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ENVIRONMENT

Libby Goldstein
Washington State Department of Ecology
NW Regional Office
3190 160th Avenue Southeast
Bellevue, WA 98008-5452

Subject:
Annual Site Status Report 2013
Former ARCO Facility No. 11060
Multi-Site VCP No. NW2463
4580 Fauntleroy Way Southwest
Seattle, WA 98126

Date:
March 24, 2014

Contact:
Praj Ghatpande

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Our ref:
GP09BPNA.WA48.N0000

Dear Ms. Goldstein:

On behalf of BP West Coast Products, LLC. (BP), ARCADIS U.S., Inc. (ARCADIS) is pleased to submit this *Annual Site Status Report 2013* for the above referenced facility (the site). The site is currently an active Shell gas station and retail store located at the southwest corner of the intersection of Southwest Alaska Street and Fauntleroy Way Southwest, in King County, Washington. During 2013, ARCADIS conducted two groundwater monitoring events at the site, performed one manual non-aqueous liquid (NAPL) removal event, installed one air sparge (AS) well and one soil vapor extraction (SVE) well, and performed a set of AS/SVE system pilot tests. A site location map is presented in **Figure 1**.

Installation of Air Sparge and Vapor Extraction Wells

On August 1, 2013, ARCADIS advanced two soil borings for the installation of one air sparge well and one soil vapor extraction well. The borings were drilled by a licensed drilling subcontractor, Cascade Drilling, LP (CDLP) with assistance from Dakota Concrete Cutting, Inc. Soil samples were collected from the borings and an air sparge well (AS-1) and a vapor extraction well (VE-2) were installed. The locations of the new wells are presented in **Figure 2**.

The boreholes 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 for AS-1 was then advanced from 6.5 feet bgs to a total depth of 31.5 feet bgs by an 8-inch diameter, hollow-stem auger mounted on a drill rig. The boring for VE-2 was advanced to a total depth of 15.0 feet bgs using a 10-inch

hollow-stem auger. During drilling, soil samples were collected for lithological description at intervals determined by ARCADIS personnel. Four open-top, 55-gallon, stainless steel drums of soil cuttings and one closed-top, 55-gallon, stainless steel drums of decontamination and purge water were generated during drilling and removed from the site by Kleen Environmental Technologies, Inc. Soil types and other pertinent data were recorded in the boring log included in **Appendix A**.

After reaching total depth at air sparge well AS-1, CDLP installed 2-inch diameter well casing with a 1-foot Schedule 80 PVC sump extending from 26 to 27 feet bgs, a 2-foot section of 0.020-inch slotted, Schedule 80 PVC screen extending from 24 feet to 26 feet bgs, and a 23-foot section of blank Schedule 80 PVC casing extending from 1 to 24 feet bgs. The annular space was filled with 2/12 silica sand from total depth to 22 feet bgs, coated bentonite from 22 to 21 feet bgs, neat cement from 21 to 2 feet bgs. An 8-inch well box was set in concrete to match the existing grade.

CDLP completed vapor extraction well VE-2 with a 4-inch diameter well casing with a 10-foot section of 0.020-inch slotted, Schedule 40 PVC screen extending from 5 feet to 15 feet bgs, and a 4-foot section of blank Schedule 40 PVC casing extending from 1 to 5 feet bgs. The annular space was filled with 2/12 silica sand from total depth to 3.5 feet bgs, and bentonite chips from 3.5 to 1.5 feet bgs. A 10-inch well box was set in concrete to match the existing grade.

Soil samples for chemical analysis were collected from AS-1 at depths of 15, 20, 25, and 27.5 feet bgs from VE-2 at depths of 10 and 13.5 feet bgs. Soil samples were analyzed for the following constituents of concern (COCs):

- Total Petroleum Hydrocarbons (TPH) as gasoline range organics (GRO) by Ecology Method NWTPH-Gx;
- TPH as diesel range organics (DRO) and heavy oil range organics (HO) by Ecology Northwest Method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX), methyl tertiary butyl ether (MTBE), 1,2-Dibromoethane (EDB), 1,2-Dichloroethane (EDC), Naphthalene, and n-Hexane by EPA Method 8260;
- Various polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270;
- Extractable Petroleum Hydrocarbons (EPH) by Ecology Northwest Method NWEPH;
- Volatile Petroleum Hydrocarbons (VPH) by Ecology Northwest Method NWVPH; and
- Total lead by EPA Method 6010.

Due to a laboratory error, the soil sample collected from a depth of 20 feet from the AS-1 boring was analyzed for full spectrum VOCs.

Analytical results of soil samples collected from a depth of 20 feet bgs at AS-1 showed GRO at a concentration of 969 milligrams per kilogram (mg/kg), which is greater than the Model Toxics Control Act (MTCA) Method A Cleanup Level (Method A CUL) of 30 mg/kg. The laboratory reporting limit for EDB in this sample exceeded the MTCA Method A CUL of 0.03 mg/kg. Remaining COCs detected above laboratory RLs did not exceed MTCA Method A CULs.

The laboratory reporting limits for benzene and MTBE, analyzed by Ecology Northwest Method NWVPH, exceeded the MTCA Method A CULs of 0.03 mg/kg and 0.1 mg/kg, respectively. However, benzene and MTBE were also analyzed by EPA Method 8260 and these reporting limits did not exceeded the MTCA Method A CULs. The laboratory reporting limit of tetrachloroethene, analyzed by EPA Method 8260, exceeded its 0.05 mg/kg MTCA Method A CUL, but tetrachloroethene was analyzed due to a laboratory error and is not a COC.

Soil analytical results are presented in **Table 1** and **Figure 2**. The samples were deposited in laboratory-provided, pre-cleaned sample containers, sealed, labeled, and immediately stored in a cooler with ice for transport to Pace under standard chain-of-custody protocol. The laboratory analytical report and chain-of-custody documentation are included in **Appendix B**.

Groundwater Monitoring

During groundwater monitoring events, monitoring wells MW-1 through MW-6, MW-9, MW-10, GMW-1, and vapor extraction well VE-1 were gauged. A historical groundwater flow direction rose diagram is included as **Figure 3**. Monitoring wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-9, MW-10, and GMW-1 were sampled via no purge methods, using disposable bailers. Duplicate samples were collected from MW-2. Groundwater monitoring field data sheets are included in **Appendix C**.

Groundwater samples were collected in laboratory-provided bottles and placed in a cooler with ice. Samples were submitted to the laboratory under standard chain-of-custody protocols. The laboratory analytical report and chain-of-custody documentation are included as **Appendix B**.

Groundwater samples were analyzed for the following COCs:

- TPH as GRO by Ecology Northwest Method NWTPH-Gx;
- TPH as DRO and HO by Ecology Northwest Method NWTPH-Dx;
- BTEX and MTBE by EPA Method 8260; and
- Total and dissolved lead by EPA Method 6010.

Groundwater gauging data and select analytical results are summarized in **Table 2.**

First Semi-Annual Monitoring Event

On May 9, 2013, ARCADIS conducted the first semi-annual groundwater monitoring event at the site. In addition to the wells listed above, extraction wells EW-1, EW-2, and EW-3 were gauged. NAPL was detected at monitoring well MW-4 and extraction wells EW-1 and EW-3. As a result, MW-4 was not sampled. NAPL was measured at thicknesses of 3.63 feet (MW-4), 0.17 foot (EW-1) and 0.31 foot (EW-3).

The depth to groundwater during the first semi-annual sampling event ranged between 21.09 feet below top of casing (btoc) in monitoring well MW-9 to 26.48 feet btoc in monitoring well MW-4. Groundwater elevations during this sampling event ranged from 241.30 feet above mean sea level (msl) in monitoring well MW-4 to 244.05 feet above msl in monitoring well MW-10. The inferred direction of groundwater flow during this event was to the northeast.

Groundwater samples were submitted to Pace Analytical Laboratories in Seattle, Washington under standard chain-of-custody protocols. Analytical results for the groundwater samples indicate concentrations of the following COCs are present above MTCA Method A CULs:

- GRO was detected above the MTCA Method A CUL of 1,000 micrograms per liter (µg/L) at concentrations of 3,660 µg/L in the sample collected from MW-2, 4,210 µg/L in the MW-2 duplicate sample, 2,850 µg/L in the sample collected from MW-3, 3,470 µg/L in the sample collected from MW-5 and 1,010 µg/L in the sample collected from GMW-1.
- DRO was detected above the MTCA Method A CUL of 500 µg/L at concentrations of 620 µg/L in the sample collected from MW-1, 1,700 µg/L in the sample collected from MW-2, 2,700 µg/L in the MW-2 duplicate sample, and 610 µg/L in the sample collected from MW-3.
- Benzene was detected above the MTCA Method A CUL of 5 µg/L at concentrations of 6.3 µg/L in the sample collected from MW-1, 42.9 µg/L in the sample collected from MW-2, 63.4 µg/L in the MW-2 duplicate sample,

32.8 µg/L in the sample collected from MW-3 and 19.0 µg/L in the sample collected from MW-5.

Remaining COCs detected above laboratory reporting limits did not exceed Method A CULs. A groundwater contour map with analytical results from the first semi-annual event is presented on **Figure 4**.

Second Semi-Annual Monitoring Event

On November 19, 2013, Blaine Technical Services, Inc. conducted the second semi-annual groundwater monitoring event at the site monitoring wells. MW-4 and VE-1 were not sampled due to the presence of NAPL measured at thicknesses of 1.81 feet and 0.55 foot, respectively.

The depth to groundwater during the November 19, 2013 sampling event ranged between 22.80 feet btoc in monitoring well MW-9 to 26.61 feet btoc in monitoring well MW-4. Groundwater elevations during this sampling event ranged from 239.71 feet above msl in monitoring well MW-5 to 243.48 feet above msl in monitoring well MW-3. The inferred direction of groundwater flow during this event was to the northeast.

Groundwater samples were submitted to Eurofins Lancaster Laboratories in Lancaster, Pennsylvania under standard chain-of-custody protocols. Analytical results for the groundwater samples indicate concentrations of the following COCs are present above the Ecology MTCA Method A CULs:

- GRO was detected above the MTCA Method A CUL of 1,000 µg/L, at concentrations of 1,400 µg/L in the sample collected from MW-2, 1,700 µg/L in the MW-2 duplicate sample, 1,800 µg/L in MW-5 and 1,400 µg/L in the sample collected from GMW-1.
- DRO was detected above the MTCA Method A CUL of 500 µg/L at concentrations of 620 µg/L in the sample collected from MW-3 and 2,500 µg/L in the sample collected from GMW-1.
- HO was detected above the MTCA Method A CUL of 500 µg/L at concentrations of 660 µg/L in the sample collected from MW-5.
- Benzene was detected above the MTCA Method A CUL of 5 µg/L at concentrations of 7.3 µg/L in the sample collected from MW-2, 8.8 µg/L in the MW-2 duplicate sample, and 24 µg/L in the sample collected from MW-5.
- Total lead was detected above the MTCA Method A CUL of 15 µg/L at concentrations of 16.7 µg/L in the sample collected from GMW-1.

Remaining COCs detected above laboratory method detection limits did not exceed MTCA Method A CULs. A groundwater contour map with analytical results from the second semi-annual event is presented on **Figure 5**.

NAPL Recovery Event

ARCADIS personnel mobilized to the site on May 15, 2013 in order to address the NAPL observed in monitoring well MW-4 during the first semi-annual groundwater monitoring event. The objective of this event was to recover NAPL from monitoring well MW-4.

Monitoring well MW-4 was purged using disposable bailers. The well was purged dry four times; after each purge the well was left to recharge for fifteen minutes. After removing a total of 5.2 gallons of NAPL and 4.9 gallons of purge water, no further NAPL was observed in the well. The recovered NAPL and purge water were stored on site in an above ground storage tank in the remediation compound. Waste in the tank will be disposed of prior to the installation of an AS/SVE trailer and the removal of the tank.

AS/SVE Pilot Tests

On October 16 and 17, 2013, ARCADIS and H2 Oil Recovery Equipment, Inc. performed three AS/SVE pilot tests at the site. The objective of the pilot tests was to evaluate AS/SVE as a remedial alternative and determine site specific design parameters such as air injection rate, radius of influence (ROI), vapor extraction flow rates and mass removal rates.

Prior to beginning pilot test activities, ARCADIS field staff recorded depth to water using a water level indicator and collected water quality parameters such as pH, dissolved oxygen (DO), and oxidation-reduction potential (ORP) using a down-hole water quality meter in air sparge well AS-1 and monitoring wells MW-2, MW-3, and MW-. Well headspace was also monitored using a 4-gas meter for vapor concentrations. Tabulated pilot test field data are included in **Appendix D** as **Table D-1**, **Table D-2**, and **Table D-3**.

For each test, a trailer mounted SVE blower was temporarily placed on-site and connected to a portable generator. Two-inch diameter reinforced flexible PVC vacuum hose was attached to a temporary SVE manifold containing a differential pressure gauge connected to a pitot tube for air flow measurements, a vapor

sampling port, a vacuum gauge and flow control valve. In addition to the pitot tube, air flow measurements were obtained using a hotwire anemometer that was placed into the sampling port. The flexible above ground PVC hose connected the manifold to the extraction well head, creating an airtight seal. Extracted vapor was run through a moisture separator before discharge through the effluent stack. Magnahelic vacuum gauges were attached to well head adaptors at each monitoring well allowing induced vacuum measurement to be recorded approximately every fifteen minutes throughout the pilot test.

The first pilot test took place on October 16, and consisted of a vapor extraction step test at monitoring well MW-2 and involved the gradual increase of extraction flow rates to determine the flow capacity of the extraction well. A target extraction rate of approximately 18 cubic feet per minute (cfm) was assumed due to subsurface soil conditions encountered during previous soil investigation activities. The mobile SVE unit was adjusted to pull an initial flow rate of 9 cfm and was sustained until flow and vacuum were observed from the extraction well. Once stable readings were observed, flow rate was increased to 18 cfm and 24 cfm. During each step, the following parameters were measured and recorded on pilot test field forms:

- extraction flow rate,
- extraction well and blower vacuum pressure,
- vapor speed through sample port,
- extraction manifold and blower outlet temperature,
- influent and effluent vapor VOCs, and
- induced vacuum at wells MW-3 and MW-6 and AS-1.

The second pilot test also took place on October 16, and consisted of an air sparging test and constant rate test at air sparge well AS-1. Air was injected into AS-1 from the compressor on the trailer, starting at a pressure of 6 pounds per square inch (psi). The flow rate was recorded from the rotameter on the manifold. While conducting the AS-1 pilot testing, vapor extraction from MW-2 continued at 24 scfm and 19.5 inches of mercury (in. Hg), which were the optimum vacuum and flow observed during the SVE step tests. Pressure, DO, ORP, and water levels were recorded at MW-3 and MW-6 every fifteen minutes and extraction vapor concentrations from MW-2 were monitored. The data described above were collected again after increasing the pressure to 11 psi, and again at 19 psi. During this final step of the second pilot test, a vapor sample was collected and analyzed using a 4-gas meter.

The third pilot test took place on October 17, and consisted of an SVE step test and constant rate test at vapor extraction well VE-2 and involved the gradual increase of extraction flow rates to determine the flow capacity of the extraction well. A target extraction rate of approximately 18 cfm was assumed due to subsurface soil conditions encountered during previous soil investigation activities. The mobile SVE unit was adjusted to pull an initial flow rate of 9 cfm and was sustained until flow and vacuum were observed from the extraction well. Once stable readings were observed, flow rate was increased to 18 cfm and 24 cfm. Vapor extraction from VE-2 continued at 24 cfm for the constant rate test. During each step, the same parameters measured during the first step test were measured and recorded on pilot test field forms.

AS/SVE Pilot Test Results

Step test results are presented in **Table D-1**. During the initial step test, the vacuum at MW-2 ranged from 5 to 19.5 inches of mercury (in. Hg). The extraction flow rate ranged from 8.4 to 24.6 cfm. PID readings ranged from 287.1 to 657.1 parts per million by volume (ppmv) with effluent concentrations increasing with an increase in vaccum and flow rate. Flow rates and PID readings were used to calculate mass removal rates and the total mass removed during the step test. The mass removal rate observed during the step test ranged from 0.97 pounds per day (lb/day) to 4.16 lb/day. The step test lasted approximately 1 hour and it is estimated that approximately 0.33 pound of petroleum hydrocarbons was removed. **Figure D-1** and **Figure D-2** present mass removal rates and cumulative mass removed over time at MW-2.

During air injection into AS-1, vapor extraction from MW-2 continued at the optimum vacuum observed at 19.5 in. Hg during the SVE step tests. Pressure, DO, ORP, and water levels recorded at MW-3 and MW-6 are presented in **Table D-2**. High concentrations of volatile organic compounds (VOCs) were detected in the influent vapor. Due to concerns about shipping samples of such high concentrations, samples for the laboratory analysis of TPH as GRO and BTEX were not collected. Groundwater table mounding was observed in monitoring well MW-3 with an increase in groundwater elevation of 6.39 feet. An increase in overall DO was not observed during AS pilot testing.

Step test results for the pilot test performed on vapor extraction well VE-2 are presented in **Table D-3**. The vacuum at VE-2 ranged from 0.5 to 10.0 in. Hg. The extraction flow rate ranged from 9.42 to 22.28 scfm. Effluent vapor concentration

increased with an increase in vacuum and flow throughout the test. PID readings ranged from 57.7 to 217.1 ppmv. Flow rates and PID readings were used to calculate mass removal rates and the total mass removed during the step test. The mass removal rate observed during the step test ranged from 0.25 lb/day to 2.13 lb/day. The step test lasted approximately one hour and it is estimated that approximately 0.27 pound of petroleum hydrocarbons was removed. **Figure D-3** and **Figure D-4** present mass removal rates and cumulative mass removed over time at VE-2.

Based on the results of the pilot testing, AS/SVE is an appropriate technology to remediate petroleum impacted soil and groundwater at the site. For remedial implementation purposes AS and SVE wells would be required to be installed within the source area to address the remaining impacts.

The AS/SVE design is based on pilot test data and typical design criteria. The design of SVE wells is based on the concept of Pore Volume Exchange and an estimate of pneumatic conductivity. The calculations are based on derivation of Darcy's Law for radial flow through porous media. Pilot study data from VE-2 and MW-2 were used to determine the average pneumatic conductivity of the formation, which was then used to determine the applied vacuum required to achieve a selected pore volume exchange rate of three pore volumes per day at the design well spacing of 30 feet. Based on typical AS design, it was assumed that an ROI of 15 feet could be achieved through AS. The design ROIs will be verified during startup and testing procedures to ensure that adequate vacuum influence and air flow is occurring over the treatment area.

Summary

During 2013, groundwater conditions remained generally consistent with previous years, with the notable exception of the appearance of a 3.63-foot thick layer of NAPL at monitoring well MW-4. In order to evaluate AS/SVE as a remedial alternative at the site, an air sparge well and a vapor extraction well were installed and an AS/SVE system pilot test was performed. Pilot test results support that the installation of an AS/SVE system would be a viable remedial alternative at this site.

The next groundwater monitoring event at the site is scheduled for the first half of 2014. AS/SVE system trenching, installation, startup, and monitoring will also be scheduled for the 2014 calendar year. Should you have any questions or if ARCADIS can be of further assistance, please contact Praj Ghatpande at (206) 726-4762.

Sincerely,

ARCADIS U.S., Inc.

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CC: Richard Wright; Jackson Food Stores

Attachments:

Table 1	Soil Selected Analytical Results
Table 2	Groundwater Gauging Data and Selected Analytical Results
Figure 1	Site Location Map
Figure 2	Selected Soil Analytical Results August 1, 2013
Figure 3	Historical Groundwater Gradient Direction Rose Diagram
Figure 4	Groundwater Map with Analytical Results May 9, 2013
Figure 5	Groundwater Map with Analytical Results November 19, 2013
Appendix A	Boring Logs
Appendix B	Laboratory Report and Chain-of-Custody Documentation
Appendix C	Groundwater Monitoring Field Data Sheets
Appendix D	Air Sparge and Soil Vapor Extraction System Pilot Test Field Data

ARCADIS

Tables

Table 1
Soil Selected Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

Well ID		AS-1										VE-2			
Depth (ft bgs)		15		20		25		27.5		27.5 Duplicate		10		13.5	
Analyte:	*Model Toxics Control Act (MTCA) Method A Soil Cleanup Level (mg/kg)*	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units
Total Petroleum Hydrocarbons as:															
Gasoline Range Organics	*30/100*	< 5.9	mg/kg	**989**	**mg/kg**	< 5.7	mg/kg	< 6.2	mg/kg	< 6.8	mg/kg	< 6.6	mg/kg	8.3	mg/kg
Diesel Range Organics	*2,000*	< 16.2	mg/kg	167	mg/kg	< 14.9	mg/kg	< 16.3	mg/kg	--		< 16.7	mg/kg	< 15.6	mg/kg
Heavy Motor Oil Range Organics	*2,000*	< 64.8	mg/kg	< 59.1	mg/kg	< 59.7	mg/kg	< 65	mg/kg	--		< 66.7	mg/kg	< 62.6	mg/kg
Benzene	*0.03*	< 0.0039	mg/kg	< 0.0227	mg/kg	< 0.0031	mg/kg	0.0050	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	0.004	mg/kg
Toluene	*7*	< 0.0039	mg/kg	< 0.0568	mg/kg	< 0.0031	mg/kg	< 0.004	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	< 0.003	mg/kg
Ethylbenzene	*6*	< 0.0039	mg/kg	0.767	mg/kg	0.0038	mg/kg	< 0.004	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	< 0.003	mg/kg
Total Xylenes	*9*	< 0.0117	mg/kg	0.881	mg/kg	< 0.0093	mg/kg	< 0.013	mg/kg	< 0.0134	mg/kg	< 0.0127	mg/kg	< 0.01	mg/kg
Naphthalene	*5*	< 0.0098	mg/kg	0.577	mg/kg	< 0.0078	mg/kg	< 0.011	mg/kg	< 0.0112	mg/kg	< 0.0106	mg/kg	< 0.009	mg/kg
Methyl t-butyl ether	*0.1*	< 0.0039	mg/kg	< 0.0568	mg/kg	< 0.0031	mg/kg	< 0.004	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	< 0.003	mg/kg
Ethylene dibromide	*0.005*	< 0.0039	mg/kg	< 0.0568	mg/kg	< 0.0031	mg/kg	< 0.004	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	< 0.003	mg/kg
1,2-Dichloroethane		< 0.0039	mg/kg	< 0.0568	mg/kg	< 0.0031	mg/kg	< 0.004	mg/kg	< 0.0045	mg/kg	< 0.0042	mg/kg	< 0.003	mg/kg
n-Hexane		< 0.489	mg/kg	--		< 0.388	mg/kg	< 0.527	mg/kg	< 0.558	mg/kg	< 0.5280	mg/kg	< 0.425	mg/kg
Lead	*250*	14.9	mg/kg	8.7	mg/kg	8.7	mg/kg	12.2	mg/kg	10.8	mg/kg	23.9	mg/kg	18.4	mg/kg
EPH - Aliphatic Hydrocarbon (C8-C10)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg			< 5.72	mg/kg	< 7.44	mg/kg
EPH - Aliphatic Hydrocarbon (C10-C12)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 7.44	mg/kg
EPH - Aliphatic Hydrocarbon (C12-C16)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 7.44	mg/kg
EPH - Aliphatic Hydrocarbon (C16-C21)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 7.44	mg/kg
EPH - Aliphatic Hydrocarbon (C21-C34)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 7.44	mg/kg
EPH - Aromatic Hydrocarbon (C8-C10)		< 5.60	mg/kg	19.3	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 6.86	mg/kg
EPH - Aromatic Hydrocarbon (C10-C12)		< 5.60	mg/kg	37.8	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 6.86	mg/kg
EPH - Aromatic Hydrocarbon (C12-C16)		< 5.60	mg/kg	9.58	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 6.86	mg/kg
EPH - Aromatic Hydrocarbon (C16-C21)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 6.86	mg/kg
EPH - Aromatic Hydrocarbon (C21-C34)		< 5.60	mg/kg	< 4.75	mg/kg	< 4.84	mg/kg	< 5.25	mg/kg	--		< 5.72	mg/kg	< 6.86	mg/kg
VPH - Aliphatic Hydrocarbon (C5-C6)		< 0.470	mg/kg	19.4	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aliphatic Hydrocarbon (C6-C8)		< 0.470	mg/kg	128	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aliphatic Hydrocarbon (C8-C10)		< 0.470	mg/kg	167	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aliphatic Hydrocarbon (C10-C12)		< 0.470	mg/kg	115	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aromatic Hydrocarbon (C8-C10)		< 0.470	mg/kg	220	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aromatic Hydrocarbon (C10-C12)		< 0.470	mg/kg	172	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Aromatic Hydrocarbon (C12-C13)		< 0.470	mg/kg	12.3	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Benzene	*0.03*	< 0.470	mg/kg	< 0.471	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Toluene	*7*	< 0.470	mg/kg	0.478	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Ethylbenzene	*6*	< 0.470	mg/kg	1.6	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - m,p-Xylene	*9*	< 0.470	mg/kg	2.76	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - o-Xylene	*9*	< 0.470	mg/kg	1.33	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Naphthalene	*5*	< 0.470	mg/kg	1.66	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
VPH - Methyl tert-butyl ether (MTBE)	*0.1*	< 0.470	mg/kg	< 0.471	mg/kg	< 0.423	mg/kg	< 0.452	mg/kg	--		< 0.479	mg/kg	< 0.685	mg/kg
1,6-Dinitropyrene		< 0.122	mg/kg	< 0.111	mg/kg	< 0.112	mg/kg	< 0.122	mg/kg	--		< 0.125	mg/kg	< 0.117	mg/kg
1,8-Dinitropyrene		< 0.122	mg/kg	< 0.111	mg/kg	< 0.112	mg/kg	< 0.122	mg/kg	--		< 0.125	mg/kg	< 0.117	mg/kg
1-Methylnaphthalene		< 0.012	mg/kg	0.082	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
1-Nitropyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
2-Chloronaphthalene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
2-Methylnaphthalene		< 0.012	mg/kg	0.201	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
2-Nitrofluorene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg

Table 1
Soil Selected Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

Well ID		AS-1										VE-2			
Depth (ft bgs)		15		20		25		27.5		27.5 Duplicate		10		13.5	
Analyte:	***Model Toxics Control Act (MTCA) Method A Soil Cleanup Level (mg/kg)***	**Concentration**	**Units**	**Concentration**	**Units**	**Concentration**	**Units**	**Concentration**	**Units**	**Concentration**	**Units**	**Concentration**	**Units**	**Concentration**	**Units**
3-Methylcholanthrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
4-Nitropyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
5-Methylchrysene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
5-Nitroacenaphthene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
6-Nitrochrysene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
7,12-Dimethylbenz(a)anthracene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
7H-Dibenzo(c,g)carbazole		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Acenaphthene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Acenaphthylene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Anthracene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Benz[a]anthracene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Benzo(a)pyrene	*0.1*	< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Benzo(e)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Benzo(ghi)perylene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Benzofluoranthenes (Total)		< 0.037	mg/kg	< 0.033	mg/kg	< 0.034	mg/kg	< 0.037	mg/kg	--		< 0.037	mg/kg	< 0.035	mg/kg
Carbazole		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Chrysene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenz(a,h)acridine		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenz(a,j)acridine		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzo(a,h)anthracene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzo(a,e)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzo(a,h)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzo(a,i)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzo(a,l)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Dibenzofuran		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Fluoranthene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Fluorene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Indeno(1,2,3-cd)pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Naphthalene		< 0.012	mg/kg	0.250	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Perylene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Phenanthrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
Pyrene		< 0.012	mg/kg	< 0.011	mg/kg	< 0.011	mg/kg	< 0.012	mg/kg	--		< 0.013	mg/kg	< 0.012	mg/kg
1,1,1,2-Tetrachloroethane		--		< 0.057	mg/kg	--		--		--		--		--	
1,1,1-Trichloroethane	*2*	--		< 0.057	mg/kg	--		--		--		--		--	
1,1,2,2-Tetrachloroethane		--		< 0.057	mg/kg	--		--		--		--		--	
1,1,2-Trichloroethane		--		< 0.057	mg/kg	--		--		--		--		--	
1,1,2-Trichlorotrifluoroethane		--		< 0.057	mg/kg	--		--		--		--		--	
1,1-Dichloroethane		--		< 0.057	mg/kg	--		--		--		--		--	
1,1-Dichloroethene		--		< 0.057	mg/kg	--		--		--		--		--	
1,1-Dichloropropene		--		< 0.057	mg/kg	--		--		--		--		--	
1,2,3-Trichlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
1,2,3-Trichloropropane		--		< 0.227	mg/kg	--		--		--		--		--	
1,2,4-Trichlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
1,2,4-Trimethylbenzene		--		9.08	mg/kg	--		--		--		--		--	
1,2-Dibromo-3-chloropropane		--		< 0.227	mg/kg	--		--		--		--		--	
1,2-Dichlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
1,2-Dichloropropane		--		< 0.057	mg/kg	--		--		--		--		--	
1,3,5-Trimethylbenzene		--		2.75	mg/kg	--		--		--		--		--	

Table 1
Soil Selected Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126

Well ID		AS-1										VE-2			
Depth (ft bgs)		15		20		25		27.5		27.5 Duplicate		10		13.5	
Analyte:	*Model Toxics Control Act (MTCA) Method A Soil Cleanup Level (mg/kg)*	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units	Concentration	Units
1,3-Dichlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
1,3-Dichloropropane		--		< 0.057	mg/kg	--		--		--		--		--	
1,4-Dichlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
2,2-Dichloropropane		--		< 0.227	mg/kg	--		--		--		--		--	
2-Butanone		--		< 0.284	mg/kg	--		--		--		--		--	
2-Chlorotoluene		--		< 0.057	mg/kg	--		--		--		--		--	
4-Chlorotoluene		--		< 0.057	mg/kg	--		--		--		--		--	
Acetone		--		< 1.14	mg/kg	--		--		--		--		--	
Allyl chloride		--		< 0.227	mg/kg	--		--		--		--		--	
Bromobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
Bromochloromethane		--		< 0.057	mg/kg	--		--		--		--		--	
Bromoform		--		< 0.227	mg/kg	--		--		--		--		--	
Bromomethane		--		< 0.568	mg/kg	--		--		--		--		--	
Carbon tetrachloride		--		< 0.057	mg/kg	--		--		--		--		--	
CFC-11		--		< 0.227	mg/kg	--		--		--		--		--	
CFC-12		--		< 0.057	mg/kg	--		--		--		--		--	
Chlorobenzene		--		< 0.057	mg/kg	--		--		--		--		--	
Chloroethane		--		< 0.568	mg/kg	--		--		--		--		--	
Chloroform		--		< 0.057	mg/kg	--		--		--		--		--	
Chloromethane		--		< 0.227	mg/kg	--		--		--		--		--	
cis-1,2-Dichloroethene		--		< 0.057	mg/kg	--		--		--		--		--	
cis-1,3-Dichloropropene		--		< 0.057	mg/kg	--		--		--		--		--	
Cumene		--		0.884	mg/kg	--		--		--		--		--	
Dibromochloromethane		--		< 0.057	mg/kg	--		--		--		--		--	
Dibromomethane		--		< 0.057	mg/kg	--		--		--		--		--	
Dichlorobromomethane		--		< 0.057	mg/kg	--		--		--		--		--	
Dichlorofluoromethane		--		< 0.568	mg/kg	--		--		--		--		--	
Diethyl ether (Ethyl ether)		--		< 0.227	mg/kg	--		--		--		--		--	
Hexachlorobutadiene		--		< 0.284	mg/kg	--		--		--		--		--	
Methyl isobutyl ketone		--		< 0.284	mg/kg	--		--		--		--		--	
Methylene Chloride	*0.02*	--		< 0.227	mg/kg	--		--		--		--		--	
n-Butylbenzene		--		1.44	mg/kg	--		--		--		--		--	
n-Propylbenzene		--		1.74	mg/kg	--		--		--		--		--	
p-Isopropyltoluene		--		1.57	mg/kg	--		--		--		--		--	
sec-Butylbenzene		--		0.847	mg/kg	--		--		--		--		--	
Styrene		--		< 0.057	mg/kg	--		--		--		--		--	
tert-Butylbenzene		--		< 0.057	mg/kg	--		--		--		--		--	
Tetrachloroethene	*0.05*	--		< 0.057	mg/kg	--		--		--		--		--	
Tetrahydrofuran		--		2.32	mg/kg	--		--		--		--		--	
trans-1,2-Dichloroethene		--		< 0.057	mg/kg	--		--		--		--		--	
trans-1,3-Dichloropropene		--		< 0.057	mg/kg	--		--		--		--		--	
Trichloroethene		--		< 0.057	mg/kg	--		--		--		--		--	
Vinyl chloride		--		< 0.023	mg/kg	--		--		--		--		--	

Model Toxics Control Act Method A Cleanup Level exceedence

< = Laboratory reporting limits exceed MTCA Method A Cleanup Levels

< = Less than laboratory reporting limits

Carcinogenic Polycyclic Aromatic Hydrocarbon

ft bgs = feet below ground surface

-- = not analyzed

mg/kg = milligrams per kilogram

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
EW-1	5/9/2013	(NS)	268.20	24.49	0.17	243.85	--	--	--	--	--	--	--	--	--	--	--	--
EW-2	5/9/2013	(NS)	267.93	24.11	0.0	243.82	--	--	--	--	--	--	--	--	--	--	--	--
EW-3	5/9/2013	(NS)	268.50	24.90	0.31	243.85	--	--	--	--	--	--	--	--	--	--	--	--
GMW-1	5/10/2011	(NP)	265.63	22.08	0.0	243.55	**5,930**	**1,900**	<420	2.4	<1.0	69.7	94.8	<1.0	--	--	**28.4**	--
GMW-1	11/29/2011	(NP)	265.63	23.83	0.0	241.80	**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)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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
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	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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	--	--	--	--	--
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	3/24/2010	(NS)	267.43	21.03	0.0	246.40	--	--	--	--	--	--	--	--	--	--	--	--
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-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**	--	--	--	--

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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)	266.69	23.90	0.0	242.79	**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**	--	--	--	--
MW-2	9/23/2003	(P)	266.69	24.33	0.0	242.36	**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	3/24/2010	(NS)	266.69	21.11	0.0	245.58	--	--	--	--	--	--	--	--	--	--	--	--
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	242.29	**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	242.29	**1,700**	--	--	**8.8**	6.4	17	46	6.4	--	--	--	--
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	--	--	--	--	--

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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	--	--	--	--
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	3/24/2010	(NS)	266.00	21.21	0.0	244.79	--	--	--	--	--	--	--	--	--	--	--	--
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

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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-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	--	--	--	--	--	--	--	--	--	--	--	--
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)	267.78	22.88	0.0	244.90	**378,000**	--	--	**11,200**	**16,300**	**3,550**	**22,600**	**2,500**	--	--	--	--
MW-4	11/15/2004	(NS)	100.26	23.07	1.45	78.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	4/14/2005	(NS)	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	(NS)	100.26	22.15	0.02	78.13	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/31/2007	(NS)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/29/2008	(NM)	267.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/28/2008	(DRY)	100.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/22/2009	(NS)	100.26	24.21	0.04	76.08	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/15/2009	(NS)	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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
MW-4	11/29/2012	(NS)	267.78	24.00	0.10	243.86	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/9/2013	(NS)	267.78	26.48	3.83	244.36	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/19/2013	(NS)	267.78	26.61	1.81	242.62	--	--	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--
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	--	--	--	--	--

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Groundwater Gauging Data and Select Analytical Results
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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)	268.46	25.55	--	242.91	**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-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	--	--	--	--	--

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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	3/24/2010	(NS)	266.06	22.12	0.0	243.94	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/24/2010	(NP)	98.62	22.90	--	75.72	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-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	(ABD)	97.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/24/2010		97.32	20.65	--	76.67	--	--	--	--	--	--	--	--	--	--	--	--
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	(ABD)	98.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/24/2010		98.49	19.78	--	78.71	--	--	--	--	--	--	--	--	--	--	--	--
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	242.26	<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	240.55	< 50	49 (J)	< 75	< 0.50	< 0.70	< 0.80	< 0.80	< 0.50	--	--	1.0	0.090(J)
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

Table 2
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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**
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
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)	268.17	24.89	0.0	243.28	**25,900**	--	--	**1,630**	**1,150**	**741**	**3,660**	<200	--	--	--	--
VE-1	3/19/2003	(P)	268.17	24.71	0.0	243.46	**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)	268.17	25.12	0.0	243.05	**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	(NS)	--	25.02	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	12/31/2007	(NS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/29/2008	(NS)	--	25.63	0.84	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	10/28/2008	(NS)	--	26.07	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	6/22/2009	(DRY, NE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	12/15/2009	(NS)	--	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	(NS)	268.17	24.05	0.10	244.12	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	5/9/2013	(NS)	268.17	24.23	0.0	243.94	--	--	--	--	--	--	--	--	--	--	--	--
VE-1	11/19/2013	(NS)	268.17	26.35	0.55	242.26	--	--	--	--	--	--	--	--	--	--	--	--

msl = Mean sea level
TOC = Top of casing
GWE = Groundwater elevation above msl
DTW = Depth to water below TOC
ABD = Well abandoned
All analytical results are in micrograms per liter (µg/L)

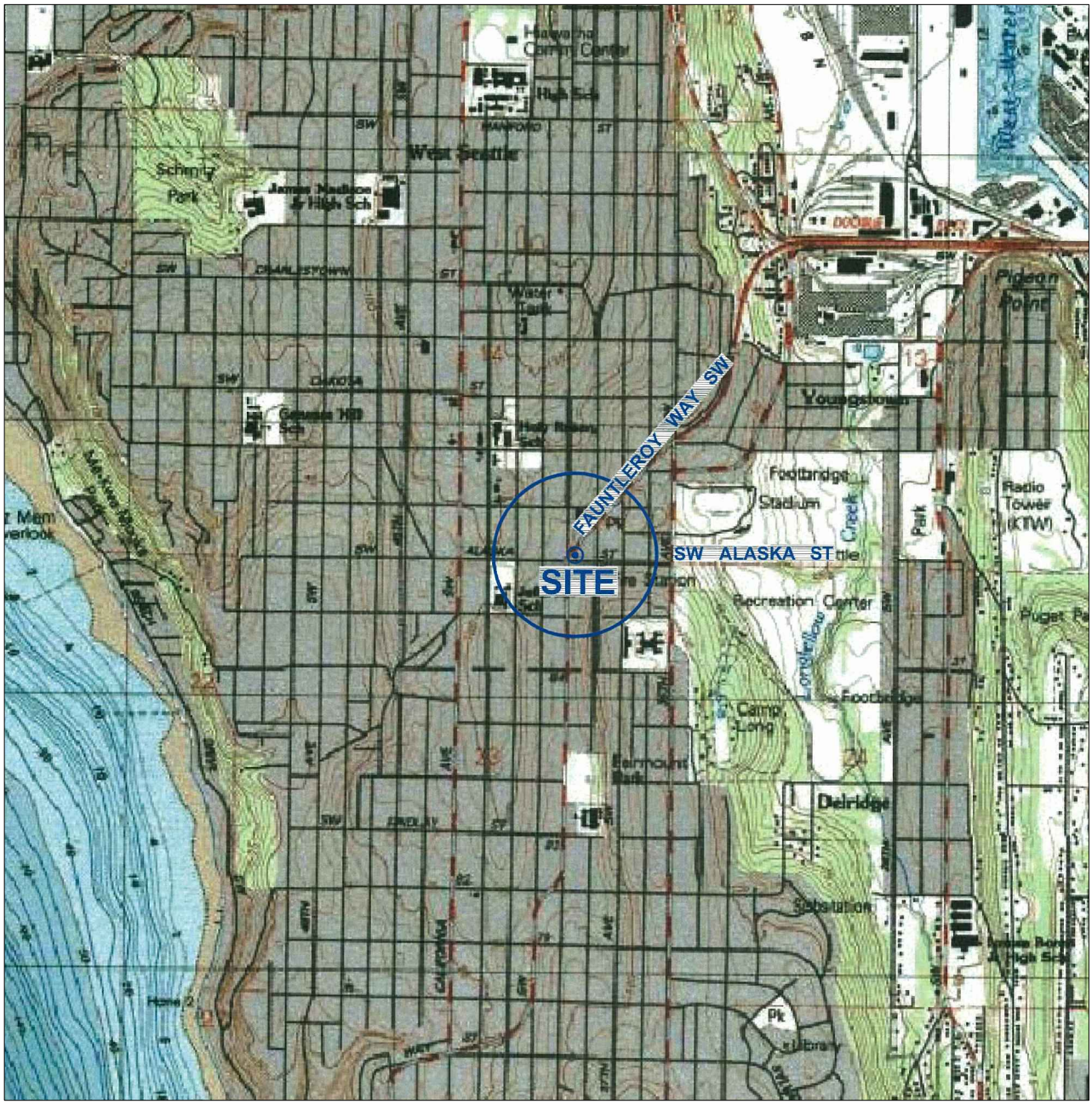
Table 2
Groundwater Gauging Data and Select Analytical Results
WA-11060
4580 Fauntleroy Way SW, Seattle, WA 98126
All analytical results are presented in micrograms per liter (µg/L)

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 (CLs) in µg/L							**800/1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**	**0.01**	**5**	**15**	**15**

TOC/DTW/NAPL/GWE measurements are in feet (ft)
< = Not detected at or above the laboratory reporting limit and/or method detection limit
-- = Not analyzed/not applicable
NA = Not analyzed
NM = Not measured
NE = Top of casing not established
DUP = Duplicate sample
NS = Not Sampled
NAPL = Non-Aqueous Phase Liquid Thickness
GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
HO = Total Petroleum Hydrocarbons- Heavy Oil Range Organics
EDB = Ethylene Dibromide
EDC = 1,2-Dichloroethane
MTBE = Methyl Tertiary Butyl Ether
BTEX = Benzene, Toluene, Ethylbenzene and Total Xylenes
P = Purge sampling
LFP = Low flow purge sampling
NP = No purge sampling
GRO, DRO, HO methods by Ecology NW Methods; BTEX, MTBE and EDB by 8260B, lead by EPA 6000/7000 Series, EDC by EPA 8011
Historic analysis by former consultant of BTEX, MTBE and EDB by EPA 8021B and confirmed with EPA 8260B if necessary
Groundwater Elevation - If NAPL is present, the elevation is corrected according to the following formula, (TOC elevation - depth to water) + (0.8 X NAPL Thickness)
800/1,000 = GRO MTCA cleanup levels with benzene present (800) and without (1,000)
Data collected prior to 2010 have been provided by previous consultants and are included as historical reference only
Site resurveyed in 2010. TOC elevation in reference to vertical datum N.A.V.D. 88 and horizontal datum NAD 83/98

BOLD constituent detected above MTCA Cleanup Levels

Figures



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

0 2000' 4000'

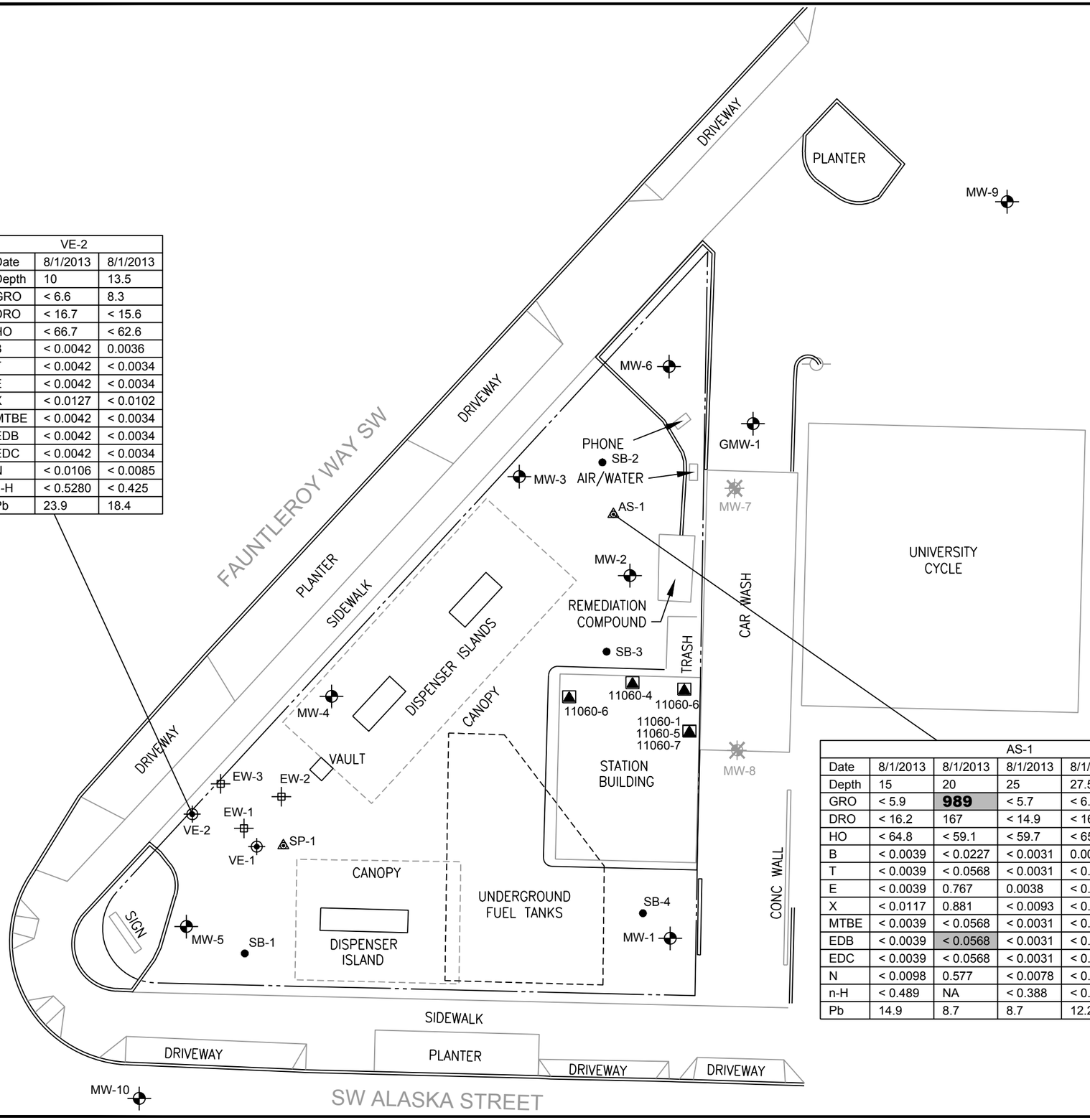
Approximate Scale: 1 in. = 2000 ft.

BP WEST COAST PRODUCTS LLC
FORMER BP STATION NO. 11060
4580 FAUNTLEROY WAY, SEATTLE, WASHINGTON
ANNUAL SITE STATUS REPORT 2013

SITE LOCATION MAP

ARCADIS

FIGURE
1



VE-2		
Date	8/1/2013	8/1/2013
Depth	10	13.5
GRO	< 6.6	8.3
DRO	< 16.7	< 15.6
HO	< 66.7	< 62.6
B	< 0.0042	0.0036
T	< 0.0042	< 0.0034
E	< 0.0042	< 0.0034
X	< 0.0127	< 0.0102
MTBE	< 0.0042	< 0.0034
EDB	< 0.0042	< 0.0034
EDC	< 0.0042	< 0.0034
N	< 0.0106	< 0.0085
n-H	< 0.5280	< 0.425
Pb	23.9	18.4

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-2 — MONITORING WELL LOCATION
- MW-7 — ABANDONED MONITORING WELL LOCATION
- SP-1 — AIR SPARGING WELL LOCATION
- VE-1 — VAPOR EXTRACTION WELL LOCATION
- 11060-1 — PASSIVE VAPOR MONITORING LOCATION
- SB-1 — SOIL BORING
- EW-1 — EXTRACTION WELL

SAMPLE LOCATION	
Date	SAMPLE COLLECTION DATE
Depth	SAMPLE DEPTH IN FEET BELOW GROUND SURFACE
GRO	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
DRO	TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS
HO	TOTAL PETROLEUM HYDROCARBONS AS HEAVY OIL RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER
EDB	ETHYLENE DIBROMIDE
EDC	1,2-DICHLOROETHANE
N	NAPHTHALENE
n-H	n-HEXANE
Pb	LEAD

NA NOT ANALYZED

BOLD ANALYTE DETECTED ABOVE MODEL TOXIC CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS

REGULAR LABORATORY REPORTING LIMIT FOR ANALYTE EXCEEDS MTCA METHOD A CLEANUP LEVELS

SOIL SAMPLE CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg)

BASEMAP SUPPLIED BY OTAK, INC., IN 2010. HISTORICAL INFORMATION SUPPLIED BY DELTA ENVIRONMENTAL CONSULTANTS, INC.

AS-1					
Date	8/1/2013	8/1/2013	8/1/2013	8/1/2013	8/1/2013
Depth	15	20	25	27.5	27.5 Duplicate
GRO	< 5.9	**989**	< 5.7	< 6.2	< 6.8
DRO	< 16.2	167	< 14.9	< 16.3	NA
HO	< 64.8	< 59.1	< 59.7	< 65	NA
B	< 0.0039	< 0.0227	< 0.0031	0.0050	< 0.0045
T	< 0.0039	< 0.0568	< 0.0031	< 0.0042	< 0.0045
E	< 0.0039	0.767	0.0038	< 0.0042	< 0.0045
X	< 0.0117	0.881	< 0.0093	< 0.0126	< 0.0134
MTBE	< 0.0039	< 0.0568	< 0.0031	< 0.0042	< 0.0045
EDB	< 0.0039	< 0.0568	< 0.0031	< 0.0042	< 0.0045
EDC	< 0.0039	< 0.0568	< 0.0031	< 0.0042	< 0.0045
N	< 0.0098	0.577	< 0.0078	< 0.0105	< 0.0112
n-H	< 0.489	NA	< 0.388	< 0.527	< 0.558
Pb	14.9	8.7	8.7	12.2	10.8

0 20' 40'

GRAPHIC SCALE

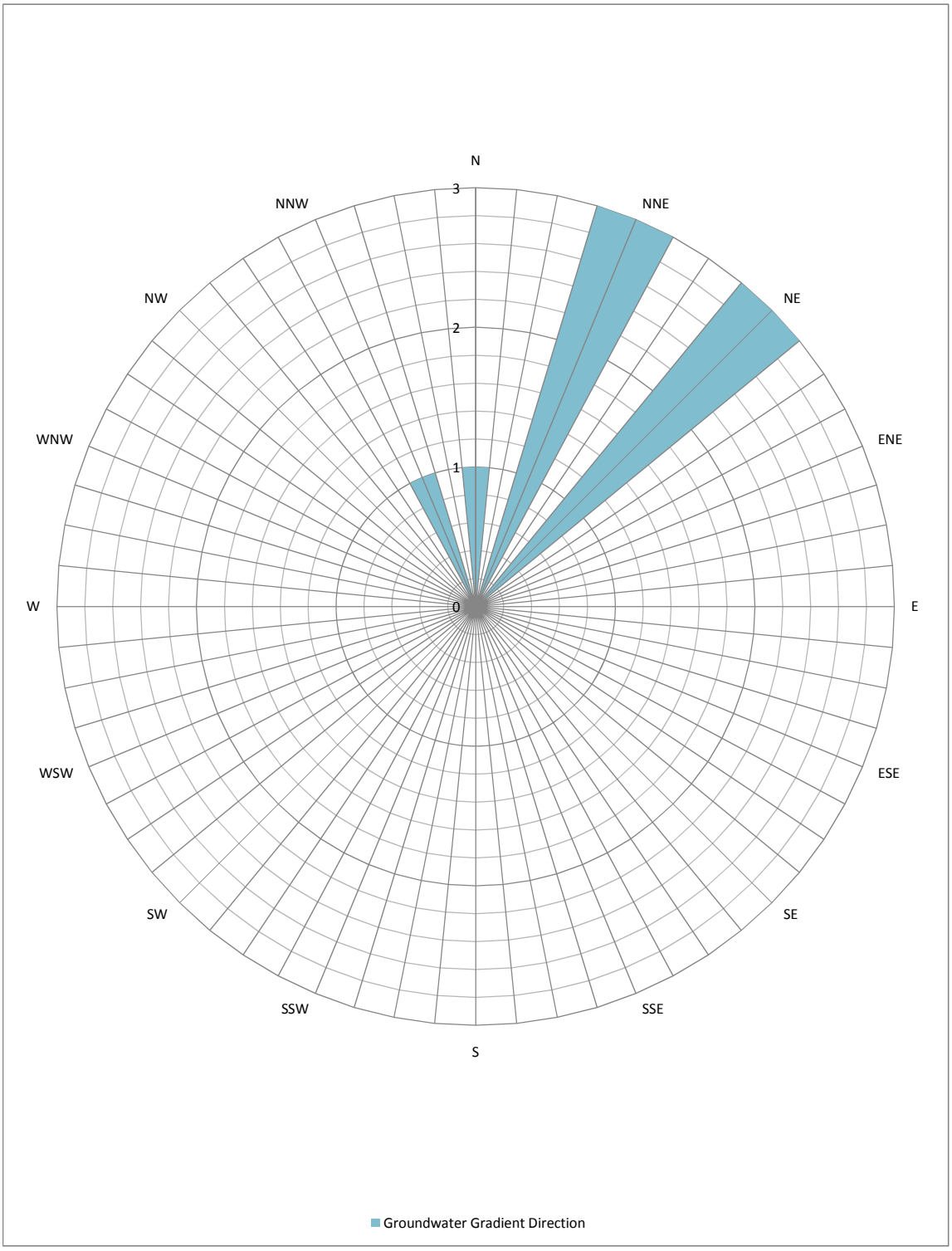
BP WEST COAST PRODUCTS LLC
FORMER BP STATION NO. 11060
4580 FAUNTLEROY WAY, SEATTLE, WASHINGTON
ANNUAL SITE STATUS REPORT 2013

SELECTED SOIL ANALYTICAL RESULTS AUGUST 1, 2013

ARCADIS

FIGURE 2

CITY:(EMERYVILLE) DIV/GROUP:(EMV) DB:(DCB) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Emeryville\ACT\GP09BPNA\WA48\N0000\AnnualSiteStatus2013\DWG\GP09BPNAWA48 C02.dwg LAYOUT: 2 SAVED: 3/10/2014 11:26 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/18/2014 2:13 PM BY: REYES, ALEC



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
5 = Number of Events Observed

Note

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

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

ANNUAL SITE STATUS REPORT 2013

HISTORICAL GROUNDWATER GRADIENT DIRECTION ROSE DIAGRAM

ARCADIS
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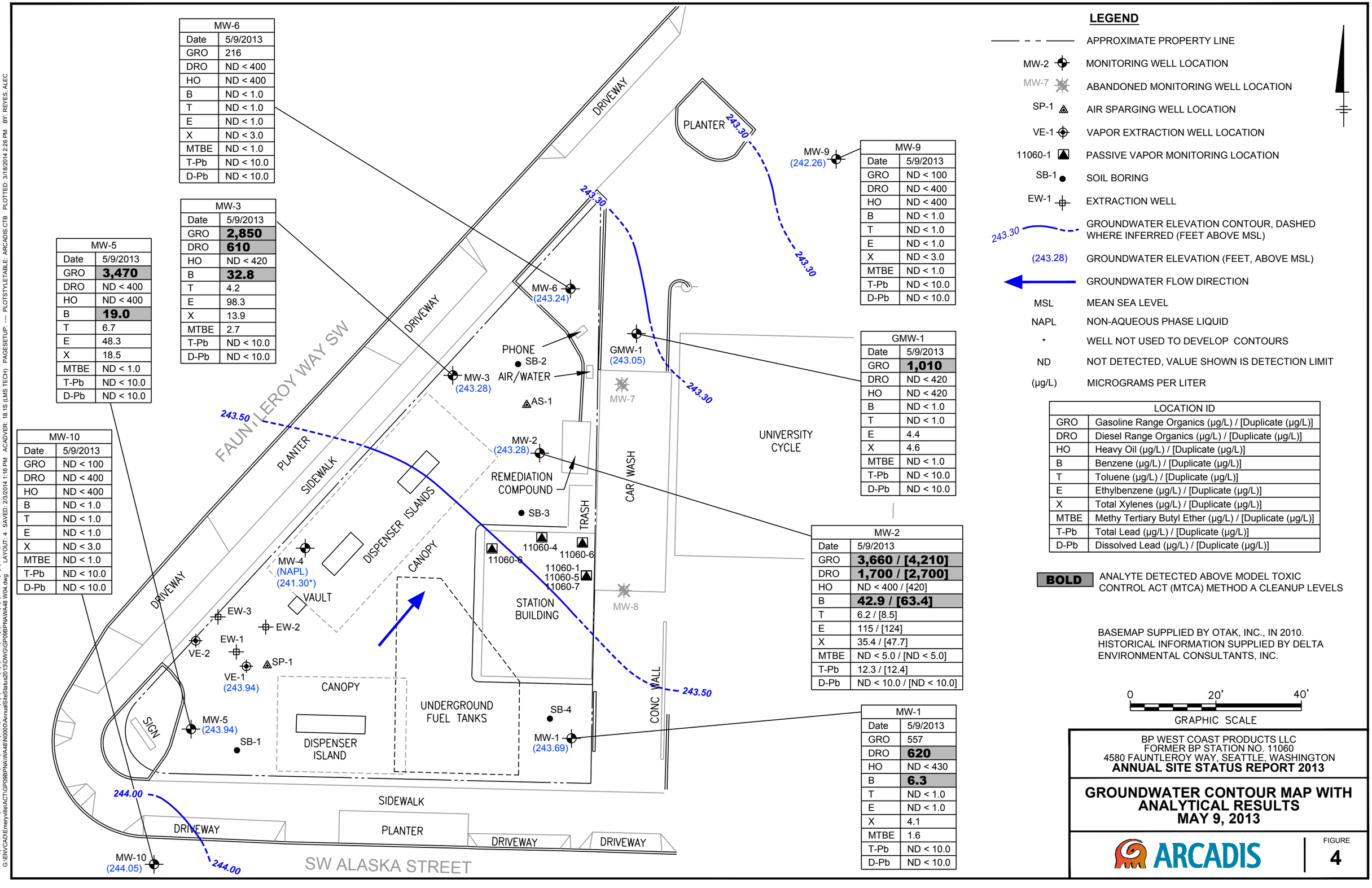
FIGURE
3



MW-6	
Date	5/9/2013
GRO	216
DRO	ND < 400
HO	ND < 400
B	ND < 1.0
T	ND < 1.0
E	ND < 1.0
X	ND < 3.0
MTBE	ND < 1.0
T-Pb	ND < 10.0
D-Pb	ND < 10.0

MW-3	
Date	5/9/2013
GRO	**2,850**
DRO	**610**
HO	ND < 420
B	**32.8**
T	4.2
E	98.3
X	13.9
MTBE	2.7
T-Pb	ND < 10.0
D-Pb	ND < 10.0

MW-5	
Date	5/9/2013
GRO	**3,470**
DRO	ND < 400
HO	ND < 400
B	**19.0**
T	6.7
E	48.3
X	18.5
MTBE	ND < 1.0
T-Pb	ND < 10.0
D-Pb	ND < 10.0

MW-10	
Date	5/9/2013
GRO	ND < 100
DRO	ND < 400
HO	ND < 400
B	ND < 1.0
T	ND < 1.0
E	ND < 1.0
X	ND < 3.0
MTBE	ND < 1.0
T-Pb	ND < 10.0
D-Pb	ND < 10.0

MW-9	
Date	5/9/2013
GRO	ND < 100
DRO	ND < 400
HO	ND < 400
B	ND < 1.0
T	ND < 1.0
E	ND < 1.0
X	ND < 3.0
MTBE	ND < 1.0
T-Pb	ND < 10.0
D-Pb	ND < 10.0

GMW-1	
Date	5/9/2013
GRO	**1,010**
DRO	ND < 420
HO	ND < 420
B	ND < 1.0
T	ND < 1.0
E	4.4
X	4.6
MTBE	ND < 1.0
T-Pb	ND < 10.0
D-Pb	ND < 10.0

MW-2	
Date	5/9/2013
GRO	**3,660 / [4,210]**
DRO	**1,700 / [2,700]**
HO	ND < 400 / [420]
B	**42.9 / [63.4]**
T	6.2 / [8.5]
E	115 / [124]
X	35.4 / [47.7]
MTBE	ND < 5.0 / [ND < 5.0]
T-Pb	12.3 / [12.4]
D-Pb	ND < 10.0 / [ND < 10.0]

MW-1	
Date	5/9/2013
GRO	557
DRO	**620**
HO	ND < 430
B	**6.3**
T	ND < 1.0
E	ND < 1.0
X	4.1
MTBE	1.6
T-Pb	ND < 10.0
D-Pb	ND < 10.0

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-2 — MONITORING WELL LOCATION
- MW-7 — ABANDONED MONITORING WELL LOCATION
- SP-1 — AIR SPARGING WELL LOCATION
- VE-1 — VAPOR EXTRACTION WELL LOCATION
- 11060-1 — PASSIVE VAPOR MONITORING LOCATION
- SB-1 — SOIL BORING
- EW-1 — EXTRACTION WELL
- 243.30 — GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED (FEET ABOVE MSL)
- (243.28) — GROUNDWATER ELEVATION (FEET, ABOVE MSL)
- GROUNDWATER FLOW DIRECTION
- MSL — MEAN SEA LEVEL
- NAPL — NON-AQUEOUS PHASE LIQUID
- * — WELL NOT USED TO DEVELOP CONTOURS
- ND — NOT DETECTED, VALUE SHOWN IS DETECTION LIMIT
- (µg/L) — MICROGRAMS PER LITER

LOCATION ID	
GRO	Gasoline Range Organics (µg/L) / [Duplicate (µg/L)]
DRO	Diesel Range Organics (µg/L) / [Duplicate (µg/L)]
HO	Heavy Oil (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	Methy Tertiary Butyl Ether (µg/L) / [Duplicate (µg/L)]
T-Pb	Total Lead (µg/L) / [Duplicate (µg/L)]
D-Pb	Dissolved Lead (µg/L) / [Duplicate (µg/L)]

BOLD ANALYTE DETECTED ABOVE MODEL TOXIC CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS

BASEMAP SUPPLIED BY OTAK, INC., IN 2010.
HISTORICAL INFORMATION SUPPLIED BY DELTA ENVIRONMENTAL CONSULTANTS, INC.

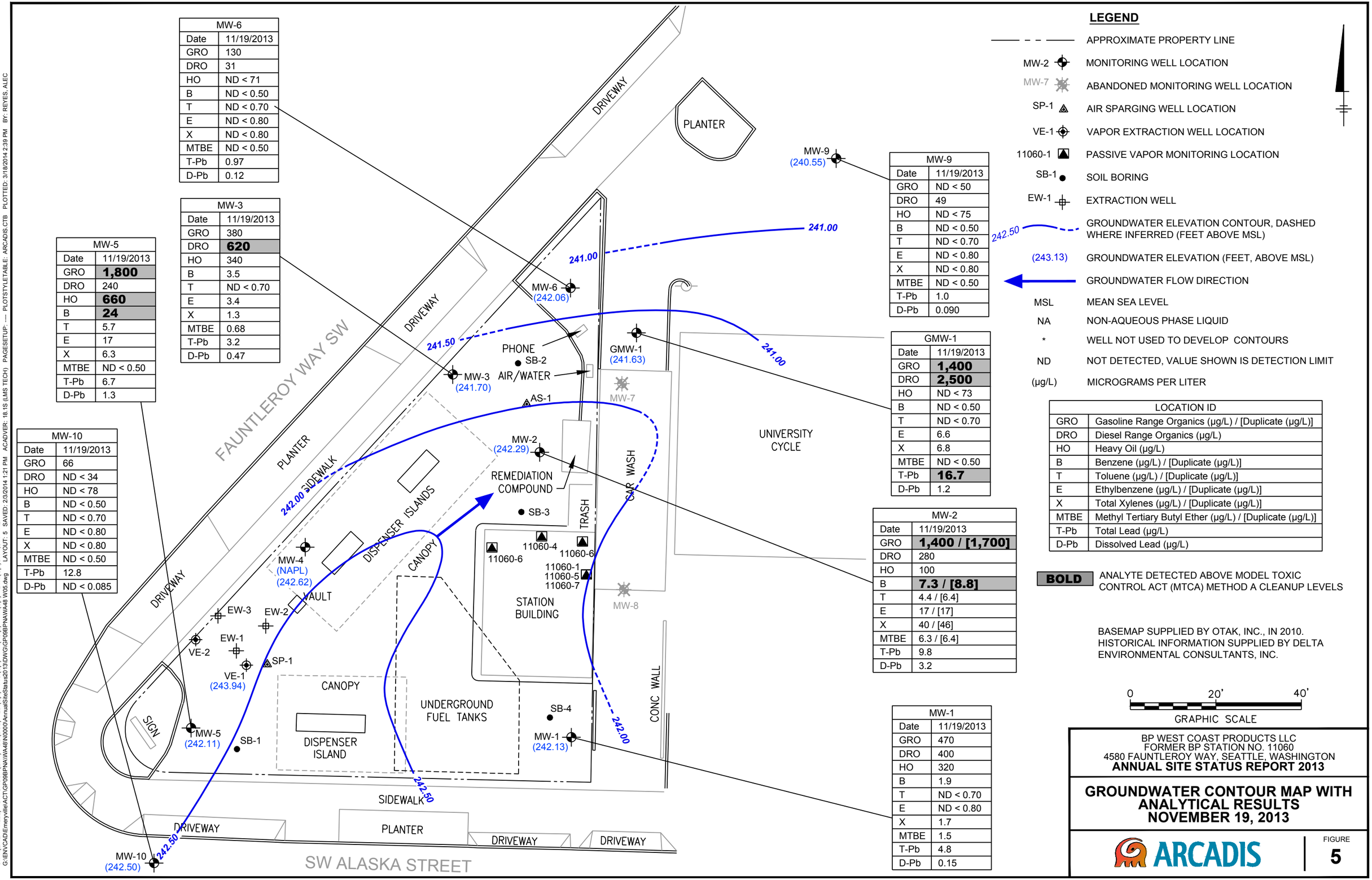
0 20' 40'
GRAPHIC SCALE

BP WEST COAST PRODUCTS LLC
FORMER BP STATION NO. 11060
4580 FAUNTLEROY WAY, SEATTLE, WASHINGTON
ANNUAL SITE STATUS REPORT 2013

GROUNDWATER CONTOUR MAP WITH ANALYTICAL RESULTS MAY 9, 2013

ARCADIS

FIGURE 4



MW-6	
Date	11/19/2013
GRO	130
DRO	31
HO	ND < 71
B	ND < 0.50
T	ND < 0.70
E	ND < 0.80
X	ND < 0.80
MTBE	ND < 0.50
T-Pb	0.97
D-Pb	0.12

MW-3	
Date	11/19/2013
GRO	380
DRO	**620**
HO	340
B	3.5
T	ND < 0.70
E	3.4
X	1.3
MTBE	0.68
T-Pb	3.2
D-Pb	0.47

MW-5	
Date	11/19/2013
GRO	**1,800**
DRO	240
HO	**660**
B	**24**
T	5.7
E	17
X	6.3
MTBE	ND < 0.50
T-Pb	6.7
D-Pb	1.3

MW-10	
Date	11/19/2013
GRO	66
DRO	ND < 34
HO	ND < 78
B	ND < 0.50
T	ND < 0.70
E	ND < 0.80
X	ND < 0.80
MTBE	ND < 0.50
T-Pb	12.8
D-Pb	ND < 0.085

MW-9	
Date	11/19/2013
GRO	ND < 50
DRO	49
HO	ND < 75
B	ND < 0.50
T	ND < 0.70
E	ND < 0.80
X	ND < 0.80
MTBE	ND < 0.50
T-Pb	1.0
D-Pb	0.090

GMW-1	
Date	11/19/2013
GRO	**1,400**
DRO	**2,500**
HO	ND < 73
B	ND < 0.50
T	ND < 0.70
E	6.6
X	6.8
MTBE	ND < 0.50
T-Pb	**16.7**
D-Pb	1.2

MW-2	
Date	11/19/2013
GRO	**1,400 / [1,700]**
DRO	280
HO	100
B	**7.3 / [8.8]**
T	4.4 / [6.4]
E	17 / [17]
X	40 / [46]
MTBE	6.3 / [6.4]
T-Pb	9.8
D-Pb	3.2

MW-1	
Date	11/19/2013
GRO	470
DRO	400
HO	320
B	1.9
T	ND < 0.70
E	ND < 0.80
X	1.7
MTBE	1.5
T-Pb	4.8
D-Pb	0.15

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-2 — MONITORING WELL LOCATION
- MW-7 — ABANDONED MONITORING WELL LOCATION
- SP-1 — AIR SPARGING WELL LOCATION
- VE-1 — VAPOR EXTRACTION WELL LOCATION
- 11060-1 — PASSIVE VAPOR MONITORING LOCATION
- SB-1 — SOIL BORING
- EW-1 — EXTRACTION WELL
- 242.50 — GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED (FEET ABOVE MSL)
- (243.13) — GROUNDWATER ELEVATION (FEET, ABOVE MSL)
- GROUNDWATER FLOW DIRECTION
- MSL — MEAN SEA LEVEL
- NA — NON-AQUEOUS PHASE LIQUID
- * — WELL NOT USED TO DEVELOP CONTOURS
- ND — NOT DETECTED, VALUE SHOWN IS DETECTION LIMIT
- (µg/L) — MICROGRAMS PER LITER

LOCATION ID	
GRO	Gasoline Range Organics (µg/L) / [Duplicate (µg/L)]
DRO	Diesel Range Organics (µg/L)
HO	Heavy Oil (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)]
T-Pb	Total Lead (µg/L)
D-Pb	Dissolved Lead (µg/L)

BOLD ANALYTE DETECTED ABOVE MODEL TOXIC CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS

BASEMAP SUPPLIED BY OTAK, INC., IN 2010.
HISTORICAL INFORMATION SUPPLIED BY DELTA ENVIRONMENTAL CONSULTANTS, INC.

0 20' 40'
GRAPHIC SCALE

BP WEST COAST PRODUCTS LLC
FORMER BP STATION NO. 11060
4580 FAUNTLEROY WAY, SEATTLE, WASHINGTON
ANNUAL SITE STATUS REPORT 2013

GROUNDWATER CONTOUR MAP WITH ANALYTICAL RESULTS NOVEMBER 19, 2013

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FIGURE 5

ARCADIS

Appendix A

Boring Logs

Date Start/Finish: 8/1/2013
Drilling Company: Cascade Drilling
Driller's Name:
Drilling Method: Hollow Stem Auger
Auger Size: 8" Outer Diameter
Rig Type:
Sampling Method: Split Spoon

Northing:
Easting:
Casing Elevation: NE

Borehole Depth: 31.5' bgs
Surface Elevation:

Descriptions By: RB

Well/Boring ID: **AS-1**

Client: BP West Coast Products LLC

Location: Former ARCO 11060, Shell Station, 4580 Fauntleroy Way South West Seattle, WA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N-Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										Concrete	Concrete; 8" Flush-mount Monument; 2" Well Cap
		HA	2.5-3	.5			0.4		SC		Clayey Sand, fine to medium, poorly sorted, medium plasticity, brown, loose, moist	
5	-5	HA	5-5.5	.5			0.3		SC		Same as above	
		1	7.5-9	1.5	2 3 4	7	1.0		SC		Same as above with a color change to grey at 8.5' bgs	
10	-10	2	10-11.5	1.5	1 2 2	4	1.4		SC		Same as above, very loose	Neat Cement
		3	12.5-14	1.5	1 2 2	4	65.7		SP		Sand lens, fine to medium, no plasticity, grey	2" Schedule 80 PVC Riser
									SC		Sand, fine to medium with clay, poorly sorted, medium plasticiy, brown, slight HCLO	First Encountered Groundwater
15	-15	4	15-16.5	1.5	5 6 6	12	10.2		SC		Same as above	
									SM		Silty Sand, fine to medium, subrounded with a little clay, low plasticiy, medium density, wet	
		5	17.5-19	1.5	8 10 10	20	1,365		SM		Same as above with Strong HCLO	

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Infrastructure · Water · Environment · Buildings

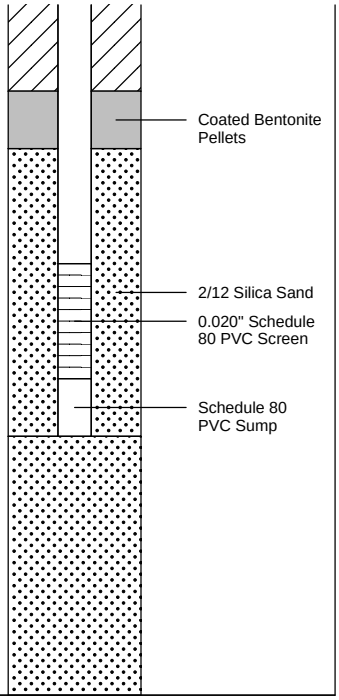
Remarks:
ft bgs = feet below ground surface
NM = Not Measured
ppm = parts per million
NE = Not Established
HA = Hand Auger
HCLO = Hydrocarbon-like Odor

Project Number:GP09BPNAWA48
Data File:

Date: 3/17/2014 Created/Edited by:RwL

Date Start/Finish: 8/1/2013 **Drilling Company:** Cascade Drilling **Driller's Name:** **Drilling Method:** Hollow Stem Auger **Auger Size:** 8" Outer Diameter **Rig Type:** **Sampling Method:** Split Spoon	**Northing:** **Easting:** **Casing Elevation:** NE **Borehole Depth:** 31.5' bgs **Surface Elevation:** **Descriptions By:** RB	**Well/Boring ID: AS-1** **Client:** BP West Coast Products LLC **Location:** Former ARCO 11060, Shell Station, 4580 Fauntleroy Way South West Seattle, WA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N-Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	6	20-21.5	1.5	8 10 8	18	1,310		SM		Same as above	
		7	22.5-24	1.5	8 10 10	20	1,093		SM		Similar to above with decreasing clay and silt, color change from blue/grey to brown/grey	
25	-25	8	25-26.5	1.5	10 12 12	24	82.8		SM		Same as above, no HCLO, granite cobble encountered	
		9	27.5-29	1.5	7 9 6	15	56.1		ML		Silt with fine subangular sand, low plasticity	
30	-30	10	30-31.5	1.5	7 9 11	20	87.4		ML		Same as above	



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ft bgs = feet below ground surface
NM = Not Measured
ppm = parts per million
NE = Not Established
HA = Hand Auger
HCLO = Hydrocarbon-like Odor

Date Start/Finish: 8/1/2013
Drilling Company: Cascade Drilling
Driller's Name:
Drilling Method: Hollow Stem Auger
Auger Size: 10'' Outer Diameter
Rig Type:
Sampling Method: Split Spoon

Northing:
Easting:
Casing Elevation: NE

Borehole Depth: 15' bgs
Surface Elevation:

Descriptions By: RB

Well/Boring ID: VE-2

Client: BP West Coast Products LLC

Location: Former ARCO 11060, Shell Station, 4580 Fauntleroy Way South West Seattle, WA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N-Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										Concrete	Concrete
												10" Flush-mount Monument
												4" Well Cap
		HA	2.5-3	.5			1.3		CL		Clay with sand, fine poorly sorted sand, medium plasticity, grey, some woody debris, moist	Bentonite Chips
												4" Schedule 40 PVC Riser
5	-5	HA	5-5.5	.5			0.6		CL		Clay with sand, fine to medium poorly sorted subangular sand, medium plasticity clay nodules in sand matrix, grey, moist	
		1	7.5-9	1.5	2 2 3	5	1.3		CL		Clay with sand, fine poorly sorted subangular sand, medium plasticity clay, loose, grey, moist	
												2/12 Silica Sand
10	-10	2	10-11.5	1.5	2 3 3	6	4.0		CL		Same as above	0.020" Schedule 40 PVC Screen
		3	13.5-15	1.5	2 4 5	9	350		CL		Same as above with some HCLO	
15	-15											

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks:
ft bgs = feet below ground surface
NM = Not Measured
ppm = parts per million
NE = Not Established
HA = Hand Auger
HCLO = Hydrocarbon-like Odor

Project Number:GP09BPNAWA48
Data File:

Date: 3/17/2014 Created/Edited by:RwL

ARCADIS

Appendix B

Laboratory Report and
Chain-of-Custody Documentation

June 03, 2013

Alan Kahal
Arcadis U.S., Inc.
2300 Eastlake Ave E
Seattle, WA 98102

RE: Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Dear Alan Kahal:
Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mariah Peronto

mariah.peronto@pacelabs.com
Project Manager

Enclosures

cc: Accounts Payable, Arcadis U.S., Inc.

CERTIFICATIONS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

SAMPLE SUMMARY

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10228605001	**MW-1**	Water	05/09/13 12:00	05/14/13 09:00
10228605002	**MW-2**	Water	05/09/13 14:20	05/14/13 09:00
10228605003	**MW-3**	Water	05/09/13 15:10	05/14/13 09:00
10228605004	**MW-5**	Water	05/09/13 15:35	05/14/13 09:00
10228605005	**MW-6**	Water	05/09/13 12:30	05/14/13 09:00
10228605006	**MW-9**	Water	05/09/13 13:50	05/14/13 09:00
10228605007	**MW-10**	Water	05/09/13 09:55	05/14/13 09:00
10228605008	**MW-GW-1**	Water	05/09/13 13:20	05/14/13 09:00
10228605009	**DUP-1**	Water	05/09/13 00:00	05/14/13 09:00
10228605010	**TRIP BLANK**	Water	05/09/13 00:00	05/14/13 09:00

SAMPLE ANALYTE COUNT

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10228605001	**MW-1**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605002	**MW-2**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605003	**MW-3**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605004	**MW-5**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605005	**MW-6**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605006	**MW-9**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605007	**MW-10**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605008	**MW-GW-1**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2

SAMPLE ANALYTE COUNT

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605009	**DUP-1**	NWTPH-Dx	JRH	4
		NWTPH-Gx/8021	KT1	2
		EPA 6010	IP	1
		EPA 6010	IP	1
		EPA 8260	EB2	8
10228605010	**TRIP BLANK**	NWTPH-Gx/8021	KT1	2
		EPA 8260	EB2	8

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS LV
Client: Arcadis
Date: June 03, 2013

General Information:
9 samples were analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **NWTPH-Gx/8021**
Description: NWTPH-Gx GCV
Client: Arcadis
Date: June 03, 2013

General Information:
10 samples were analyzed for NWTPH-Gx/8021. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: GCV/10772

S0: Surrogate recovery outside laboratory control limits.

- MW-1 (Lab ID: 10228605001)
  - a,a,a-Trifluorotoluene (S)
- MW-2 (Lab ID: 10228605002)
  - a,a,a-Trifluorotoluene (S)
- MW-3 (Lab ID: 10228605003)
  - a,a,a-Trifluorotoluene (S)
- MW-5 (Lab ID: 10228605004)
  - a,a,a-Trifluorotoluene (S)
- MW-GW-1 (Lab ID: 10228605008)
  - a,a,a-Trifluorotoluene (S)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **NWTPH-Gx/8021**
Description: NWTPH-Gx GCV
Client: Arcadis
Date: June 03, 2013

Analyte Comments:

QC Batch: GCV/10772

1M: Surrogate recovery outside laboratory control limits due to matrix interferences.

- MW-1 (Lab ID: 10228605001)
  - a,a,a-Trifluorotoluene (S)
- MW-2 (Lab ID: 10228605002)
  - a,a,a-Trifluorotoluene (S)
- MW-3 (Lab ID: 10228605003)
  - a,a,a-Trifluorotoluene (S)
- MW-5 (Lab ID: 10228605004)
  - a,a,a-Trifluorotoluene (S)
- MW-GW-1 (Lab ID: 10228605008)
  - a,a,a-Trifluorotoluene (S)

QC Batch: GCV/10773

1M: Surrogate recovery outside laboratory control limits due to matrix interferences.

- DUP-1 (Lab ID: 10228605009)
  - a,a,a-Trifluorotoluene (S)

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Arcadis
Date: June 03, 2013

General Information:
9 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **EPA 6010**
Description: 6010 MET ICP, Lab Filtered
Client: Arcadis
Date: June 03, 2013

General Information:
9 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **EPA 8260**
Description: 8260 VOC
Client: Arcadis
Date: June 03, 2013

General Information:
10 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/23710

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10228605004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1435507)
  - Ethylbenzene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: MSV/23710

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- DUP-1 (Lab ID: 10228605009)
  - 1,2-Dichloroethane-d4 (S)

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Method: **EPA 8260**
Description: 8260 VOC
Client: Arcadis
Date: June 03, 2013

Analyte Comments:

QC Batch: MSV/23710

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MW-2 (Lab ID: 10228605002)
  - 1,2-Dichloroethane-d4 (S)

This data package has been reviewed for quality and completeness and is approved for release.

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-1 **Lab ID: 10228605001** Collected: 05/09/13 12:00 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	**0.62**	mg/L	0.43	1	05/16/13 12:36	05/30/13 19:28	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	1	05/16/13 12:36	05/30/13 19:28		
Surrogates								
o-Terphenyl (S)	79	%	30-125	1	05/16/13 12:36	05/30/13 19:28	84-15-1	
n-Triacontane (S)	90	%	30-125	1	05/16/13 12:36	05/30/13 19:28	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**557**	ug/L	100	1		05/19/13 00:03		
Surrogates								
a,a,a-Trifluorotoluene (S)	152	%	75-125	1		05/19/13 00:03	98-08-8	1M,S0
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 20:59	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 21:16	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	**6.3**	ug/L	1.0	1		05/18/13 19:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/18/13 19:08	100-41-4	
Methyl-tert-butyl ether	**1.6**	ug/L	1.0	1		05/18/13 19:08	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 19:08	108-88-3	
Xylene (Total)	**4.1**	ug/L	3.0	1		05/18/13 19:08	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	75-125	1		05/18/13 19:08	17060-07-0	
Toluene-d8 (S)	101	%	75-125	1		05/18/13 19:08	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		05/18/13 19:08	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-2 **Lab ID: 10228605002** Collected: 05/09/13 14:20 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	**1.7**	mg/L	0.40	1	05/16/13 12:36	05/30/13 19:50	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 19:50		
Surrogates								
o-Terphenyl (S)	38	%	30-125	1	05/16/13 12:36	05/30/13 19:50	84-15-1	
n-Triacontane (S)	44	%	30-125	1	05/16/13 12:36	05/30/13 19:50	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**3660**	ug/L	100	1		05/19/13 00:23		
Surrogates								
a,a,a-Trifluorotoluene (S)	244	%	75-125	1		05/19/13 00:23	98-08-8	1M,S0
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	**12.3**	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:06	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 21:35	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	**42.9**	ug/L	5.0	5		05/18/13 21:34	71-43-2	
Ethylbenzene	**115**	ug/L	5.0	5		05/18/13 21:34	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		05/18/13 21:34	1634-04-4	
Toluene	**6.2**	ug/L	5.0	5		05/18/13 21:34	108-88-3	
Xylene (Total)	**35.4**	ug/L	15.0	5		05/18/13 21:34	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	75-125	5		05/18/13 21:34	17060-07-0	D3
Toluene-d8 (S)	100	%	75-125	5		05/18/13 21:34	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125	5		05/18/13 21:34	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-3 **Lab ID: 10228605003** Collected: 05/09/13 15:10 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	**0.61**	mg/L	0.42	1	05/16/13 12:36	05/30/13 20:12	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	05/16/13 12:36	05/30/13 20:12		
Surrogates								
o-Terphenyl (S)	78	%	30-125	1	05/16/13 12:36	05/30/13 20:12	84-15-1	
n-Triacontane (S)	90	%	30-125	1	05/16/13 12:36	05/30/13 20:12	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**2850**	ug/L	100	1		05/19/13 00:43		
Surrogates								
a,a,a-Trifluorotoluene (S)	242	%	75-125	1		05/19/13 00:43	98-08-8	1M,S0
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:12	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 21:41	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	**32.8**	ug/L	1.0	1		05/18/13 17:30	71-43-2	
Ethylbenzene	**98.3**	ug/L	1.0	1		05/18/13 17:30	100-41-4	
Methyl-tert-butyl ether	**2.7**	ug/L	1.0	1		05/18/13 17:30	1634-04-4	
Toluene	**4.2**	ug/L	1.0	1		05/18/13 17:30	108-88-3	
Xylene (Total)	**13.9**	ug/L	3.0	1		05/18/13 17:30	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	75-125	1		05/18/13 17:30	17060-07-0	
Toluene-d8 (S)	104	%	75-125	1		05/18/13 17:30	2037-26-5	
4-Bromofluorobenzene (S)	103	%	75-125	1		05/18/13 17:30	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-5 **Lab ID: 10228605004** Collected: 05/09/13 15:35 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 20:35	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 20:35		
Surrogates								
o-Terphenyl (S)	80	%	30-125	1	05/16/13 12:36	05/30/13 20:35	84-15-1	
n-Triacontane (S)	91	%	30-125	1	05/16/13 12:36	05/30/13 20:35	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**3470**	ug/L	100	1		05/19/13 01:04		
Surrogates								
a,a,a-Trifluorotoluene (S)	223	%	75-125	1		05/19/13 01:04	98-08-8	1M,S0
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:19	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 21:48	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	**19.0**	ug/L	1.0	1		05/18/13 17:06	71-43-2	
Ethylbenzene	**48.3**	ug/L	1.0	1		05/18/13 17:06	100-41-4	M1
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 17:06	1634-04-4	
Toluene	**6.7**	ug/L	1.0	1		05/18/13 17:06	108-88-3	
Xylene (Total)	**18.5**	ug/L	3.0	1		05/18/13 17:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	75-125	1		05/18/13 17:06	17060-07-0	
Toluene-d8 (S)	104	%	75-125	1		05/18/13 17:06	2037-26-5	
4-Bromofluorobenzene (S)	103	%	75-125	1		05/18/13 17:06	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-6 **Lab ID: 10228605005** Collected: 05/09/13 12:30 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 20:57	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 20:57		
Surrogates								
o-Terphenyl (S)	77	%	30-125	1	05/16/13 12:36	05/30/13 20:57	84-15-1	
n-Triacontane (S)	88	%	30-125	1	05/16/13 12:36	05/30/13 20:57	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**216**	ug/L	100	1		05/19/13 20:02		
Surrogates								
a,a,a-Trifluorotoluene (S)	122	%	75-125	1		05/19/13 20:02	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:34	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 22:01	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		05/18/13 20:21	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/18/13 20:21	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 20:21	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 20:21	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		05/18/13 20:21	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	75-125	1		05/18/13 20:21	17060-07-0	
Toluene-d8 (S)	100	%	75-125	1		05/18/13 20:21	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125	1		05/18/13 20:21	460-00-4	

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-9 **Lab ID: 10228605006** Collected: 05/09/13 13:50 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 21:20	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 21:20		
Surrogates								
o-Terphenyl (S)	79	%	30-125	1	05/16/13 12:36	05/30/13 21:20	84-15-1	
n-Triacontane (S)	91	%	30-125	1	05/16/13 12:36	05/30/13 21:20	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	ND	ug/L	100	1		05/19/13 01:44		
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%	75-125	1		05/19/13 01:44	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:38	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 22:06	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		05/18/13 19:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/18/13 19:57	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 19:57	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 19:57	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		05/18/13 19:57	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	75-125	1		05/18/13 19:57	17060-07-0	
Toluene-d8 (S)	98	%	75-125	1		05/18/13 19:57	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125	1		05/18/13 19:57	460-00-4	

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-10 **Lab ID: 10228605007** Collected: 05/09/13 09:55 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 21:42	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	05/16/13 12:36	05/30/13 21:42		
Surrogates								
o-Terphenyl (S)	77	%	30-125	1	05/16/13 12:36	05/30/13 21:42	84-15-1	
n-Triacontane (S)	90	%	30-125	1	05/16/13 12:36	05/30/13 21:42	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	ND	ug/L	100	1		05/19/13 02:04		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%	75-125	1		05/19/13 02:04	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:43	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 22:10	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		05/18/13 18:43	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/18/13 18:43	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 18:43	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 18:43	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		05/18/13 18:43	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	75-125	1		05/18/13 18:43	17060-07-0	
Toluene-d8 (S)	100	%	75-125	1		05/18/13 18:43	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125	1		05/18/13 18:43	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: MW-GW-1 **Lab ID: 10228605008** Collected: 05/09/13 13:20 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	ND	mg/L	0.42	1	05/16/13 12:36	05/30/13 22:05	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	05/16/13 12:36	05/30/13 22:05		
Surrogates								
o-Terphenyl (S)	77	%	30-125	1	05/16/13 12:36	05/30/13 22:05	84-15-1	
n-Triacontane (S)	88	%	30-125	1	05/16/13 12:36	05/30/13 22:05	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**1010**	ug/L	100	1		05/19/13 02:24		
Surrogates								
a,a,a-Trifluorotoluene (S)	192	%	75-125	1		05/19/13 02:24	98-08-8	1M,S0
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:49	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 22:17	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		05/18/13 19:32	71-43-2	
Ethylbenzene	**4.4**	ug/L	1.0	1		05/18/13 19:32	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 19:32	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 19:32	108-88-3	
Xylene (Total)	**4.6**	ug/L	3.0	1		05/18/13 19:32	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	75-125	1		05/18/13 19:32	17060-07-0	
Toluene-d8 (S)	102	%	75-125	1		05/18/13 19:32	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		05/18/13 19:32	460-00-4	

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: DUP-1 **Lab ID: 10228605009** Collected: 05/09/13 00:00 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Fuel Range	**2.7**	mg/L	0.40	1	05/16/13 12:36	05/30/13 22:27	68334-30-5	
Motor Oil Range	**0.42**	mg/L	0.40	1	05/16/13 12:36	05/30/13 22:27		
Surrogates								
o-Terphenyl (S)	73	%	30-125	1	05/16/13 12:36	05/30/13 22:27	84-15-1	
n-Triacontane (S)	83	%	30-125	1	05/16/13 12:36	05/30/13 22:27	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	**4210**	ug/L	100	1		05/19/13 23:03		
Surrogates								
a,a,a-Trifluorotoluene (S)	260	%	75-125	1		05/19/13 23:03	98-08-8	1M
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	**12.4**	ug/L	10.0	1	05/21/13 14:42	05/23/13 21:54	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead, Dissolved	ND	ug/L	10.0	1	05/25/13 08:07	05/26/13 22:22	7439-92-1	
8260 VOC	Analytical Method: EPA 8260							
Benzene	**63.4**	ug/L	5.0	5		05/18/13 21:58	71-43-2	
Ethylbenzene	**124**	ug/L	5.0	5		05/18/13 21:58	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		05/18/13 21:58	1634-04-4	
Toluene	**8.5**	ug/L	5.0	5		05/18/13 21:58	108-88-3	
Xylene (Total)	**47.7**	ug/L	15.0	5		05/18/13 21:58	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	75-125	5		05/18/13 21:58	17060-07-0	D3
Toluene-d8 (S)	100	%	75-125	5		05/18/13 21:58	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125	5		05/18/13 21:58	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Sample: TRIP BLANK **Lab ID: 10228605010** Collected: 05/09/13 00:00 Received: 05/14/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021							
TPH as Gas	ND	ug/L	100	1		05/19/13 19:15		
Surrogates								
a,a,a-Trifluorotoluene (S)	89	%	75-125	1		05/19/13 19:15	98-08-8	
8260 VOC	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		05/18/13 15:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		05/18/13 15:53	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/18/13 15:53	1634-04-4	
Toluene	ND	ug/L	1.0	1		05/18/13 15:53	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		05/18/13 15:53	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	75-125	1		05/18/13 15:53	17060-07-0	
Toluene-d8 (S)	100	%	75-125	1		05/18/13 15:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125	1		05/18/13 15:53	460-00-4	

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: GCV/10772 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx/8021B Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605006, 10228605007, 10228605008

METHOD BLANK: 1435708 Matrix: Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605006, 10228605007, 10228605008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	05/18/13 19:43	
a,a,a-Trifluorotoluene (S)	%	88	75-125	05/18/13 19:43	

LABORATORY CONTROL SAMPLE & LCSD: 1435709 1435710

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	928	986	93	99	75-126	6	20	
a,a,a-Trifluorotoluene (S)	%				97	97	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1435711 1435712

Parameter	Units	10228638006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	ND	1000	1000	958	1040	95	103	75-137	8	30	
a,a,a-Trifluorotoluene (S)	%						98	100	75-125			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: GCV/10773 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx/8021B Water
Associated Lab Samples: 10228605005, 10228605009, 10228605010

METHOD BLANK: 1435753 Matrix: Water
Associated Lab Samples: 10228605005, 10228605009, 10228605010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	05/19/13 18:44	
a,a,a-Trifluorotoluene (S)	%	89	75-125	05/19/13 18:44	

LABORATORY CONTROL SAMPLE & LCSD: 1435754 1435755

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1030	938	103	94	75-126	9	20	
a,a,a-Trifluorotoluene (S)	%				96	98	75-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1435756 1435757

Parameter	Units	10228965010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	4070	5000	5000	9650	9950	112	118	75-137	3	30	
a,a,a-Trifluorotoluene (S)	%						101	100	75-125			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: MPRP/39290 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

METHOD BLANK: 1435390 Matrix: Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	10.0	05/23/13 19:54	

LABORATORY CONTROL SAMPLE: 1435391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	1000	975	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1435392 1435393

Parameter	Units	10227957003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	1000	1000	969	956	97	96	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: MPRP/39379 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

METHOD BLANK: 1437837 Matrix: Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead, Dissolved	ug/L	ND	10.0	05/26/13 21:08	

LABORATORY CONTROL SAMPLE: 1437838

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	1000	957	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1437839 1437840

Parameter	Units	10228605001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead, Dissolved	ug/L	ND	1000	1000	940	920	94	92	75-125	2	20	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: MSV/23710 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 W
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009, 10228605010

METHOD BLANK: 1435445 Matrix: Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009, 10228605010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	05/18/13 14:40	
Ethylbenzene	ug/L	ND	1.0	05/18/13 14:40	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/18/13 14:40	
Toluene	ug/L	ND	1.0	05/18/13 14:40	
Xylene (Total)	ug/L	ND	3.0	05/18/13 14:40	
1,2-Dichloroethane-d4 (S)	%	98	75-125	05/18/13 14:40	
4-Bromofluorobenzene (S)	%	100	75-125	05/18/13 14:40	
Toluene-d8 (S)	%	99	75-125	05/18/13 14:40	

LABORATORY CONTROL SAMPLE: 1435446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.5	107	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Methyl-tert-butyl ether	ug/L	20	21.7	108	74-126	
Toluene	ug/L	20	21.0	105	75-125	
Xylene (Total)	ug/L	60	63.2	105	75-125	
1,2-Dichloroethane-d4 (S)	%			100	75-125	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			100	75-125	

MATRIX SPIKE SAMPLE: 1435507

Parameter	Units	10228605004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	19.0	20	40.9	110	70-135	
Ethylbenzene	ug/L	48.3	20	73.8	127	75-125	M1
Methyl-tert-butyl ether	ug/L	ND	20	22.7	114	70-132	
Toluene	ug/L	6.7	20	29.8	115	75-125	
Xylene (Total)	ug/L	18.5	60	88.1	116	75-125	
1,2-Dichloroethane-d4 (S)	%				103	75-125	
4-Bromofluorobenzene (S)	%				104	75-125	
Toluene-d8 (S)	%				105	75-125	

SAMPLE DUPLICATE: 1435508

Parameter	Units	10228605003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	32.8	33.2	1	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

SAMPLE DUPLICATE: 1435508

Parameter	Units	10228605003 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethylbenzene	ug/L	98.3	98.9	.6	30	
Methyl-tert-butyl ether	ug/L	2.7	2.9	8	30	
Toluene	ug/L	4.2	4.2	.6	30	
Xylene (Total)	ug/L	13.9	13.8	.5	30	
1,2-Dichloroethane-d4 (S)	%	104	102	2		
4-Bromofluorobenzene (S)	%	103	102	1		
Toluene-d8 (S)	%	104	103	.7		

QUALITY CONTROL DATA

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

QC Batch: OEXT/21692 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS LV
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

METHOD BLANK: 1433301 Matrix: Water
Associated Lab Samples: 10228605001, 10228605002, 10228605003, 10228605004, 10228605005, 10228605006, 10228605007, 10228605008, 10228605009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.20	05/30/13 18:20	
Motor Oil Range	mg/L	ND	0.20	05/30/13 18:20	
n-Triacontane (S)	%	71	30-125	05/30/13 18:20	
o-Terphenyl (S)	%	63	30-125	05/30/13 18:20	

LABORATORY CONTROL SAMPLE & LCSD: 1433302 1433303

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	1	0.87	0.96	87	96	50-150	10	20	
Motor Oil Range	mg/L	1	0.99	1.1	99	106	50-150	7	20	
n-Triacontane (S)	%				87	89	30-125			
o-Terphenyl (S)	%				87	90	30-125			

QUALIFIERS

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Surrogate recovery outside laboratory control limits due to matrix interferences.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S0	Surrogate recovery outside laboratory control limits.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10228605001	**MW-1**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605002	**MW-2**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605003	**MW-3**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605004	**MW-5**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605005	**MW-6**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605006	**MW-9**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605007	**MW-10**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605008	**MW-GW-1**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605009	**DUP-1**	EPA 3510	OEXT/21692	NWTPH-Dx	GCSV/11402
10228605001	**MW-1**	NWTPH-Gx/8021	GCV/10772		
10228605002	**MW-2**	NWTPH-Gx/8021	GCV/10772		
10228605003	**MW-3**	NWTPH-Gx/8021	GCV/10772		
10228605004	**MW-5**	NWTPH-Gx/8021	GCV/10772		
10228605005	**MW-6**	NWTPH-Gx/8021	GCV/10773		
10228605006	**MW-9**	NWTPH-Gx/8021	GCV/10772		
10228605007	**MW-10**	NWTPH-Gx/8021	GCV/10772		
10228605008	**MW-GW-1**	NWTPH-Gx/8021	GCV/10772		
10228605009	**DUP-1**	NWTPH-Gx/8021	GCV/10773		
10228605010	**TRIP BLANK**	NWTPH-Gx/8021	GCV/10773		
10228605001	**MW-1**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605002	**MW-2**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605003	**MW-3**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605004	**MW-5**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605005	**MW-6**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605006	**MW-9**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605007	**MW-10**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605008	**MW-GW-1**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605009	**DUP-1**	EPA 3010	MPRP/39290	EPA 6010	ICP/16458
10228605001	**MW-1**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605002	**MW-2**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605003	**MW-3**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605004	**MW-5**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605005	**MW-6**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605006	**MW-9**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605007	**MW-10**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605008	**MW-GW-1**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605009	**DUP-1**	EPA 3010	MPRP/39379	EPA 6010	ICP/16504
10228605001	**MW-1**	EPA 8260	MSV/23710		
10228605002	**MW-2**	EPA 8260	MSV/23710		
10228605003	**MW-3**	EPA 8260	MSV/23710		
10228605004	**MW-5**	EPA 8260	MSV/23710		
10228605005	**MW-6**	EPA 8260	MSV/23710		
10228605006	**MW-9**	EPA 8260	MSV/23710		
10228605007	**MW-10**	EPA 8260	MSV/23710		
10228605008	**MW-GW-1**	EPA 8260	MSV/23710		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GP09BPNAWA48 WA-11060
Pace Project No.: 10228605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10228605009	**DUP-1**	EPA 8260	MSV/23710		
10228605010	**TRIP BLANK**	EPA 8260	MSV/23710		

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10228605

1131 - 1152

Page: 1 of 1

1586661

Section A
Required Client Information:

Company:	ARCADIS
Address:	1100 Olive Wy Ste 600
	Seattle, WA 98101
Email To:	alan.kehel@arcadis-us.com
Phone: 206-325-5254	Fax: 206-325-8218
Requested Due Date/TAT:	standard

Section B
Required Project Information:

Report To:	Alan Kehel
Copy To:	Sam Miles
Purchase Order No.:	GP09BPNAWA48
Project Name:	WA-11060
Project Number:	GP09BPNAWA48

Section C
Invoice Information:

Attention:	Scott Zorn
Company Name:	ARCADIS
Address:	1100 Olive Wy Ste 600
Pace Quote Reference:	NA
Pace Project Manager:	Mariah Pengelly
Pace Profile #:	NA

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER Ecology

Site Location STATE: WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N): GRO by NWTPH-Gx N; BTEX/MTBE by 8260B N; DRO/HO by NWTPH-Dx N; Total Pb by 6010 N; Dissolved Pb by 6010 Y

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	GRO by NWTPH-Gx	BTEX/MTBE by 8260B	DRO/HO by NWTPH-Dx	Total Pb by 6010	Dissolved Pb by 6010	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			5/9/13	12:00		10	1		1	8						X	X	X	X	X		10228605001
2	MW-2						14:20		10	1		1	8						X	X	X	X	X		002
3	MW-3						15:10		10	1		1	8						X	X	X	X	X		003
4	MW-5						15:35		10	1		1	8						X	X	X	X	X		004
5	MW-6						12:30		10	1		1	8						X	X	X	X	X		005
6	MW-9						13:50		10	1		1	8						X	X	X	X	X		006
7	MW-10						9:55		10	1		1	8						X	X	X	X	X		007
8	MW-GW-1						13:20		10	1		1	8						X	X	X	X	X		008
9	DUP-1						—		10	1		1	8						X	X	X	X	X		009
10	TRIP BLANK						—		4				4						X	X					010
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please filter dissolved Pb	Roy G. Hennacle / ARCADIS	5/10/13	15:05	[signature] PACE	5/10/13	10:09	21.8	Y	N	Y
Samples may need dilution.				[signature]	5-14-13	9:00	2.0	Y	Y	Y
							1.9	Y	Y	Y

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Roy G. Hennacle

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 05/09/13

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Client Name: Arcadis

Project #: WO#: 10228605

10228605

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 5287 3746 7585, 7596

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermom. Used: ☑ B88A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.1, 1.2 **Cooler Temp Corrected (°C):** 2.0, 1.9

Temp should be above freezing to 6°C **Correction Factor:** 1.9 **Biological Tissue Frozen?** ☐ Yes ☐ No

Date and Initials of Person Examining Contents: CU 5-14-13

Comments:

Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☑ Yes	☐ No	☐ N/A	Sample # 1-9 Y1
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☑ Yes	☐ No		Initial when completed: CU Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☑ No	☐ N/A	14.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	15. 4WT Trip Blank
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): 032583-1				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 5/15/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

August 23, 2013

Samuel Miles
Arcadis U.S., Inc.
2300 Eastlake Ave. E
Seattle, WA 98102

RE: Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Dear Samuel Miles:
Enclosed are the analytical results for sample(s) received by the laboratory on August 01, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mariah Peronto

mariah.peronto@pacelabs.com
Project Manager

Enclosures

cc: Accounts Payable, Arcadis U.S., Inc.

CERTIFICATIONS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

SAMPLE SUMMARY

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10237432001	**AS-1-15**	Solid	08/01/13 12:30	08/01/13 16:15
10237432002	**AS-1-20**	Solid	08/01/13 12:40	08/01/13 16:15
10237432003	**AS-1-25**	Solid	08/01/13 15:05	08/01/13 16:15
10237432004	**AS-1-27.5**	Solid	08/01/13 12:50	08/01/13 16:15
10237432005	**VE-2-10**	Solid	08/01/13 15:20	08/01/13 16:15
10237432006	**VE-2-13.5**	Solid	08/01/13 15:30	08/01/13 16:15
10237432007	**DUP-1**	Solid	08/01/13 00:00	08/01/13 16:15
10237432008	**TRIP BLANK**	Solid	08/01/13 00:00	08/01/13 16:15

SAMPLE ANALYTE COUNT

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10237432001	**AS-1-15**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	CNC	12
10237432002	**AS-1-20**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	LPM	70
10237432003	**AS-1-25**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	CNC	12
10237432004	**AS-1-27.5**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	CNC	12
10237432005	**VE-2-10**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	CNC	12
10237432006	**VE-2-13.5**	NWTPH-Dx	JRH	3
		NWTPH-Gx/8021	LLC	2
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8270 by SIM	JLR	41
		EPA 8260	CNC	12
10237432007	**DUP-1**	NWTPH-Gx/8021	LLC	2

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010	IP	1
		ASTM D2974	CW1	1
		EPA 8260	CNC	12
10237432008	**TRIP BLANK**	NWTPH-Gx/8021	LLC	2
		EPA 8260	CNC	12

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-15 **Lab ID: 10237432001** Collected: 08/01/13 12:30 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	ND	mg/kg	16.2	1	08/05/13 13:20	08/08/13 14:51	68334-30-5	
Motor Oil Range	ND	mg/kg	64.8	1	08/05/13 13:20	08/08/13 14:51		
Surrogates								
n-Pentacosane (S)	90	%	50-150	1	08/05/13 13:20	08/08/13 14:51	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	5.9	1	08/10/13 11:30	08/13/13 09:24		
Surrogates								
a,a,a-Trifluorotoluene (S)	82	%	66-125	1	08/10/13 11:30	08/13/13 09:24	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**14.9**	mg/kg	1.1	1	08/07/13 07:04	08/12/13 18:26	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**17.7**	%	0.10	1		08/05/13 00:00		
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	83-32-9	
Acenaphthylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	208-96-8	
Anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	50-32-8	
Benzo(e)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	36.5	1	08/07/13 08:44	08/13/13 17:09		
Carbazole	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	86-74-8	
2-Chloronaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	91-58-7	
Chrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	194-59-2	
Dibenzofuran	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	122	1	08/07/13 08:44	08/13/13 17:09	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	122	1	08/07/13 08:44	08/13/13 17:09	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	206-44-0	
Fluorene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	193-39-5	
3-Methylcholanthrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	56-49-5	
5-Methylchrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	3697-24-3	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-15 **Lab ID: 10237432001** Collected: 08/01/13 12:30 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
1-Methylnaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	91-57-6	
Naphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	602-57-8	
6-Nitrochrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	7496-02-8	
2-Nitrofluorene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	607-57-8	
1-Nitropyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	5522-43-0	
4-Nitropyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	57835-92-4	
Perylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	198-55-0	
Phenanthrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	85-01-8	
Pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 17:09	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	51	%	39-125	1	08/07/13 08:44	08/13/13 17:09	321-60-8	
Terphenyl-d14 (S)	61	%	41-130	1	08/07/13 08:44	08/13/13 17:09	1718-51-0	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	106-93-4	
1,2-Dichloroethane	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	107-06-2	
Ethylbenzene	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	100-41-4	
n-Hexane	ND	ug/kg	489	1	08/06/13 13:19	08/08/13 21:30	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	1634-04-4	
Naphthalene	ND	ug/kg	9.8	1	08/06/13 13:19	08/08/13 21:30	91-20-3	
Toluene	ND	ug/kg	3.9	1	08/06/13 13:19	08/08/13 21:30	108-88-3	
Xylene (Total)	ND	ug/kg	11.7	1	08/06/13 13:19	08/08/13 21:30	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	30-150	1	08/06/13 13:19	08/08/13 21:30	17060-07-0	
Toluene-d8 (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 21:30	2037-26-5	
4-Bromofluorobenzene (S)	101	%	30-150	1	08/06/13 13:19	08/08/13 21:30	460-00-4	

Sample: AS-1-20 **Lab ID: 10237432002** Collected: 08/01/13 12:40 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	**167**	mg/kg	14.8	1	08/05/13 13:20	08/08/13 15:57	68334-30-5	
Motor Oil Range	ND	mg/kg	59.1	1	08/05/13 13:20	08/08/13 15:57		
Surrogates								
n-Pentacosane (S)	86	%	50-150	1	08/05/13 13:20	08/08/13 15:57	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	**989**	mg/kg	115	20	08/10/13 11:30	08/13/13 10:19		
Surrogates								
a,a,a-Trifluorotoluene (S)	98	%	66-125	20	08/10/13 11:30	08/13/13 10:19	98-08-8	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-20 **Lab ID: 10237432002** Collected: 08/01/13 12:40 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**8.7**	mg/kg	0.81	1	08/07/13 07:04	08/12/13 18:31	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**9.7**	%	0.10	1		08/05/13 00:00		
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	83-32-9	
Acenaphthylene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	208-96-8	
Anthracene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	50-32-8	
Benzo(e)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	33.2	1	08/07/13 08:44	08/13/13 17:36		
Carbazole	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	86-74-8	
2-Chloronaphthalene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	91-58-7	
Chrysene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	194-59-2	
Dibenzofuran	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	111	1	08/07/13 08:44	08/13/13 17:36	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	111	1	08/07/13 08:44	08/13/13 17:36	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	206-44-0	
Fluorene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	193-39-5	
3-Methylcholanthrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	56-49-5	
5-Methylchrysene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	3697-24-3	
1-Methylnaphthalene	**81.9**	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	90-12-0	
2-Methylnaphthalene	**201**	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	91-57-6	
Naphthalene	**250**	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	602-57-8	
6-Nitrochrysene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	7496-02-8	
2-Nitrofluorene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	607-57-8	
1-Nitropyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	5522-43-0	
4-Nitropyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	57835-92-4	
Perylene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	198-55-0	
Phenanthrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	85-01-8	
Pyrene	ND	ug/kg	11.1	1	08/07/13 08:44	08/13/13 17:36	129-00-0	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-20 **Lab ID: 10237432002** Collected: 08/01/13 12:40 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Surrogates								
2-Fluorobiphenyl (S)	48	%	39-125	1	08/07/13 08:44	08/13/13 17:36	321-60-8	
Terphenyl-d14 (S)	62	%	41-130	1	08/07/13 08:44	08/13/13 17:36	1718-51-0	
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	1140	1	08/07/13 10:44	08/08/13 00:46	67-64-1	
Allyl chloride	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	107-05-1	
Benzene	ND	ug/kg	22.7	1	08/07/13 10:44	08/08/13 00:46	71-43-2	
Bromobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	108-86-1	
Bromochloromethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	74-97-5	
Bromodichloromethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	75-27-4	
Bromoform	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	75-25-2	
Bromomethane	ND	ug/kg	568	1	08/07/13 10:44	08/08/13 00:46	74-83-9	
2-Butanone (MEK)	ND	ug/kg	284	1	08/07/13 10:44	08/08/13 00:46	78-93-3	
n-Butylbenzene	**1440**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	104-51-8	
sec-Butylbenzene	**847**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	135-98-8	
tert-Butylbenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	98-06-6	
Carbon tetrachloride	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	56-23-5	
Chlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	108-90-7	
Chloroethane	ND	ug/kg	568	1	08/07/13 10:44	08/08/13 00:46	75-00-3	
Chloroform	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	67-66-3	
Chloromethane	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	74-87-3	
2-Chlorotoluene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	95-49-8	
4-Chlorotoluene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	96-12-8	
Dibromochloromethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	106-93-4	
Dibromomethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	75-71-8	
1,1-Dichloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	75-34-3	
1,2-Dichloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	107-06-2	
1,1-Dichloroethene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	156-60-5	
Dichlorofluoromethane	ND	ug/kg	568	1	08/07/13 10:44	08/08/13 00:46	75-43-4	
1,2-Dichloropropane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	78-87-5	
1,3-Dichloropropane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	142-28-9	
2,2-Dichloropropane	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	594-20-7	
1,1-Dichloropropene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	60-29-7	
Ethylbenzene	**767**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	100-41-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-20 **Lab ID: 10237432002** Collected: 08/01/13 12:40 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Hexachloro-1,3-butadiene	ND	ug/kg	284	1	08/07/13 10:44	08/08/13 00:46	87-68-3	
Isopropylbenzene (Cumene)	**884**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	98-82-8	
p-Isopropyltoluene	**1570**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	99-87-6	
Methylene Chloride	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	284	1	08/07/13 10:44	08/08/13 00:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	1634-04-4	
Naphthalene	**577**	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	91-20-3	
n-Propylbenzene	**1740**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	103-65-1	
Styrene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	79-34-5	
Tetrachloroethene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	127-18-4	
Tetrahydrofuran	**2320**	ug/kg	2270	1	08/07/13 10:44	08/08/13 00:46	109-99-9	
Toluene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	79-00-5	
Trichloroethene	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	79-01-6	
Trichlorofluoromethane	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	227	1	08/07/13 10:44	08/08/13 00:46	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	76-13-1	
1,2,4-Trimethylbenzene	**9080**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	95-63-6	
1,3,5-Trimethylbenzene	**2750**	ug/kg	56.8	1	08/07/13 10:44	08/08/13 00:46	108-67-8	
Vinyl chloride	ND	ug/kg	22.7	1	08/07/13 10:44	08/08/13 00:46	75-01-4	
Xylene (Total)	**881**	ug/kg	170	1	08/07/13 10:44	08/08/13 00:46	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	114	%	57-150	1	08/07/13 10:44	08/08/13 00:46	17060-07-0	1M
Toluene-d8 (S)	109	%	70-136	1	08/07/13 10:44	08/08/13 00:46	2037-26-5	
4-Bromofluorobenzene (S)	164	%	67-138	1	08/07/13 10:44	08/08/13 00:46	460-00-4	S5

Sample: AS-1-25 **Lab ID: 10237432003** Collected: 08/01/13 15:05 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	ND	mg/kg	14.9	1	08/05/13 13:20	08/08/13 16:19	68334-30-5	
Motor Oil Range	ND	mg/kg	59.7	1	08/05/13 13:20	08/08/13 16:19		
Surrogates								
n-Pentacosane (S)	89	%	50-150	1	08/05/13 13:20	08/08/13 16:19	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	5.7	1	08/10/13 11:30	08/12/13 19:35		

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-25 **Lab ID: 10237432003** Collected: 08/01/13 15:05 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
Surrogates								
a,a,a-Trifluorotoluene (S)	88	%	66-125	1	08/10/13 11:30	08/12/13 19:35	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**8.7**	mg/kg	0.77	1	08/07/13 07:04	08/12/13 18:36	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**10.6**	%	0.10	1		08/05/13 00:00		
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	83-32-9	
Acenaphthylene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	208-96-8	
Anthracene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	50-32-8	
Benzo(e)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	33.6	1	08/07/13 08:44	08/13/13 18:04		
Carbazole	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	86-74-8	
2-Chloronaphthalene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	91-58-7	
Chrysene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	194-59-2	
Dibenzofuran	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	112	1	08/07/13 08:44	08/13/13 18:04	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	112	1	08/07/13 08:44	08/13/13 18:04	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	206-44-0	
Fluorene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	193-39-5	
3-Methylcholanthrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	56-49-5	
5-Methylchrysene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	3697-24-3	
1-Methylnaphthalene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	91-57-6	
Naphthalene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	602-57-8	
6-Nitrochrysene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	7496-02-8	
2-Nitrofluorene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	607-57-8	
1-Nitropyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	5522-43-0	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-25 **Lab ID: 10237432003** Collected: 08/01/13 15:05 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
4-Nitropyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	57835-92-4	
Perylene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	198-55-0	
Phenanthrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	85-01-8	
Pyrene	ND	ug/kg	11.2	1	08/07/13 08:44	08/13/13 18:04	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	43	%	39-125	1	08/07/13 08:44	08/13/13 18:04	321-60-8	
Terphenyl-d14 (S)	62	%	41-130	1	08/07/13 08:44	08/13/13 18:04	1718-51-0	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	ND	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	106-93-4	
1,2-Dichloroethane	ND	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	107-06-2	
Ethylbenzene	**3.8**	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	100-41-4	
n-Hexane	ND	ug/kg	388	1	08/06/13 13:19	08/08/13 21:49	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	1634-04-4	
Naphthalene	ND	ug/kg	7.8	1	08/06/13 13:19	08/08/13 21:49	91-20-3	
Toluene	ND	ug/kg	3.1	1	08/06/13 13:19	08/08/13 21:49	108-88-3	
Xylene (Total)	ND	ug/kg	9.3	1	08/06/13 13:19	08/08/13 21:49	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	30-150	1	08/06/13 13:19	08/08/13 21:49	17060-07-0	
Toluene-d8 (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 21:49	2037-26-5	
4-Bromofluorobenzene (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 21:49	460-00-4	

Sample: AS-1-27.5 **Lab ID: 10237432004** Collected: 08/01/13 12:50 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	ND	mg/kg	16.3	1	08/05/13 13:20	08/08/13 16:41	68334-30-5	
Motor Oil Range	ND	mg/kg	65.0	1	08/05/13 13:20	08/08/13 16:41		
Surrogates								
n-Pentacosane (S)	88	%	50-150	1	08/05/13 13:20	08/08/13 16:41	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	6.2	1	08/10/13 11:30	08/12/13 20:02		
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%	66-125	1	08/10/13 11:30	08/12/13 20:02	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**12.2**	mg/kg	0.83	1	08/07/13 07:04	08/12/13 18:42	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**18.2**	%	0.10	1		08/05/13 00:00		

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-27.5 **Lab ID: 10237432004** Collected: 08/01/13 12:50 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	83-32-9	
Acenaphthylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	208-96-8	
Anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	50-32-8	
Benzo(e)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	36.6	1	08/07/13 08:44	08/13/13 18:31		
Carbazole	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	86-74-8	
2-Chloronaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	91-58-7	
Chrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	194-59-2	
Dibenzofuran	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	122	1	08/07/13 08:44	08/13/13 18:31	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	122	1	08/07/13 08:44	08/13/13 18:31	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	206-44-0	
Fluorene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	193-39-5	
3-Methylcholanthrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	56-49-5	
5-Methylchrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	3697-24-3	
1-Methylnaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	91-57-6	
Naphthalene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	602-57-8	
6-Nitrochrysene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	7496-02-8	
2-Nitrofluorene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	607-57-8	
1-Nitropyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	5522-43-0	
4-Nitropyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	57835-92-4	
Perylene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	198-55-0	
Phenanthrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	85-01-8	
Pyrene	ND	ug/kg	12.2	1	08/07/13 08:44	08/13/13 18:31	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	52	%	39-125	1	08/07/13 08:44	08/13/13 18:31	321-60-8	
Terphenyl-d14 (S)	60	%	41-130	1	08/07/13 08:44	08/13/13 18:31	1718-51-0	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	**5.0**	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	106-93-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: AS-1-27.5 **Lab ID: 10237432004** Collected: 08/01/13 12:50 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
1,2-Dichloroethane	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	107-06-2	
Ethylbenzene	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	100-41-4	
n-Hexane	ND	ug/kg	527	1	08/06/13 13:19	08/08/13 22:07	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	1634-04-4	
Naphthalene	ND	ug/kg	10.5	1	08/06/13 13:19	08/08/13 22:07	91-20-3	
Toluene	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 22:07	108-88-3	
Xylene (Total)	ND	ug/kg	12.6	1	08/06/13 13:19	08/08/13 22:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	30-150	1	08/06/13 13:19	08/08/13 22:07	17060-07-0	
Toluene-d8 (S)	99	%	30-150	1	08/06/13 13:19	08/08/13 22:07	2037-26-5	
4-Bromofluorobenzene (S)	101	%	30-150	1	08/06/13 13:19	08/08/13 22:07	460-00-4	

Sample: VE-2-10 **Lab ID: 10237432005** Collected: 08/01/13 15:20 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	ND	mg/kg	16.7	1	08/05/13 13:20	08/08/13 17:03	68334-30-5	
Motor Oil Range	ND	mg/kg	66.7	1	08/05/13 13:20	08/08/13 17:03		
Surrogates								
n-Pentacosane (S)	86	%	50-150	1	08/05/13 13:20	08/08/13 17:03	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	6.6	1	08/10/13 11:30	08/12/13 20:29		
Surrogates								
a,a,a-Trifluorotoluene (S)	87	%	66-125	1	08/10/13 11:30	08/12/13 20:29	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**23.9**	mg/kg	1.1	1	08/07/13 07:04	08/12/13 18:55	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**20.1**	%	0.10	1		08/05/13 00:00		
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	83-32-9	
Acenaphthylene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	208-96-8	
Anthracene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	50-32-8	
Benzo(e)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	37.4	1	08/07/13 08:44	08/13/13 18:59		
Carbazole	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	86-74-8	
2-Chloronaphthalene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	91-58-7	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: VE-2-10 **Lab ID: 10237432005** Collected: 08/01/13 15:20 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Chrysene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	194-59-2	
Dibenzofuran	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	125	1	08/07/13 08:44	08/13/13 18:59	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	125	1	08/07/13 08:44	08/13/13 18:59	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	206-44-0	
Fluorene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	193-39-5	
3-Methylcholanthrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	56-49-5	
5-Methylchrysene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	3697-24-3	
1-Methylnaphthalene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	91-57-6	
Naphthalene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	602-57-8	
6-Nitrochrysene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	7496-02-8	
2-Nitrofluorene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	607-57-8	
1-Nitropyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	5522-43-0	
4-Nitropyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	57835-92-4	
Perylene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	198-55-0	
Phenanthrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	85-01-8	
Pyrene	ND	ug/kg	12.5	1	08/07/13 08:44	08/13/13 18:59	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	49	%	39-125	1	08/07/13 08:44	08/13/13 18:59	321-60-8	
Terphenyl-d14 (S)	58	%	41-130	1	08/07/13 08:44	08/13/13 18:59	1718-51-0	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	107-06-2	
Ethylbenzene	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	100-41-4	
n-Hexane	ND	ug/kg	528	1	08/06/13 13:19	08/08/13 20:34	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	1634-04-4	
Naphthalene	ND	ug/kg	10.6	1	08/06/13 13:19	08/08/13 20:34	91-20-3	
Toluene	ND	ug/kg	4.2	1	08/06/13 13:19	08/08/13 20:34	108-88-3	
Xylene (Total)	ND	ug/kg	12.7	1	08/06/13 13:19	08/08/13 20:34	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	30-150	1	08/06/13 13:19	08/08/13 20:34	17060-07-0	
Toluene-d8 (S)	101	%	30-150	1	08/06/13 13:19	08/08/13 20:34	2037-26-5	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: VE-2-10 **Lab ID: 10237432005** Collected: 08/01/13 15:20 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Surrogates								
4-Bromofluorobenzene (S)	110	%	30-150	1	08/06/13 13:19	08/08/13 20:34	460-00-4	

Sample: VE-2-13.5 **Lab ID: 10237432006** Collected: 08/01/13 15:30 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3550 Sonication							
Diesel Fuel Range	ND	mg/kg	15.6	1	08/05/13 13:20	08/08/13 17:25	68334-30-5	
Motor Oil Range	ND	mg/kg	62.6	1	08/05/13 13:20	08/08/13 17:25		
Surrogates								
n-Pentacosane (S)	90	%	50-150	1	08/05/13 13:20	08/08/13 17:25	629-99-2	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	**8.3**	mg/kg	6.1	1	08/10/13 11:30	08/12/13 20:55		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%	66-125	1	08/10/13 11:30	08/12/13 20:55	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**18.4**	mg/kg	0.89	1	08/07/13 07:04	08/12/13 19:01	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**14.8**	%	0.10	1		08/05/13 00:00		
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	83-32-9	
Acenaphthylene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	208-96-8	
Anthracene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	50-32-8	
Benzo(e)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	192-97-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	191-24-2	
Benzofluoranthenes (Total)	ND	ug/kg	35.1	1	08/07/13 08:44	08/13/13 19:26		
Carbazole	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	86-74-8	
2-Chloronaphthalene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	91-58-7	
Chrysene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	218-01-9	
Dibenz(a,h)acridine	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	226-36-8	
Dibenz(a,h)anthracene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	53-70-3	
Dibenz(a,j)acridine	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	224-42-0	
Dibenzo(a,e)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	192-65-4	
Dibenzo(a,h)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	189-64-0	
Dibenzo(a,i)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	189-55-9	
Dibenzo(a,l)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	191-30-0	L2
7H-Dibenzo(c,g)carbazole	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	194-59-2	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: VE-2-13.5 **Lab ID: 10237432006** Collected: 08/01/13 15:30 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV CPAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Dibenzofuran	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	132-64-9	
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	57-97-6	
1,6-Dinitropyrene	ND	ug/kg	117	1	08/07/13 08:44	08/13/13 19:26	42397-64-8	IC,L2
1,8-Dinitropyrene	ND	ug/kg	117	1	08/07/13 08:44	08/13/13 19:26	42397-65-9	IC,L2
Fluoranthene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	206-44-0	
Fluorene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	193-39-5	
3-Methylcholanthrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	56-49-5	
5-Methylchrysene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	3697-24-3	
1-Methylnaphthalene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	91-57-6	
Naphthalene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	91-20-3	
5-Nitroacenaphthene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	602-57-8	
6-Nitrochrysene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	7496-02-8	
2-Nitrofluorene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	607-57-8	
1-Nitropyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	5522-43-0	
4-Nitropyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	57835-92-4	
Perylene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	198-55-0	
Phenanthrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	85-01-8	
Pyrene	ND	ug/kg	11.7	1	08/07/13 08:44	08/13/13 19:26	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	43	%	39-125	1	08/07/13 08:44	08/13/13 19:26	321-60-8	
Terphenyl-d14 (S)	59	%	41-130	1	08/07/13 08:44	08/13/13 19:26	1718-51-0	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	**3.6**	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	106-93-4	
1,2-Dichloroethane	ND	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	107-06-2	
Ethylbenzene	ND	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	100-41-4	
n-Hexane	ND	ug/kg	425	1	08/06/13 13:19	08/08/13 22:26	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	1634-04-4	
Naphthalene	ND	ug/kg	8.5	1	08/06/13 13:19	08/08/13 22:26	91-20-3	
Toluene	ND	ug/kg	3.4	1	08/06/13 13:19	08/08/13 22:26	108-88-3	
Xylene (Total)	ND	ug/kg	10.2	1	08/06/13 13:19	08/08/13 22:26	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	30-150	1	08/06/13 13:19	08/08/13 22:26	17060-07-0	
Toluene-d8 (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 22:26	2037-26-5	
4-Bromofluorobenzene (S)	113	%	30-150	1	08/06/13 13:19	08/08/13 22:26	460-00-4	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: DUP-1 **Lab ID: 10237432007** Collected: 08/01/13 00:00 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	6.8	1	08/10/13 11:30	08/12/13 21:23		
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%	66-125	1	08/10/13 11:30	08/12/13 21:23	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**10.8**	mg/kg	1.0	1	08/07/13 07:04	08/12/13 19:06	7439-92-1	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**23.0**	%	0.10	1		08/05/13 00:00		
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	107-06-2	
Ethylbenzene	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	100-41-4	
n-Hexane	ND	ug/kg	558	1	08/06/13 13:19	08/08/13 22:45	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	1634-04-4	
Naphthalene	ND	ug/kg	11.2	1	08/06/13 13:19	08/08/13 22:45	91-20-3	
Toluene	ND	ug/kg	4.5	1	08/06/13 13:19	08/08/13 22:45	108-88-3	
Xylene (Total)	ND	ug/kg	13.4	1	08/06/13 13:19	08/08/13 22:45	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	30-150	1	08/06/13 13:19	08/08/13 22:45	17060-07-0	
Toluene-d8 (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 22:45	2037-26-5	
4-Bromofluorobenzene (S)	103	%	30-150	1	08/06/13 13:19	08/08/13 22:45	460-00-4	

Sample: TRIP BLANK **Lab ID: 10237432008** Collected: 08/01/13 00:00 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx/8021 Preparation Method: NWTPH-Gx/8021							
TPH as Gas	ND	mg/kg	5.0	1	08/10/13 11:30	08/12/13 15:21		
Surrogates								
a,a,a-Trifluorotoluene (S)	79	%	66-125	1	08/10/13 11:30	08/12/13 15:21	98-08-8	
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Benzene	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	107-06-2	
Ethylbenzene	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	100-41-4	
n-Hexane	ND	ug/kg	500	1	08/06/13 13:19	08/08/13 18:43	110-54-3	
Methyl-tert-butyl ether	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	1634-04-4	
Naphthalene	ND	ug/kg	10.0	1	08/06/13 13:19	08/08/13 18:43	91-20-3	
Toluene	ND	ug/kg	4.0	1	08/06/13 13:19	08/08/13 18:43	108-88-3	
Xylene (Total)	ND	ug/kg	12.0	1	08/06/13 13:19	08/08/13 18:43	1330-20-7	

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Sample: TRIP BLANK **Lab ID: 10237432008** Collected: 08/01/13 00:00 Received: 08/01/13 16:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035 Low Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035A							
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	30-150	1	08/06/13 13:19	08/08/13 18:43	17060-07-0	
Toluene-d8 (S)	97	%	30-150	1	08/06/13 13:19	08/08/13 18:43	2037-26-5	
4-Bromofluorobenzene (S)	100	%	30-150	1	08/06/13 13:19	08/08/13 18:43	460-00-4	

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: GCV/11190 Analysis Method: NWTPH-Gx/8021
QC Batch Method: NWTPH-Gx/8021 Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007, 10237432008

METHOD BLANK: 1499719 Matrix: Solid
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007, 10237432008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	mg/kg	ND	5.0	08/12/13 14:55	
a,a,a-Trifluorotoluene (S)	%	88	66-125	08/12/13 14:55	

LABORATORY CONTROL SAMPLE & LCSD: 1499720 1499721

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	mg/kg	50	53.5	50.5	107	101	75-134	6	20	
a,a,a-Trifluorotoluene (S)	%				89	93	66-125			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MPRP/41045 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007

METHOD BLANK: 1494165 Matrix: Solid
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	0.90	08/12/13 17:32	

LABORATORY CONTROL SAMPLE: 1494166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	47.2	44.5	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1494167 1494168

Parameter	Units	10236785001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	5.4	46.2	40.5	46.5	40.9	89	88	75-125	13	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MPRP/41047
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10237432001

SAMPLE DUPLICATE: 1494314

Parameter	Units	10237431001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	9.9	10.1	2	30	

SAMPLE DUPLICATE: 1494315

Parameter	Units	10237432001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.7	18.5	4	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MPRP/41058
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10237432002

SAMPLE DUPLICATE: 1494616

Parameter	Units	10237194051 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.9	7.9	.5	30	

SAMPLE DUPLICATE: 1494617

Parameter	Units	10237432002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	9.7	9.3	4	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MPRP/41061 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10237432003, 10237432004, 10237432005, 10237432006, 10237432007

SAMPLE DUPLICATE: 1494626

Parameter	Units	10237360001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	0.46	0.40	14	30	

SAMPLE DUPLICATE: 1494627

Parameter	Units	10237432007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.0	22.6	2	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MSV/24550 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035 Low Level
Associated Lab Samples: 10237432001, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007, 10237432008

METHOD BLANK: 1498038 Matrix: Solid
Associated Lab Samples: 10237432001, 10237432003, 10237432004, 10237432005, 10237432006, 10237432007, 10237432008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	ND	4.0	08/08/13 18:24	
1,2-Dichloroethane	ug/kg	ND	4.0	08/08/13 18:24	
Benzene	ug/kg	ND	4.0	08/08/13 18:24	
Ethylbenzene	ug/kg	ND	4.0	08/08/13 18:24	
Methyl-tert-butyl ether	ug/kg	ND	4.0	08/08/13 18:24	
n-Hexane	ug/kg	ND	500	08/08/13 18:24	
Naphthalene	ug/kg	ND	10.0	08/08/13 18:24	
Toluene	ug/kg	ND	4.0	08/08/13 18:24	
Xylene (Total)	ug/kg	ND	12.0	08/08/13 18:24	
1,2-Dichloroethane-d4 (S)	%	97	30-150	08/08/13 18:24	
4-Bromofluorobenzene (S)	%	100	30-150	08/08/13 18:24	
Toluene-d8 (S)	%	100	30-150	08/08/13 18:24	

LABORATORY CONTROL SAMPLE: 1498039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	50	51.6	103	72-125	
1,2-Dichloroethane	ug/kg	50	49.5	99	73-125	
Benzene	ug/kg	50	49.8	100	70-125	
Ethylbenzene	ug/kg	50	49.0	98	74-125	
Methyl-tert-butyl ether	ug/kg	50	50.0	100	70-125	
n-Hexane	ug/kg	125	140J	112	70-130	
Naphthalene	ug/kg	50	51.9	104	68-125	
Toluene	ug/kg	50	49.2	98	75-125	
Xylene (Total)	ug/kg	150	150	100	72-125	
1,2-Dichloroethane-d4 (S)	%			96	30-150	
4-Bromofluorobenzene (S)	%			98	30-150	
Toluene-d8 (S)	%			100	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1498040 1498041

Parameter	Units	10237032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/kg	ND	54.9	52.9	53.2	48.8	97	92	66-137	9	30	
1,2-Dichloroethane	ug/kg	ND	54.9	52.9	51.9	47.1	95	89	66-135	10	30	
Benzene	ug/kg	ND	54.9	52.9	52.6	48.2	96	91	62-133	9	30	
Ethylbenzene	ug/kg	ND	54.9	52.9	50.8	46.2	93	87	70-134	10	30	
Methyl-tert-butyl ether	ug/kg	ND	54.9	52.9	53.8	49.2	98	93	64-137	9	30	
n-Hexane	ug/kg	ND	137	132	96.5J	116J	70	88	30-150		30	
Naphthalene	ug/kg	ND	54.9	52.9	44.3	38.9	80	73	50-150	13	30	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1498040 1498041

Parameter	Units	10237032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/kg	ND	54.9	52.9	52.3	48.9	95	92	68-134	7	30	
Xylene (Total)	ug/kg	ND	165	158	154	138	93	87	71-137	11	30	
1,2-Dichloroethane-d4 (S)	%						98	95	30-150			
4-Bromofluorobenzene (S)	%						105	107	30-150			
Toluene-d8 (S)	%						101	102	30-150			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: MSV/24537 Analysis Method: EPA 8260
QC Batch Method: EPA 5035/5030B Analysis Description: 8260 MSV 5030 Med Level
Associated Lab Samples: 10237432002

METHOD BLANK: 1496367 Matrix: Solid
Associated Lab Samples: 10237432002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1,1-Trichloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1,2,2-Tetrachloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1,2-Trichloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1-Dichloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,1-Dichloroethene	ug/kg	ND	50.0	08/07/13 19:35	
1,1-Dichloropropene	ug/kg	ND	50.0	08/07/13 19:35	
1,2,3-Trichlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,2,3-Trichloropropane	ug/kg	ND	200	08/07/13 19:35	
1,2,4-Trichlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,2,4-Trimethylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,2-Dibromo-3-chloropropane	ug/kg	ND	200	08/07/13 19:35	
1,2-Dibromoethane (EDB)	ug/kg	ND	50.0	08/07/13 19:35	
1,2-Dichlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,2-Dichloroethane	ug/kg	ND	50.0	08/07/13 19:35	
1,2-Dichloropropane	ug/kg	ND	50.0	08/07/13 19:35	
1,3,5-Trimethylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,3-Dichlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
1,3-Dichloropropane	ug/kg	ND	50.0	08/07/13 19:35	
1,4-Dichlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
2,2-Dichloropropane	ug/kg	ND	200	08/07/13 19:35	
2-Butanone (MEK)	ug/kg	ND	250	08/07/13 19:35	
2-Chlorotoluene	ug/kg	ND	50.0	08/07/13 19:35	
4-Chlorotoluene	ug/kg	ND	50.0	08/07/13 19:35	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	250	08/07/13 19:35	
Acetone	ug/kg	ND	1000	08/07/13 19:35	
Allyl chloride	ug/kg	ND	200	08/07/13 19:35	
Benzene	ug/kg	ND	20.0	08/07/13 19:35	
Bromobenzene	ug/kg	ND	50.0	08/07/13 19:35	
Bromochloromethane	ug/kg	ND	50.0	08/07/13 19:35	
Bromodichloromethane	ug/kg	ND	50.0	08/07/13 19:35	
Bromoform	ug/kg	ND	200	08/07/13 19:35	
Bromomethane	ug/kg	ND	500	08/07/13 19:35	
Carbon tetrachloride	ug/kg	ND	50.0	08/07/13 19:35	
Chlorobenzene	ug/kg	ND	50.0	08/07/13 19:35	
Chloroethane	ug/kg	ND	500	08/07/13 19:35	
Chloroform	ug/kg	ND	50.0	08/07/13 19:35	
Chloromethane	ug/kg	ND	200	08/07/13 19:35	
cis-1,2-Dichloroethene	ug/kg	ND	50.0	08/07/13 19:35	
cis-1,3-Dichloropropene	ug/kg	ND	50.0	08/07/13 19:35	
Dibromochloromethane	ug/kg	ND	50.0	08/07/13 19:35	
Dibromomethane	ug/kg	ND	50.0	08/07/13 19:35	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

METHOD BLANK: 1496367 Matrix: Solid

Associated Lab Samples: 10237432002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/kg	ND	50.0	08/07/13 19:35	
Dichlorofluoromethane	ug/kg	ND	500	08/07/13 19:35	
Diethyl ether (Ethyl ether)	ug/kg	ND	200	08/07/13 19:35	
Ethylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
Hexachloro-1,3-butadiene	ug/kg	ND	250	08/07/13 19:35	
Isopropylbenzene (Cumene)	ug/kg	ND	50.0	08/07/13 19:35	
Methyl-tert-butyl ether	ug/kg	ND	50.0	08/07/13 19:35	
Methylene Chloride	ug/kg	ND	200	08/07/13 19:35	
n-Butylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
n-Propylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
Naphthalene	ug/kg	ND	200	08/07/13 19:35	
p-Isopropyltoluene	ug/kg	ND	50.0	08/07/13 19:35	
sec-Butylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
Styrene	ug/kg	ND	50.0	08/07/13 19:35	
tert-Butylbenzene	ug/kg	ND	50.0	08/07/13 19:35	
Tetrachloroethene	ug/kg	ND	50.0	08/07/13 19:35	
Tetrahydrofuran	ug/kg	ND	2000	08/07/13 19:35	
Toluene	ug/kg	ND	50.0	08/07/13 19:35	
trans-1,2-Dichloroethene	ug/kg	ND	50.0	08/07/13 19:35	
trans-1,3-Dichloropropene	ug/kg	ND	50.0	08/07/13 19:35	
Trichloroethene	ug/kg	ND	50.0	08/07/13 19:35	
Trichlorofluoromethane	ug/kg	ND	200	08/07/13 19:35	
Vinyl chloride	ug/kg	ND	20.0	08/07/13 19:35	
Xylene (Total)	ug/kg	ND	150	08/07/13 19:35	
1,2-Dichloroethane-d4 (S)	%	107	57-150	08/07/13 19:35	
4-Bromofluorobenzene (S)	%	104	67-138	08/07/13 19:35	
Toluene-d8 (S)	%	100	70-136	08/07/13 19:35	

LABORATORY CONTROL SAMPLE & LCSD: 1496368 1496369

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	945	946	95	95	72-125	.1	20	
1,1,1-Trichloroethane	ug/kg	1000	1040	980	104	98	72-125	6	20	
1,1,2,2-Tetrachloroethane	ug/kg	1000	960	905	96	90	73-125	6	20	
1,1,2-Trichloroethane	ug/kg	1000	922	870	92	87	75-125	6	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	1150	1090	115	109	65-127	5	20	
1,1-Dichloroethane	ug/kg	1000	1100	1000	110	100	73-125	9	20	
1,1-Dichloroethene	ug/kg	1000	1020	957	102	96	68-125	6	20	
1,1-Dichloropropene	ug/kg	1000	1030	977	103	98	71-125	5	20	
1,2,3-Trichlorobenzene	ug/kg	1000	872	948	87	95	66-125	8	20	
1,2,3-Trichloropropane	ug/kg	1000	928	876	93	88	72-125	6	20	
1,2,4-Trichlorobenzene	ug/kg	1000	883	968	88	97	69-125	9	20	
1,2,4-Trimethylbenzene	ug/kg	1000	933	878	93	88	74-125	6	20	
1,2-Dibromo-3-chloropropane	ug/kg	2500	2180	2290	87	92	65-125	5	20	
1,2-Dibromoethane (EDB)	ug/kg	1000	952	963	95	96	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

LABORATORY CONTROL SAMPLE & LCSD: 1496368 1496369

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/kg	1000	894	881	89	88	74-125	1	20	
1,2-Dichloroethane	ug/kg	1000	1080	1030	108	103	72-125	5	20	
1,2-Dichloropropane	ug/kg	1000	967	905	97	91	74-125	7	20	
1,3,5-Trimethylbenzene	ug/kg	1000	917	881	92	88	73-125	4	20	
1,3-Dichlorobenzene	ug/kg	1000	904	879	90	88	74-125	3	20	
1,3-Dichloropropane	ug/kg	1000	937	922	94	92	75-125	2	20	
1,4-Dichlorobenzene	ug/kg	1000	904	888	90	89	75-125	2	20	
2,2-Dichloropropane	ug/kg	1000	1110	1000	111	100	62-135	11	20	
2-Butanone (MEK)	ug/kg	5000	4890	4750	98	95	58-126	3	20	
2-Chlorotoluene	ug/kg	1000	901	865	90	86	74-125	4	20	
4-Chlorotoluene	ug/kg	1000	902	876	90	88	74-125	3	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	4960	4640	99	93	66-125	7	20	
Acetone	ug/kg	5000	4710	4120	94	82	63-128	13	20	
Allyl chloride	ug/kg	1000	1180	971	118	97	66-132	20	20	
Benzene	ug/kg	1000	1010	940	101	94	72-125	7	20	
Bromobenzene	ug/kg	1000	909	939	91	94	74-125	3	20	
Bromochloromethane	ug/kg	1000	968	928	97	93	72-125	4	20	
Bromodichloromethane	ug/kg	1000	960	915	96	91	72-125	5	20	
Bromoform	ug/kg	1000	899	874	90	87	63-125	3	20	
Bromomethane	ug/kg	1000	1050	1070	105	107	58-125	3	20	
Carbon tetrachloride	ug/kg	1000	1030	996	103	100	66-125	4	20	
Chlorobenzene	ug/kg	1000	908	879	91	88	75-125	3	20	
Chloroethane	ug/kg	1000	778	942	78	94	67-125	19	20	
Chloroform	ug/kg	1000	969	885	97	89	73-125	9	20	
Chloromethane	ug/kg	1000	840	903	84	90	60-125	7	20	
cis-1,2-Dichloroethene	ug/kg	1000	1000	885	100	88	73-125	12	20	
cis-1,3-Dichloropropene	ug/kg	1000	1060	989	106	99	73-125	7	20	
Dibromochloromethane	ug/kg	1000	927	900	93	90	69-125	3	20	
Dibromomethane	ug/kg	1000	918	924	92	92	75-125	.6	20	
Dichlorodifluoromethane	ug/kg	1000	798	941	80	94	44-125	16	20	
Dichlorofluoromethane	ug/kg	1000	1100	992	110	99	67-142	10	20	CH
Diethyl ether (Ethyl ether)	ug/kg	1000	912	878	91	88	69-125	4	20	
Ethylbenzene	ug/kg	1000	919	884	92	88	75-125	4	20	
Hexachloro-1,3-butadiene	ug/kg	1000	880	959	88	96	62-126	9	20	
Isopropylbenzene (Cumene)	ug/kg	1000	930	879	93	88	74-125	6	20	
Methyl-tert-butyl ether	ug/kg	1000	1040	912	104	91	71-125	13	20	
Methylene Chloride	ug/kg	1000	909	848	91	85	72-125	7	20	
n-Butylbenzene	ug/kg	1000	981	919	98	92	70-125	6	20	
n-Propylbenzene	ug/kg	1000	958	926	96	93	74-125	3	20	
Naphthalene	ug/kg	1000	863	926	86	93	69-125	7	20	
p-Isopropyltoluene	ug/kg	1000	900	881	90	88	70-125	2	20	
sec-Butylbenzene	ug/kg	1000	948	902	95	90	71-125	5	20	
Styrene	ug/kg	1000	920	873	92	87	74-125	5	20	
tert-Butylbenzene	ug/kg	1000	928	894	93	89	71-125	4	20	
Tetrachloroethene	ug/kg	1000	961	933	96	93	73-125	3	20	
Tetrahydrofuran	ug/kg	10000	9220	8770	92	88	65-125	5	20	
Toluene	ug/kg	1000	937	914	94	91	75-125	3	20	
trans-1,2-Dichloroethene	ug/kg	1000	1030	905	103	91	71-125	13	20	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

LABORATORY CONTROL SAMPLE & LCSD: 1496368 1496369

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,3-Dichloropropene	ug/kg	1000	919	895	92	90	75-125	3	20	
Trichloroethene	ug/kg	1000	951	935	95	94	74-125	2	20	
Trichlorofluoromethane	ug/kg	1000	750	923	75	92	64-125	21	20	CH,R1
Vinyl chloride	ug/kg	1000	851	965	85	96	65-125	13	20	
Xylene (Total)	ug/kg	3000	2800	2650	93	88	75-125	5	20	
1,2-Dichloroethane-d4 (S)	%				110	103	57-150			
4-Bromofluorobenzene (S)	%				104	103	67-138			
Toluene-d8 (S)	%				102	100	70-136			

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: OEXT/22565 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3550 Analysis Description: 8270 CPAH by SIM MSSV
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006

METHOD BLANK: 1496236 Matrix: Solid
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,6-Dinitropyrene	ug/kg	ND	100	08/13/13 14:51	IC
1,8-Dinitropyrene	ug/kg	ND	100	08/13/13 14:51	IC
1-Methylnaphthalene	ug/kg	ND	10.0	08/13/13 14:51	
1-Nitropyrene	ug/kg	ND	10.0	08/13/13 14:51	
2-Chloronaphthalene	ug/kg	ND	10.0	08/13/13 14:51	
2-Methylnaphthalene	ug/kg	ND	10.0	08/13/13 14:51	
2-Nitrofluorene	ug/kg	ND	10.0	08/13/13 14:51	
3-Methylcholanthrene	ug/kg	ND	10.0	08/13/13 14:51	
4-Nitropyrene	ug/kg	ND	10.0	08/13/13 14:51	
5-Methylchrysene	ug/kg	ND	10.0	08/13/13 14:51	
5-Nitroacenaphthene	ug/kg	ND	10.0	08/13/13 14:51	
6-Nitrochrysene	ug/kg	ND	10.0	08/13/13 14:51	
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	10.0	08/13/13 14:51	
7H-Dibenzo(c,g)carbazole	ug/kg	ND	10.0	08/13/13 14:51	
Acenaphthene	ug/kg	ND	10.0	08/13/13 14:51	
Acenaphthylene	ug/kg	ND	10.0	08/13/13 14:51	
Anthracene	ug/kg	ND	10.0	08/13/13 14:51	
Benzo(a)anthracene	ug/kg	ND	10.0	08/13/13 14:51	
Benzo(a)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Benzo(e)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	08/13/13 14:51	
Benzofluoranthenes (Total)	ug/kg	ND	30.0	08/13/13 14:51	
Carbazole	ug/kg	ND	10.0	08/13/13 14:51	
Chrysene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenz(a,h)acridine	ug/kg	ND	10.0	08/13/13 14:51	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenz(a,j)acridine	ug/kg	ND	10.0	08/13/13 14:51	
Dibenzo(a,e)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenzo(a,h)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenzo(a,i)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenzo(a,l)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Dibenzofuran	ug/kg	ND	10.0	08/13/13 14:51	
Fluoranthene	ug/kg	ND	10.0	08/13/13 14:51	
Fluorene	ug/kg	ND	10.0	08/13/13 14:51	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	08/13/13 14:51	
Naphthalene	ug/kg	ND	10.0	08/13/13 14:51	
Perylene	ug/kg	ND	10.0	08/13/13 14:51	
Phenanthrene	ug/kg	ND	10.0	08/13/13 14:51	
Pyrene	ug/kg	ND	10.0	08/13/13 14:51	
2-Fluorobiphenyl (S)	%	63	39-125	08/13/13 14:51	
Terphenyl-d14 (S)	%	68	41-130	08/13/13 14:51	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

LABORATORY CONTROL SAMPLE: 1496237

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,6-Dinitropyrene	ug/kg	100	ND	14	30-125	IC,L0
1,8-Dinitropyrene	ug/kg	100	ND	14	30-125	IC,L0
1-Methylnaphthalene	ug/kg	100	79.0	79	42-125	
1-Nitropyrene	ug/kg	100	65.2	65	30-125	
2-Chloronaphthalene	ug/kg	100	60.1	60	54-125	
2-Methylnaphthalene	ug/kg	100	77.4	77	42-125	
2-Nitrofluorene	ug/kg	100	79.2	79	61-125	
3-Methylcholanthrene	ug/kg	100	65.4	65	39-125	
4-Nitropyrene	ug/kg	100	68.3	68	30-130	
5-Methylchrysene	ug/kg	100	86.1	86	66-125	
5-Nitroacenaphthene	ug/kg	100	96.9	97	51-125	
6-Nitrochrysene	ug/kg	100	76.1	76	30-126	
7,12-Dimethylbenz(a)anthracene	ug/kg	100	110	110	30-125	SS
7H-Dibenzo(c,g)carbazole	ug/kg	100	101	101	64-125	
Acenaphthene	ug/kg	100	88.2	88	48-125	
Acenaphthylene	ug/kg	100	78.5	78	45-125	
Anthracene	ug/kg	100	92.1	92	52-125	
Benzo(a)anthracene	ug/kg	100	95.0	95	54-125	
Benzo(a)pyrene	ug/kg	100	102	102	59-125	
Benzo(e)pyrene	ug/kg	100	116	116	66-125	
Benzo(g,h,i)perylene	ug/kg	100	121	121	58-125	
Benzofluoranthenes (Total)	ug/kg	300	349	116	65-125	
Carbazole	ug/kg	100	95.8	96	66-125	
Chrysene	ug/kg	100	100	100	56-125	
Dibenz(a,h)acridine	ug/kg	100	110	110	67-125	
Dibenz(a,h)anthracene	ug/kg	100	114	114	62-125	
Dibenz(a,j)acridine	ug/kg	100	97.9	98	61-125	
Dibenzo(a,e)pyrene	ug/kg	100	88.2	88	53-125	
Dibenzo(a,h)pyrene	ug/kg	100	111	111	56-125	
Dibenzo(a,i)pyrene	ug/kg	100	77.3	77	50-125	
Dibenzo(a,l)pyrene	ug/kg	100	26.4	26	35-125	L0
Dibenzofuran	ug/kg	100	81.9	82	57-125	
Fluoranthene	ug/kg	100	103	103	59-125	
Fluorene	ug/kg	100	88.9	89	56-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	116	116	61-125	
Naphthalene	ug/kg	100	81.1	81	42-125	
Perylene	ug/kg	100	87.9	88	62-125	
Phenanthrene	ug/kg	100	98.6	99	55-125	
Pyrene	ug/kg	100	94.7	95	59-125	
2-Fluorobiphenyl (S)	%			56	39-125	
Terphenyl-d14 (S)	%			64	41-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1496238 1496239

Parameter	Units	10237184001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,6-Dinitropyrene	ug/kg	ND	112	112	ND	ND	0	0	30-125		30	IC,M0

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1496238 1496239

Parameter	Units	10237184001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,8-Dinitropyrene	ug/kg	ND	112	112	ND	ND	0	0	30-125		30	IC,M0
1-Methylnaphthalene	ug/kg	22.1	112	112	103	107	72	76	30-150	4	30	
1-Nitropyrene	ug/kg	ND	112	112	25.6	18.6	23	17	30-125	31	30	M1,R1
2-Chloronaphthalene	ug/kg	ND	112	112	63.9	65.2	57	58	47-125	2	30	
2-Methylnaphthalene	ug/kg	25.6	112	112	104	110	70	76	30-125	6	30	
2-Nitrofluorene	ug/kg	ND	112	112	94.9	86.9	75	68	30-150	9	30	
3-Methylcholanthrene	ug/kg	ND	112	112	71.2	65.3	64	58	30-150	9	30	
4-Nitropyrene	ug/kg	ND	112	112	33.2	24.1	30	22	30-136	32	30	M1,R1
5-Methylchrysene	ug/kg	ND	112	112	93.6	90.1	77	74	30-150	4	30	
5-Nitroacenaphthene	ug/kg	ND	112	112	105	103	94	92	30-150	2	30	
6-Nitrochrysene	ug/kg	ND	112	112	17.2	13.3	15	12	30-125	26	30	M1
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	112	112	59.7	57.3	53	51	30-136	4	30	SS
7H-Dibenzo(c,g)carbazole	ug/kg	ND	112	112	68.7	60.1	62	54	30-146	13	30	
Acenaphthene	ug/kg	ND	112	112	105	103	94	92	30-138	2	30	
Acenaphthylene	ug/kg	64.8	112	112	160	146	85	73	30-150	9	30	
Anthracene	ug/kg	48.9	112	112	157	136	97	78	30-146	14	30	
Benzo(a)anthracene	ug/kg	97.9	112	112	233	181	121	74	30-150	25	30	
Benzo(a)pyrene	ug/kg	123	112	112	238	189	103	59	30-150	23	30	
Benzo(e)pyrene	ug/kg	118	112	112	219	183	90	58	30-150	18	30	
Benzo(g,h,i)perylene	ug/kg	125	112	112	179	131	48	5	30-150	31	30	M1,R1
Benzofluoranthenes (Total)	ug/kg	250	335	335	608	525	107	82	30-150	15	30	
Carbazole	ug/kg	13.5	112	112	122	114	97	90	30-150	7	30	
Chrysene	ug/kg	118	112	112	246	192	114	66	30-150	24	30	
Dibenz(a,h)acridine	ug/kg	ND	112	112	88.9	80.4	73	65	30-150	10	30	
Dibenz(a,h)anthracene	ug/kg	27.9	112	112	107	91.9	71	57	30-150	16	30	
Dibenz(a,j)acridine	ug/kg	ND	112	112	77.8	61.8	70	55	30-143	23	30	
Dibenzo(a,e)pyrene	ug/kg	28.6	112	112	71.4	51.0	38	20	30-150	33	30	M1,R1
Dibenzo(a,h)pyrene	ug/kg	ND	112	112	40.7	29.8	27	17	30-150	31	30	M1,R1
Dibenzo(a,i)pyrene	ug/kg	ND	112	112	27.7	21.1	25	19	30-142	27	30	M1
Dibenzo(a,l)pyrene	ug/kg	ND	112	112	23.5	19.2	21	17	30-127	20	30	M0
Dibenzofuran	ug/kg	ND	112	112	99.6	97.8	81	80	30-150	2	30	
Fluoranthene	ug/kg	157	112	112	318	229	144	65	30-150	32	30	R1
Fluorene	ug/kg	ND	112	112	104	101	88	85	30-150	3	30	
Indeno(1,2,3-cd)pyrene	ug/kg	82.3	112	112	172	131	80	44	30-150	27	30	
Naphthalene	ug/kg	13.9	112	112	85.3	91.9	64	70	30-148	8	30	
Perylene	ug/kg	43.2	112	112	141	128	87	76	30-150	9	30	
Phenanthrene	ug/kg	64.1	112	112	183	149	106	76	30-150	20	30	
Pyrene	ug/kg	145	112	112	282	209	122	57	30-150	30	30	
2-Fluorobiphenyl (S)	%						52	53	39-125			
Terphenyl-d14 (S)	%						59	57	41-130			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

QC Batch: OEXT/22634 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3550 Sonication Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006

METHOD BLANK: 1500489 Matrix: Solid
Associated Lab Samples: 10237432001, 10237432002, 10237432003, 10237432004, 10237432005, 10237432006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/kg	ND	13.3	08/08/13 12:18	
Motor Oil Range	mg/kg	ND	53.3	08/08/13 12:18	

LABORATORY CONTROL SAMPLE: 1500490

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range	mg/kg	133	134	101	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1500491 1500492

Parameter	Units	10237432001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Fuel Range	mg/kg	ND	160	162	165	160	102	99	50-150	3	30	2M,3M

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/24537

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/11190

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M	Sample was run by medium level due to high levels of matrix in the sample.
2M	The surrogate recovery in final report is incorrect, the actual recovery is 93%. Data will be re-issued upon request.
3M	The surrogate recovery in final report is incorrect, the actual recovery is 96%. Data will be re-issued upon request.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11060 FORMER ARCO
Pace Project No.: 10237432

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10237432001	AS-1-15	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432002	AS-1-20	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432003	AS-1-25	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432004	AS-1-27.5	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432005	VE-2-10	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432006	VE-2-13.5	EPA 3550 Sonication	OEXT/22634	NWTPH-Dx	GCSV/11851
10237432001	AS-1-15	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432002	AS-1-20	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432003	AS-1-25	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432004	AS-1-27.5	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432005	VE-2-10	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432006	VE-2-13.5	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432007	DUP-1	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432008	TRIP BLANK	NWTPH-Gx/8021	GCV/11190	NWTPH-Gx/8021	GCV/11191
10237432001	AS-1-15	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432002	AS-1-20	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432003	AS-1-25	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432004	AS-1-27.5	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432005	VE-2-10	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432006	VE-2-13.5	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432007	DUP-1	EPA 3050	MPRP/41045	EPA 6010	ICP/17234
10237432001	AS-1-15	ASTM D2974	MPRP/41047		
10237432002	AS-1-20	ASTM D2974	MPRP/41058		
10237432003	AS-1-25	ASTM D2974	MPRP/41061		
10237432004	AS-1-27.5	ASTM D2974	MPRP/41061		
10237432005	VE-2-10	ASTM D2974	MPRP/41061		
10237432006	VE-2-13.5	ASTM D2974	MPRP/41061		
10237432007	DUP-1	ASTM D2974	MPRP/41061		
10237432001	AS-1-15	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432002	AS-1-20	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432003	AS-1-25	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432004	AS-1-27.5	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432005	VE-2-10	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432006	VE-2-13.5	EPA 3550	OEXT/22565	EPA 8270 by SIM	MSSV/9621
10237432001	AS-1-15	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432003	AS-1-25	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432004	AS-1-27.5	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432005	VE-2-10	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432006	VE-2-13.5	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432007	DUP-1	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432008	TRIP BLANK	EPA 5035A	MSV/24525	EPA 8260	MSV/24550
10237432002	AS-1-20	EPA 5035/5030B	MSV/24537	EPA 8260	MSV/24538

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10237432

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: 1 of 1

1630714

Section A Required Client Information:

Company:	ARCADIS
Address:	1100 Olive Way, Seattle WA 98101
Email To:	Scott Zorn
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Sam Miles
Copy To:	Harini Shanmugam
Purchase Order No.:	GP09BPNAWA48 K0000
Project Name:	Former ARCO 11060
Project Number:	11060

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	TIME	Composite End/Grab DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	GRO	BTEX/Naphthalene	MTBE/EDB/EDC	n-Hexane	DO/HO	EPH	VPH	cPAHs	Total Lead	Moisture	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	AS-1-15			8/1/13	1230				11	7					2	2		X	X	X	X	X	X	X	X	X	X		001
2	AS-1-20				1240				11	7					2	2		X	X	X	X	X	X	X	X	X	X		002
3	AS-1-25				1505				11	7					2	2		X	X	X	X	X	X	X	X	X	X		003
4	AS-1-27.5				1250				11	7					2	2		X	X	X	X	X	X	X	X	X	X		004
5	VE-2-10				1520				11	7					2	2		X	X	X	X	X	X	X	X	X	X		005
6	VE-2-13.5				1530				11	7					2	2		X	X	X	X	X	X	X	X	X	X		006
7	DUP-1				—				5	1					2	2		X	X							X			007
8	TRIP BLANK			↓	—				2							2		X	X										008
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
VPH packed w/ no headspace, unpreserved	Ryan Brauchla / ARCADIS	8/1/13	1615	Jyothi Swamy / PACE	8/1/13	1615	6.6	Y	N	Y
	Jyothi Swamy / PACE	8/1/13	1637	TN / Pace	8/2/13	935	8.3			
							1.7			
							4.3	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Brauchla

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 8/1/13

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: **F-MN-L-213-rev.06**	Issuing Authority: Pace Minnesota Quality Office

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Sample Condition Upon Receipt

Client Name: Arcadis **Project #:** WO# : 10237432

10237432

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 5647 7475 1554, 1565

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☐ B88A912167504 ☐ 80512447 ☒ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.4, 4.0 **Cooler Temp Corrected (°C):** 1.7, 4.3 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.3 **Date and Initials of Person Examining Contents:** 8213 TN

Comments:

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☒ No	☐ N/A	12. missing 3 containers from 1 to 6
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	15. other vials used
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Mariah Kent **Date:** 8/2/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota
Mariah Peronto
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 11060 Former ARCO
Lab ID: 1308016

August 19, 2013

Attention Mariah Peronto:

Fremont Analytical, Inc. received 6 sample(s) on 8/2/2013 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO
Lab Order: 1308016

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1308016-001	AS-1-15	08/01/2013 12:30 PM	08/02/2013 10:35 AM
1308016-002	AS-1-20	08/01/2013 12:40 PM	08/02/2013 10:35 AM
1308016-003	AS-1-25	08/01/2013 3:05 PM	08/02/2013 10:35 AM
1308016-004	AS-1-27.5	08/01/2013 12:50 PM	08/02/2013 10:35 AM
1308016-005	VE-2-10	08/01/2013 3:20 PM	08/02/2013 10:35 AM
1308016-006	VE-2-13.5	08/01/2013 3:30 PM	08/02/2013 10:35 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1308016**
Date: **8/19/2013**

CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 12:30:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-001
Matrix: Soil
Client Sample ID: AS-1-15

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5132		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	5.60		mg/Kg-dry	1	8/17/2013 6:35:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	5.60		mg/Kg-dry	1	8/17/2013 6:35:00 AM
Aliphatic Hydrocarbon (C12-C16)	ND	5.60		mg/Kg-dry	1	8/17/2013 6:35:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	5.60		mg/Kg-dry	1	8/17/2013 6:35:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	5.60		mg/Kg-dry	1	8/17/2013 6:35:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	5.60		mg/Kg-dry	1	8/17/2013 4:07:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	5.60		mg/Kg-dry	1	8/17/2013 4:07:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	5.60		mg/Kg-dry	1	8/17/2013 4:07:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.60		mg/Kg-dry	1	8/17/2013 4:07:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	5.60		mg/Kg-dry	1	8/17/2013 4:07:00 PM
Surr: 1-Chlorooctadecane	72.7	65-140		%REC	1	8/17/2013 6:35:00 AM
Surr: o-Terphenyl	82.1	65-140		%REC	1	8/17/2013 4:07:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aliphatic Hydrocarbon (C6-C8)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Aromatic Hydrocarbon (C12-C13)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Benzene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Toluene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Ethylbenzene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
m,p-Xylene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
o-Xylene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Naphthalene	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.470		mg/Kg-dry	1	8/2/2013 9:17:00 PM
Surr: Bromofluorobenzene	102	65-140		%REC	1	8/2/2013 9:17:00 PM
Surr: Trifluorotoluene	96.0	65-140		%REC	1	8/2/2013 9:17:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	20.1			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 12:40:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-002
Matrix: Soil
Client Sample ID: AS-1-20

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5132		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	4.75		mg/Kg-dry	1	8/17/2013 8:09:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	4.75		mg/Kg-dry	1	8/17/2013 8:09:00 AM
Aliphatic Hydrocarbon (C12-C16)	ND	4.75		mg/Kg-dry	1	8/17/2013 8:09:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	4.75		mg/Kg-dry	1	8/17/2013 8:09:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	4.75		mg/Kg-dry	1	8/17/2013 8:09:00 AM
Aromatic Hydrocarbon (C8-C10)	19.3	4.75		mg/Kg-dry	1	8/17/2013 5:45:00 PM
Aromatic Hydrocarbon (C10-C12)	37.8	4.75		mg/Kg-dry	1	8/17/2013 5:45:00 PM
Aromatic Hydrocarbon (C12-C16)	9.58	4.75		mg/Kg-dry	1	8/17/2013 5:45:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	4.75		mg/Kg-dry	1	8/17/2013 5:45:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	4.75		mg/Kg-dry	1	8/17/2013 5:45:00 PM
Surr: 1-Chlorooctadecane	72.7	65-140		%REC	1	8/17/2013 8:09:00 AM
Surr: o-Terphenyl	93.6	65-140		%REC	1	8/17/2013 5:45:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	19.4	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Aliphatic Hydrocarbon (C6-C8)	128	4.71	D	mg/Kg-dry	10	8/3/2013 11:10:00 AM
Aliphatic Hydrocarbon (C8-C10)	167	4.71	D	mg/Kg-dry	10	8/3/2013 11:10:00 AM
Aliphatic Hydrocarbon (C10-C12)	115	4.71	D	mg/Kg-dry	10	8/3/2013 11:10:00 AM
Aromatic Hydrocarbon (C8-C10)	220	4.71	D	mg/Kg-dry	10	8/3/2013 11:10:00 AM
Aromatic Hydrocarbon (C10-C12)	172	4.71	D	mg/Kg-dry	10	8/3/2013 11:10:00 AM
Aromatic Hydrocarbon (C12-C13)	12.3	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Benzene	ND	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Toluene	0.478	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Ethylbenzene	1.60	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
m,p-Xylene	2.76	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
o-Xylene	1.33	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Naphthalene	1.66	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.471		mg/Kg-dry	1	8/3/2013 6:43:00 AM
Surr: Bromofluorobenzene	97.1	65-140		%REC	1	8/3/2013 6:43:00 AM
Surr: Trifluorotoluene	82.0	65-140		%REC	1	8/3/2013 6:43:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	9.51			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 3:05:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-003
Matrix: Soil
Client Sample ID: AS-1-25

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5132		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	4.84		mg/Kg-dry	1	8/17/2013 8:57:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	4.84		mg/Kg-dry	1	8/17/2013 8:57:00 AM
Aliphatic Hydrocarbon (C12-C16)	ND	4.84		mg/Kg-dry	1	8/17/2013 8:57:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	4.84		mg/Kg-dry	1	8/17/2013 8:57:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	4.84		mg/Kg-dry	1	8/17/2013 8:57:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	4.84		mg/Kg-dry	1	8/17/2013 6:34:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	4.84		mg/Kg-dry	1	8/17/2013 6:34:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	4.84		mg/Kg-dry	1	8/17/2013 6:34:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	4.84		mg/Kg-dry	1	8/17/2013 6:34:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	4.84		mg/Kg-dry	1	8/17/2013 6:34:00 PM
Surr: 1-Chlorooctadecane	73.2	65-140		%REC	1	8/17/2013 8:57:00 AM
Surr: o-Terphenyl	91.7	65-140		%REC	1	8/17/2013 6:34:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aliphatic Hydrocarbon (C6-C8)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Aromatic Hydrocarbon (C12-C13)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Benzene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Toluene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Ethylbenzene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
m,p-Xylene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
o-Xylene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Naphthalene	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.423		mg/Kg-dry	1	8/2/2013 10:24:00 PM
Surr: Bromofluorobenzene	100	65-140		%REC	1	8/2/2013 10:24:00 PM
Surr: Trifluorotoluene	96.3	65-140		%REC	1	8/2/2013 10:24:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	7.46			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 12:50:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-004
Matrix: Soil
Client Sample ID: AS-1-27.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5132		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	5.25		mg/Kg-dry	1	8/17/2013 9:44:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	5.25		mg/Kg-dry	1	8/17/2013 9:44:00 AM
Aliphatic Hydrocarbon (C12-C16)	ND	5.25		mg/Kg-dry	1	8/17/2013 9:44:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	5.25		mg/Kg-dry	1	8/17/2013 9:44:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	5.25		mg/Kg-dry	1	8/17/2013 9:44:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	5.25		mg/Kg-dry	1	8/17/2013 7:24:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	5.25		mg/Kg-dry	1	8/17/2013 7:24:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	5.25		mg/Kg-dry	1	8/17/2013 7:24:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.25		mg/Kg-dry	1	8/17/2013 7:24:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	5.25		mg/Kg-dry	1	8/17/2013 7:24:00 PM
Surr: 1-Chlorooctadecane	75.6	65-140		%REC	1	8/17/2013 9:44:00 AM
Surr: o-Terphenyl	81.0	65-140		%REC	1	8/17/2013 7:24:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aliphatic Hydrocarbon (C6-C8)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Aromatic Hydrocarbon (C12-C13)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Benzene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Toluene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Ethylbenzene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
m,p-Xylene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
o-Xylene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Naphthalene	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.452		mg/Kg-dry	1	8/3/2013 1:44:00 AM
Surr: Bromofluorobenzene	100	65-140		%REC	1	8/3/2013 1:44:00 AM
Surr: Trifluorotoluene	96.4	65-140		%REC	1	8/3/2013 1:44:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	20.0			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 3:20:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-005
Matrix: Soil
Client Sample ID: VE-2-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5132		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	5.72		mg/Kg-dry	1	8/17/2013 10:32:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	5.72		mg/Kg-dry	1	8/17/2013 10:32:00 AM
Aliphatic Hydrocarbon (C12-C16)	ND	5.72		mg/Kg-dry	1	8/17/2013 10:32:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	5.72		mg/Kg-dry	1	8/17/2013 10:32:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	5.72		mg/Kg-dry	1	8/17/2013 10:32:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	5.72		mg/Kg-dry	1	8/17/2013 8:12:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	5.72		mg/Kg-dry	1	8/17/2013 8:12:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	5.72		mg/Kg-dry	1	8/17/2013 8:12:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.72		mg/Kg-dry	1	8/17/2013 8:12:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	5.72		mg/Kg-dry	1	8/17/2013 8:12:00 PM
Surr: 1-Chlorooctadecane	75.5	65-140		%REC	1	8/17/2013 10:32:00 AM
Surr: o-Terphenyl	80.7	65-140		%REC	1	8/17/2013 8:12:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aliphatic Hydrocarbon (C6-C8)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Aromatic Hydrocarbon (C12-C13)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Benzene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Toluene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Ethylbenzene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
m,p-Xylene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
o-Xylene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Naphthalene	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.479		mg/Kg-dry	1	8/3/2013 2:50:00 AM
Surr: Bromofluorobenzene	101	65-140		%REC	1	8/3/2013 2:50:00 AM
Surr: Trifluorotoluene	99.4	65-140		%REC	1	8/3/2013 2:50:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	20.2			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1308016**
Date Reported: **8/19/2013**

Client: Pace Analytical Minnesota
Collection Date: 8/1/2013 3:30:00 PM
Project: 11060 Former ARCO
Lab ID: 1308016-006
Matrix: Soil
Client Sample ID: VE-2-13.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 5229		Analyst: BR
Aliphatic Hydrocarbon (C8-C10)	ND	7.44	H	mg/Kg-dry	1	8/19/2013 3:38:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	7.44	H	mg/Kg-dry	1	8/19/2013 3:38:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	7.44	H	mg/Kg-dry	1	8/19/2013 3:38:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	7.44	H	mg/Kg-dry	1	8/19/2013 3:38:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	7.44	H	mg/Kg-dry	1	8/19/2013 3:38:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	6.86		mg/Kg-dry	1	8/17/2013 9:01:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	6.86		mg/Kg-dry	1	8/17/2013 9:01:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	6.86		mg/Kg-dry	1	8/17/2013 9:01:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	6.86		mg/Kg-dry	1	8/17/2013 9:01:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	6.86		mg/Kg-dry	1	8/17/2013 9:01:00 PM
Surr: 1-Chlorooctadecane	73.7	65-140	H	%REC	1	8/19/2013 3:38:00 PM
Surr: o-Terphenyl	93.5	65-140		%REC	1	8/17/2013 9:01:00 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 5118		Analyst: EM
Aliphatic Hydrocarbon (C5-C6)	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aliphatic Hydrocarbon (C6-C8)	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aliphatic Hydrocarbon (C10-C12)	0.848	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aromatic Hydrocarbon (C8-C10)	0.988	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aromatic Hydrocarbon (C10-C12)	0.787	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Aromatic Hydrocarbon (C12-C13)	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Benzene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Toluene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Ethylbenzene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
m,p-Xylene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
o-Xylene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Naphthalene	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.685		mg/Kg-dry	1	8/3/2013 5:03:00 AM
Surr: Bromofluorobenzene	102	65-140		%REC	1	8/3/2013 5:03:00 AM
Surr: Trifluorotoluene	97.8	65-140		%REC	1	8/3/2013 5:03:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R9524		Analyst: JY
Percent Moisture	35.3			wt%	1	8/8/2013 11:06:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **1308016-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/6/2013** RunNo: **9655**
Client ID: **AS-1-15** Batch ID: **5132** Analysis Date: **8/17/2013** SeqNo: **194481**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	5.37						0	0	30	
Aliphatic Hydrocarbon (C10-C12)	ND	5.37						0	0	30	
Aliphatic Hydrocarbon (C12-C16)	ND	5.37						0	0	30	
Aliphatic Hydrocarbon (C16-C21)	ND	5.37						0	0	30	
Aliphatic Hydrocarbon (C21-C34)	ND	5.37						0	0	30	
Surr: 1-Chlorooctadecane	3.02		4.295		70.2	65	140		0		

Sample ID: **1308016-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/6/2013** RunNo: **9655**
Client ID: **AS-1-15** Batch ID: **5132** Analysis Date: **8/17/2013** SeqNo: **194482**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	5.37						0	0	30	R
Aromatic Hydrocarbon (C10-C12)	ND	5.37						0	0	30	
Aromatic Hydrocarbon (C12-C16)	ND	5.37						0	0	30	
Aromatic Hydrocarbon (C16-C21)	ND	5.37						0	0	30	
Aromatic Hydrocarbon (C21-C34)	ND	5.37						0	0	30	
Surr: o-Terphenyl	3.98		4.295		92.7	65	140		0		

NOTES:
R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Sample ID: **LCS-5132** SampType: **LCS** Units: **mg/Kg** Prep Date: **8/6/2013** RunNo: **9655**
Client ID: **LCSS** Batch ID: **5132** Analysis Date: **8/17/2013** SeqNo: **194501**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	14.4	5.00	20.00	0	72.2	70	130				
Aliphatic Hydrocarbon (C10-C12)	7.02	5.00	10.00	0	70.2	70	130				
Aliphatic Hydrocarbon (C12-C16)	7.19	5.00	10.00	0	71.9	70	130				
Aliphatic Hydrocarbon (C16-C21)	8.15	5.00	10.00	0	81.5	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-5132**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **8/6/2013**		RunNo: **9655**		
Client ID: **LCSS**	Batch ID: **5132**					Analysis Date: **8/17/2013**		SeqNo: **194501**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C21-C34)	8.12	5.00	10.00	0	81.2	70	130				
Surr: 1-Chlorooctadecane	3.26		4.000		81.4	65	140				

Sample ID: **LCS-5132**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **8/6/2013**		RunNo: **9655**		
Client ID: **LCSS**	Batch ID: **5132**					Analysis Date: **8/17/2013**		SeqNo: **194502**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	7.84	5.00	10.00	0	78.4	70	130				
Aromatic Hydrocarbon (C10-C12)	7.83	5.00	10.00	0	78.3	70	130				
Aromatic Hydrocarbon (C12-C16)	8.23	5.00	10.00	0	82.3	70	130				
Aromatic Hydrocarbon (C16-C21)	8.22	5.00	10.00	0	82.2	70	130				
Aromatic Hydrocarbon (C21-C34)	7.81	5.00	10.00	0	78.1	70	130				
Surr: o-Terphenyl	3.39		4.000		84.6	65	140				

Sample ID: **LCSD-5132**	SampType: **LCSD**			Units: **mg/Kg**		Prep Date: **8/6/2013**		RunNo: **9655**		
Client ID: **LCSS02**	Batch ID: **5132**					Analysis Date: **8/17/2013**		SeqNo: **194503**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	14.8	5.00	20.00	0	74.2	70	130	14.44	2.78	20	
Aliphatic Hydrocarbon (C10-C12)	7.08	5.00	10.00	0	70.8	70	130	7.015	0.958	20	
Aliphatic Hydrocarbon (C12-C16)	7.37	5.00	10.00	0	73.7	70	130	7.192	2.46	20	
Aliphatic Hydrocarbon (C16-C21)	8.29	5.00	10.00	0	82.9	70	130	8.147	1.72	20	
Aliphatic Hydrocarbon (C21-C34)	8.29	5.00	10.00	0	82.9	70	130	8.116	2.12	20	
Surr: 1-Chlorooctadecane	3.35		4.000		83.7	65	140		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCSD-5132**	SampType: **LCSD**			Units: **mg/Kg**		Prep Date: **8/6/2013**			RunNo: **9655**		
Client ID: **LCSS02**	Batch ID: **5132**					Analysis Date: **8/17/2013**			SeqNo: **194504**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	8.19	5.00	10.00	0	81.9	70	130	7.838	4.40	20	
Aromatic Hydrocarbon (C10-C12)	8.27	5.00	10.00	0	82.7	70	130	7.832	5.41	20	
Aromatic Hydrocarbon (C12-C16)	8.57	5.00	10.00	0	85.7	70	130	8.234	4.00	20	
Aromatic Hydrocarbon (C16-C21)	8.76	5.00	10.00	0	87.6	70	130	8.217	6.35	20	
Aromatic Hydrocarbon (C21-C34)	8.69	5.00	10.00	0	86.9	70	130	7.810	10.6	20	
Surr: o-Terphenyl	3.83		4.000		95.8	65	140		0		

Sample ID: **MB-5132**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **8/6/2013**			RunNo: **9655**		
Client ID: **MBLKS**	Batch ID: **5132**					Analysis Date: **8/17/2013**			SeqNo: **194505**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	5.00									
Aliphatic Hydrocarbon (C10-C12)	ND	5.00									
Aliphatic Hydrocarbon (C12-C16)	ND	5.00									
Aliphatic Hydrocarbon (C16-C21)	ND	5.00									
Aliphatic Hydrocarbon (C21-C34)	ND	5.00									
Surr: 1-Chlorooctadecane	2.89		4.000		72.2	65	140				

Sample ID: **MB-5132**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **8/6/2013**			RunNo: **9655**		
Client ID: **MBLKS**	Batch ID: **5132**					Analysis Date: **8/17/2013**			SeqNo: **194506**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	5.00									
Aromatic Hydrocarbon (C10-C12)	ND	5.00									
Aromatic Hydrocarbon (C12-C16)	ND	5.00									
Aromatic Hydrocarbon (C16-C21)	ND	5.00									
Aromatic Hydrocarbon (C21-C34)	ND	5.00									
Surr: o-Terphenyl	3.32		4.000		82.9	65	140				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-5132**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **8/6/2013**		RunNo: **9655**	
Client ID: **MBLKS**	Batch ID: **5132**					Analysis Date: **8/17/2013**		SeqNo: **194506**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **CCV-5229**	SampType: **CCV**			Units: **mg/Kg**		Prep Date: **8/19/2013**		RunNo: **9661**	
Client ID: **CCV**	Batch ID: **5229**					Analysis Date: **8/19/2013**		SeqNo: **194556**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	90.8	5.00	100.0	0	90.8	80	120				
Aliphatic Hydrocarbon (C10-C12)	43.9	5.00	50.00	0	87.8	80	120				
Aliphatic Hydrocarbon (C12-C16)	46.4	5.00	50.00	0	92.8	80	120				
Aliphatic Hydrocarbon (C16-C21)	40.8	5.00	50.00	0	81.5	80	120				
Aliphatic Hydrocarbon (C21-C34)	40.7	5.00	50.00	0	81.5	80	120				
Surr: 1-Chlorooctadecane	32.4		40.00		80.9	80	120				

Sample ID: **LCS-5229**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **8/19/2013**		RunNo: **9661**	
Client ID: **LCSS**	Batch ID: **5229**					Analysis Date: **8/19/2013**		SeqNo: **194557**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	16.3	5.00	20.00	0	81.4	70	130				
Aliphatic Hydrocarbon (C10-C12)	7.54	5.00	10.00	0	75.4	70	130				
Aliphatic Hydrocarbon (C12-C16)	7.57	5.00	10.00	0	75.7	70	130				
Aliphatic Hydrocarbon (C16-C21)	7.83	5.00	10.00	0	78.3	70	130				
Aliphatic Hydrocarbon (C21-C34)	7.82	5.00	10.00	0	78.2	70	130				
Surr: 1-Chlorooctadecane	3.02		4.000		75.4	65	140				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1308016-003AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **AS-1-25** Batch ID: **5118** Analysis Date: **8/2/2013** SeqNo: **193722**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	44.2	0.423	50.81	0	87.0	70	130				
Aliphatic Hydrocarbon (C6-C8)	14.6	0.423	16.94	0	85.9	70	130				
Aliphatic Hydrocarbon (C8-C10)	14.6	0.423	16.94	0	86.0	70	130				
Aliphatic Hydrocarbon (C10-C12)	14.0	0.423	16.94	0	82.7	70	130				
Aromatic Hydrocarbon (C8-C10)	60.0	0.423	67.75	0	88.6	70	130				
Aromatic Hydrocarbon (C10-C12)	15.9	0.423	16.94	0	93.7	70	130				
Aromatic Hydrocarbon (C12-C13)	13.2	0.423	16.94	0	78.1	70	130				
Benzene	16.5	0.423	16.94	0	97.2	70	130				
Toluene	16.0	0.423	16.94	0	94.5	70	130				
Ethylbenzene	16.0	0.423	16.94	0	94.6	70	130				
m,p-Xylene	31.8	0.423	33.88	0	93.8	70	130				
o-Xylene	15.6	0.423	16.94	0	92.1	70	130				
Naphthalene	16.7	0.423	16.94	0	98.3	70	130				
Methyl tert-butyl ether (MTBE)	15.3	0.423	16.94	0	90.1	70	130				
Surr: Bromofluorobenzene	2.12		2.117		99.9	65	140				
Surr: Trifluorotoluene	2.15		2.117		102	65	140				

Sample ID: **1308016-005ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **VE-2-10** Batch ID: **5118** Analysis Date: **8/3/2013** SeqNo: **193725**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.479		0	0			0	0	25	
Aliphatic Hydrocarbon (C6-C8)	ND	0.479		0	0			0	0	25	
Aliphatic Hydrocarbon (C8-C10)	ND	0.479		0	0			0	0	25	
Aliphatic Hydrocarbon (C10-C12)	ND	0.479		0	0			0	0	25	
Aromatic Hydrocarbon (C8-C10)	ND	0.479		0	0			0	0	25	
Aromatic Hydrocarbon (C10-C12)	ND	0.479		0	0			0	0	25	
Aromatic Hydrocarbon (C12-C13)	ND	0.479		0	0			0	0	25	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1308016-005ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **VE-2-10** Batch ID: **5118** Analysis Date: **8/3/2013** SeqNo: **193725**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.479		0	0			0	0	25	
Toluene	ND	0.479		0	0			0	0	25	
Ethylbenzene	ND	0.479		0	0			0	0	25	
m,p-Xylene	ND	0.479		0	0			0	0	25	
o-Xylene	ND	0.479		0	0			0	0	25	
Naphthalene	ND	0.479		0	0			0	0	25	
Methyl tert-butyl ether (MTBE)	ND	0.479		0	0			0	0	25	
Surr: Bromofluorobenzene	2.40		2.395		100	65	140		0		
Surr: Trifluorotoluene	2.32		2.395		97.0	65	140		0		

Sample ID: **LCS-5118** SampType: **LCS** Units: **mg/Kg** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **LCSS** Batch ID: **5118** Analysis Date: **8/2/2013** SeqNo: **193729**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	61.3	0.500	60.00	0	102	70	130				
Aliphatic Hydrocarbon (C6-C8)	18.7	0.500	20.00	0	93.6	70	130				
Aliphatic Hydrocarbon (C8-C10)	19.1	0.500	20.00	0	95.4	70	130				
Aliphatic Hydrocarbon (C10-C12)	21.0	0.500	20.00	0	105	70	130				
Aromatic Hydrocarbon (C8-C10)	72.8	0.500	80.00	0	91.0	70	130				
Aromatic Hydrocarbon (C10-C12)	17.1	0.500	20.00	0	85.5	70	130				
Aromatic Hydrocarbon (C12-C13)	16.7	0.500	20.00	0	83.7	70	130				
Benzene	21.4	0.500	20.00	0	107	70	130				
Toluene	20.7	0.500	20.00	0	103	70	130				
Ethylbenzene	19.9	0.500	20.00	0	99.4	70	130				
m,p-Xylene	39.3	0.500	40.00	0	98.2	70	130				
o-Xylene	19.4	0.500	20.00	0	97.2	70	130				
Naphthalene	20.5	0.500	20.00	0	102	70	130				
Methyl tert-butyl ether (MTBE)	20.0	0.500	20.00	0	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1308016
CLIENT: Pace Analytical Minnesota
Project: 11060 Former ARCO

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-5118** SampType: **LCS** Units: **mg/Kg** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **LCSS** Batch ID: **5118** Analysis Date: **8/2/2013** SeqNo: **193729**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene	2.55		2.500		102	65	140				
Surr: Trifluorotoluene	2.53		2.500		101	65	140				

Sample ID: **MB-5118** SampType: **MBLK** Units: **mg/Kg** Prep Date: **8/2/2013** RunNo: **9612**
Client ID: **MBLKS** Batch ID: **5118** Analysis Date: **8/2/2013** SeqNo: **193730**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.500		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	0.500		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	0.500		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	0.500		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	0.500		0	0						
Benzene	ND	0.500		0	0						
Toluene	ND	0.500		0	0						
Ethylbenzene	ND	0.500		0	0						
m,p-Xylene	ND	0.500		0	0						
o-Xylene	ND	0.500		0	0						
Naphthalene	ND	0.500		0	0						
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						
Surr: Bromofluorobenzene	2.50		2.500		100	65	140				
Surr: Trifluorotoluene	2.39		2.500		95.5	65	140				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**PACEMINN**	Work Order Number:	**1308016**
Logged by:	**Chelsea Ward**	Date Received:	**8/2/2013 10:35:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Initial COC given with samples was not a sub-contractor COC, it is original COC with 10 analyses listed. PACE submitted sub-contract COC later in the afternoon (8/2).

Item Information

Item #	Temp ºC	Condition
Sample	9.5	Good

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1308016

Page: 1 of 1

1630714

Section A Required Client Information:
- Company: ARCADIS
- Address: 1100 Olive Way, Seattle WA 98101
- Email To: Scott Zorn
- Phone:
- Fax:
- Requested Due Date/TAT:

Section B Required Project Information:
- Report To: Sam Miles
- Copy To: Harini Shanmugam
- Purchase Order No.: GP09BPNAWA48 K000
- Project Name: Former ARCO 11060
- Project Number: 11060

Section C Invoice Information:
- Attention:
- Company Name:
- Address:
- Pace Quote Reference:
- Pace Project Manager:
- Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	CRO	BTEX/Naphthalene	MTBE/EDB/EDC	n-Hexane	DO/HO	EPH	VPH	cPAHs	Total Lead	[illegible]	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	AS-1-15			8/1/13	1230				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
2	AS-1-20				1240				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
3	AS-1-25				1505				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
4	AS-1-27.5				1250				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
5	VE-2-10				1520				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
6	VE-2-13.5				1530				11	7					2	2			X	X	X	X	X	X	X	X	X	X		
7	DUP-1				—				5	1					2	2			X	X							X			
8	TRIP BLANK			↓	—				2							2			X	X										
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
VPH packed w/ no headspace, unpreserved	Ryan Bruchler/ARCADIS	8/1/13	1615	John Swamy/PACE	8/1/13	1615	6.6	Y	N	Y
							8.3			
				[signature] / FAI	8/2/13	10:35				

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: Ryan Bruchler
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM/DD/YY): 8/1/13

3

Chain of Custody

13080116A

Pace Analytical
www.pacelabs.com

Workorder: 10237432 **Workorder Name:** 11060 FORMER ARCO **Results Requested** 8/15/2013

Report To	Subcontract To	Requested Analysis
Mariah Perorto Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700 Email: mariah.perorto@pacelabs.com	Fremont Analytical P.O.	

Item	Sample ID	Collected Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	EPH	VPH	LAB USE ONLY
1	AS-1-15	8/1/2013 12:30	10237432001	Solid	2	X	X	
2	AS-1-20	8/1/2013 12:40	10237432002	Solid	2	X	X	
3	AS-1-25	8/1/2013 15:05	10237432003	Solid	2	X	X	
4	AS-1-27.5	8/1/2013 12:50	10237432004	Solid	2	X	X	
5	VE-2-10	8/1/2013 15:20	10237432005	Solid	2	X	X	
6	VE-2-13.5	8/1/2013 15:30	10237432006	Solid	2	X	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	8/2/13 14:30	[signature] PAI	8/2/13 14:30
2				
3				
4				
5				

Comments

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

December 06, 2013

Project: WA-11060

Submittal Date: 11/22/2013
Group Number: 1436266
PO Number: GP09BPNA.WA48
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
MW-1-11192013 Grab Water	7290607
MW-1-11192013 Filtered Grab Water	7290608
MW-2-11192013 Grab Water	7290609
MW-2-11192013 Filtered Grab Water	7290610
MW-3-11192013 Grab Water	7290611
MW-3-11192013 Filtered Grab Water	7290612
MW-5-11192013 Grab Water	7290613
MW-5-11192013 Filtered Grab Water	7290614
MW-6-11192013 Grab Water	7290615
MW-6-11192013 Filtered Grab Water	7290616
MW-9-11192013 Grab Water	7290617
MW-9-11192013 Filtered Grab Water	7290618
MW-10-11192013 Grab Water	7290619
MW-10-11192013 Filtered Grab Water	7290620
MW-GW-1-11192013 Grab Water	7290621
MW-GW-1-11192013 Filtered Grab Water	7290622
BD-11060-11192013 Grab Water	7290624

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

ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Sam Miles
ELECTRONIC COPY TO	Atlantic Richfield c/o ARCADIS	Attn: Rory Henneck
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Prajakta Ghatpande

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

Project Name: WA-11060
LLI Group #: 1436266

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

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

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

Project specific QC samples are not included in this data set

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

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

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

Analysis Specific Comments:

SW-846 8260B, GC/MS Volatiles

Batch #: T133312AA (Sample number(s): 7290607, 7290609, 7290611, 7290613, 7290615, 7290617 UNSPK: P288890)

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

ECY 97-602 NWTPH-Gx, GC Volatiles

Batch #: 13329A07A (Sample number(s): 7290607, 7290609, 7290611, 7290613, 7290615, 7290617, 7290619, 7290621, 7290624 UNSPK: P290271)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7290613

Sample Description: MW-1-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290607
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 07:55

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-1

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	1.9	J	0.50	1
10335	Ethylbenzene	100-41-4	N.D.		0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1.5	J	0.50	1
10335	Toluene	108-88-3	N.D.		0.70	1
10335	Xylene (Total)	1330-20-7	1.7	J	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	470		50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**		**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	400		32	1
08271	Heavy Range Organics C24-C40	n.a.	320		75	1
Metals	**SW-846 6020**		**ug/l**		**ug/l**	
06035	Lead	7439-92-1	4.8		0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 15:30	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 15:30	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 14:39	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 14:39	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 17:39	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050003A	12/05/2013 21:41	John P Hook	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050003	12/03/2013 13:35	James L Mertz	1

Sample Description: MW-1-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290608
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 07:55

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l		ug/l	
06035	Lead	7439-92-1	0.15	J	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050003A	12/05/2013 21:43	John P Hook	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050003	12/03/2013 13:35	James L Mertz	1

Sample Description: MW-2-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290609
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 09:55

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-2

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	7.3		0.50	1
10335	Ethylbenzene	100-41-4	17		0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	6.3		0.50	1
10335	Toluene	108-88-3	4.4	J	0.70	1
10335	Xylene (Total)	1330-20-7	40		0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	1,400		50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**		**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	280		30	1
08271	Heavy Range Organics C24-C40	n.a.	100	J	70	1
Metals	**SW-846 6020**		**ug/l**		**ug/l**	
06035	Lead	7439-92-1	9.8		0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 18:17	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 18:17	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 15:04	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 15:04	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 16:12	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:28	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-2-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290610
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 09:55

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	3.2	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:30	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-3-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290611
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 09:20

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-3

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	Benzene	71-43-2	3.5	J	0.50	1
10335	Ethylbenzene	100-41-4	3.4	J	0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	0.68	J	0.50	1
10335	Toluene	108-88-3	N.D.		0.70	1
10335	Xylene (Total)	1330-20-7	1.3	J	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		ug/l		ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	380		50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		ug/l		ug/l	
08271	Diesel Range Organics C12-C24	n.a.	620		33	1
08271	Heavy Range Organics C24-C40	n.a.	340		77	1
Metals	**SW-846 6020**		ug/l		ug/l	
06035	Lead	7439-92-1	3.2		0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 15:54	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 15:54	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 15:29	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 15:29	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 16:34	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:35	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-3-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290612
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 09:20

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	0.47 J	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:37	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-5-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290613
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 08:25

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	24	0.50	1
10335	Ethylbenzene	100-41-4	17	0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1
10335	Toluene	108-88-3	5.7	0.70	1
10335	Xylene (Total)	1330-20-7	6.3	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**	**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	1,800	50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**	**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	240	34	1
08271	Heavy Range Organics C24-C40	n.a.	660	80	1
Metals	**SW-846 6020**		**ug/l**	**ug/l**	
06035	Lead	7439-92-1	6.7	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 17:53	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 17:53	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 19:16	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 19:16	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 16:56	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:39	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-5-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290614
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 08:25

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	1.3	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:41	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-6-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290615
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 10:25

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.50	1
10335	Ethylbenzene	100-41-4	N.D.	0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1
10335	Toluene	108-88-3	N.D.	0.70	1
10335	Xylene (Total)	1330-20-7	N.D.	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**	**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	130 J	50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**	**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	31 J	31	1
08271	Heavy Range Organics C24-C40	n.a.	N.D.	71	1
Metals	**SW-846 6020**		**ug/l**	**ug/l**	
06035	Lead	7439-92-1	0.97 J	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 16:17	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 16:17	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 16:20	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 16:20	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 14:45	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:42	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-6-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290616
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 10:25

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	0.12 J	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:44	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-9-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290617
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 11:35

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-6

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.50	1
10335	Ethylbenzene	100-41-4	N.D.		0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.50	1
10335	Toluene	108-88-3	N.D.		0.70	1
10335	Xylene (Total)	1330-20-7	N.D.		0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.		50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**		**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	49	J	32	1
08271	Heavy Range Organics C24-C40	n.a.	N.D.		75	1
Metals	**SW-846 6020**		**ug/l**		**ug/l**	
06035	Lead	7439-92-1	1.0		0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133312AA	11/27/2013 16:41	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133312AA	11/27/2013 16:41	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 16:45	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 16:45	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 15:07	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:46	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-9-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290618
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 11:35

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	0.090 J	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:48	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-10-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290619
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 12:05

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-7

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.50	1
10335	Ethylbenzene	100-41-4	N.D.		0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.50	1
10335	Toluene	108-88-3	N.D.		0.70	1
10335	Xylene (Total)	1330-20-7	N.D.		0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	66	J	50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**		**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	N.D.		34	1
08271	Heavy Range Organics C24-C40	n.a.	N.D.		78	1
Metals	**SW-846 6020**		**ug/l**		**ug/l**	
06035	Lead	7439-92-1	12.8		0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133313AA	11/27/2013 23:02	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133313AA	11/27/2013 23:02	Sarah A Guill	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 17:10	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 17:10	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 17:17	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:18	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-10-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290620
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 12:05

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	N.D.	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:50	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-GW-1-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290621
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 11:05

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-8

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.50	1
10335	Ethylbenzene	100-41-4	6.6	0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1
10335	Toluene	108-88-3	N.D.	0.70	1
10335	Xylene (Total)	1330-20-7	6.8	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**	**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	1,400	50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**	**ug/l**	
08271	Diesel Range Organics C12-C24	n.a.	2,500	31	1
08271	Heavy Range Organics C24-C40	n.a.	N.D.	73	1
Metals	**SW-846 6020**		**ug/l**	**ug/l**	
06035	Lead	7439-92-1	16.7	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133313AA	11/27/2013 23:26	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133313AA	11/27/2013 23:26	Sarah A Guill	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 19:41	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 19:41	Catherine J Schwarz	1
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	133310039A	12/03/2013 15:28	Christine E Dolman	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	133310039A	11/29/2013 15:00	William H Saadeh	1
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:51	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: MW-GW-1-11192013 Filtered Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290622
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013 11:05

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6020**		ug/l	ug/l	
06035	Lead	7439-92-1	1.2	0.085	1

General Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	SW-846 6020	1	133366050004A	12/05/2013 12:57	Parker D Lindstrom	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	133366050004	12/03/2013 13:46	James L Mertz	1

Sample Description: BD-11060-11192013 Grab Water
BP 11060
4580 Fauntleroy Way SW - Seattle, WA

LL Sample # WW 7290624
LL Group # 1436266
Account # 13255

Project Name: WA-11060

Collected: 11/19/2013

Submitted: 11/22/2013 19:30
Reported: 12/06/2013 14:52

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

060-9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	8.8	0.50	1
10335	Ethylbenzene	100-41-4	17	0.80	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	6.4	0.50	1
10335	Toluene	108-88-3	6.4	0.70	1
10335	Xylene (Total)	1330-20-7	46	0.80	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**	**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	1,700	50	1

General Sample Comments

State of Washington Lab Certification No. C457

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

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	T133313AA	11/27/2013 23:50	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T133313AA	11/27/2013 23:50	Sarah A Guill	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	13329A07A	11/26/2013 20:07	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13329A07A	11/26/2013 20:07	Catherine J Schwarz	1

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS Group Number: 1436266
Reported: 12/06/13 at 02:52 PM

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

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: T133312AA	Sample number(s): 7290607,7290609,7290611,7290613,7290615,7290617							
Benzene	N.D.	0.50	ug/l	104		78-120		
Ethylbenzene	N.D.	0.80	ug/l	105		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.50	ug/l	101		75-120		
Toluene	N.D.	0.70	ug/l	99		80-120		
Xylene (Total)	N.D.	0.80	ug/l	96		80-120		
Batch number: T133313AA	Sample number(s): 7290619,7290621,7290624							
Benzene	N.D.	0.50	ug/l	96		78-120		
Ethylbenzene	N.D.	0.80	ug/l	94		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.50	ug/l	99		75-120		
Toluene	N.D.	0.70	ug/l	90		80-120		
Xylene (Total)	N.D.	0.80	ug/l	88		80-120		
Batch number: 13329A07A	Sample number(s): 7290607,7290609,7290611,7290613,7290615,7290617,7290619,7290621,7290624							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	93		75-135		
Batch number: 133310039A	Sample number(s): 7290607,7290609,7290611,7290613,7290615,7290617,7290619,7290621							
Diesel Range Organics C12-C24	N.D.	30.	ug/l	76	79	50-113	4	20
Heavy Range Organics C24-C40	N.D.	70.	ug/l					
Batch number: 133366050003A	Sample number(s): 7290607-7290608							
Lead	N.D.	0.085	ug/l	103		90-110		
Batch number: 133366050004A	Sample number(s): 7290609-7290622							
Lead	N.D.	0.085	ug/l	107		90-110		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: T133312AA	Sample number(s): 7290607,7290609,7290611,7290613,7290615,7290617 UNSPK: P288890								
Benzene	119	133	72-134	7	30				
Ethylbenzene	115	128	71-134	9	30				
Methyl Tertiary Butyl Ether	101	106	72-126	5	30				
Toluene	105	114	80-125	8	30				

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

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS Group Number: 1436266
Reported: 12/06/13 at 02:52 PM

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Xylene (Total)	144 (2)	345 (2)	79-125	14	30				
Batch number: T133313AA	Sample number(s): 7290619,7290621,7290624 UNSPK: P288591								
Benzene	111	112	72-134	1	30				
Ethylbenzene	111	110	71-134	1	30				
Methyl Tertiary Butyl Ether	102	101	72-126	1	30				
Toluene	107	107	80-125	0	30				
Xylene (Total)	103	101	79-125	2	30				
Batch number: 13329A07A	Sample number(s): 7290607,7290609,7290611,7290613,7290615,7290617,7290619,7290621,7290624 UNSPK: P290271								
NWTPH-Gx water C7-C12	107	107	75-135	0	30				
Batch number: 133366050003A	Sample number(s): 7290607-7290608 UNSPK: P290279 BKG: P290279								
Lead	102	103	89-120	1	20	1.8	1.8	3 (1)	20
Batch number: 133366050004A	Sample number(s): 7290609-7290622 UNSPK: 7290619 BKG: 7290619								
Lead	101	104	89-120	1	20	12.8	11.9	7	20

Surrogate Quality Control

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

Analysis Name: PPL + Xylene (total) by 8260
Batch number: T133312AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7290607	100	98	104	99
7290609	97	96	104	98
7290611	99	96	105	100
7290613	100	99	106	98
7290615	99	100	105	96
7290617	101	101	103	96
Blank	102	101	106	96
LCS	97	99	103	100
MS	103	101	103	100
MSD	102	100	106	103
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PPL + Xylene (total) by 8260
Batch number: T133313AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7290619	99	98	105	98
7290621	97	95	107	98
7290624	93	98	103	94

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

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS Group Number: 1436266
Reported: 12/06/13 at 02:52 PM

Surrogate Quality Control

Blank	97	97	104	92
LCS	99	100	104	96
MS	98	97	103	98
MSD	98	99	105	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 13329A07A

	Trifluorotoluene-F
7290607	132
7290609	121
7290611	106
7290613	147*
7290615	95
7290617	86
7290619	91
7290621	132
7290624	134
Blank	93
LCS	104
MS	114
MSD	115
Limits:	63-135

Analysis Name: NWTPH-Dx water
Batch number: 133310039A

	Orthoterphenyl
7290607	108
7290609	105
7290611	109
7290613	92
7290615	110
7290617	100
7290619	108
7290621	106
Blank	100
LCS	111
LCSD	120
Limits:	50-150

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

13255/1436266/7290607-25

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ARCADIS	Report To:	Samuel Miles	Attention:	Praj Ghatpande
Address:	1100 Olive Way Suite 800	Copy To:	Rory Henneck (rory.henneck@arcadis-us.com)	Company Name:	ARCADIS
	Seattle, WA 98101	Praj Ghatpande (praj.ghatpande@arcadis-us.com)		Address:	1100 Olive Way Ste. 800, Seattle, WA 98101
Email To:	Samuel.Miles@arcadis-us.com	Purchase Order No.		Lancaster Quote Reference:	
Phone:	206-726-4720 Fax: 206-325-8218	Client Project ID:	ARCO 11060	Lancaster Project Manager:	Natalie Luciano
Requested Due Date/TAT:	10 Day (Default)	Project Number:	GP09BPNA.WA48	Lancaster Profile #:	

Regulatory Agency
Washington State Department of Ecology
State / Location
WA

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	GRO (NWTPH-Gx)	MTBE/BTEX (8260B)		DRO (TPH-d)	RRO (TPH-o) H2O per R Henneck	MKL 11/25/13	Dissolved Lead (6020) field filtered	Total Lead (6020)	Residual Chlorine (Y/N)	
	MW-1-11192013		G			11/19/13	0755		10			X	X						X	X		X	X		X	X		
	MW-2-11192013		↓			↓	0955		10			X	X						X	X		X	X		X	X		
	MW-3-11192013						0920		10			X	X						X	X		X	X		X	X		
	MW-5-11192013						0825		9			X	X						X	X		X	X		X	X		
	MW-6-11192013						1025		10			X	X						X	X		X	X		X	X		
	MW-9-11192013						1135		10			X	X						X	X		X	X		X	X		
	MW-10-11192013						1205		10			X	X						X	X		X	X		X	X		
	MW-GW-1-11192013						1105		10			X	X						X	X		X	X		X	X		
	~~BD-11060-11192013~~						~~—~~		~~9~~			~~X~~	~~X~~						~~X~~	~~X~~		~~X~~	~~X~~		~~X~~	~~X~~		(initials)
	TB-11060-11192013		↓			↓	0740		3				X						X	X								ON HOLD
	BD-11060-11192013		G			11/19/13	—		6				X						X	X								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	(signature)	11/19/13		(signature)	11/21/13	07:25				
				(signature)	11/22/13	1930	4.5 / 1.2	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ricky Dhupar

SIGNATURE of SAMPLER: (signature)

DATE Signed: 11/19/13

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Environmental Sample Administration Receipt Documentation Log 1436266

Client/Project: Arcadis

Date of Receipt: 11/22/13

Time of Receipt: 1930

Source Code: 30

Shipping Container Sealed: (YES) NO

Custody Seal Present * : (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	DT121	1.2	TB	WI	Y	B	
2	↓	0.5	↓	↓	↓	↓	
3	↓	0.7	↓	↓	↓	↓	
4	↓	1.0	↓	↓	↓	↓	
5	↓	0.8	↓	↓	↓	↓	
6	↓	0.5	↓	↓	↓	↓	

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Unpacker Signature/Emp#: [signature] 2308 **Date/Time:** 11/22/13 2040

Issued by Dept. 6042 Management

2174.06

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Environmental Sample Administration Receipt Documentation Log

1436266

(continuation page)

Client/Project: Arcadis

Date of Receipt: 11/22/13

Unpacker Emp. No.: 2308

Additional Paperwork Discrepancy/Unpacking Problems:

project # 11060. Received 10 containers for MW-5

1 vial of TB-11060 has headspace

TB-977 vials have headspace

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Explanation of Symbols and Abbreviations

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

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

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

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

ppb parts per billion

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

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

ARCADIS

Appendix C

Groundwater Monitoring
Field Data Sheets

ARCADIS

Groundwater Monitoring Well Gauging Form

Site ID: WA-11060 Project #: GP09BPNA.WA46

Site Address: 580 Fauntleroy Way SW Seattle, WA Date: 5/9/13

	Well ID	Time	Sheen/ Odor	LNAPL Depth	LNAPL Thickness	DTW	TD	Notes
2	MW-1	8:32	No / Yes	23.74	0	23.74	27.33	PID: 28.5 ppm w.s.v. 2/2 bolts
4	MW-2	8:20	No / Yes	23.49	0	23.49	28.04	PID: 28.1 ppm w.s.v. 2/2 bolts
5	MW-3	8:58	No / Yes	22.72	0	22.72	34.20	PID 67.7 ppm 2/2 bolts
6	MW-4	9:27	Yes / Yes	22.65	3.63*	26.48	NM	PID 44.4 ppm * NAPL thick: 2.5' when collected in bailer
3	MW-5	8:45	No / Yes	24.52	0	24.52	27.73	PID: >336 ppm 2/2 bolts
1	MW-6	~~12:19~~ ~~8:20~~	No / No	~~22.82~~ ~~23.49~~ NM	0	~~22.82~~ ~~23.49~~ NM	~~29.48~~ ~~26.04~~ NM	PID: ~~26.1 ppm~~ 0.0 ppm w.s.v. 3/3 bolts
7	MW-9	10:16	No / No	21.09	0	~~35.09~~ 21.09	35.09	PID: 0.0 ppm 3/3 bolts
10	MW-10	9:50	No / No	24.25	0	24.25	35.51	PID: 24 ppm w.s.v. 3/3 bolts
9	MW-GW-1	10:27	No / Yes	22.58	0	22.58	34.56	PID 106 ppm w.s.v. 3/3 bolts
11	VE-1	10:38	/ Yes	24.23	0	24.23	27.31	PID 0.0 ppm 3/3 bolts Soft bottom. Replaced plug.
12	EW-1	10:44	Yes / Yes	24.32	0.17	24.49	29.61	P.I.D. 0.0 ppm 3/3 bolts
13	EW-2	11:02	Yes / Yes	~~24.11~~ ~~21.59~~ NM	~~0.31~~ 0.0	~~24.90~~ 24.11	~~26.68~~ 29.89	P.I.D. 50.0 ppm 3/3 bolts, W.I.V.
14	EW-3	10:53	Yes / Yes	24.59	0.31	24.90	29.88	PID 0.0 ppm 3/3 bolts w.s.v.

ARCADIS Groundwater Sampling Form

Project No. GP09BPNAWA98 | Well ID MW-1 | Date 5/9/13

Project Name/Location WA-11060 | 4500 Fremont Way SW; Seattle, WA | Weather overcast, 60°F

Measuring Pt. Description N side TOC | Screen Setting (ft-bmp) NA | Casing Diameter (in.) 4 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 23.74 | Total Depth (ft-btoc) 27.33 | Water Column/ Gallons in Well 3.59 / | Initial PID Reading (ppm) 28.5

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer | Sample Method grab

Pump On/Off NA | Volumes Purged 0 | Centrifugal ___ Submersible NA Other ___

Sample Time: Label 12:00 | Start 12:00 | End 12:05 | Replicate/ Code No. NA | Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
12:00 8:32 PM	0	0	23.74	0	6.50	1.85	19.9	12.7	15.5	-125	slight yellow	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	↓	3	↓
DRO/HO	Amber	2	↓
Total Pb	Poly	1	HNO_3
Diss Pb	↓	1	—

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: SE pt. of site | Well Locked at Arrival: Yes / No

Condition of Well: good | Well Locked at Departure: Yes / No

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

ARCADIS Groundwater Sampling Form

Project No. GPOGBPNAWA46 | Well ID MW-2 | Date 5/9/13

Project Name/Location WA-11060 / 19580 Fauntleroy Wy SW, Seattle, WA | Weather Sunny, 75°F

Measuring Pt. Description N side TOC | Screen Setting (ft-bmp) NA | Casing Diameter (in.) 4 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 23.49 | Total Depth (ft-btoc) 28.04 | Water Column/ Gallons in Well 4.55 / ~~0.63~~ 3.2 | Initial PID Reading (ppm) 28.1

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer; Centrifugal NA; Submersible ___; Other ↓ | Sample Method grab

Pump On/Off NA | Volumes Purged 0

Sample Time: Label 1420 | Start 1421 | End 1432 | Replicate/ Code No. Dup-1

Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1420	0	0	23.49	0	7.13	2.95	—	8.6	17.9	-46	clear	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3/3	HCl
BTEX	VOA	3/3	↓
DRO	Amber	2/2	↓
Total Pb	Poly	1/1	HNO_3
Diss Pb	↓	1/1	—

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: N side of station bldg. | Well Locked at Arrival: Yes / No

Condition of Well: good | Well Locked at Departure: Yes / No

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

ARCADIS Groundwater Sampling Form

Project No. 6POSBPNAWA46 Well ID MW-3 Date 5/9/13

Project Name/Location WA-11060 / 4500 Fauntleroy Wy SW, Seattle, WA Weather sunny, 75°F

Measuring Pt. Description N side TOC | Screen Setting (ft-bmp) NA | Casing Diameter (in.) 4 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 22.72 | Total Depth (ft-btoc) 34.20 | Water Column/ Gallons in Well 11.48 / 7.3 | Initial PID Reading (ppm) 67.7

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer | Sample Method grab

Pump On/Off NA | Volumes Purged 0 | Centrifugal NA / Submersible ___ / Other ↓

Sample Time: Label 1510 | Start 1512 | End 1526 | Replicate/ Code No. NA | Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1510	0	0	22.72	0	7.04	1.09	—	—	15.6	-44	slight yellow	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	↓	3	↓
DRO	Amber	2	↓
Total Pb	Poly	1	HNO_3
Diss Pb		1	—

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: E of NW driveway

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: NA

ARCADIS Groundwater Sampling Form

Project No. GP09BFNAWA46 Well ID MW-5 Date 5/9/13

Project Name/Location WA-11060 Weather Sunny, 75°F

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

Static Water Level (ft-btoc) 24.52 | Total Depth (ft-btoc) 27.73 | Water Column/ Gallons in Well 3.21 / 2.1 | Initial PID Reading (ppm) >336

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer | Sample Method grab

Pump On/Off NA | Volumes Purged 0 | Centrifugal ___ Submersible NA ↓ Other ___

Sample Time: Label 1535 | Start 1535 | End 1545 | Replicate/ Code No. NA | Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1535	0	0	24.52	0	6.38	0.821	—	—	17.7	-79	clear	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	VOA	3	↓
DRO	Amber	2	↓
Total Pb	Poly	1	HNO_3
Diss Pb	↓	1	—

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: SW corner of site

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: NA

ARCADIS Groundwater Sampling Form

Project No. GPOSBPNAWA96 | Well ID MW-6 | Date 5/9/13

Project Name/Location WA-11066 / 4580 Fauntleroy Wy SW, Seattle, WA | Weather overcast, 60°F

Measuring Pt. Description N side TOC | Screen Setting (ft-bmp) NA | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 22.82 | Total Depth (ft-btoc) 29.48 | Water Column/ Gallons in Well 6.66 / | Initial PID Reading (ppm) 0.0

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer | Sample Method grab

Pump On/Off NA | Volumes Purged 0 | Centrifugal NA / Submersible ___ / Other ↓

Sample Time: Label 12:30 | Start 12:30 | End 12:35 | Replicate/ Code No. NA

Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
12:30	0	0	22.82	0	6.71	1.91	20.1	13.1	16.0	-128	clear w/ brown flecks	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	VOA	3	↓
DRO	Amber	2	
Total Pb	Poly	1	HNO3
Diss. Pb	↓	1	—

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: Planter at N tip of site, under hedge. | Well Locked at Arrival: Yes / No

Condition of Well: good | Well Locked at Departure: Yes / No

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

ARCADIS Groundwater Sampling Form

Project No. GP09BPNAWA9B | Well ID MW-9 | Date 5/9/13

Project Name/Location WA-11060 / 4580 Fauntleroy Wy SW, Seattle, WA | Weather sunny, 75°F

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

Static Water Level (ft-btoc) 21.09 | Total Depth (ft-btoc) 35.09 | Water Column/ Gallons in Well 14.00 / 2.2 | Initial PID Reading (ppm) 0.0

TOC Elevation | Pump Intake (ft-btoc) NA | Purge Method: NP bailer; Centrifugal NA; Submersible; Other ↓ | Sample Method grab

Pump On/Off NA | Volumes Purged 0

Sample Time: Label 13:50 | Start 13:50 | End | Replicate/ Code No. NA | Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
13:50	0	0	21.09	0	6.07	1.40	136.0	8.9	15.6	69	clear	no

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	↓	3	↓
DRO	Amber	2	↓
Total Pb	Poly	1	HNO_3
Diss Pb	↓	1	–

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: NE of site in Highline Urgent Care lot

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: NA

ARCADIS Groundwater Sampling Form

Project No. GP09BPNAWA46 Well ID MW-10 Date 5/9/13

Project Name/Location WA-11060 / 4560 Fauntleroy Way SW, Seattle, WA Weather Overcast, 55°F

Measuring Pt. Description N side TOC Screen Setting (ft-bmp) NA Casing Diameter (in.) 2 Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 24.25 Total Depth (ft-btoc) 35.51 Water Column/ Gallons in Well 11.26 / 1.7 Initial PID Reading (ppm) 244

TOC Elevation ___ Pump Intake (ft-btoc) NA Purge Method: No purge bailer Centrifugal NA Submersible ↓ Other ↓ Sample Method grab

Pump On/Off NA Volumes Purged 0

Sample Time: Label 9:55 Start 9:55 End 10:03 Replicate/ Code No. NA Sampled by RH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
9:55	0	0	24.25	0	7.41	1.48	144.0	15.0	15.1	165	clear	∅

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
DRO	Amber	2	↓
BTEX	VOA	3	↓
Total Pb	Poly	1	HNO3
Diss Pb	↓	1	—

Well Casing Volumes

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

Well Information

Well Location: SW of site in Alaska St. bus lane Well Locked at Arrival: Yes / No

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

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

ARCADIS Groundwater Sampling Form

Project No. GP09BPNAWA48 | Well ID GW-MW-1 | Date 5/9/13

Project Name/Location WA-11060 / 4580 Fauntleroy Wy SW, Seattle, WA | Weather Sunny, 70°F

Measuring Pt. Description N side TOC | Screen Setting (ft-bmp) NA | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 22.58 | Total Depth (ft-btoc) 34.56 | Water Column/ Gallons in Well 11.98/ | Initial PID Reading (ppm) 106

TOC Elevation ___ | Pump Intake (ft-btoc) NA | Purge Method: NP bailer | Sample Method grab

Pump On/Off NA | Volumes Purged 0 | Centrifugal NA / Submersible ___ / Other ___

Sample Time: Label 13:20 | Start 13:20 | End ___ | Replicate/ Code No. DUP-1 | Sampled by KH

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
13:20	0	0	22.58	0	7.26	1.51	91.1	14.8	15.3	-108	slight yellow	yes

Constituents Sampled	Container	Number	Preservative
GRO	VOA	3	HCl
BTEX	VOA	3	↓
DRO	Amber	2	↓
Total Pb	Poly	1	HNO_3
Diss Pb	↓	1	—

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: NE corner of site | Well Locked at Arrival: Yes / No ✓

Condition of Well: good | Well Locked at Departure: Yes / No ✓

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

WELL GAUGING DATA

Project # 131119-R1 Date 11/19/13 Client Arcadis

Site 4580 Fauntleroy Way SW, Seattle

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	0745	4					25.30	27.30		
MW-2	0945	2					24.40 ~~29.30~~ (EW)	27.30 ~~24.40~~ (EW)		
MW-3	0910	4					24.30	34.27		
MW-4	0845	4	ODOR	24.80	1.81	—	26.61	—		
MW-5	0815	4					26.35	27.70		
MW-6	1015	2					24.00	29.50		
MW-9	1125	2					22.80	35.10		
MW-10	1150	2					25.80	35.41		
VE-1	0840	4	ODOR	25.80	0.55	—	26.35	—		
MW-GW-1	1055	2					24.00	34.60		

WELL MONITORING DATA SHEET

Project #: 131119-RK1	Client: Aradis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 27.30	Depth to Water: 25.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other ____

Sampling Method: Bailer

- ~~Disposable Bailer~~
- Extraction Port
- Dedicated Tubing
- Other: ____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
0755	57.8	6.17	1170	7	—	

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 0755		Sampling Date: 11/19/13	
Sample I.D.: MW-1-11192013		Laboratory: Lancaster	
Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Other:) see c-o-c.			
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

WELL MONITORING DATA SHEET

Project #: 131119-RK1	Client: Aruadis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 27.30	Depth to Water: 24.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

____(Gals.) X ____ = ____ Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
0955	50.1	6.78	1200	27	—	

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 0955		Sampling Date: 11/19/13	
Sample I.D.: MW-2-11192013		Laboratory: Lancaster	
Analyzed for: ~~TPH-G~~ ~~BTEX~~ MTBE TPH-D (~~Other:~~) see c.o.c.			
Equipment Blank I.D.: @ Time		Duplicate I.D.: BD-1140-11192013	
Analyzed for: TPH-G BTEX MTBE TPH-D Other:			
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

WELL MONITORING DATA SHEET

Project #: 131119-EK1	Client: Aradis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 34.27	Depth to Water: 24.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
0920	52	6.79	696	13	—	

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 0920 Sampling Date: 11/19/13

Sample I.D.: MW-3-11192013 Laboratory: Lancaster

Analyzed for: (TPH-G) ~~BTEX~~ MTBE TPH-D (~~Other:~~) See C-O-C.

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 131119-RC1	Client: Arcadis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: ____	Depth to Water: 26.61
Depth to Free Product: 24.80	Thickness of Free Product (feet): 1.81
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer	Waterra
Disposable Bailer	Peristaltic
Positive Air Displacement	Extraction Pump
Electric Submersible	Other_____

Sampling Method: Bailer

Disposable Bailer	
Extraction Port	
Dedicated Tubing	
Other:_____	

____ (Gals.) X	____	=	____ Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
____	____	1.81 feet of SPH Detected w/ Interface Probe				____
____	____	No Sample Taken				

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Time:		Sampling Date:	
Sample I.D.:		Laboratory:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: ____ mg/L	Post-purge:	____ mg/L
ORP (if req'd):	Pre-purge: ____ mV	Post-purge:	____ mV

WELL MONITORING DATA SHEET

Project #: 131119-RR1	Client: Aradis
Sampler: RR	Start Date: 11/19/13
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 27.70	Depth to Water: 26.35
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
0825	55.7	6.43	1001	24	—	

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 0825		Sampling Date: 11/19/13	
Sample I.D.: MW-5-11192013		Laboratory: Lancaster	
Analyzed for: TPH-G (BTEX) MTBE TPH-D (~~Other~~) See C.O.C.			
Equipment Blank I.D.: @ Time		Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

WELL MONITORING DATA SHEET

Project #: 131119-RR1	Client: Aradis
Sampler: RR	Start Date: 11/19/13
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 29.50	Depth to Water: 24.00
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
1025	51.4	7.26	599	12	—	

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 1025		Sampling Date: 11/19/13	
Sample I.D.: MW-6-11192013		Laboratory: Lancaster	
Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Other:) See C.O.C.			
Equipment Blank I.D.: @ Time		Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D Other:			
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

WELL MONITORING DATA SHEET

Project #: 131119-RK1	Client: Aradis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 35.10	Depth to Water: 22.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
1135	54.2	6.76	485	13	—	

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1135 Sampling Date: 11/19/13

Sample I.D.: MW-9-11192013 Laboratory: Lancaster

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Other:) See C.O.C.

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 131119-RK1	Client: Aradis
Sampler: RK	Start Date: 11/19/13
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 35.41	Depth to Water: 25.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- ~~Disposable Bailer~~
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (~~Disposable Bailer~~)
- Extraction Port
- Dedicated Tubing
- Other:_____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

— (Gals.) X — = — Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
—	NO	PURGE	Sample	—		
1205	54.4	6.70	742	7	—	

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1205 Sampling Date: 11/19/13

Sample I.D.: MW-10-11192013 Laboratory: Lancaster

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Other:) see c.o.c.

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 131119-PM1	Client: Aradis
Sampler: PM	Start Date: 11/19/13
Well I.D.: MW-GW-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 34.60	Depth to Water: 24.00
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other____

Sampling Method:

- Bailer
- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other:____

____ (Gals.) X ____ = ____ Gals.		
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (uS))	Turbidity (NTU)	Gals. Removed	Observations
—	—	No Purge	Sample	—		
1105	55.3	6.92	457	33	—	

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 1105		Sampling Date: 11/14/13	
Sample I.D.: MW-GW-1-11192013		Laboratory: Lancaster	
Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Other: See C-O-C.			
Equipment Blank I.D.: @ Time		Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

ARCADIS

Appendix D

Air Sparge and Soil Vapor Extraction
System Pilot Test Field Data

TABLE D-1
MW-2 SVE STEP TEST DATA
WA-11060
4580 FAUNTLEROY WAY SOUTHWEST, SEATTLE, WA

Time	Time from Start	Target Flow Rate (scfm)	Extraction Well Vacuum (Manifold) (in. Hg)	Knockout Tank Vaccum/ Blower Vacuum (in. Hg)	Manifold Temperature (°F)	Blower Outlet Temp (System Control Panel) (°F)	Anenometer Reading (through sample port) (ft/min)	Magnahelic Gauge (manifold) (ΔP)	Flow Rate (Calculated) (scfm)	Effluent VOCs PID (manifold) (ppmv)	Time from Start (Minutes)	Mass Removal Rate (lbs/day)	Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Monitoring Well Measured Vacuum (inches of water column)			LEL
															MW-3	MW-6	AS-1	
11:30	0:15	9	5	12.5	58.6	61.5	385	0	7.1	353	15	1.13	0.012	0.01	0.0	0.0	--	--
11:45	0:30	9.0	5.0	12.5	58.2	58.2	405	0	7.5	287.1	30	0.97	0.010	0.02	0.0	0.0	--	--
12:00	0:45	9.0	5.3	12.5	58.0	63.6	402	0	7.4	381.2	45	1.27	0.013	0.04	0.0	0.0	--	--
12:18	1:03	18.0	8.6	12.5	56.2	70.4	825	0	13.1	536	63	3.17	0.040	0.07	0.0	0.0	2.5	--
12:34	1:19	18.0	9.0	12.5	60.2	70.7	817	0	12.6	649	79	3.70	0.041	0.12	0.0	0.0	7.9	--
12:49	1:34	18.0	9.3	12.5	58.9	68.9	899	0	13.8	657.1	94	4.09	0.043	0.16	0.0	0.0	5.0	--
13:04	1:49	18.0	9.6	12.5	58.6	68.5	937	0	14.1	652	109	4.16	0.043	0.20	0.0	0.0	3.2	--
13:35	2:20	24.0	19.5	21.5	56.2	86.1	1064	0	8.3	--	140	2.43	0.052	0.25	0.2	0.3	9.3	--
13:50	2:35	24.0	18.8	21	57.1	89.2	1127	0	9.4	628.3	155	2.66	0.028	0.28	0.2	0.4	11.7	--
14:05	2:50	24.0	19.5	21	57.1	88.6	1114	0	8.6	621.9	170	2.43	0.025	0.31	0.1	0.4	12.5	--
14:20	3:05	24.0	19.5	21	57.5	89.3	1114	0	8.6	--	185	2.42	0.025	0.33	0.2	0.4	8.6	--

Notes:
VOC = volatile organic compounds
PID = photoionization detector
LEL = Lower Explosive Limit
scfm = Standard cubic feet per minute = actual cubic feet per minute at STP
STP = standard temperature and pressure (68° F and 14.7 psi OR 293.15K and 29.93in. Hg)

$$Calculated\ flow\ rate\ (scfm) = actual\ flow\ rate\ (acfm)\left(\frac{standard\ temperature(K)}{actual\ temperature(K)}\right)\left(\frac{actual\ pressure(in.Hg)}{standard\ pressure(in.Hg)}\right)$$

$$Actual\ flow\ rate\ (acfm) = anemometer\ reading\left(\frac{ft}{\min}\right)\pi(sample\ port\ radius\ (ft))^2 = anemometer\ reading\left(\frac{ft}{\min}\right)\cdot 0.0218 ft^2$$

$$Actual\ pressure(in.Hg) = standard\ pressure\ (in.Hg) - extraction\ well\ vacuum(in.Hg)$$

in. Hg = inches of mercury
°F = degrees fahrenheit
ft/min = feet per minute
ΔP = differential pressure (psi)
ppmv = parts per million by volume
lbs/day = pounds per day
-- = Not available or not applicable

$$Mass\ Removal\ rate\ \left(\frac{lbs}{day}\right) = \left(\frac{Q * 1440\ \left(\frac{min}{day}\right)}{\mathrm{M}_{\ air\ /ft^3}}\right)\left(\frac{C}{1{,}000{,}000}\right)(MW_{TPHg})$$

Q = Total flow in standard cubic feet per minute (scfm)
C = VOC Concentration
MW_{TPHg} = Molecular weight of gasoline = 105 grams per mole = 0.231 pounds per mole
M_{air/ft^3} = Moles of air per standard cubic foot = 0.737 ft^3 air/mole at STP
Mass removed = Mass Removal Rate * Elapsed Time

TABLE D-2
AS PILOT TEST DATA
WA-11060
4580 FAUNTLEROY WAY SOUTHWEST, SEATTLE, WA

AS Pilot Test Data					Monitoring Wells			SVE Well								
Time	Time from Start	Injection Pressure (psi)	Flow Rate (acfm)	Rotameter Pressure (psi)	[redacted]	MW-3	MW-6	Well ID	Extraction Well Vacuum (in. Hg)	Influent PID (ppmv)	Anemometer Reading (ft/min)	Calculated Flow Rate (scfm)	Mass Removal Rate (lb/day)	Time from Start (Minutes)	Mass Removed (lbs)	Cumulative Mass Removed (lbs)
Distance from AS Well (ft)						18	29									
15:10	0:10	6.0	<3	--	DO (mg/L)	0.85	0.66	MW-2	19.5	389.7	1087	8.26	1.45	10	0.010	0.01
					ORP (mV)	223.8	431.6									
					DTW (ft btoc)	24.28	24.16									
					Pressure (psi)	0.20	0.40									
15:25	0:25	6.0	<3	--	DO (mg/L)	0.15	0.76	MW-2	19.5	608.7	1146	8.71	2.39	25	0.025	0.04
					ORP (mV)	241.6	414.0									
					DTW (ft btoc)	23.91	24.19									
					Pressure (psi)	0.20	0.35									
15:40	0:40	6.0	<3	--	DO (mg/L)	--	--	MW-2	--	--	--	--	2.39	40	0.025	0.06
					ORP (mV)	--	--									
					DTW (ft btoc)	--	--									
					Pressure (psi)	--	--									
16:00	1:00	11.0	1.0	--	DO (mg/L)	0.17	0.06	MW-2	19.5	621.5	1160	8.81	2.47	60	0.034	0.09
					ORP (mV)	665.0	456.6									
					DTW (ft btoc)	22.81	24.23									
					Pressure (psi)	0.20	0.40									
16:15	1:15	11.0	1.0	--	DO (mg/L)	0.11	0.09	MW-2	19.5	625.6	1166	8.86	2.50	75	0.026	0.12
					ORP (mV)	636.1	447.8									
					DTW (ft btoc)	21.75	24.25									
					Pressure (psi)	0.20	0.35									
16:30	1:30	11.0	1.0	--	DO (mg/L)	0.08	0.10	MW-2	19.5	628.9	1106	8.40	2.38	90	0.025	0.15
					ORP (mV)	519.4	356.8									
					DTW (ft btoc)	21.13	24.23									
					Pressure (psi)	0.20	0.35									
16:45	1:45	16.0	3.5	--	DO (mg/L)	0.35	1.27	MW-2	19.5	687.2	1086	8.25	2.56	105	0.027	0.17
					ORP (mV)	673.5	459.9									
					DTW (ft btoc)	19.72	24.18									
					Pressure (psi)	0.15	0.30									
17:00	2:00	16.0	3.5	--	DO (mg/L)	0.14	0.15	MW-2	19.5	634.4	1172	8.90	2.55	120	0.027	0.20
					ORP (mV)	515.6	249.7									
					DTW (ft btoc)	18.16	24.15									
					Pressure (psi)	0.15	0.30									
17:15	2:15	16.0	3.5	--	DO (mg/L)	0.06	0.14	MW-2	19.5	631.5	1146	8.71	2.48	135	0.026	0.22
					ORP (mV)	531.9	715.1									
					DTW (ft btoc)	17.89	24.1									
					Pressure (psi)	0.15	0.30									

Notes:

psi = pounds per square inch
acfm = cubic feet per minute
in. Hg = inches of mercury
PID = photo ionization detector
ppmv = parts per million by volume
ft/min = feet per minute
scfm = Standard cubic feet per minute
= actual cubic feet per minute at STP
STP = standard temperature and pressure (68o F and 14.7 psi OR 293.15K and 29.93in. Hg)
-- = Not available or not applicable

DO = dissolved oxygen (milligrams per liter)
ORP = oxidation-reduction potential (millivolts)
DTW = depth to water (feet below top of casing)
scfm = Standard cubic feet per minute
ppmv = Parts per million by volume
lbs/day = Pounds per day

$$Calculated\ flow\ rate\ (scfm) = actual\ flow\ rate\ (acfm)\left(\frac{standard\ temperature(K)}{actual\ temperature(K)}\right)\left(\frac{actual\ pressure(C)}{standard\ pressure(in.Hg)}\right)$$

$$Actual\ flow\ rate\ (acfm) = anemometer\ reading\left(\frac{ft}{\min}\right)\pi(sample\ port\ radius\ (ft))^2 = anemometer\ reading\left(\frac{ft}{\min}\right)\cdot 0.0218 ft^2$$

$$Actual\ pressure(in.Hg) = standard\ pressure\ (in.Hg) - extraction\ well\ vacuum(in.Hg)$$

$$Mass\ Removal\ rate\ \left(\frac{lbs}{day}\right) = \frac{\left(Q * 1440\ \left(\frac{min}{day}\right)\right)}{\mathrm{M}_{\ air\ /ft^3}} \times \frac{C}{1{,}000{,}000} * (MW_{TPHg})$$

Q = Total flow in standard cubic feet per minute (scfm)
C = VOC Concentration
MW_{TPHg} = Molecular weight of gasoline = 0.231 pounds per mole
$M_{air/ft}{}^3$ = Moles of air per standard cubic foot = 0.737 ft^3 air/mole at STP
Mass removed = Mass Removal Rate * Elapsed Time

TABLE D-3
VE-2 SVE STEP TEST DATA
WA-11060
4580 FAUNTLEROY WAY SOUTHWEST, SEATTLE, WA

Time	Time from Start	Target Flow Rate (scfm)	Extraction Well Vacuum (Manifold) (in. Hg)	Knockout Tank Vaccum/ Blower Vacuum (in. Hg)	Manifold Temperature (°F)	Blower Outlet Temp (System Control Panel) (°F)	Anenometer Reading (through sample port) (ft/min)	Magnahelic Gauge (manifold) (ΔP)	Flow Rate (Calculated) (scfm)	Effluent VOCs PID (manifold) (ppmv)	Time from Start (Minutes)	Mass Removal Rate (lbs/day)	Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Monitoring Well Measured Vacuum (inches of water column)				LEL
															EW-1	EW-2	MW-5	VE-1	
11:15	0:15	9	0.5	14.5	56.4	57.2	430	-0.4	9.42	57.7	15	0.25	0.003	0.003	0.40	0.35	0.20	0.20	--
11:30	0:30	9.0	0.5	14.5	55.9	57.6	430	0.0	9.43	106.3	30	0.45	0.005	0.007	0.25	0.30	0.20	0.15	--
11:55	0:55	18.0	4.0	13.5	57.5	59.8	800	0.0	15.42	156.8	55	1.09	0.019	0.026	0.70	1.20	0.70	0.55	--
12:10	1:10	18.0	4.0	13.5	59.5	60.9	700	0.0	13.44	122.7	70	0.74	0.008	0.034	1.45	1.45	0.80	0.55	--
12:45	1:45	18.0	4.0	13.5	60.0	61.9	715	0.0	13.71	186.6	105	1.15	0.028	0.062	1.55	1.50	0.80	0.55	--
13:15	2:15	24.0	10.0	21.5	58.6	77.3	1388	-0.4	20.51	89.5	135	0.83	0.017	0.079	4.20	3.60	2.10	1.20	30%
13:45	2:45	24.0	9.5	21.0	60.0	78.7	1400	-0.4	21.15	207.8	165	1.98	0.041	0.121	3.60	3.80	1.60	1.30	24%
14:20	3:20	24.0	9.5	21.3	57.8	80.3	1385	-0.5	21.02	142.8	200	1.35	0.033	0.154	3.50	4.10	2.40	1.40	25%
14:50	3:50	24.0	9.5	21.0	57.8	80.4	1430	-0.5	21.70	217.1	230	2.13	0.044	0.198	4.30	4.00	2.30	1.30	27%
15:20	4:20	24.0	9.5	21.0	58.4	80.4	1470	-0.5	22.28	158.9	260	1.60	0.033	0.231	4.40	3.60	2.30	1.30	24%
15:50	4:50	24.0	9.5	21.0	58.3	80.1	1461	-0.4	22.15	190.9	290	1.91	0.040	0.271	4.20	3.00	2.40	1.60	--

Notes:

VOC = volatile organic compounds

PID = photoionization detector

LEL = Lower Explosive Limit

scfm = Standard cubic feet per minute = actual cubic feet per minute at STP

STP = standard temperature and pressure (68°F and 14.7 psi OR 293.15K and 29.93in. Hg)

$$Calculated\ flow\ rate\ (scfm) = actual\ flow\ rate\ (acfm)\left(\frac{standard\ temperature(K)}{actual\ temperature(K)}\right)\left(\frac{actual\ pressure(in.Hg)}{standard\ pressure(in.Hg)}\right)$$

$$Actual\ flow\ rate\ (acfm) = anemometer\ reading\left(\frac{ft}{\min}\right)\pi(sample\ port\ radius\ (ft))^2 = anemometer\ reading\left(\frac{ft}{\min}\right)\cdot 0.0218 ft^2$$

$$Actual\ pressure(in.Hg) = standard\ pressure\ (in.Hg) - extraction\ well\ vacuum(in.Hg)$$

in. Hg = inches of mercury

°F = degrees fahrenheit

ft/min = feet per minute

ΔP = differential pressure (psi)

ppmv = parts per million by volume

lbs/day = pounds per day

-- = Not available or not applicable

$$Mass\ Removal\ rate\ \left(\frac{lbs}{day}\right) = \frac{\left(Q * 1440\ \left(\frac{min}{day}\right)\right)}{\mathrm{M}_{\ air/ft^3}} \times \frac{C}{1{,}000{,}000} * (MW_{TPHg})$$

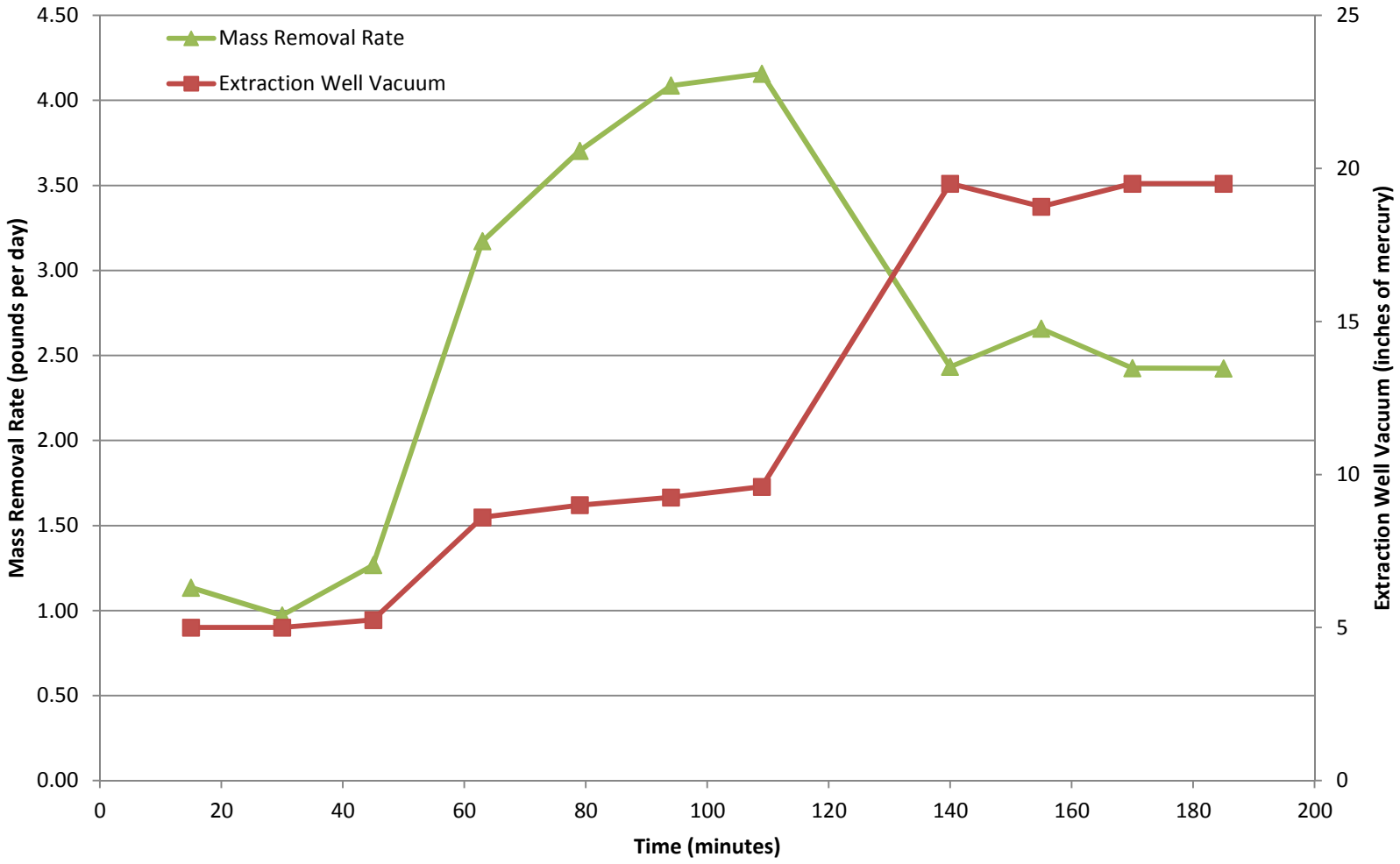
Q = Total flow in standard cubic feet per minute (scfm)

C = Concentration of GRO or Benzene

MW_{TPHg} = Molecular weight of gasoline = 105 grams per mole = 0.231 pounds per mole

M_{air/ft^3} = Moles of air per standard cubic foot = 0.737 ft^3 air/mole at STP

Mass removed = Mass Removal Rate * Elapsed Time



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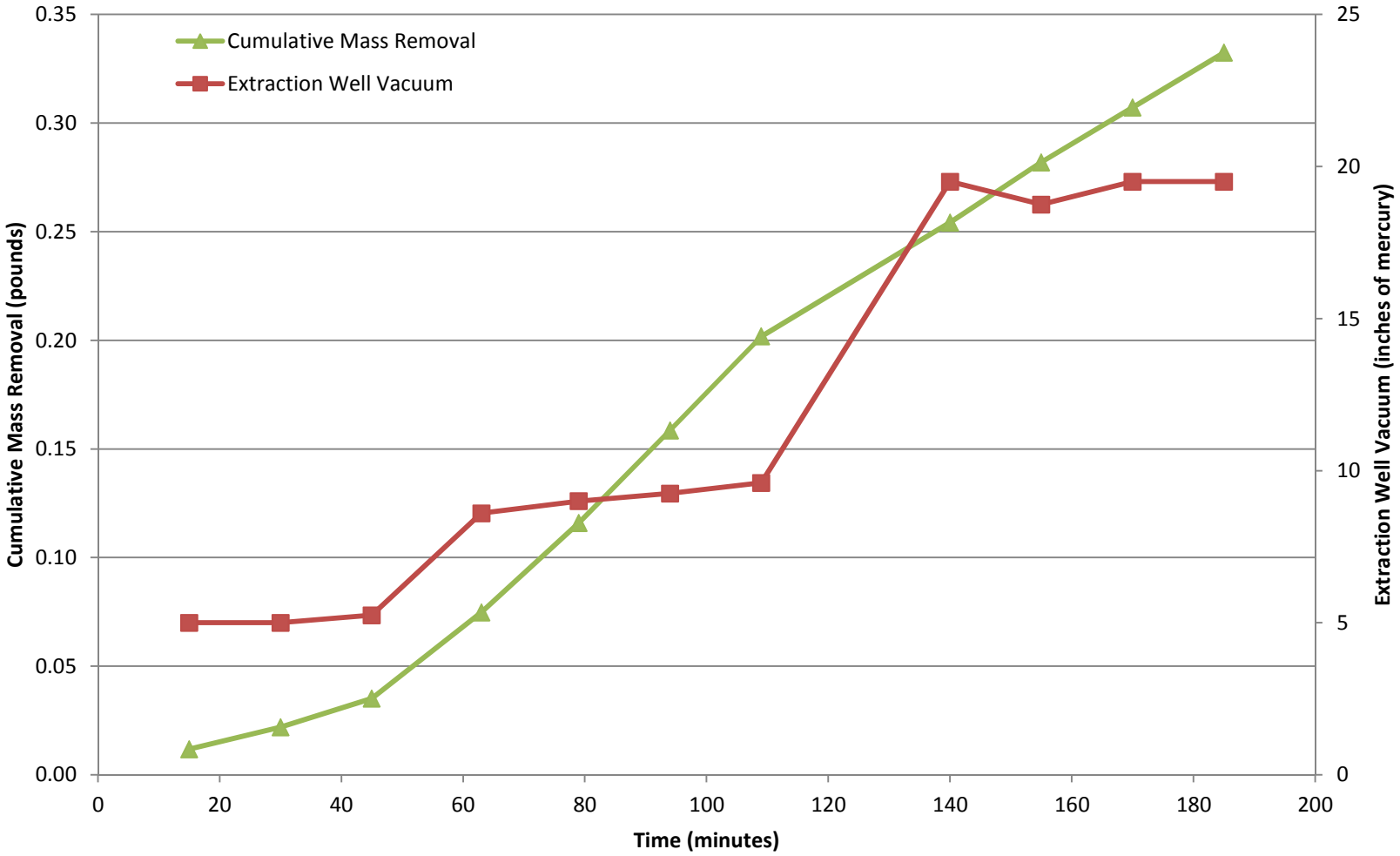
MW-2 SVE STEP TEST MASS REMOVAL RATE

ARCADIS | **Figure D-1**



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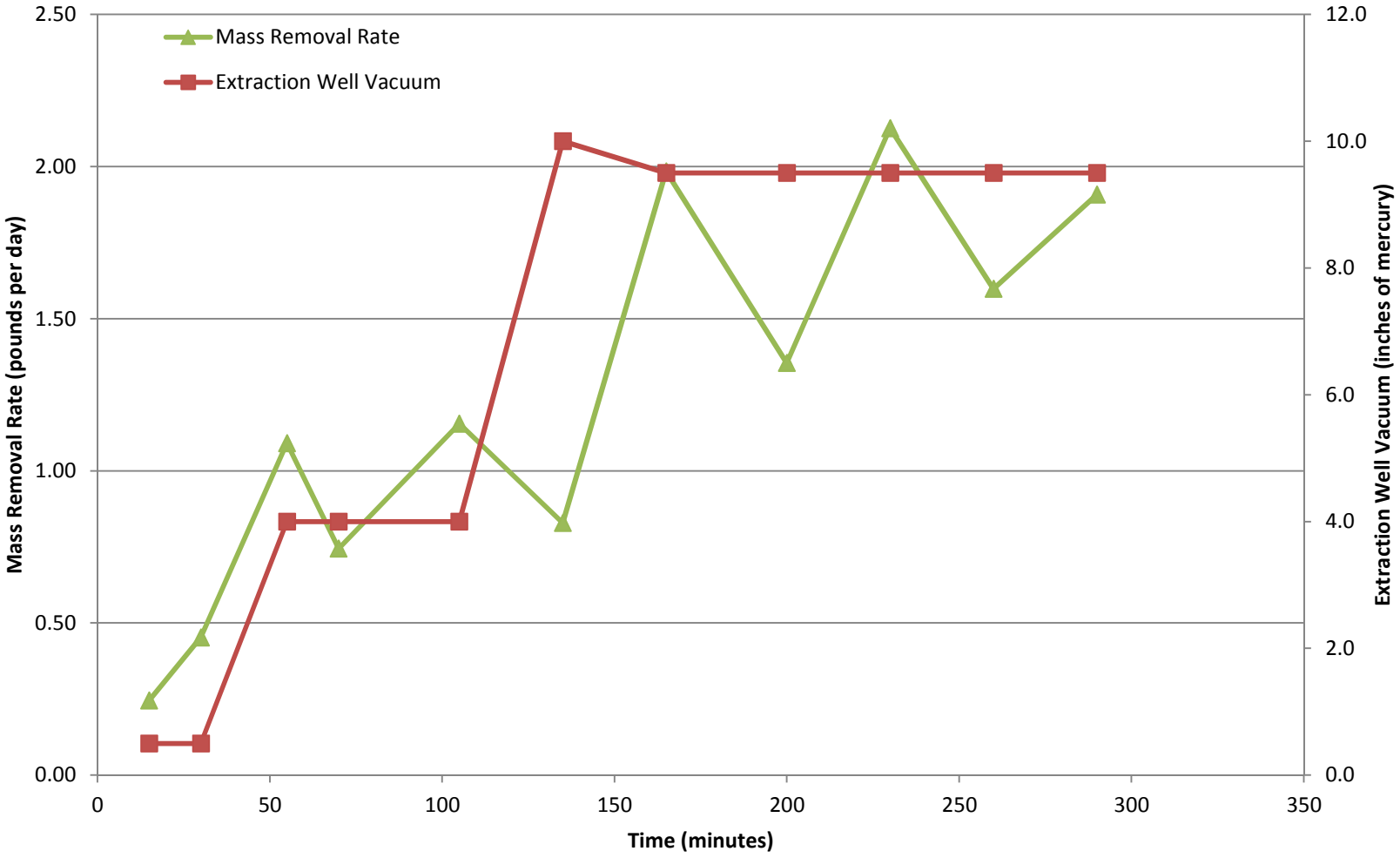
MW-2 SVE STEP TEST CUMULATIVE MASS REMOVAL

ARCADIS | **Figure D-2**



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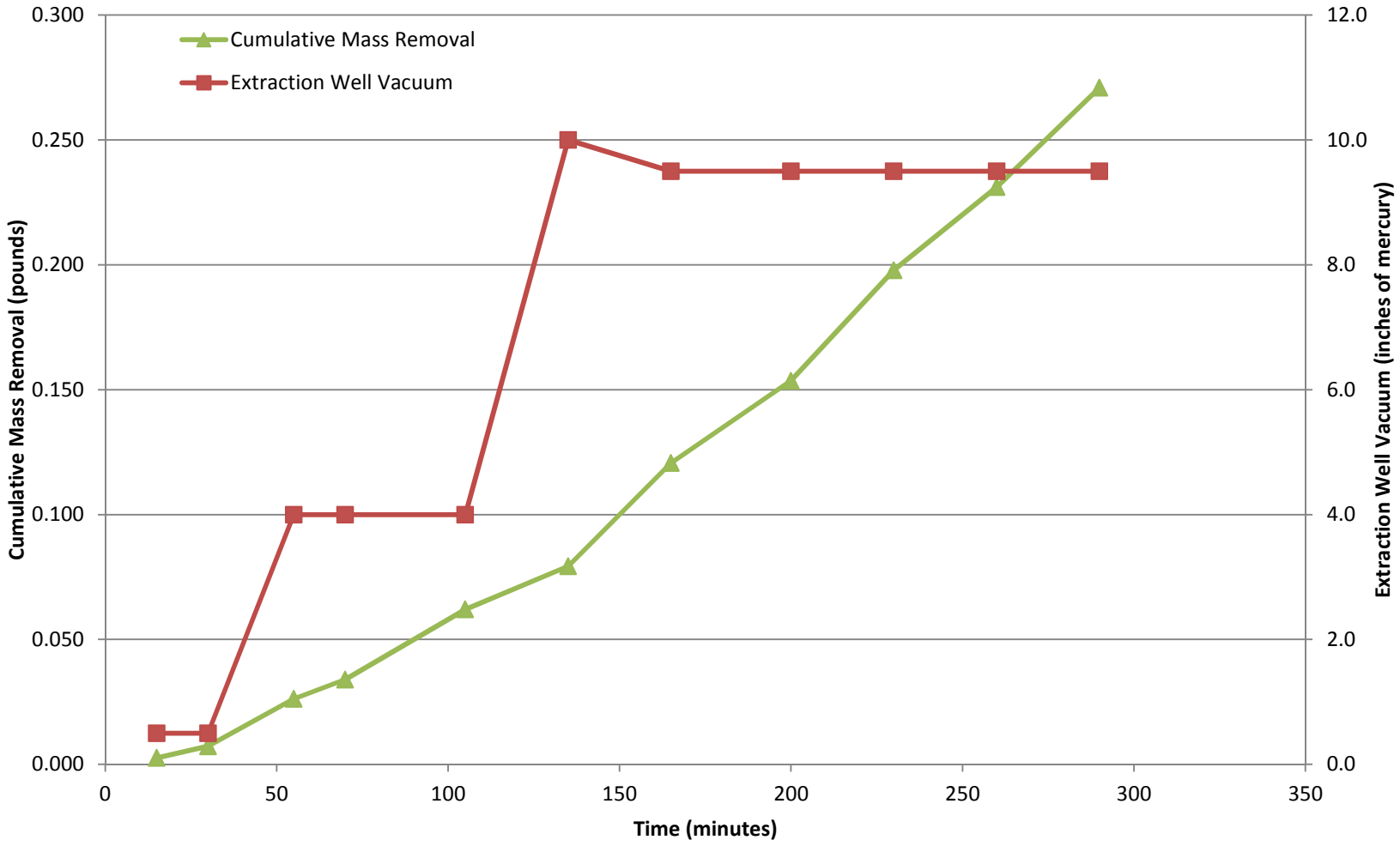
VE-2 SVE STEP TEST MASS REMOVAL RATE

ARCADIS | **Figure D-3**



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VE-2 SVE STEP TEST CUMULATIVE MASS REMOVAL

ARCADIS | **Figure D-4**