			*34.0-125*		*10/27/2018 10:59*	WG1186724
(S) p-Terphenyl-d14	*77.1*			*23.0-120*		*10/27/2018 10:59*	WG1186724

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.1		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.39		0.237	0.624	1	10/26/2018 06:08	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	3.67		1.06	3.12	25	10/27/2018 05:56	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*10/27/2018 05:56*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000500	0.00125	1	10/27/2018 10:48	WG1187209
Toluene	U		0.00156	0.00624	1	10/27/2018 10:48	WG1187209
Ethylbenzene	0.000733	J	0.000662	0.00312	1	10/27/2018 10:48	WG1187209
Total Xylenes	U		0.00597	0.00812	1	10/27/2018 10:48	WG1187209
Methyl tert-butyl ether	U		0.000368	0.00125	1	10/27/2018 10:48	WG1187209
1,2-Dichloroethane	U		0.000593	0.00312	1	10/27/2018 10:48	WG1187209
1,2-Dibromoethane	U		0.000656	0.00312	1	10/27/2018 10:48	WG1187209
(S) Toluene-d8	*108*			*75.0-131*		*10/27/2018 10:48*	WG1187209
(S) Dibromofluoromethane	*95.1*			*65.0-129*		*10/27/2018 10:48*	WG1187209
(S) a,a,a-Trifluorotoluene	*106*			*80.0-120*		*10/27/2018 10:48*	WG1187209
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*10/27/2018 10:48*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.66	5.00	1	10/26/2018 17:43	WG1186709
Residual Range Organics (RRO)	U		4.16	12.5	1	10/26/2018 17:43	WG1186709
(S) o-Terphenyl	*64.5*			*18.0-148*		*10/26/2018 17:43*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Benzo(a)pyrene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Benzo(b)fluoranthene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Benzo(k)fluoranthene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Chrysene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Dibenz(a,h)anthracene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Indeno(1,2,3-cd)pyrene	U		0.000749	0.00749	1	10/27/2018 11:20	WG1186724
Naphthalene	U		0.00250	0.0250	1	10/27/2018 11:20	WG1186724
1-Methylnaphthalene	U		0.00250	0.0250	1	10/27/2018 11:20	WG1186724
2-Methylnaphthalene	U		0.00250	0.0250	1	10/27/2018 11:20	WG1186724
(S) Nitrobenzene-d5	*48.4*			*14.0-149*		*10/27/2018 11:20*	WG1186724
(S) 2-Fluorobiphenyl	*52.8*			*34.0-125*		*10/27/2018 11:20*	WG1186724
(S) p-Terphenyl-d14	*53.7*			*23.0-120*		*10/27/2018 11:20*	WG1186724

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.7		1	10/26/2018 15:27	WG1187000

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	0.316	J	0.227	0.597	1	10/26/2018 06:11	WG1185404

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.41	J	1.01	2.99	25	10/27/2018 06:21	WG1187003
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*10/27/2018 06:21*	WG1187003

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000478	0.00119	1	10/27/2018 11:07	WG1187209
Toluene	0.00238	J	0.00149	0.00597	1	10/27/2018 11:07	WG1187209
Ethylbenzene	0.00109	J	0.000633	0.00299	1	10/27/2018 11:07	WG1187209
Total Xylenes	U		0.00571	0.00776	1	10/27/2018 11:07	WG1187209
Methyl tert-butyl ether	U		0.000352	0.00119	1	10/27/2018 11:07	WG1187209
1,2-Dichloroethane	U		0.000567	0.00299	1	10/27/2018 11:07	WG1187209
1,2-Dibromoethane	U		0.000627	0.00299	1	10/27/2018 11:07	WG1187209
(S) Toluene-d8	*105*			*75.0-131*		*10/27/2018 11:07*	WG1187209
(S) Dibromofluoromethane	*92.2*			*65.0-129*		*10/27/2018 11:07*	WG1187209
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*		*10/27/2018 11:07*	WG1187209
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/27/2018 11:07*	WG1187209

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.59	4.78	1	10/26/2018 18:00	WG1186709
Residual Range Organics (RRO)	U		3.98	11.9	1	10/26/2018 18:00	WG1186709
(S) o-Terphenyl	*75.5*			*18.0-148*		*10/26/2018 18:00*	WG1186709

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)anthracene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Benzo(a)pyrene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Benzo(b)fluoranthene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Benzo(k)fluoranthene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Chrysene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Dibenz(a,h)anthracene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Indeno(1,2,3-cd)pyrene	U		0.000717	0.00717	1	10/27/2018 11:41	WG1186724
Naphthalene	0.00239	J	0.00239	0.0239	1	10/27/2018 11:41	WG1186724
1-Methylnaphthalene	U		0.00239	0.0239	1	10/27/2018 11:41	WG1186724
2-Methylnaphthalene	U		0.00239	0.0239	1	10/27/2018 11:41	WG1186724
(S) Nitrobenzene-d5	*57.0*			*14.0-149*		*10/27/2018 11:41*	WG1186724
(S) 2-Fluorobiphenyl	*60.2*			*34.0-125*		*10/27/2018 11:41*	WG1186724
(S) p-Terphenyl-d14	*64.6*			*23.0-120*		*10/27/2018 11:41*	WG1186724

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	32.5	B J	31.6	100	1	10/26/2018 03:50	WG1186690
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*10/26/2018 03:50*	WG1186690

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.331	1.00	1	10/24/2018 11:51	WG1185596
Toluene	U		0.412	1.00	1	10/24/2018 11:51	WG1185596
Ethylbenzene	U		0.384	1.00	1	10/24/2018 11:51	WG1185596
Total Xylenes	U		1.06	3.00	1	10/24/2018 11:51	WG1185596
Methyl tert-butyl ether	U		0.367	1.00	1	10/24/2018 11:51	WG1185596
1,2-Dichloroethane	U		0.361	1.00	1	10/24/2018 11:51	WG1185596
1,2-Dibromoethane	U		0.381	1.00	1	10/24/2018 11:51	WG1185596
(S) Toluene-d8	*101*			*80.0-120*		*10/24/2018 11:51*	WG1185596
(S) Dibromofluoromethane	*92.7*			*75.0-120*		*10/24/2018 11:51*	WG1185596
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*		*10/24/2018 11:51*	WG1185596
(S) 4-Bromofluorobenzene	*95.7*			*77.0-126*		*10/24/2018 11:51*	WG1185596

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/27/2018 00:03	WG1186744
Residual Range Organics (RRO)	U		83.3	250	1	10/27/2018 00:03	WG1186744
(S) o-Terphenyl	*82.1*			*52.0-156*		*10/27/2018 00:03*	WG1186744

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3354433-1 10/26/18 15:27

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1037208-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1037208-02 10/26/18 15:27 • (DUP) R3354433-3 10/26/18 15:27

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	80.0	79.8	1	0.245		10

Laboratory Control Sample (LCS)

(LCS) R3354433-2 10/26/18 15:27

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3354095-1 10/26/18 04:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.190	0.500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354095-2 10/26/18 04:57 • (LCSD) R3354095-3 10/26/18 04:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Lead	100	93.0	91.2	93.0	91.2	80.0-120			1.87	20

L1037208-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037208-02 10/26/18 05:02 • (MS) R3354095-6 10/26/18 05:09 • (MSD) R3354095-7 10/26/18 05:11

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	125	1.28	111	109	88.2	86.1	1	75.0-125			2.35	20

Method Blank (MB)

(MB) R3354309-3 10/26/18 03:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	46.0	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354309-1 10/26/18 02:19 • (LCSD) R3354309-2 10/26/18 02:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5370	5720	97.7	104	70.0-124			6.17	20
(S) a,a,a-Trifluorotoluene(FID)				*105*	*106*	*78.0-120*				

Method Blank (MB)

(MB) R3354518-3 10/27/18 00:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354518-1 10/26/18 22:59 • (LCSD) R3354518-2 10/26/18 23:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5.50	5.52	5.45	100	99.1	71.0-124			1.22	20
(S) a,a,a-Trifluorotoluene(FID)				*106*	*105*	*77.0-120*				

L1037208-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037208-07 10/27/18 06:21 • (MS) R3354518-4 10/27/18 09:12 • (MSD) R3354518-5 10/27/18 09:37

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	6.57	1.41	115	111	68.9	66.9	25	10.0-149			2.93	27
(S) a,a,a-Trifluorotoluene(FID)					*114*	*114*		*77.0-120*				

Method Blank (MB)

(MB) R3354022-4 10/24/18 10:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dibromoethane	U		0.381	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*102*			*80.0-120*
(S) Dibromofluoromethane	*89.5*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354022-1 10/24/18 09:33 • (LCSD) R3354022-2 10/24/18 09:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	25.0	22.8	22.8	91.3	91.0	70.0-123			0.274	20
1,2-Dibromoethane	25.0	25.2	25.9	101	104	80.0-122			2.84	20
1,2-Dichloroethane	25.0	20.3	20.1	81.4	80.3	70.0-128			1.41	20
Ethylbenzene	25.0	25.8	26.1	103	104	79.0-123			1.18	20
Methyl tert-butyl ether	25.0	21.8	21.5	87.2	85.8	68.0-125			1.57	20
Toluene	25.0	24.8	25.1	99.2	100	79.0-120			1.27	20
Xylenes, Total	75.0	76.4	77.6	102	103	79.0-123			1.56	20
(S) Toluene-d8				*98.8*	*102*	*80.0-120*				
(S) Dibromofluoromethane				*90.7*	*89.8*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*103*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*96.8*	*98.3*	*77.0-126*				

Method Blank (MB)

(MB) R3354805-3 10/27/18 08:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
1,2-Dibromoethane	U		0.000525	0.00250
1,2-Dichloroethane	U		0.000475	0.00250
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*111*			*75.0-131*
(S) Dibromofluoromethane	*92.4*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*106*			*67.0-138*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354805-1 10/27/18 07:39 • (LCSD) R3354805-2 10/27/18 07:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.111	0.121	88.7	96.5	70.0-123			8.42	20
1,2-Dibromoethane	0.125	0.115	0.124	91.9	99.5	74.0-128			7.99	20
1,2-Dichloroethane	0.125	0.115	0.117	91.7	93.6	65.0-131			1.96	20
Ethylbenzene	0.125	0.116	0.127	92.7	102	74.0-126			9.18	20
Methyl tert-butyl ether	0.125	0.116	0.125	92.6	99.9	66.0-132			7.60	20
Toluene	0.125	0.117	0.124	93.4	98.9	75.0-121			5.71	20
Xylenes, Total	0.375	0.358	0.389	95.5	104	72.0-127			8.30	20
(S) Toluene-d8				*105*	*105*	*75.0-131*				
(S) Dibromofluoromethane				*98.5*	*98.9*	*65.0-129*				
(S) a,a,a-Trifluorotoluene				*101*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*109*	*109*	*67.0-138*				

Method Blank (MB)

(MB) R3354244-1 10/26/18 10:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*83.8*			*18.0-148*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354244-2 10/26/18 10:35 • (LCSD) R3354244-3 10/26/18 10:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	25.0	20.4	21.4	81.6	85.6	50.0-150			4.78	20
Residual Range Organics (RRO)	25.0	19.9	21.0	79.6	84.0	50.0-150			5.38	20
(S) o-Terphenyl				*76.7*	*77.3*	*18.0-148*				

L1037326-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037326-11 10/26/18 18:31 • (MS) R3354244-4 10/26/18 18:46 • (MSD) R3354244-5 10/26/18 18:59

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	25.0	U	21.1	20.1	84.4	80.4	1	50.0-150			4.85	20
Residual Range Organics (RRO)	25.0	U	20.7	20.5	82.8	82.0	1	50.0-150			0.971	20
(S) o-Terphenyl					*80.3*	*75.8*		*18.0-148*				

Method Blank (MB)

(MB) R3354410-1 10/26/18 22:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*81.0*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354410-2 10/26/18 23:23 • (LCSD) R3354410-3 10/26/18 23:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	750	736	780	98.1	104	50.0-150			5.80	20
Residual Range Organics (RRO)	750	695	700	92.7	93.3	50.0-150			0.717	20
(S) o-Terphenyl				*118*	*100*	*52.0-156*				

Method Blank (MB)

(MB) R3354415-3 10/26/18 20:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	*64.1*			*14.0-149*
(S) 2-Fluorobiphenyl	*125*			*34.0-125*
(S) p-Terphenyl-d14	*103*			*23.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354415-1 10/26/18 19:25 • (LCSD) R3354415-2 10/26/18 19:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0800	0.0555	0.0546	69.4	68.3	45.0-120			1.63	20
Benzo(a)pyrene	0.0800	0.0540	0.0570	67.5	71.3	42.0-120			5.41	20
Benzo(b)fluoranthene	0.0800	0.0577	0.0546	72.1	68.3	42.0-121			5.52	20
Benzo(k)fluoranthene	0.0800	0.0753	0.0781	94.1	97.6	49.0-125			3.65	20
Chrysene	0.0800	0.0763	0.0774	95.4	96.8	49.0-122			1.43	20
Dibenz(a,h)anthracene	0.0800	0.0731	0.0721	91.4	90.1	47.0-125			1.38	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0738	0.0734	92.3	91.8	46.0-125			0.543	20
Naphthalene	0.0800	0.0643	0.0634	80.4	79.3	50.0-120			1.41	20
1-Methylnaphthalene	0.0800	0.0671	0.0668	83.9	83.5	51.0-121			0.448	20
2-Methylnaphthalene	0.0800	0.0617	0.0616	77.1	77.0	50.0-120			0.162	20
(S) Nitrobenzene-d5				*59.5*	*52.5*	*14.0-149*				
(S) 2-Fluorobiphenyl				*113*	*105*	*34.0-125*				
(S) p-Terphenyl-d14				*95.9*	*93.3*	*23.0-120*				

L1037201-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037201-03 10/26/18 23:30 • (MS) R3354415-4 10/26/18 23:52 • (MSD) R3354415-5 10/27/18 00:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0768	U	0.0462	0.0419	60.2	54.3	1	10.0-139			9.76	30
Benzo(a)pyrene	0.0768	U	0.0512	0.0476	66.7	61.7	1	10.0-141			7.29	31
Benzo(b)fluoranthene	0.0768	0.000789	0.0438	0.0401	56.0	50.9	1	10.0-140			8.82	36
Benzo(k)fluoranthene	0.0768	U	0.0578	0.0569	75.3	73.7	1	10.0-137			1.57	31
Chrysene	0.0768	U	0.0579	0.0564	75.4	73.1	1	10.0-145			2.62	30
Dibenz(a,h)anthracene	0.0768	U	0.0563	0.0526	73.3	68.1	1	10.0-132			6.80	31
Indeno(1,2,3-cd)pyrene	0.0768	U	0.0558	0.0522	72.7	67.6	1	10.0-137			6.67	32
Naphthalene	0.0768	0.00231	0.0554	0.0502	69.1	62.0	1	10.0-135			9.85	27
1-Methylnaphthalene	0.0768	0.00710	0.0622	0.0527	71.7	59.1	1	10.0-142			16.5	28
2-Methylnaphthalene	0.0768	0.00978	0.0583	0.0490	63.2	50.8	1	10.0-137			17.3	28
(S) Nitrobenzene-d5					*53.9*	*44.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*84.5*	*83.7*		*34.0-125*				
(S) p-Terphenyl-d14					*78.2*	*78.9*		*23.0-120*				

Method Blank (MB)

(MB) R3354451-3 10/27/18 08:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	*82.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*86.3*			*34.0-125*
(S) p-Terphenyl-d14	*87.9*			*23.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3354451-1 10/27/18 07:50 • (LCSD) R3354451-2 10/27/18 08:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0800	0.0635	0.0662	79.4	82.8	45.0-120			4.16	20
Benzo(a)pyrene	0.0800	0.0579	0.0603	72.4	75.4	42.0-120			4.06	20
Benzo(b)fluoranthene	0.0800	0.0614	0.0611	76.8	76.4	42.0-121			0.490	20
Benzo(k)fluoranthene	0.0800	0.0635	0.0716	79.4	89.5	49.0-125			12.0	20
Chrysene	0.0800	0.0653	0.0707	81.6	88.4	49.0-122			7.94	20
Dibenz(a,h)anthracene	0.0800	0.0715	0.0737	89.4	92.1	47.0-125			3.03	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0669	0.0690	83.6	86.3	46.0-125			3.09	20
Naphthalene	0.0800	0.0643	0.0662	80.4	82.8	50.0-120			2.91	20
1-Methylnaphthalene	0.0800	0.0711	0.0767	88.9	95.9	51.0-121			7.58	20
2-Methylnaphthalene	0.0800	0.0636	0.0687	79.5	85.9	50.0-120			7.71	20
(S) Nitrobenzene-d5				*63.2*	*74.5*	*14.0-149*				
(S) 2-Fluorobiphenyl				*80.9*	*80.3*	*34.0-125*				
(S) p-Terphenyl-d14				*80.5*	*85.4*	*23.0-120*				

L1037288-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037288-02 10/27/18 13:05 • (MS) R3354451-4 10/27/18 13:26 • (MSD) R3354451-5 10/27/18 13:47

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0825	ND	0.0746	0.0692	90.4	84.4	1	10.0-139			7.46	30
Benzo(a)pyrene	0.0825	ND	0.0708	0.0674	85.8	82.2	1	10.0-141			4.87	31
Benzo(b)fluoranthene	0.0825	ND	0.0667	0.0621	80.9	75.6	1	10.0-140			7.19	36
Benzo(k)fluoranthene	0.0825	ND	0.0670	0.0674	81.2	82.2	1	10.0-137			0.626	31
Chrysene	0.0825	ND	0.0713	0.0633	86.5	77.2	1	10.0-145			11.9	30
Dibenz(a,h)anthracene	0.0825	ND	0.0668	0.0677	81.0	82.6	1	10.0-132			1.41	31
Indeno(1,2,3-cd)pyrene	0.0825	ND	0.0644	0.0642	78.1	78.2	1	10.0-137			0.327	32
Naphthalene	0.0825	ND	0.0711	0.0664	86.2	80.9	1	10.0-135			6.89	27
1-Methylnaphthalene	0.0825	ND	0.0792	0.0741	96.0	90.3	1	10.0-142			6.73	28
2-Methylnaphthalene	0.0825	ND	0.0711	0.0676	86.2	82.4	1	10.0-137			5.00	28
(S) Nitrobenzene-d5					*93.6*	*89.9*		*14.0-149*				
(S) 2-Fluorobiphenyl					*86.0*	*81.3*		*34.0-125*				
(S) p-Terphenyl-d14					*100*	*90.0*		*23.0-120*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

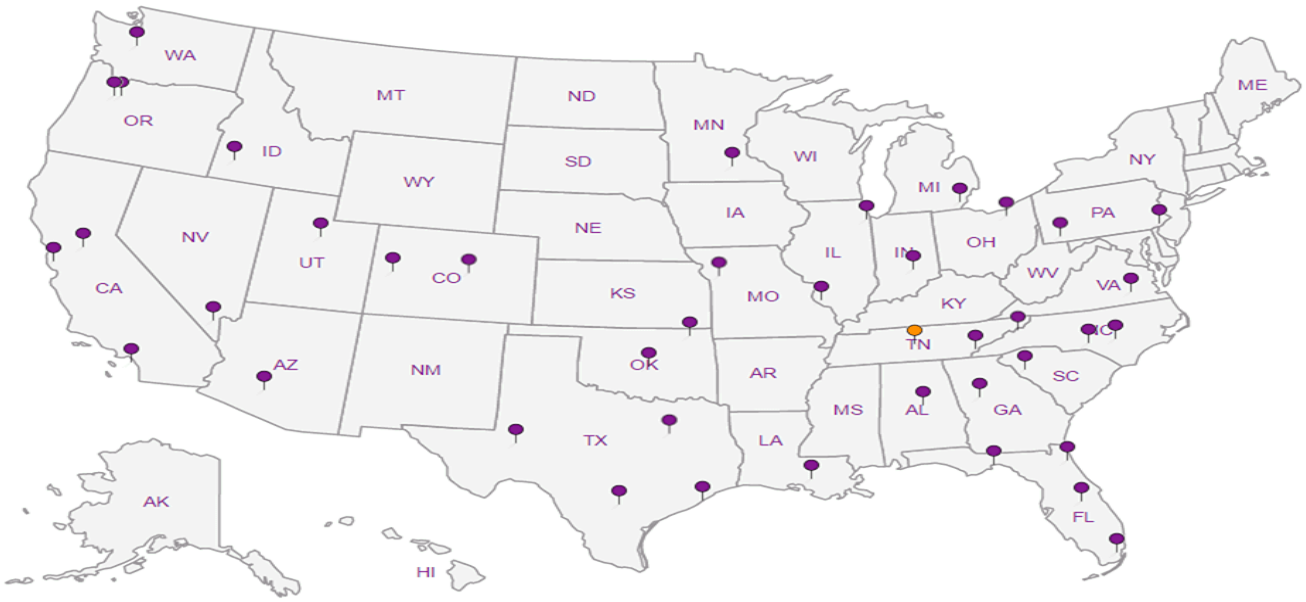
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ARCADIS US - Seattle, WA

1100 Olive Way
Suite 800
Seattle, WA 98101

Billing Information:
Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres Chk

Email To: Ross.LaGrandeur@arcadis.com; Ryan.Brauchla@arcadis.com;

Report to: Ross LaGrandeur

Project Description: WA48

City/State Collected:

Phone: 509-438-9828
Fax:

Client Project #

Lab Project # ARCABPWA-WA48

Collected by (print): Eric Krueger

Site/Facility ID # WA48

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: STAT

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
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L# L1037208

A121

Acctnum: ARCABPWA
Template: T141800
Prelogin: P676707
TSR: 110 - Brian Ford
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM,EDB,EDC 8260C 40mlAmb/MeOH5ml/Syr	NWTPHDX NOSGT 4ozClr-NoPres	NWTPHGX 40mlAmb/MeOH5ml/Syr	Pb 6010 4ozClr-NoPres	cPAHs SV8270PAHSIMD 4ozClr-NoPres	dry weight 2ozClr-NoPres	Remarks	Sample # (lab only)
MW-11-22.5-24	Grab	SS	22.5-24	10/19/18	1320	4								-01
MW-11-30-31.5		SS	30-31.5		1325	4								-02
MW-12-17.5-19		SS	17.5-19		1520	4								-03
MW-12-22.5-24		SS	22.5-24		1525	4								-04
MW-12-25-26.5		SS	25-26.5		1530	4								-05
MW-12-32.5-34		SS	32.5-34		1535	4								-06
DUP-1		SS	—		—	4								-07
Trip Blank	—	SS	—	—	—	2								-08
		SS												
		SS												

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: RAD SCREEN: <0.5 mR/hr

pH ___ Temp ___
Flow ___ Other ___

Samples returned via:
__ UPS __ FedEx __ Courier __

Tracking # 496 3259 1569

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/22/18	1310	Michele Yates
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
2 HCl / MeoH
TBR

Temp: 4.3-3.4-4.0 °C Bottles Received: 28 12 9735

Date: 10/23/18 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK