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February 19, 2021

Washington Department of Ecology
Northwest Regional Office
Attn: VCP Coordinator
3190 160th Avenue SE
Bellevue, WA 98008-5452

Dear VCP Coordinator:

Please find the enclosed Subsurface Invesgitaion Report, that documents the results at ARCO Facility No. 980 located at 10822 Roosevelt Way NE, Seattle, Washington.

Sincerely yours,

Wade Melton
Operations Project Manager
Remediation Management Services Company
An affiliate of Atlantic Richfield Company

cc: File, Antea Group

Subsurface Investigation Report

ARCO Facility No. 980
10822 Roosevelt Way NE, Seattle, Washington

Antea®Group

Understanding today.
Improving tomorrow.

PREPARED FOR
Remediation Management Services Company
An affiliate of Atlantic Richfield Company
4 Centerpointe Drive, Suite 200
Room LPR-4-222
La Palma, CA 90623

PREPARED BY
Antea Group, Seattle WA
February 19, 2021
Project # 00980SA201
FSID # 68996432

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10822 Roosevelt Way NE, Seattle, Washington

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF WORK

On behalf of Remediation Management Services Company (RMSC, a BP affiliated company), Antea®Group (Antea Group) conducted a subsurface investigation at Atlantic Richfield Company (ARCO) Facility No. 980, located at 10822 Roosevelt Way NE, Seattle, King County, Washington (hereinafter referred to as the "Site"). The investigation, which consisted of the installation of three monitoring wells, was conducted in November 2020. The objective of this assessment was to delineate the extent of the Washington State Department of Ecology's (Ecology) Model Toxics Control Act (MTCA) Site boundary south of the existing monitoring well network at the Site.

The investigation scope of work included the following:

- Update the Health and Safety Plan (HASP) for the Site.
- Request a public locate via the One-Call Notification Center.
- Conduct a meeting with subcontractors to develop Level 2 Task Risk Assessment (TRA);
- Contract Applied Professional Services (APS) of North Bend, WA to identify all private utilities at the Site.
- Conduct utility pre-clearance at each boring location to a minimum of 6.5 feet below ground surface (bgs) using a vacuum truck and air-knife.
- Advance three soil borings and subsequently complete them as 2-inch diameter monitoring wells to an approximate depth of 20 feet bgs using a sonic drill rig.
- Collect soil samples and submit select samples for quantitative chemical analyses.
- Develop the newly installed groundwater monitoring wells.
- Survey the locations and relative vertical elevations of the monitoring wells.
- Collect groundwater samples from monitoring wells and submit the samples for quantitative chemical analyses.
- Coordinate the proper disposal of investigation derived waste.
- Interpret the data obtained; and
- Prepare this report.

1.2 SITE DESCRIPTION

The Site is an active ARCO branded retail gasoline station with a convenience store located on the southeast corner of the intersection of Roosevelt Way NE and NE Northgate Way in Seattle, Washington. A Site Location Map and Site Aerial Map are presented as Figures 1 and 2, respectively. The Site extends south to the Caribbean House Apartments. The parking lot of the apartment building is approximately 5 feet lower in elevation than the station's grade. The two properties are separated by a cinder block retaining wall. The Site vicinity is a mix of commercial and residential land uses. The closest surface water body is Thornton Creek located approximately 250 feet south of the Site. According to Google Earth, the Site is approximately 260 feet above mean sea level.

Site features include the station building with a canopy extending north from the building over two pump islands and a separate canopy west of the building over a third pump island. The underground storage tank (UST) complex containing four double-walled tanks is located to the northeast of the station building. The Site surface consists of asphalt pavement and concrete except in three designated planter areas. A Site Map detailing the structures is presented on Figure 3.

1.3 PREVIOUS INVESTIGATIONS

A summary of previous assessments is described below:

1.3.1 DECEMBER 1989 – PRELIMINARY SOIL ASSESSMENT

On September 12, 1989, ARCO contracted Geraghty & Miller (G&M) to install four soil borings (B1 – B4) in the vicinity of the UST complex at the Site. The soil borings were installed as part of a preliminary soil assessment prior to UST removal activities. Hydrocarbon concentrations were detected above MTCA Method A cleanup levels at three of the four borings. Additional information pertaining to this investigation was reported in G&M's Preliminary Subsurface Assessment Report dated October 25, 1989.

1.3.2 OCTOBER 1990 – STATION UPGRADES

In October 1990, ARCO contracted Joe Hall Construction Company to remove four gasoline USTs, and the associated product distribution piping from the Site. The USTs consisted of one 10,000-gallon steel UST, and three 6,000-gallon steel USTs. Petroleum hydrocarbon concentrations were detected above the MTCA Method A Cleanup Levels in soil samples collected from the UST cavity and from below the product lines. During excavation activities, an abandoned septic tank was discovered. Light non-aqueous phase liquid (LNAPL) was measured in the abandoned septic tank and the contents were removed; however, the septic tank was left in place due to the proximity to structures on the ARCO property. In addition to the gasoline USTs, a waste oil UST was also reportedly removed. Additional information pertaining to this investigation was reported in G&M's Site Assessment During Underground Storage Tank Removal report dated August 7, 1991.

1.3.3 MARCH 1992 – SOIL GAS SURVEY

On March 30 and 31, 1992, G&M subcontracted Tracer Research Corporation (Tracer) to conduct a soil-gas survey at the Site to determine the approximate distribution of hydrocarbons and potential locations for bioventing and monitoring wells. Fifteen soil-gas samples were collected and analyzed onsite by Tracer for total volatile hydrocarbons (TVH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). Soil-gas as TVH was detected in 10 of the soil-gas samples. The highest concentrations of TVH were detected in samples collected along the east side of the Site from sampling locations SG-1 at 11 feet bgs and SG-2 at 8 feet bgs. Additional information pertaining to this investigation was reported in Tracer's Shallow Soil Gas Investigation dated April 13, 1992.

1.3.4 AUGUST AND SEPTEMBER 1992 – MONITORING WELL AND BIOVENTING WELL INSTALLATION

Between August 18 and 21 1992, ARCO contracted G&M to install 10 soil borings at the Site. Five soil borings were subsequently completed as groundwater monitoring wells (MW-1 through MW-5), and five borings were completed as bioventing wells (BV-1 through BV-5). Petroleum hydrocarbon concentrations were detected above the MTCA Method A Cleanup Levels in soil samples collected from the borings for MW-1, MW-4, MW-5, BV 3, and BV-5. Groundwater samples were collected from each of the five monitoring wells on September 22, 1992. Groundwater samples collected from MW-2, MW-4, and MW-5 contained concentrations of dissolved petroleum hydrocarbons, BTEX, total petroleum hydrocarbons as diesel (TPH-D), and/or total lead in excess of

cleanup levels. LNAPL was subsequently measured in wells MW-4 and BV-3 in March 1993. Additional information pertaining to this investigation was reported in G&M's Site Characterization dated January 28, 1993.

1.3.5 1993 – MONITORING WELL INSTALLATION AND SOIL VAPOR EXTRACTION PILOT TEST

In early 1993, ARC contracted G&M to install four additional soil borings to further delineate soil and groundwater contamination at the Site. Two soil borings were subsequently completed as groundwater monitoring wells (MW-6 and MW-7), and two borings were completed as bioventing wells (BV-6 and BV-7). In addition to the subsurface investigation, a soil vapor extraction (SVE) feasibility test was conducted on select bioventing wells. Soil samples collected from MW-6 and BV-7 contained concentrations of petroleum hydrocarbons in excess of cleanup levels. Additional information pertaining to this investigation was reported in G&M's Additional Site Characterization and Soil Vapor Extraction Field Testing report dated July 12, 1993.

1.3.6 SEPTEMBER 1993 – OFFSITE INVESTIGATION

James P. Hurley and Company (JPHC) completed Phase I and Phase II Environmental Site Assessments (ESA) for the adjacent property located at 10800 Roosevelt Way NE, located just south of the ARCO station (Caribbean Apartments). The Phase II ESA included the installation of three soil borings on the Caribbean House Apartments property, two of which were completed as groundwater monitoring wells B1 (JPHC) and B3 (JPHC). The results of the assessment indicated the presence of elevated hydrocarbon concentrations in soil and groundwater. Additional information pertaining to this investigation was reported in JPHCs Phase II Environmental Site Assessment Report dated November 20, 1993.

1.3.7 1994 – OFFSITE INVESTIGATION AND WELL INSTALLATION

In early 1994, G&M completed a subsurface investigation on the Caribbean House Apartments property. The investigation consisted of the installation of nine soil borings. Three soil borings were completed as groundwater monitoring wells (MW-8 through MW-10), two as nested pressure and vacuum monitoring wells (VP-1 and VP-2), one soil vacuum extraction well nested with one air sparge well (SVE-1/AS-1) one SVE well (SVE-2), and two air sparge wells (AS-2 and AS-3). Additional information pertaining to this investigation was reported in G&M's Off-Site Assessment dated July 7, 1994.

1.3.8 SEPTEMBER 1994 – SOIL VAPOR EXTRACTION SYSTEM INSTALLATION

In September 1994, G&M installed a soil vapor extraction system with a combination thermal and catalytic oxidizer at the Site. The SVE system extracted from wells BV-3, BV-7 and MW-5. The SVE system was started in November 1994 by Delta Consultants (Delta).

1.3.9 MARCH 1995 – AIR SPARGE PILOT TEST

In March and April 1995, Delta oversaw the installation of two air sparge wells (AS-4 and AS-5), and one monitoring well (MW-11) at the Site. Soil samples AS-5-12 and MW-11-17 contained concentrations of total petroleum hydrocarbons as gasoline (TPH-G) at 1,200 parts per million (ppm) and 140 ppm, respectively. Concentrations of BTEX were detected in AS-5-12, ranging from 4.7 ppm (benzene) to 240 ppm (xylenes). Following installation of the air sparge wells, Delta completed an air sparge pilot test on the newly installed air sparge wells with favorable results. Additional information pertaining to this investigation was reported in Delta's Air Sparging Pilot Test Report dated November 8, 1995.

1.3.10 APRIL 1996 – REMEDIATION SYSTEM UPGRADES

In April 1996, the remediation system was shut down for system upgrades. Remediation system upgrades included the addition of air sparge components, the enlargement of existing SVE wells from 2 to 4-inch diameter wells and installing more SVE and air sparge wells. The remediation system was restarted on May 1, 1996.

1.3.11 JULY 1996 – ADDITIONAL ASSESSMENT

In July 1996, Delta oversaw the installation of soil borings B-4 and B-5 and monitoring well MW-12 on the Caribbean House Apartments property for additional assessment and delineation of soil and groundwater impacts. Soil analytical results indicated concentrations of TPH-G and/or benzene from sample B-4 and 20 feet bgs and MW-12 at 10 feet bgs. Additional information pertaining to this investigation was reported in Delta's Offsite Assessment Activities Report dated July 1996.

1.3.12 SEPTEMBER 1997 – ENHANCED FLUID RECOVERY PROGRAM

In September 1997, Delta began an enhanced fluid recovery (EFR) program for the recovery of LNAPL and petroleum hydrocarbon impacted groundwater from wells located on the Site and the Caribbean House Apartments property. EFR events were conducted through 2003. Details on volumes recovered are included in groundwater monitoring reports for the Site.

1.3.13 OCTOBER 1999 – AIR SPARGE SYSTEM SHUTDOWN

In October 1999, the air sparge portion of the remediation system was shut down.

1.3.14 AUGUST 2002 – TEMPORARY SYSTEM SHUTDOWN

In August 2002, the SVE system was shut down to evaluate LNAPL rebound.

1.3.15 OCTOBER 2005 – REMEDIATION SYSTEM EXPANSION

In October 2005, Delta oversaw the installation of additional remediation wells at the Site. In preparation for the installation of a dual phase extraction (DPE) remediation system, six extraction wells (EX-1 through EX-6) were installed along the southern portion of the ARCO property. Soil samples were collected during extraction well installation. Soil analytical results indicated the presence of benzene and TPH-G in the soil samples collected from EX-4 at 16.5 and 21 feet bgs. The system was tested and optimized before being placed in full-time operation in the first quarter 2008. The DPE system operated at the Site until fourth quarter 2012, when it was shut down and subsequently removed in August 2014. A total of 6,583,867 gallons of water was treated and discharged to sanitary sewer during the operational lifetime of the DPE system. Additional information was reported in and Delta's Remediation System Installation Report dated April 11, 2008.

1.3.16 DECEMBER 2014 – INJECTION WELL INSTALLATION

In December 2014, Innovex Environmental Management, Inc. (Innovex) personnel oversaw the installation of four injection wells IW-1 through IW-4 on the Caribbean House Apartments property to address remaining dissolved-phase and soil bound hydrocarbon impacts.

1.3.17 APRIL 2016 – HYDROGEN PEROXIDE INJECTION

In April 2016, Innovex contracted In-Situ Oxidative Technologies, Inc. (Isotec) to conduct injection of stabilized hydrogen peroxide in injection wells IW-1 through IW-4. On April 19, 2016, injection well IW-2 received 50 gallons of ferrous iron catalyst followed by 50 gallons of stabilized hydrogen peroxide. While preparing for injection in IW-1 Innovex measured and confirmed the presence of approximately 0.25 inches of LNAPL in IW-1.

Injections were stopped due to health and safety concerns associated with hydrogen peroxide application into free LNAPL.

1.3.18 JULY 2017 – VAPOR INTRUSION EVALUATION

In February and June 2017, PBS Engineering and Environmental Inc. (PBS) conducted a vapor intrusion evaluation at the Caribbean House Apartments property to determine whether petroleum contamination associated with the Site has the potential to adversely affect indoor air at the Apartments. Three vapor probes (SV-1 through SV-3) were installed along the north and east sides of the building. Vapor sampling was conducted on February 14, 2017. During this event, SV-2 and SV-3 contained water and were therefore unable to be sampled. The vapor sample from SV-1 contained naphthalene above the Ecology Screening Level (ESL). A second soil vapor sampling event was conducted on June 23, 2017 during which SV-3 still contained water. Samples were collected from SV-1 and SV-2, both of which contained naphthalene above the ESL. Additional information pertaining to this investigation was reported in PBS's Vapor Intrusion Evaluation dated July 2017.

1.3.19 NOVEMBER 2017 – VAPOR INTRUSION AND INDOOR QUALITY INVESTIGATION

In October 2017, PBS conducted a vapor intrusion and limited indoor air quality investigation at the Caribbean House Apartments to determine if indoor air had been affected by soil vapor intrusion. Indoor and outdoor air samples were collected over 8-hour sampling intervals to compare indoor air to ambient air conditions. No volatile organic compounds (VOC) concentrations exceeded the California Office of Environmental Health Hazard Assessments reference exposure levels adopted by PBS as the most protective cleanup standards for residential receptors. Additional information pertaining to this investigation was reported in PBS's Vapor Intrusion and Indoor Air Quality Investigation dated November 17, 2017.

1.3.20 DECEMBER 2018 – ORPHAN TANK DECOMMISSIONING

On December 12, 2018, Antea Group was notified of the presence of an unknown oily substance in an open trench cut at ARCO facility 980. Upon arrival at the site, Antea Group personnel observed the accumulated fluid and collected a sample for profiling. Laboratory analysis identified the fluid as a light, oil-range petroleum product with a chromatogram characteristic of transmission or hydraulic fluid. Between December 12 and 18, 2018, a previously unidentified 140-gallon oil tank was discovered and removed from the Site. Approximately 175 gallons of a mixture of oil, stormwater, sludge, soil, and rinse water was removed from the tank prior to removal from the ground on December 18, 2018. An area approximately 8 feet wide, 8 feet long, and 6 feet deep was excavated from around the tank to remove petroleum impacted soil. Soil samples contained petroleum hydrocarbon impacts in excess of the MTCA Method A Cleanup Levels. On January 2 and 3, 2019, additional soil was removed to extend each sidewall 3 to 4 feet beyond the prior limit and an additional 1 foot of soil was removed from the bottom of the excavation. Following removal of additional soil from the sidewalls, soil samples collected from the north, south and east sidewalls still contained petroleum hydrocarbon impacts in excess of the respective MTCA Method A Cleanup Levels. Due to the limits imposed by buried utilities and fuel dispensers in the area, no additional soil was removed. Additional information pertaining to this investigation was reported in Antea Group's Underground Storage Tank Removal Report dated May 13, 2019.

1.3.21 NOVEMBER 2018 AND JANUARY 2019 – VAPOR PROBE INSTALLATION AND NEAR-SLAB SOIL VAPOR SAMPLING

Antea Group oversaw the installation of four soil borings to depths between 5 and 8.25 feet bgs using a hand auger and subsequently completing them as soil vapor probes on November 11 and November 27, 2018. Soil samples were collected at approximately 5 feet bgs in borings SB-1 and SB-2; 5 feet and 8 feet in SB-3; and 3 feet and 4.5 feet in SB-4. Laboratory analytical results did not indicate petroleum hydrocarbons in excess of MTCA

Method A Cleanup Levels. Well screen intervals were positioned from 5.5 to 6 feet bgs in SG-1, from 5 to 5.5 feet bgs in SG-2, from 7.75 to 8.25 feet bgs in SG-3, and 4.5 to 5 feet bgs in SG-4. The depth to groundwater has historically ranged from 12.36 to 18.83 feet bgs in the vicinity of SG-1, from 8.65 to 21.82 in the vicinity of SG-2 and SG-3, and from 5.54 to 17.30 feet bgs in the vicinity of SG-4. The soil vapor probes were constructed in accordance with the provisions set forth in the Petroleum Vapor Intrusion Guidance Document prepared by The Interstate Technology & Regulatory Council (ITRC) Petroleum Vapor Intrusion Team, dated October 2014. Following vapor probe installation, soil vapor conditions were allowed to equilibrate for more than one month before sampling. Antea Group conducted seasonal soil vapor sampling from vapor probes SG-1 and SG-4 on January 15, 2019 and SG-2 on January 30, 2019. A soil vapor sample was not collected from SB-3 due to the presence of water. Laboratory analytical results indicated concentrations of BTEX, MTBE, naphthalene, and hexane were not detected in excess of Washington State ESLs in any of the samples collected. A second round of soil vapor sampling was completed on August 27, 2019 and samples were collected from SG-1, SG-2, SG-3, and SG-4. Laboratory analytical results indicated concentrations of BTEX, MTBE, naphthalene, and hexane were not detected in excess of Washington State ESLs in any of the samples collected. Additional information pertaining to this investigation was reported in Antea Group's Soil Vapor Probe Installation and Soil Vapor Sampling Report dated January 7, 2020.

1.3.22 SEPTEMBER 2019 – SITE INVESTIGATION

On September 9th and 10th, 2019 Antea Group oversaw the installation of four soil borings converted to permanent monitoring wells MW-13, MW-14, MW-15, and MW-16. Soil samples collected from MW-13 at 8, 10, and 14 feet bgs exceeded the TPH-G MTCA Method A Cleanup Level at concentrations of 930 milligrams per kilogram (mg/kg), 340 mg/kg, and 120 mg/kg, respectively. The soil sample collected from MW-15 at 5 feet bgs contained a total concentration of combined carcinogenic PAHs of 0.17385 mg/kg. Under WAC 173-340-708(8), Toxicity Equivalency Factors (TEF) are defined to establish Cleanup Levels for carcinogenic PAHs. When PAH concentrations are corrected for toxicity, the total concentration of combined carcinogenic PAHs is 0.03567, which is below the MTCA Method A Cleanup Level for combined carcinogenic PAHs. All other soil samples collected from MW-13, MW-14, MW-15, and MW-16 did not exceed MTCA Method A Cleanup Levels for benzene, TPH-G, TPH-D, or total petroleum hydrocarbons as oil (TPH-O). Groundwater analytical results from MW-13, MW-15, and MW-16 exceeded MTCA Method A Levels for one or more of the following; benzene, TPH-G, TPH-D, or TPH-O. Additional information pertaining to this investigation was reported in Antea Group's Subsurface Investigation Report dated November 18, 2019.

1.4 CURRENT SITE STATUS

The Site is listed on Ecology's Leaking Underground Storage Tanks (LUST) list with facility site ID 68996432. The Site was enrolled in Ecology's Voluntary Cleanup Program (VCP) with VCP ID NW2729 but was subsequently terminated from the program in February 2017. All remedial activities are currently being conducted as an independent cleanup action outside of the VCP. The current status on Ecology's database is "Cleanup Started". There are currently eight monitoring wells on the ARCO property and thirteen monitoring wells on or surrounding the Caribbean Apartments property. Currently, monitoring wells MW-2, MW-4, MW-8 through MW-16, and B1(JPHC) are sampled on a semi-annual basis. The new monitoring wells MW-17, MW-18, and MW-19 will be added to the semi-annual groundwater monitoring schedule.

2.0 PROJECT ACTIVITIES

2.1 DRILLING AND SOIL SAMPLING

The subsurface investigation included advancing a total of three soil borings to a maximum depth of 22 feet bgs. All three borings were completed as groundwater monitoring wells MW-17, MW-18, and MW-19. The soil borings and monitoring well locations are presented on Figure 3.

Cascade Drilling, Inc. (Cascade), of Tacoma, Washington completed the borings and well installation activities in November 2020. Cascade began borehole clearance on November 17, 2020, using a vacuum truck and air-knife to clear each boring to a minimum depth of 6.5 feet bgs. Air-knife and vacuum truck operations were ceased at 1.5 feet bgs and again at 3.5 feet bgs and soil samples were collected from 3 feet bgs and 5 feet bgs utilizing a hand auger that was advanced into the undisturbed soil 18 inches ahead of the pre-cleared boring. The hand auger was washed with soap and water followed by a clean water rinse before each use.

On November 18, 2020, drilling activities began at monitoring well MW-17 using a track mounted limited access sonic drill rig. Soil samples were collected from MW-17, MW-18, and MW19 using a 6-inch diameter core barrel advanced ahead of the drill casing to collect continuous core soil samples. Soil samples were transferred from the core barrel to clean, single-use plastic bags for observation and collection of laboratory samples. Drill casing and sample barrels were decontaminated using detergent and a water pressure washer between boring locations.

Soil samples were collected to characterize subsurface lithology and to provide samples for chemical analyses. Antea Group personnel observed and logged the borings using the Unified Soil Classification System. After collection, each soil sample was field screened for the presence of volatile organic compounds with a photoionization detector (PID) to aid in the selection of representative soil samples for chemical analysis. Discrete soil samples were collected for analytical testing based on depth, indications of petroleum contamination, and moisture content. A total of 10 soil samples were submitted to Eurofins-TestAmerica Laboratory (Eurofins-TestAmerica) in Tacoma, Washington for quantitative chemical analysis following standard chain-of-custody procedures.

The field procedures used during the investigation are provided in Appendix A. Boring logs describing soil horizons, sample recovery, PID screening values, and well completion details are presented in Appendix B.

2.2 MONITORING WELL COMPLETION

Monitoring wells MW-17, MW-18, and MW-19 were constructed of 2-inch diameter schedule 40 PVC with 0.010-inch slotted screen. The screened interval of monitoring wells MW-17, MW-18, and MW-19 were 7 to 22 feet bgs, 5 to 20 feet bgs, and 5 to 20 feet bgs, respectively. The annular space of the borings was filled with sand to approximately 2 feet above the screen, followed by a hydrated bentonite chip seal to approximately 18 inches bgs. Each well was completed to ground surface with concrete from the top of the bentonite seal and a flush-mounted well monument.

2.3 WELL DEVELOPMENT AND SURVEYING

On November 19, 2020, monitoring wells MW-17 and MW-19 were developed to remove fine grained sediments from the sand filter pack. Monitoring well MW-18 was developed on November 20, 2020. Development was conducted using a submersible pump to remove a minimum of ten casing volumes or until the groundwater

from the monitoring well ran clear. On November 19, 2020, the top of casing (TOC) for each well was surveyed relative to an existing Site monitoring well. Elevations were surveyed to the nearest 0.01 foot.

2.4 ON-SITE CONTAINMENT OF DRILL CUTTINGS AND DECONTAMINATION WATER

Soil cuttings and decontamination water generated from the subsurface investigation were properly labeled, sealed, and temporarily stored in 55-gallon drums onsite. On December 14, 2020, an Antea Group representative met Cascade personnel onsite for removal of the investigation derived waste. The drums were transported by Cascade to Clean Earth of Kent, WA for treatment and disposal of the soil cuttings and decontamination water. The soil and decontamination water disposal documents are included in Appendix C.

2.5 GROUNDWATER SAMPLING

On December 14, 2020, Antea Group collected groundwater samples from the newly installed monitoring wells MW-17, MW-18, and MW-19. Prior to sampling, groundwater levels were measured using an oil/water interface probe. Groundwater samples were collected using low-flow sampling methods. The samples were collected using a peristaltic pump and dedicated LDPE and silicone tubing for purging while collecting water quality readings and samples from each well. Water quality readings were collected for each well by pumping water through a flow-through cell of a water quality meter at a rate of less than 1 liter per minute. Measurements are recorded for temperature, electrical conductivity, pH, oxidation reduction potential (ORP), dissolved oxygen (DO), turbidity, and/or total dissolved solids (TDS) at 3 to 5-minute intervals until each parameter stabilized. The flow-through cell was disconnected from the pump tubing and samples for laboratory analysis were collected directly from the tubing. The groundwater samples were submitted to Eurofins-TestAmerica for quantitative chemical analysis in accordance with standard chain-of-custody procedures.

3.0 PROJECT RESULTS

3.1 SITE GEOLOGY AND HYDROGEOLOGY

The area is in the Puget Sound Lowland geomorphic province, which consists mainly of glacially-deposited sediments. The Puget Sound Lowland is a basin lying between the Cascade Mountains to the east and the Olympic Mountains (coastal range) to the west. At least five major advances of continental glacial ice have been identified as having occurred in the Puget Sound Lowlands. Geologic units resulting from these glacial events include complex sequences of lacustrine deposits, advance outwash, glaciomarine drift, till, and recessional outwash. More recent erosional processes have deposited alluvial sand and gravel, primarily along river valleys. The Site vicinity is underlain by Alderwood Soils, which is a Quaternary stratified sequence consisting of sandy loam with varying amounts of gravel. In addition, Alderwood soils are considered hydrologically as Class C, which indicates slow infiltration rates with layers impeding downward movement of water, or soils with moderately fine or fine textures. Soils observed at the Site during previous investigations include dense to very dense silty sand, sand, gravelly sand, and sandy gravel.

3.2 SUBSURFACE LITHOLOGIC CONDITIONS

Soils encountered during this investigation consisted of silty sand and very fine to very coarse sand with some mixtures containing cobbles and gravels. Moist to wet soils were encountered beginning at depths between 3 and 20 feet bgs. Detailed soil descriptions are presented in the boring logs in Appendix B.

3.3 QUANTITATIVE CHEMICAL ANALYSIS

3.3.1 SOIL ANALYTICAL

Soil samples were analyzed for the presence of the following constituents:

- BTEX, MTBE, dibromoethane (EDB), dichloroethane (EDC) by EPA Method 8260D.
- TPH-G by Northwest Method NWTPH-Gx.
- TPH-D and TPH-O by Northwest Method NWTPH-Dx; and
- Total lead by EPA Method 6010D.

Quantitative laboratory analysis from the November 2020 drilling event indicated that concentrations of the analyzed constituents were not detected above laboratory method reporting limits and/or MTCA Method A Cleanup Levels in any of the samples collected.

Soil analytical results are summarized in Table 1. The Soil Analytical Data Map is presented on Figure 3. A copy of the Soil Laboratory Analytical Report is included in Appendix D.

3.3.2 GROUNDWATER ANALYTICAL

Groundwater samples were analyzed for the presence of the following constituents:

- BTEX by EPA Method 8260D.
- TPH-G by Northwest Method NWTPH-Gx.
- TPH-D and TPH-O by Northwest Method NWTPH-Dx; and
- Total and dissolved lead by EPA Method 6020B.

Quantitative laboratory analysis from the December 14, 2020 sampling event indicated that concentrations of the analyzed constituents were not detected above laboratory method reporting limits and MTCA Method A Cleanup Levels in any of the samples collected.

The groundwater elevation data is summarized in Table 2, groundwater analytical data is summarized in Table 3, and the Groundwater Elevation and Analytical Data Map is presented on Figure 4. A copy of the Groundwater Laboratory Analytical Report is included in Appendix E.

4.0 SUMMARY

In November 2020, two soil borings were advanced at the Caribbean Apartments property and one soil boring was advanced on the property southeast of the Caribbean Apartments building. The three borings were completed as groundwater monitoring wells (MW-17, MW-18, and MW-19). Each monitoring well was constructed with a 2-inch diameter schedule 40 PVC well casing. A total of 10 soil samples were submitted to Eurofins-TestAmerica for quantitative chemical analysis. Laboratory analytical results indicated that concentrations of petroleum hydrocarbons were not detected above laboratory method reporting limits and/or MTCA Method A Cleanup Levels in any of the samples collected. Groundwater was sampled from the new monitoring wells MW-17, MW-18, and MW-19 on December 14, 2020. All samples were submitted to Eurofins-TestAmerica for quantitative chemical analysis. None of the December 2020 groundwater samples submitted for analysis contained hydrocarbon concentrations in excess of laboratory method reporting limits and/or MTCA Method A Cleanup Levels.

5.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by

Marissa Bernard

Date: February 19, 2021

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Project Manager

Reviewed by:

State of Washington
3157
Licensed Geologist
MEGAN RICHARD

Date: February 19, 2021

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Senior Project Manager

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7.0 REFERENCES

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Antea Group. 2019. “Underground Storage Tank Removal Report”. May 13.
Antea Group. 2020. ”Soil Vapor Probe Installation and Soil Vapor Sampling Report”. January 7.
Antea Group. 2019. ”Subsurface Investigation Report”. November 18.

Tables

Table 1
Soil Analytical Data
ARCO Facility 980
10822 Rosevelt Way NE, Seattle, WA 98125

CONSTITUENT			B	T	E	X	MTBE	EDB	EDC	TPH-G	TPH-D	TPH-O	Lead
UNIT			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MTCA METHOD A			**0.03**	**7**	**6**	**9**	**0.1**	**0.005**	**NGV**	**30**	**2000**	**2000**	**250**
Location ID	Sample Date	Sample Depth											
MW-17	11/17/2020	5	< 0.0024	< 0.012	< 0.0024	< 0.012	< 0.0024	< 0.0012	< 0.0012	< 6.4	< 56	< 56	9.7
MW-17	11/18/2020	10	< 0.0016	< 0.0080	< 0.0016	< 0.0080	< 0.0016	< 0.00080	< 0.00080	8.9 H	< 49	< 49	2.1
MW-17	11/18/2020	15	< 0.0017	< 0.0086	< 0.0017	< 0.0086	< 0.0017	< 0.00086	< 0.00086	< 4.6	< 54	< 54	2.5
MW-18	11/17/2020	5	< 0.0020	< 0.010	< 0.0020	< 0.010	< 0.0020	< 0.0010	< 0.0010	< 6.8	< 61	< 61	6.9
MW-18	11/19/2020	12	< 0.0017	0.013	0.0030	0.017	< 0.0017	< 0.00083	< 0.00083	< 6.3	< 54	< 54	1.9
MW-18	11/19/2020	16	< 0.0016	< 0.0080*3	< 0.0016*3	< 0.0080	< 0.0016*	< 0.00080*3	< 0.00080	< 5.4	< 57	< 57	2.0
MW-19	11/17/2020	3	< 0.0018	< 0.0088	< 0.0018	< 0.0088	< 0.0018	< 0.00088	< 0.00088	< 5.0	< 54	< 54	10
MW-19	11/19/2020	5	< 0.0018	0.043	0.011	0.065	< 0.0018	< 0.00088	< 0.00088	< 7.0	< 57	< 57	3.1
MW-19	11/18/2020	10	< 0.0018	< 0.0089	< 0.0018	< 0.0089	< 0.0018	< 0.00089	< 0.00089	10	< 52	< 52	2.2

NOTES:

Results in bold exceed applicable action limits

NGV = No given value

mg/kg = milligrams/kilogram

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes, total

MTBE = Methyl-tert-butyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethene

TPH-G = Total petroleum hydrocarbons as gasoline

TPH-D = Total petroleum hydrocarbons as diesel

TPH-O = Total petroleum hydrocarbons as oil

< = Not detected at or above indicated laboratory reporting limit

F2 = MS/MSD RPD exceeds control limits

H = Sample was prepped or analyzed beyond the specified holding time

* = LCS or LCSD is outside acceptance limits.

*3 = ISTD response or retention time outside acceptable limits.

Table 2
Groundwater Gauging Data
ARCO Facility 980
10822 Rosevelt Way NE, Seattle, WA 98125

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-17	12/14/2020	253.47	11.10	NP	--	242.37	--
MW-18	12/14/2020	249.67	8.47	NP	--	241.20	--
MW-19	12/14/2020	249.21	8.17	NP	--	241.04	--

Notes:
TOC - Top of Casing
ft - feet
NP - No Product
LNAPL - Light Non-Aqueous Phase Liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
-- No Information Available

Table 3
Groundwater Analytical Data
ARCO Facility 980
10822 Rosevelt Way NE, Seattle, WA 98125

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O	Total Lead	Dissolved Lead
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		**5**	**1000**	**700**	**1000**	**1000/800[1]**	**500**	**500**	**15**	**15**
Well ID	Date									
MW-17	12/14/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350	< 4.0	< 4.0
MW-18	12/14/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 350	< 4.0	< 4.0
MW-19	12/14/2020	< 3.0	< 2.0	< 3.0	< 3.0	< 250	< 110	< 360	< 4.0	< 4.0

Notes:

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes, Total

TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx

TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx

1,000/800[1] ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L

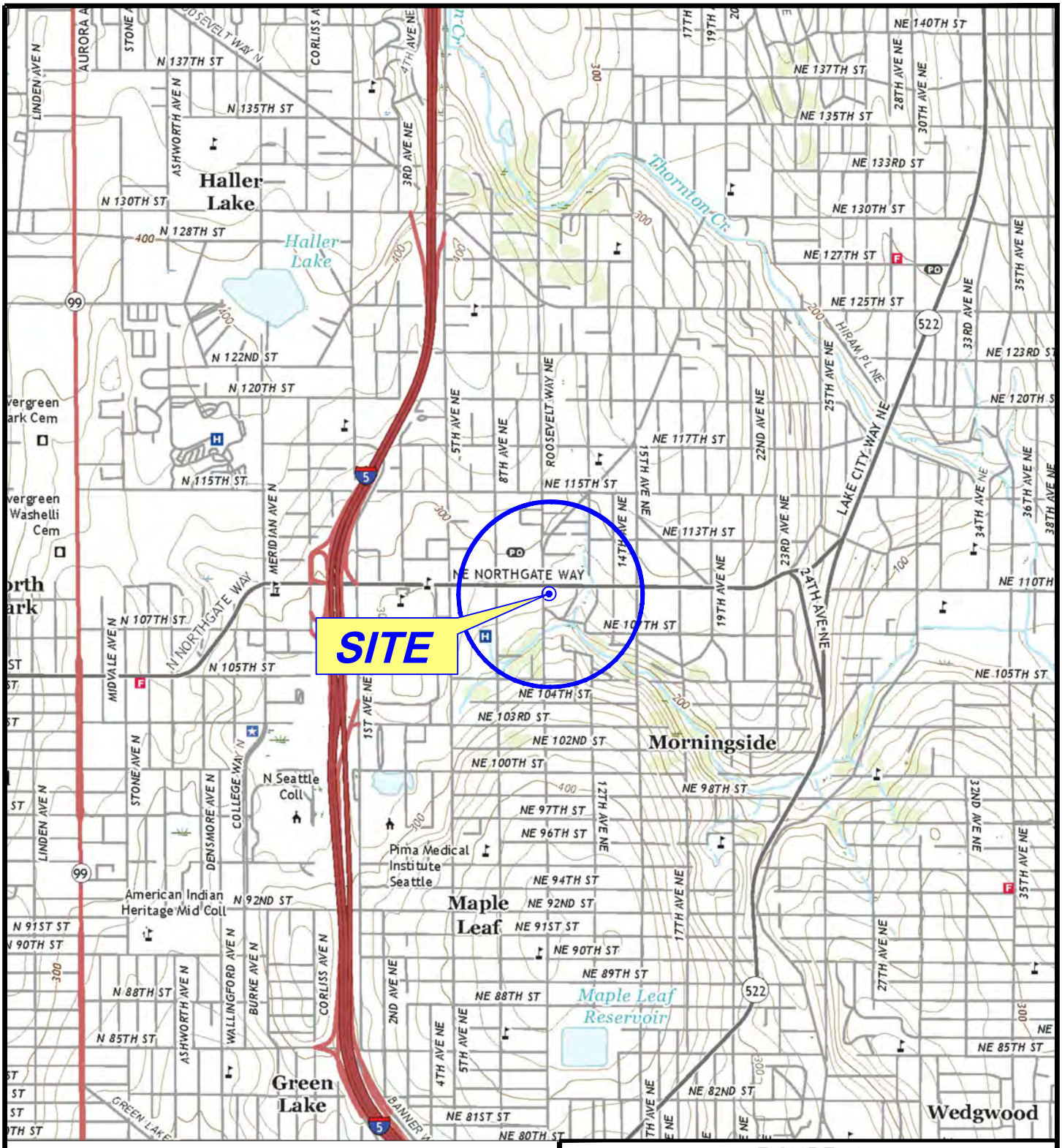
<1.0 = Concentrations were not detected above the laboratory method reporting limit.

ug/L = Micrograms per liter (ppb)

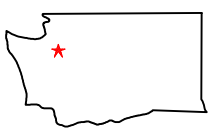
-- = No value given/Not analyzed/Not applicable

MTCA = Model Toxics Control Act

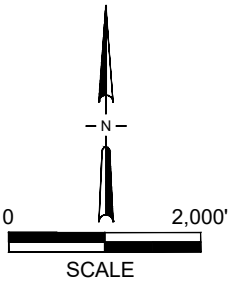
Figures



GENERAL NOTES:
BASE MAP FROM TOPO!
SEATTLE NORTH E., WA. QUADRANGLE
7.5 MINUTE TOPOGRAPHIC MAP



QUADRANGLE LOCATION



SCALE

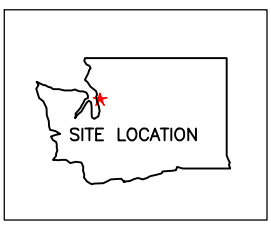
FIGURE 1
SITE LOCATION MAP

ARCO FACILITY NO. 980
10822 ROOSEVELT WAY NE
SEATTLE, WASHINGTON

PROJECT NO. 00980SA201		DRAWN BY J. HIGHFILL	
FILE NO. 0980-SLM18		PREPARED BY M. BERNARD	
DATE 12 Dec 18	REV. 0	REVIEWED BY	

antea group

GENERAL NOTES:
BASE MAP FROM GOOGLE EARTH 2018



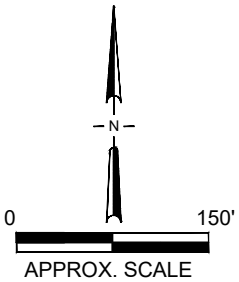
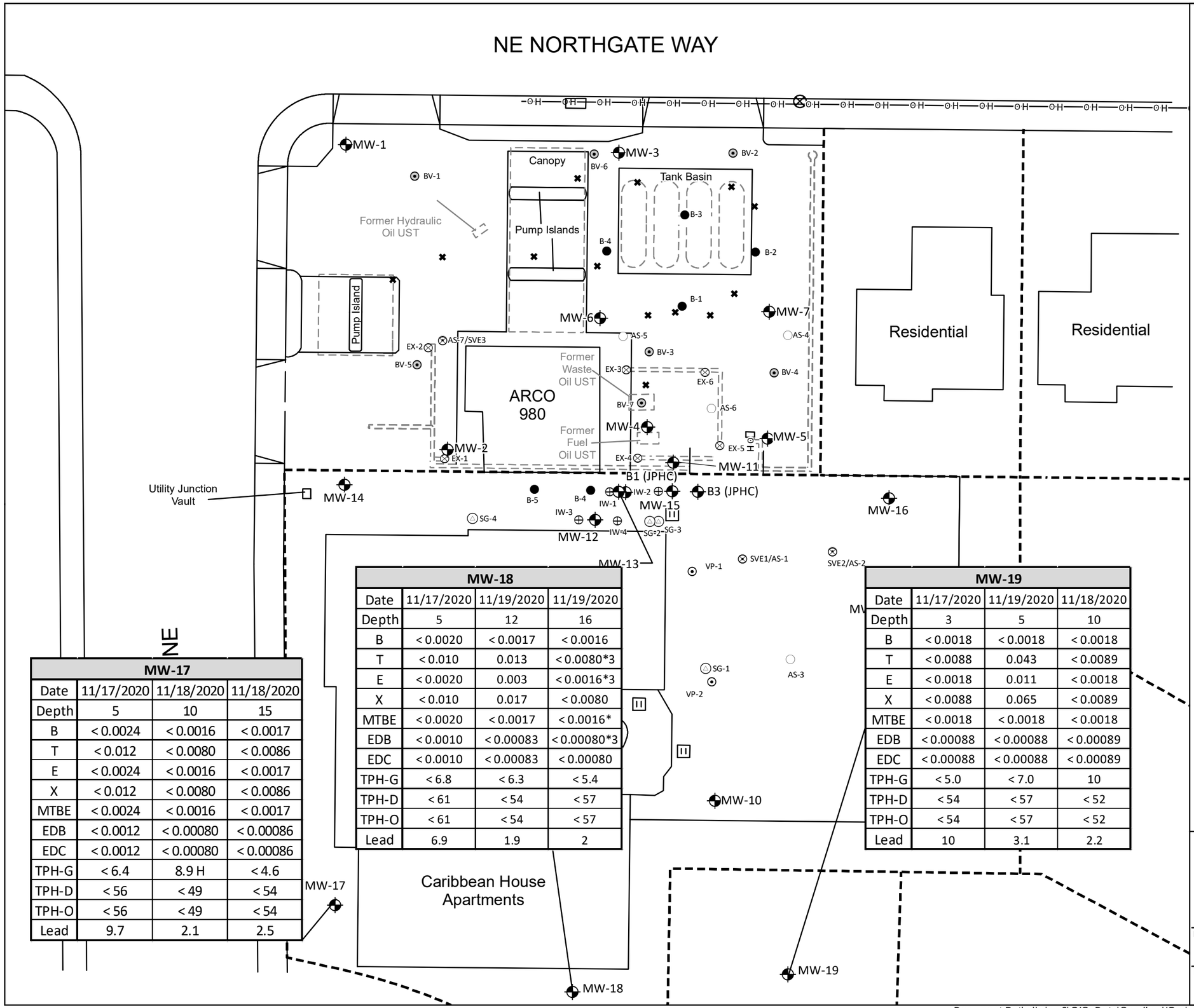


FIGURE 2
SITE AERIAL MAP

ARCO FACILITY NO. 0980
10822 ROOSEVELT WAY NE
SEATTLE, WASHINGTON

PROJECT NO. 00980SA201	DRAWN BY J. HIGHFILL	
FILE NO. 980G-SAM18	PREPARED BY M. BERNARD	
DATE 12 DEC 18 / REV. 1	REVIEWED BY	

antea group



MW-17

Date	11/17/2020	11/18/2020	11/18/2020
Depth	5	10	15
B	< 0.0024	< 0.0016	< 0.0017
T	< 0.012	< 0.0080	< 0.0086
E	< 0.0024	< 0.0016	< 0.0017
X	< 0.012	< 0.0080	< 0.0086
MTBE	< 0.0024	< 0.0016	< 0.0017
EDB	< 0.0012	< 0.00080	< 0.00086
EDC	< 0.0012	< 0.00080	< 0.00086
TPH-G	< 6.4	8.9 H	< 4.6
TPH-D	< 56	< 49	< 54
TPH-O	< 56	< 49	< 54
Lead	9.7	2.1	2.5

MW-18

Date	11/17/2020	11/19/2020	11/19/2020
Depth	5	12	16
B	< 0.0020	< 0.0017	< 0.0016
T	< 0.010	0.013	< 0.0080*3
E	< 0.0020	0.003	< 0.0016*3
X	< 0.010	0.017	< 0.0080
MTBE	< 0.0020	< 0.0017	< 0.0016*
EDB	< 0.0010	< 0.00083	< 0.00080*3
EDC	< 0.0010	< 0.00083	< 0.00080
TPH-G	< 6.8	< 6.3	< 5.4
TPH-D	< 61	< 54	< 57
TPH-O	< 61	< 54	< 57
Lead	6.9	1.9	2

MW-19

Date	11/17/2020	11/19/2020	11/18/2020
Depth	3	5	10
B	< 0.0018	< 0.0018	< 0.0018
T	< 0.0088	0.043	< 0.0089
E	< 0.0018	0.011	< 0.0018
X	< 0.0088	0.065	< 0.0089
MTBE	< 0.0018	< 0.0018	< 0.0018
EDB	< 0.00088	< 0.00088	< 0.00089
EDC	< 0.00088	< 0.00088	< 0.00089
TPH-G	< 5.0	< 7.0	10
TPH-D	< 54	< 57	< 52
TPH-O	< 54	< 57	< 52
Lead	10	3.1	2.2

LEGEND

- GROUNDWATER MONITORING WELL
- AIR SPARGING WELL LOCATION
- EXTRACTION WELL LOCATION
- SOIL VAPOR EXTRACTION WELL
- INJECTION WELL LOCATION INSTALLED BY INNOVEX
- SOIL VAPOR EXTRACTION / VACUUM PRESSURE MONITORING POINT
- BIOVENTING WELL LOCATION
- SOIL GAS PROBE LOCATION
- SOIL BORING LOCATION
- SOIL SAMPLING LOCATION
- PROPERTY BOUNDARY
- SITE FEATURES
- FORMER SITE FEATURES
- OVERHEAD UTILITY LINES
- CATCH BASIN

MW-17	Well ID
Date	Sample Date
Depth	Sample Depth
B	Benzene
T	Toluene
E	Ethybenzene
X	Total Xylenes
MTBE	Methyl-tert-butyl ether
EDB	1,2-Dibromoethane
EDC	1,2-Dichloroethene
TPH-G	Total Petroleum Hydrocarbons as Gasoline
TPH-D	Total Petroleum Hydrocarbons as Diesel
TPH-O	Total Petroleum Hydrocarbons as Oil
Lead	Lead

Results in bold exceed applicable action limits
All results given in milligrams per kilograms (mg/kg)
< = Not detected at or above indicated laboratory reporting limit
J = Estimated concentration value detected below the reporting limit

0 5 10 20 30 40 Feet

N

FIGURE 3
SOIL ANALYTICAL DATA MAP
NOVEMBER 17-19, 2020
ARCO FACILITY NO. 980
10822 ROOSEVELT WAY NE
SEATTLE, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
00980SA201	JJ	1:360
DATE	REVIEWED BY	MAP SCALE
2/16/2021	MR	1 inch = 30 feet

antea group

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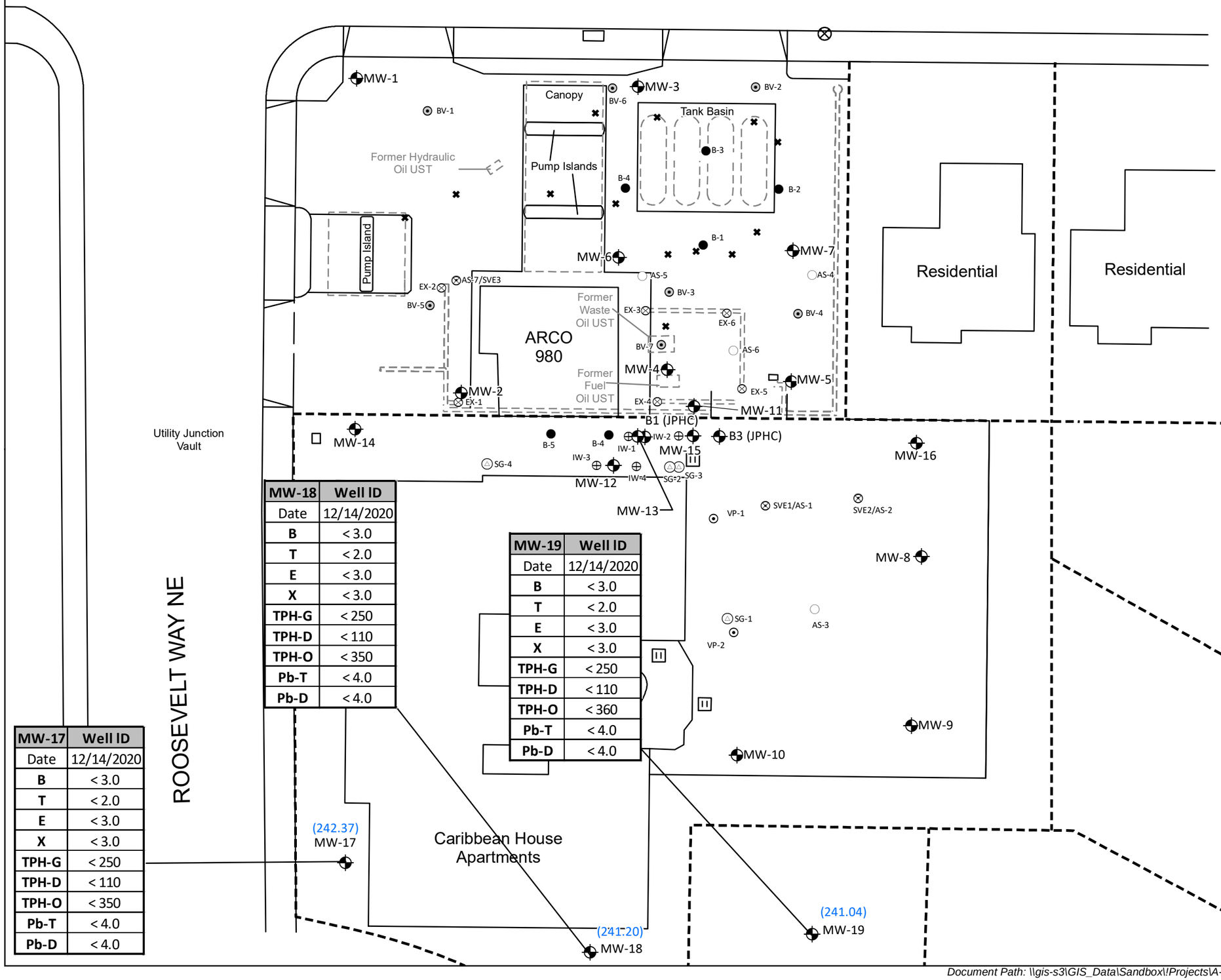
NE NORTHGATE WAY



MW-18	Well ID
Date	12/14/2020
B	< 3.0
T	< 2.0
E	< 3.0
X	< 3.0
TPH-G	< 250
TPH-D	< 110
TPH-O	< 350
Pb-T	< 4.0
Pb-D	< 4.0

MW-19	Well ID
Date	12/14/2020
B	< 3.0
T	< 2.0
E	< 3.0
X	< 3.0
TPH-G	< 250
TPH-D	< 110
TPH-O	< 360
Pb-T	< 4.0
Pb-D	< 4.0

MW-17	Well ID
Date	12/14/2020
B	< 3.0
T	< 2.0
E	< 3.0
X	< 3.0
TPH-G	< 250
TPH-D	< 110
TPH-O	< 350
Pb-T	< 4.0
Pb-D	< 4.0

LEGEND

- GROUNDWATER MONITORING WELL
- AIR SPARGING WELL LOCATION
- EXTRACTION WELL LOCATION
- SOIL VAPOR EXTRACTION WELL
- INJECTION WELL LOCATION INSTALLED BY INNOVEX
- SOIL VAPOR EXTRACTION / VACUUM PRESSURE MONITORING POINT
- BIOVENTING WELL LOCATION
- SOIL GAS PROBE LOCATION
- SOIL BORING LOCATION
- SOIL SAMPLING LOCATION
- PROPERTY BOUNDARY
- SITE FEATURES
- FORMER SITE FEATURES
- CATCH BASIN
- (241.04) Groundwater Elevation in Feet Referenced to the National Geodetic Vertical Datum (1929)

MW-13	Well ID
Date	Sample Date
B	Benzene
T	Toluene
E	Ethybenzene
X	Total Xylenes
TPH-G	Gasoline Range Organics
TPH-D	Diesel Range Organics
TPH-O	Oil Range Organics
Pb-T	Total Lead
Pb-D	Dissolved Lead

Results in bold exceed applicable action limits
All results given in micrograms per liter (ug/L)
< = Not detected at or above indicated laboratory reporting limit

0 5 10 20 30 40 Feet

N

FIGURE 4

GROUNDWATER ELEVATION AND ANALYTICAL DATA MAP
DECEMBER 14, 2020
ARCO FACILITY NO. 980
10822 ROOSEVELT WAY NE
SEATTLE, WASHINGTON

PROJECT NO.	PREPARED BY	REF SCALE
009805A201	MB	1:360
DATE	REVIEWED BY	MAP SCALE
2/16/2021	MR	1 inch = 30 feet

anteagroup

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Appendix A - Summary of Field Procedures and Quality Assurance Plan

FIELD PROCEDURES

The boring locations were marked, and the Utility Underground Location Center was contacted at least 72 hours before the Site walk was scheduled. A Site walk was conducted to visually inspect utility markers and indicators. Applied Professional Services, Inc. (APS) of North Bend, Washington was utilized to identify private subsurface utilities. APS swept a search zone of 15 feet in all directions surrounding the proposed boring locations. APS uses Metrotech 810 multi-frequency locators to identify conductive subsurface utilities. All utilities were marked in paint and recorded on a drawing/plot plan.

Prior to drilling, each boring location was cleared to a depth of at least 6.5 feet below ground surface (bgs) and 120 percent of the drilling tool diameter with an airknife, vacuum truck, and/or hand auger. Following utility clearing, all borings were advanced using a track-mounted sonic drill rig operated by Cascade Drilling, Inc. (Cascade). Discrete soil samples were collected from each boring to characterize site soils with respect to petroleum hydrocarbon impacts.

For shallow soil samples collected during borehole pre-clearance, Cascade would cease air knife and vacuum truck operations 1.5 feet above the desired sample depth, and a hand auger would be used to extend the boring to the desired depth. The hand auger was decontaminated between each sample. After collecting the shallow sample(s), Cascade continued to widen and clear the boring to 6.5 feet bgs. Soil samples at depths greater than 6.5 feet bgs were collected using a 4-inch diameter core barrel advanced ahead of the drill casing in order to continuously collect soils samples. Soil samples were transferred from the core barrel to clean, single-use plastic sleeves for observation and collection of laboratory samples.

Soil samples were collected directly from the hand auger and sample sleeves using a single-use syringe sampler and placed into laboratory-supplied 40-milliliter (mL) VOA vials preserved with methanol in accordance with Environmental Protection Agency (EPA) Method 5035A. Additional soil was placed into 4 to 8-ounce laboratory-supplied glass soil jars. The samples were labeled and immediately placed in cold storage until submitted to the laboratory for analysis. The samples were transported to Test America Laboratories, Inc. (Test America) for quantitative chemical analysis following chain-of-custody documentation.

After sample collection, soil was field screened for the presence of volatile organic compounds with a photoionization detector (PID) to aid in the facilitation of selecting representative soil samples for chemical analysis. The PID was a RAE Systems MiniRAE 3000 PID equipped with a 10.6 electron volt (eV) ultraviolet (UV) lamp and calibrated to a 100-ppm isobutylene calibration gas for direct readings in parts per million (ppm). The operating range of the detector is from 0 to 15,000 parts per million with a minimum detection limit of 0.1 ppm. It should be noted that the PID measurements are considered semi-quantitative data since the instrument detects all organic compounds with ionization potentials less than 10.2 eV. Clear plastic bags were filled to one-third to half capacity and then sealed. Soils in the bags were gently agitated to facilitate the breakup of any lumps and allowed to sit for approximately 10 minutes prior to analyzing the air above the soil in the bag. The PID probe was inserted into an opening of the plastic bag and the maximum vapor concentration was recorded for each soil sample collected.

ANALYTICAL METHODS

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to delivery to the laboratory. Each sample submitted for analysis was labeled and identified with the project number, date and time of sample collection, sampler, and sample number unique to the sample. This information, in addition to any field measurements, noted names of on-site personnel, and any other pertinent field observations were recorded in the field notes.

Upon arrival at the laboratory, the sample control personnel at the laboratory verified sample integrity and confirmed that the sample was collected in the proper container, packaged correctly, and that there was adequate volume of sample for the required analyses. The laboratory assigned a unique log number for identification of each sample throughout analyses and reporting. The log number was recorded on the chain of custody form and in the legally required logbook maintained in the laboratory. The sample description, date received, client name, and any other relevant information was recorded.

ANALYTICAL QUALITY ASSURANCE

In addition to routine calibration of the analytical instruments with standards and blanks, the analyst is required to run duplicates and spikes on 10 percent of the analyses to insure an added measure of precision and accuracy. Accuracy is also verified through the following:

- U.S. Environmental Protection Agency (EPA) and State certification programs.
- Participation in an inter-laboratory or "round-robin" quality assurance program.
- Verification of results with an alternative method. For example, calcium may be determined by atomic absorption, ion chromatography, or titrimetric methods.

ANALYTICAL METHODS

The analytical tests performed for this evaluation were chosen based upon standard requirements issued by the Washington State Department of Ecology. Select soil and groundwater samples collected during this investigation were analyzed by the following methods:

- Benzene, toluene, ethyl benzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), 1,2-Dibromoethane (EDB), and 1,2-Dichloroethane (EDC) by Environmental Protection Agency (EPA) Method 8260B/C;
- Total petroleum hydrocarbons as gasoline (TPH-G) by Northwest Method NWTPH-Gx;
- Total petroleum hydrocarbons as diesel (TPH-D) and total petroleum hydrocarbons as oil (TPH-O) by Northwest Method NWTPH-Dx;
- Total lead using EPA Method 6020A;
- Groundwater samples were analyzed for EDB by EPA method 8011;
- RCRA 8 Metals by EPA Method 6020A and EPA Method 7470A for waste disposal characterization purposes.

Appendix B - Boring Logs

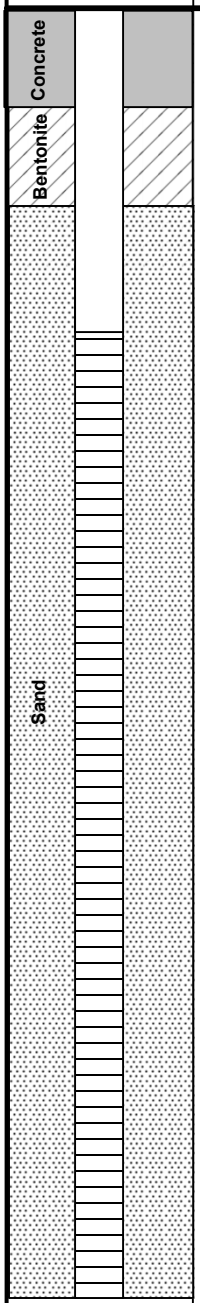
antea group	WELL/BORING: MW-17	Unique Ecology Well ID: BLZ 445
	INSTALLATION DATE: 11/17-18/20	DRILLING METHOD: Sonic
	PROJECT: ARCO 980	SAMPLING METHOD: HA/Continuous Core
	CLIENT: BP	BORING DIAMETER: 6"
	LOCATION: 10822 Roosevelt Way NE	BORING DEPTH: 22'
	CITY: Seattle	WELL CASING: SCH 40 PVC 2"
	STATE: WA	WELL SCREEN: 7' – 22' (0.010")
	DRILLER: Cascade Drilling, Inc.	SAND PACK: 5' – 22' (2 x 12)

CASING ELEVATION	253.47'	DTC:	5.5"								
SURVEY DATE:	11/19/2020										
DTW:	11.01										

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	Temperature	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Marissa Bernard
Concrete						1					Surface = Mulch
Bentonite						2					
			DMP	0.0	-	3			SM		Silty SAND: brown; 10% silt; 90% fine to very coarse sand; trace gravel.
						4					
			DMP	0.0	-	5			SM		Same as Above: very fine to medium sand; trace cobbles; trace organics.
						6					
						7					
			DRY	0.0	-	8			SM		Same as Above: lighter in color; increased gravel.
						9					
			-	0.1	-	10			SM		Same as Above: increased silt (2" lens)
Sand		▼	MST	-	-	11			SP		SAND: brown; trace silt; 80% medium to very coarse sand; 20% gravel.
			-	0.0	-	12			SM		Silty SAND: gray/brown; 20% silt; 80% very fine to fine sand.
						13					
			-	0.1	-	14			SM		Same as Above: very fine to medium sand; trace gravel and cobbles.
	▽		WET	-	-	15					
			-	0.1	-	16			SM		Same as Above: very fine to very coarse sand.
						17					
			MST	0.2	-	18			SP		SAND: grey iron staining; very fine to medium sand; trace gravel.
						19					
			MST	0.5	-	20			SP		Same as Above: no iron staining; no trace gravel.
						21					Boring completed at 22' bgs as monitoring well
						22					

antea group	WELL/BORING: MW-18	Unique Ecology Well ID: BLZ 355
	INSTALLATION DATE: 11/17-19/20	DRILLING METHOD: Sonic
	PROJECT: ARCO 980	SAMPLING METHOD: HA/Continuous Core
	CLIENT: BP	BORING DIAMETER: 6"
	LOCATION: 10822 Roosevelt Way NE	BORING DEPTH: 20'
	CITY: Seattle	WELL CASING: SCH 40 PVC 2"
	STATE: WA	WELL SCREEN: 5' – 20' (0.010")
	DRILLER: Cascade Drilling, Inc.	SAND PACK: 3' – 20' (2 x 12)

CASING ELEVATION	249.67' DTC: 3.25"
SURVEY DATE:	11/19/2020
DTW:	8.42



DEPTH (FEET)	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	Temperature	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Marissa Bernard
1										Surface = Asphalt
2										
3			DRY	0.0	-			SM		Silty SAND: brown; 10% silt; 80% very fine to medium sand; 10% gravel; trace organics.
4										
5			DMP	0.0	-			SM		Same as Above: increased gravel; no trace organics.
6										
7			DMP	-	-			SM		Same as Above: light brown; 90% very fine to medium sand; trace gravel.
8		▼	-	0.3	-					
9			DMP	-	-			SM		2" layer Same as Above: increased sand grain size (very fine to very coarse sand).
10			-	0.4	-			SM		Same as Above: decreased sand grain size (very fine to fine sand).
11										
12			MST	0.4	-			SM		Same as Above: 90% very fine to medium sand; trace gravel and cobbles.
13	▽		WET	-	-					
14			-	0.2	-					
15			WET	-	-					Same as Above: no cobbles.
16			-	0.6	-					
17										
18			MST	1.3	-			SM		Same as Above: more grey in color.
19										
20			MST	1.5	-			SM		Same as Above.
21										Boring completed at 20' bgs as monitoring well
22										

antea group	WELL/BORING: MW-19	Unique Ecology Well ID: BLZ 444
	INSTALLATION DATE: 11/17-18/20	DRILLING METHOD: Sonic
	PROJECT: ARCO 980	SAMPLING METHOD: HA/Continuous Core
	CLIENT: BP	BORING DIAMETER: 6"
	LOCATION: 10822 Roosevelt Way NE	BORING DEPTH: 20'
	CITY: Seattle	WELL CASING: SCH 40 PVC 2"
	STATE: WA	WELL SCREEN: 5' – 20' (0.010")
	DRILLER: Cascade Drilling, Inc.	SAND PACK: 3' – 20' (2 x 12)

CASING ELEVATION	249.21'	DTC:	4"	
SURVEY DATE:	11/19/2020			
DTW:	8.07			

DESCRIPTION/LOGGED BY: Marissa Bernard

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	Temperature	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete						1					Surface = Grass
Bentonite						2					
			MST	0.0	-	3			SP		SAND: brown; trace silt; 40% fine to very coarse sand; 60% gravel and cobbles.
	▽					4					@4.0 – 4.5' gravel/cobble layer
			WET	0.1	-	5			SP		SAND: greyish brown; fine to coarse sand; trace gravel.
						6					
						7					
		▼	DMP	0.3	-	8			SM		Silty SAND: light brown; 10% silt; 80% very fine to medium sand; 10% gravel and cobbles.
						9					
Sand			MST	0.6	-	10			SM		Silty SAND: grey; 20% silt; 80% very fine to medium sand; trace gravel.
						11					
			-	0.6	-	12					
			WET	-	-	13			SM		Same as Above: increased (80%) subangular and rounded gravel and cobbles.
			-	0.3	-	14					
						15					
			WET	0.3	-	16			SM		Silty SAND: brown; 10% silt; 60% fine to very coarse sand; 30% subangular gravel and cobbles.
						17					
			-	0.7	-	18			SM		Same as Above: greyish brown; 90% very fine to medium sand; 10% gravel.
						19			SM		Same as Above: brown; fine to very coarse sand; increased gravel.
			WET	0.6	-	20					
						21					Boring completed at 20' bgs as monitoring well
						22					

Appendix C - Waste Disposal Forms

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

GENERATOR'S/SHIPPER'S INITIAL COPY

Appendix D - Soil Laboratory Analytical Report and Chain-of-Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-99238-1
Client Project/Site: ARCO Facility No. 00980

For:
Antea USA Inc.
4006 148th Ave NE
Redmond, Washington 98052

Attn: Megan Richard

M. Elaine Walker

Authorized for release by:
12/7/2020 5:17:12 PM

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of Eurofins TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The signature on the cover page extends to the case narrative and all the data and forms in the package. The Chain of Custody is included and is an integral part of this report.

Elaine Walker
Project Manager II
12/7/2020 5:17:12 PM

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*3	ISTD response or retention time outside acceptable limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 580-99238-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative
580-99238-1

Receipt
Ten samples were received on 11/20/2020 11:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.2º C.

GC/MS VOA
Method 8260D: The laboratory control sample duplicate (LCSD) for preparation batch 580-344221 and analytical batch 580-344378 recovered outside control limits for the following analyte: m-Xylene & p0Xylene. The associated samples were reanalyzed outside hold time and both sets of data have been reported.

Method 8260D: Surrogate recovery for the following samples were outside control limits: MW-19.5_20201119 (580-99238-7), MW-18.12_20201119 (580-99238-8), and MW-18.16_20201119 (580-99238-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The laboratory control sample duplicate (LCSD) for preparation batch 580-344617 and analytical batch 580-344651 recovered outside control limits for the following analyte: Methyl tert-butyl ether. The analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Internal standard responses were outside of lower acceptance limits for the following sample: MW-18.16_20201119 (580-99238-9). The sample shows evidence of matrix interference, and a low IS response results in a high bias for target analytes. This sample was ND for all target analytes; therefore, the data have been reported.

Method 8260D: Reanalysis of the following samples were performed outside of the analytical holding time due to QC failure in initial analysis (Laboratory control sample duplicate recovered low for m-Xylene & p-Xylene): MW-17.5_20201117 (580-99238-1), MW-18.5_20201117 (580-99238-2) and MW-19.3_20201117 (580-99238-3). Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method NWTPH-Gx: Reanalysis of the following sample was performed outside of the analytical holding time due to the CCV failing high in the initial analysis due to carry over from a previous sample: MW-17.10_20201118 (580-99238-4). Both sets of data have been reported.

Method NWTPH-Gx: CCV recovered high for Gasoline due to carry over from a previous sample. No volume remains for sample MW-19.10_20201118 (580-99238-6) and the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method NWTPH-Dx: Due to the high concentration of C10-C24 and Motor Oil, the matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 580-344508 and analytical batch 580-344607 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method NWTPH-Dx: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 580-344659 and analytical batch 580-344835 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010D: The Sample Duplciate (DU) was outside %RPD control limits for sample MW-17.5_20201117 (580-99238-1) in prep batch 580-344241 and analysis batch 580-344447. The MS/MSD and associated LCS/LCSD recoveries and precision met acceptance limits.

Job ID: 580-99238-1 (Continued)

Laboratory: Eurofins TestAmerica, Seattle (Continued)

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
Method 5035: The following samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: MW-18.5_20201117 (580-99238-2), MW-19.3_20201117 (580-99238-3), MW-17.10_20201118 (580-99238-4), MW-17.15_20201118 (580-99238-5), MW-19.10_20201118 (580-99238-6), MW-19.5_20201119 (580-99238-7), MW-18.12_20201119 (580-99238-8), and MW-18.16_20201119 (580-99238-9). Deviations in the weight by more than 20% may affect reporting limits and potentially method performance. The method specifies 5g. The amount provided was above this range.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Client Sample ID: MW-17.5_20201117 — Lab Sample ID: 580-99238-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.3		2.3		mg/Kg	1	☼	6010D	Total/NA
Barium	41		0.38		mg/Kg	1	☼	6010D	Total/NA
Chromium	20		0.99		mg/Kg	1	☼	6010D	Total/NA
Lead	9.7		1.1		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-18.5_20201117 — Lab Sample ID: 580-99238-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.1		2.7		mg/Kg	1	☼	6010D	Total/NA
Barium	78		0.44		mg/Kg	1	☼	6010D	Total/NA
Chromium	22		1.2		mg/Kg	1	☼	6010D	Total/NA
Lead	6.9		1.3		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-19.3_20201117 — Lab Sample ID: 580-99238-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.0		2.5		mg/Kg	1	☼	6010D	Total/NA
Barium	38		0.42		mg/Kg	1	☼	6010D	Total/NA
Chromium	26		1.1		mg/Kg	1	☼	6010D	Total/NA
Lead	10		1.3		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-17.10_20201118 — Lab Sample ID: 580-99238-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	7.5		4.7		mg/Kg	1	☼	NWTPH-Gx	Total/NA
Gasoline - RA	8.9	H	4.7		mg/Kg	1	☼	NWTPH-Gx	Total/NA
Arsenic	3.2		2.3		mg/Kg	1	☼	6010D	Total/NA
Barium	26		0.38		mg/Kg	1	☼	6010D	Total/NA
Chromium	16		0.99		mg/Kg	1	☼	6010D	Total/NA
Lead	2.1		1.1		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-17.15_20201118 — Lab Sample ID: 580-99238-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	29		0.41		mg/Kg	1	☼	6010D	Total/NA
Chromium	19		1.1		mg/Kg	1	☼	6010D	Total/NA
Lead	2.5		1.2		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-19.10_20201118 — Lab Sample ID: 580-99238-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	10		5.0		mg/Kg	1	☼	NWTPH-Gx	Total/NA
Barium	32		0.39		mg/Kg	1	☼	6010D	Total/NA
Chromium	16		1.0		mg/Kg	1	☼	6010D	Total/NA
Lead	2.2		1.2		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-19.5_20201119 — Lab Sample ID: 580-99238-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.011		0.0018		mg/Kg	1	☼	8260D	Total/NA
m-Xylene & p-Xylene	0.048		0.0088		mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.017		0.0044		mg/Kg	1	☼	8260D	Total/NA
Toluene	0.043		0.0088		mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.065		0.0088		mg/Kg	1	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Seattle

Client Sample ID: MW-19.5_20201119 (Continued) — Lab Sample ID: 580-99238-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	28		0.39		mg/Kg	1	☼	6010D	Total/NA
Chromium	18		1.0		mg/Kg	1	☼	6010D	Total/NA
Lead	3.1		1.2		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-18.12_20201119 — Lab Sample ID: 580-99238-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.0030		0.0017		mg/Kg	1	☼	8260D	Total/NA
m-Xylene & p-Xylene	0.012		0.0083		mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0045		0.0042		mg/Kg	1	☼	8260D	Total/NA
Toluene	0.013		0.0083		mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.017		0.0083		mg/Kg	1	☼	8260D	Total/NA
Barium	26		0.36		mg/Kg	1	☼	6010D	Total/NA
Chromium	16		0.93		mg/Kg	1	☼	6010D	Total/NA
Lead	1.9		1.1		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-18.16_20201119 — Lab Sample ID: 580-99238-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	26		0.39		mg/Kg	1	☼	6010D	Total/NA
Chromium	17		1.0		mg/Kg	1	☼	6010D	Total/NA
Lead	2.0		1.2		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: Trip Blank_20201119 — Lab Sample ID: 580-99238-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-17.5_20201117

Date Collected: 11/17/20 11:10
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-1

Matrix: Solid
Percent Solids: 88.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0024		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
EDB	ND		0.0012		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
EDC	ND		0.0012		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
Ethylbenzene	ND		0.0024		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
Methyl tert-butyl ether	ND		0.0024		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
m-Xylene & p-Xylene	ND	*	0.012		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
n-Hexane	ND		0.024		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
o-Xylene	ND		0.0061		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
Toluene	ND		0.012		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1
Xylenes, Total	ND		0.012		mg/Kg	☼	11/20/20 14:40	11/27/20 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 121*	*11/20/20 14:40*	*11/27/20 22:48*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*11/20/20 14:40*	*11/27/20 22:48*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*11/20/20 14:40*	*11/27/20 22:48*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*11/20/20 14:40*	*11/27/20 22:48*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND	H	0.011		mg/Kg	☼	11/20/20 14:40	12/03/20 16:57	1
Xylenes, Total	ND	H	0.011		mg/Kg	☼	11/20/20 14:40	12/03/20 16:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 121*	*11/20/20 14:40*	*12/03/20 16:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*	*11/20/20 14:40*	*12/03/20 16:57*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*	*11/20/20 14:40*	*12/03/20 16:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*	*11/20/20 14:40*	*12/03/20 16:57*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.4		mg/Kg	☼	11/25/20 15:01	11/27/20 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*50 - 150*	*11/25/20 15:01*	*11/27/20 19:36*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56		mg/Kg	☼	12/01/20 17:22	12/02/20 18:23	1
Motor Oil (>C24-C36)	ND		56		mg/Kg	☼	12/01/20 17:22	12/02/20 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*12/01/20 17:22*	*12/02/20 18:23*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.3**		2.3		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1
Barium	**41**		0.38		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1
Cadmium	ND		0.76		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1
Chromium	**20**		0.99		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1
Lead	**9.7**		1.1		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1
Selenium	ND		3.8		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1

Client Sample ID: MW-17.5_20201117

Lab Sample ID: 580-99238-1
Date Collected: 11/17/20 11:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 88.8

Method: 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.9		mg/Kg	☼	11/28/20 08:11	12/01/20 01:54	1

Client Sample ID: MW-18.5_20201117

Lab Sample ID: 580-99238-2
Date Collected: 11/17/20 12:19
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 79.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
EDB	ND		0.0010		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
EDC	ND		0.0010		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
Ethylbenzene	ND		0.0020		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
Methyl tert-butyl ether	ND		0.0020		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
m-Xylene & p-Xylene	ND	*	0.010		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
n-Hexane	ND		0.020		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
o-Xylene	ND		0.0051		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
Toluene	ND		0.010		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1
Xylenes, Total	ND		0.010		mg/Kg	☼	11/20/20 14:40	11/27/20 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 121*	*11/20/20 14:40*	*11/27/20 23:14*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:14*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:14*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:14*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND	H	0.0099		mg/Kg	☼	11/20/20 14:40	12/03/20 17:23	1
Xylenes, Total	ND	H	0.0099		mg/Kg	☼	11/20/20 14:40	12/03/20 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*0*	*X *3*	*80 - 121*	*11/20/20 14:40*	*12/03/20 17:23*	*1*
4-Bromofluorobenzene (Surr)	*0*	*X*	*80 - 120*	*11/20/20 14:40*	*12/03/20 17:23*	*1*
Dibromofluoromethane (Surr)	*0*	*X *3*	*80 - 120*	*11/20/20 14:40*	*12/03/20 17:23*	*1*
Toluene-d8 (Surr)	*16*	*X*	*80 - 120*	*11/20/20 14:40*	*12/03/20 17:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.8		mg/Kg	☼	12/01/20 12:19	12/01/20 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*50 - 150*	*12/01/20 12:19*	*12/01/20 13:57*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61		mg/Kg	☼	12/01/20 17:22	12/02/20 19:03	1
Motor Oil (>C24-C36)	ND		61		mg/Kg	☼	12/01/20 17:22	12/02/20 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*50 - 150*	*12/01/20 17:22*	*12/02/20 19:03*	*1*

Client Sample ID: MW-18.5_20201117

Lab Sample ID: 580-99238-2
Date Collected: 11/17/20 12:19
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 79.2

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.1**		2.7		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Barium	**78**		0.44		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Cadmium	ND		0.89		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Chromium	**22**		1.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Lead	**6.9**		1.3		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Selenium	ND		4.4		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1
Silver	ND		2.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:23	1

Client Sample ID: MW-19.3_20201117

Lab Sample ID: 580-99238-3
Date Collected: 11/17/20 13:30
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 90.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
EDB	ND		0.00088		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
EDC	ND		0.00088		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
Ethylbenzene	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
Methyl tert-butyl ether	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
m-Xylene & p-Xylene	ND	*	0.0088		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
n-Hexane	ND		0.018		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
o-Xylene	ND		0.0044		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
Toluene	ND		0.0088		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1
Xylenes, Total	ND		0.0088		mg/Kg	☼	11/20/20 14:40	11/27/20 23:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 121*	*11/20/20 14:40*	*11/27/20 23:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:40*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:40*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*11/20/20 14:40*	*11/27/20 23:40*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND	H	0.0073		mg/Kg	☼	11/20/20 14:40	12/03/20 17:48	1
Xylenes, Total	ND	H	0.0073		mg/Kg	☼	11/20/20 14:40	12/03/20 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*80 - 121*	*11/20/20 14:40*	*12/03/20 17:48*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*	*11/20/20 14:40*	*12/03/20 17:48*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*	*11/20/20 14:40*	*12/03/20 17:48*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*	*11/20/20 14:40*	*12/03/20 17:48*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg	☼	12/01/20 12:19	12/01/20 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/01/20 12:19*	*12/01/20 14:22*	*1*

Client Sample ID: MW-19.3_20201117

Lab Sample ID: 580-99238-3
Date Collected: 11/17/20 13:30
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 90.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54		mg/Kg	☼	12/01/20 17:22	12/02/20 19:23	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	☼	12/01/20 17:22	12/02/20 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*12/01/20 17:22*	*12/02/20 19:23*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.0**		2.5		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Barium	**38**		0.42		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Cadmium	ND		0.84		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Chromium	**26**		1.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Lead	**10**		1.3		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Selenium	ND		4.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1
Silver	ND		2.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:27	1

Client Sample ID: MW-17.10_20201118

Lab Sample ID: 580-99238-4
Date Collected: 11/18/20 12:00
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 93.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
EDB	ND		0.00080		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
EDC	ND		0.00080		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
Ethylbenzene	ND		0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
Methyl tert-butyl ether	ND		0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
m-Xylene & p-Xylene	ND		0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
n-Hexane	ND		0.016		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
o-Xylene	ND		0.0040		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
Toluene	ND		0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1
Xylenes, Total	ND		0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 02:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*	*11/20/20 14:40*	*12/02/20 02:26*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*11/20/20 14:40*	*12/02/20 02:26*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*11/20/20 14:40*	*12/02/20 02:26*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*11/20/20 14:40*	*12/02/20 02:26*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**7.5**		4.7		mg/Kg	☼	12/02/20 12:40	12/02/20 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*	*12/02/20 12:40*	*12/02/20 20:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**8.9**	**H**	4.7		mg/Kg	☼	12/02/20 12:40	12/03/20 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/02/20 12:40*	*12/03/20 19:27*	*1*

Client Sample ID: MW-17.10_20201118

Lab Sample ID: 580-99238-4
Date Collected: 11/18/20 12:00
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 93.1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		49		mg/Kg	☼	12/02/20 17:53	12/05/20 02:25	1
Motor Oil (>C24-C36)	ND		49		mg/Kg	☼	12/02/20 17:53	12/05/20 02:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*109*		*50 - 150*	*12/02/20 17:53*	*12/05/20 02:25*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.2**		2.3		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Barium	**26**		0.38		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Cadmium	ND		0.76		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Chromium	**16**		0.99		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Lead	**2.1**		1.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Selenium	ND		3.8		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1
Silver	ND		1.9		mg/Kg	☼	11/28/20 08:11	12/01/20 02:30	1

Client Sample ID: MW-17.15_20201118

Lab Sample ID: 580-99238-5
Date Collected: 11/18/20 12:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 92.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0017		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
EDB	ND		0.00086		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
EDC	ND		0.00086		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
Ethylbenzene	ND		0.0017		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
Methyl tert-butyl ether	ND		0.0017		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
m-Xylene & p-Xylene	ND		0.0086		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
n-Hexane	ND		0.017		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
o-Xylene	ND		0.0043		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
Toluene	ND		0.0086		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1
Xylenes, Total	ND		0.0086		mg/Kg	☼	11/20/20 14:40	11/30/20 23:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 121*	*11/20/20 14:40*	*11/30/20 23:19*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:19*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:19*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:19*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.6		mg/Kg	☼	12/02/20 12:40	12/02/20 20:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/02/20 12:40*	*12/02/20 20:48*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54		mg/Kg	☼	12/02/20 17:53	12/05/20 02:45	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	☼	12/02/20 17:53	12/05/20 02:45	1

Client Sample ID: MW-17.15_20201118

Lab Sample ID: 580-99238-5
Date Collected: 11/18/20 12:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 92.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*105*		*50 - 150*	*12/02/20 17:53*	*12/05/20 02:45*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.5		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Barium	**29**		0.41		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Cadmium	ND		0.82		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Chromium	**19**		1.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Lead	**2.5**		1.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Selenium	ND		4.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1
Silver	ND		2.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:33	1

Client Sample ID: MW-19.10_20201118

Lab Sample ID: 580-99238-6
Date Collected: 11/18/20 14:30
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 93.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
EDB	ND		0.00089		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
EDC	ND		0.00089		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
Ethylbenzene	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
Methyl tert-butyl ether	ND		0.0018		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
m-Xylene & p-Xylene	ND		0.0089		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
n-Hexane	ND		0.018		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
o-Xylene	ND		0.0044		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
Toluene	ND		0.0089		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1
Xylenes, Total	ND		0.0089		mg/Kg	☼	11/20/20 14:40	11/30/20 23:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 121*	*11/20/20 14:40*	*11/30/20 23:45*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:45*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:45*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*	*11/20/20 14:40*	*11/30/20 23:45*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**10**		5.0		mg/Kg	☼	12/02/20 12:40	12/02/20 21:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*12/02/20 12:40*	*12/02/20 21:12*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52		mg/Kg	☼	12/02/20 17:53	12/05/20 03:05	1
Motor Oil (>C24-C36)	ND		52		mg/Kg	☼	12/02/20 17:53	12/05/20 03:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*106*		*50 - 150*	*12/02/20 17:53*	*12/05/20 03:05*	*1*

Client Sample ID: MW-19.10_20201118

Lab Sample ID: 580-99238-6
Date Collected: 11/18/20 14:30
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 93.6

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.3		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Barium	**32**		0.39		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Cadmium	ND		0.78		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Chromium	**16**		1.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Lead	**2.2**		1.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Selenium	ND		3.9		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1
Silver	ND		2.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:36	1

Client Sample ID: MW-19.5_20201119

Lab Sample ID: 580-99238-7
Date Collected: 11/19/20 10:00
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 81.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0018		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
EDB	ND		0.00088		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
EDC	ND		0.00088		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
Ethylbenzene	**0.011**		0.0018		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
Methyl tert-butyl ether	ND		0.0018		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
m-Xylene & p-Xylene	**0.048**		0.0088		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
n-Hexane	ND		0.018		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
o-Xylene	**0.017**		0.0044		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
Toluene	**0.043**		0.0088		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1
Xylenes, Total	**0.065**		0.0088		mg/Kg	☼	11/20/20 14:40	12/02/20 03:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*60*	*X*	*80 - 121*	*11/20/20 14:40*	*12/02/20 03:44*	*1*
4-Bromofluorobenzene (Surr)	*79*	*X*	*80 - 120*	*11/20/20 14:40*	*12/02/20 03:44*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*	*11/20/20 14:40*	*12/02/20 03:44*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*	*11/20/20 14:40*	*12/02/20 03:44*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.0		mg/Kg	☼	12/02/20 12:40	12/03/20 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/02/20 12:40*	*12/03/20 19:03*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57		mg/Kg	☼	12/03/20 11:47	12/05/20 03:21	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	☼	12/03/20 11:47	12/05/20 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*12/03/20 11:47*	*12/05/20 03:21*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.3		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1
Barium	**28**		0.39		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1
Cadmium	ND		0.77		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1

Client Sample ID: MW-19.5_20201119

Lab Sample ID: 580-99238-7
Date Collected: 11/19/20 10:00
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 81.6

Method: 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**18**		1.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1
Lead	**3.1**		1.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1
Selenium	ND		3.9		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1
Silver	ND		1.9		mg/Kg	☼	11/28/20 08:11	12/01/20 02:39	1

Client Sample ID: MW-18.12_20201119

Lab Sample ID: 580-99238-8
Date Collected: 11/19/20 10:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 88.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0017		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
EDB	ND		0.00083		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
EDC	ND		0.00083		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
Ethylbenzene	**0.0030**		0.0017		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
Methyl tert-butyl ether	ND		0.0017		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
m-Xylene & p-Xylene	**0.012**		0.0083		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
n-Hexane	ND		0.017		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
o-Xylene	**0.0045**		0.0042		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
Toluene	**0.013**		0.0083		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1
Xylenes, Total	**0.017**		0.0083		mg/Kg	☼	11/20/20 14:40	12/02/20 04:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*149*	*X*	*80 - 121*	*11/20/20 14:40*	*12/02/20 04:10*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*	*11/20/20 14:40*	*12/02/20 04:10*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*	*11/20/20 14:40*	*12/02/20 04:10*	*1*
Toluene-d8 (Surr)	*82*		*80 - 120*	*11/20/20 14:40*	*12/02/20 04:10*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.3		mg/Kg	☼	12/02/20 12:40	12/03/20 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*50 - 150*	*12/02/20 12:40*	*12/03/20 01:41*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54		mg/Kg	☼	12/03/20 11:47	12/05/20 03:40	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	☼	12/03/20 11:47	12/05/20 03:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*68*		*50 - 150*	*12/03/20 11:47*	*12/05/20 03:40*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1
Barium	**26**		0.36		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1
Cadmium	ND		0.72		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1
Chromium	**16**		0.93		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1
Lead	**1.9**		1.1		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1
Selenium	ND		3.6		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1

Client Sample ID: MW-18.12_20201119

Lab Sample ID: 580-99238-8
Date Collected: 11/19/20 10:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 88.4

Method: 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.8		mg/Kg	☼	11/28/20 08:11	12/01/20 02:42	1

Client Sample ID: MW-18.16_20201119

Lab Sample ID: 580-99238-9
Date Collected: 11/19/20 10:20
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 86.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
EDB	ND	*3	0.00080		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
EDC	ND		0.00080		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
Ethylbenzene	ND	*3	0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
Methyl tert-butyl ether	ND	*	0.0016		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
m-Xylene & p-Xylene	ND	*3	0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
n-Hexane	ND		0.016		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
o-Xylene	ND	*3	0.0040		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
Toluene	ND	*3	0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1
Xylenes, Total	ND		0.0080		mg/Kg	☼	11/20/20 14:40	12/02/20 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*122*	*X*	*80 - 121*	*11/20/20 14:40*	*12/02/20 19:12*	*1*
4-Bromofluorobenzene (Surr)	*85*	**3*	*80 - 120*	*11/20/20 14:40*	*12/02/20 19:12*	*1*
Dibromofluoromethane (Surr)	*116*		*80 - 120*	*11/20/20 14:40*	*12/02/20 19:12*	*1*
Toluene-d8 (Surr)	*89*	**3*	*80 - 120*	*11/20/20 14:40*	*12/02/20 19:12*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4		mg/Kg	☼	12/02/20 12:40	12/03/20 02:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*50 - 150*	*12/02/20 12:40*	*12/03/20 02:05*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57		mg/Kg	☼	12/03/20 11:47	12/05/20 04:00	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	☼	12/03/20 11:47	12/05/20 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82*		*50 - 150*	*12/03/20 11:47*	*12/05/20 04:00*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.4		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Barium	**26**		0.39		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Cadmium	ND		0.79		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Chromium	**17**		1.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Lead	**2.0**		1.2		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Selenium	ND		3.9		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1
Silver	ND		2.0		mg/Kg	☼	11/28/20 08:11	12/01/20 02:45	1

Client Sample ID: Trip Blank_20201119

Lab Sample ID: 580-99238-10

Date Collected: 11/19/20 00:00

Matrix: Solid

Date Received: 11/20/20 11:55

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
EDB	ND		0.0010		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
EDC	ND		0.0010		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
Ethylbenzene	ND		0.0020		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
Methyl tert-butyl ether	ND	*	0.0020		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
m-Xylene & p-Xylene	ND		0.010		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
n-Hexane	ND		0.020		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
o-Xylene	ND		0.0050		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
Toluene	ND		0.010		mg/Kg		11/20/20 14:40	12/02/20 18:20	1
Xylenes, Total	ND		0.010		mg/Kg		11/20/20 14:40	12/02/20 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*	*11/20/20 14:40*	*12/02/20 18:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 121*	*11/20/20 14:40*	*12/02/20 18:20*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*	*11/20/20 14:40*	*12/02/20 18:20*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*11/20/20 14:40*	*12/02/20 18:20*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		12/03/20 09:24	12/03/20 11:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*50 - 150*	*12/03/20 09:24*	*12/03/20 11:41*	*1*

Surrogate Summary

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid | **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-121)	(80-120)	(80-120)	(80-120)
580-99238-1	MW-17.5_20201117	104	100	99	99
580-99238-1 - RA	MW-17.5_20201117	105	98	107	101
580-99238-2	MW-18.5_20201117	102	96	102	99
580-99238-2 - RA	MW-18.5_20201117	0 X *3	0 X	0 X *3	16 X
580-99238-3	MW-19.3_20201117	98	102	98	98
580-99238-3 - RA	MW-19.3_20201117	120	95	105	92
580-99238-4	MW-17.10_20201118	106	104	101	95
580-99238-5	MW-17.15_20201118	100	104	99	100
580-99238-6	MW-19.10_20201118	101	103	96	94
580-99238-7	MW-19.5_20201119	60 X	79 X	107	103
580-99238-8	MW-18.12_20201119	149 X	98	110	82
580-99238-9	MW-18.16_20201119	122 X	85 *3	116	89 *3
580-99238-10	Trip Blank_20201119	101	96	97	95
LCS 580-344221/2-A	Lab Control Sample	100	109	104	102
LCS 580-344412/2-A	Lab Control Sample	108	103	106	94
LCS 580-344507/2-A	Lab Control Sample	102	102	106	97
LCS 580-344617/2-A	Lab Control Sample	104	103	103	98
LCS 580-344707/2-A	Lab Control Sample	98	101	101	94
LCSD 580-344221/3-A	Lab Control Sample Dup	101	111	103	99
LCSD 580-344412/3-A	Lab Control Sample Dup	103	105	104	98
LCSD 580-344507/3-A	Lab Control Sample Dup	99	100	97	94
LCSD 580-344617/3-A	Lab Control Sample Dup	108	101	104	92
LCSD 580-344707/3-A	Lab Control Sample Dup	110	100	104	93
MB 580-344221/1-A	Method Blank	105	100	104	97
MB 580-344412/1-A	Method Blank	103	101	102	94
MB 580-344507/1-A	Method Blank	104	100	103	95
MB 580-344617/1-A	Method Blank	106	104	98	98
MB 580-344707/1-A	Method Blank	109	97	108	90

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Solid | **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB2
Lab Sample ID	Client Sample ID	(50-150)
580-99238-1	MW-17.5_20201117	86
580-99238-2	MW-18.5_20201117	83
580-99238-3	MW-19.3_20201117	87
580-99238-4	MW-17.10_20201118	91
580-99238-4 - RA	MW-17.10_20201118	87
580-99238-5	MW-17.15_20201118	87
580-99238-6	MW-19.10_20201118	92
580-99238-7	MW-19.5_20201119	87
580-99238-8	MW-18.12_20201119	90

Surrogate Summary

Client: Antea USA Inc.
Job ID: 580-99238-1
Project/Site: ARCO Facility No. 00980

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB2 (50-150)
580-99238-9	MW-18.16_20201119	89
580-99238-10	Trip Blank_20201119	90
LCS 580-344085/2-A	Lab Control Sample	94
LCS 580-344456/2-A	Lab Control Sample	94
LCS 580-344580/1-A	Lab Control Sample	93
LCS 580-344686/2-A	Lab Control Sample	92
LCSD 580-344085/3-A	Lab Control Sample Dup	97
LCSD 580-344456/3-A	Lab Control Sample Dup	94
LCSD 580-344580/2-A	Lab Control Sample Dup	96
LCSD 580-344686/3-A	Lab Control Sample Dup	93
MB 580-344085/1-A	Method Blank	88
MB 580-344456/1-A	Method Blank	84
MB 580-344580/3-A	Method Blank	94
MB 580-344686/1-A	Method Blank	86

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTPH (50-150)
580-99238-1	MW-17.5_20201117	90
580-99238-1 DU	MW-17.5_20201117	90
580-99238-2	MW-18.5_20201117	84
580-99238-3	MW-19.3_20201117	88
580-99238-4	MW-17.10_20201118	109
580-99238-5	MW-17.15_20201118	105
580-99238-6	MW-19.10_20201118	106
580-99238-7	MW-19.5_20201119	79
580-99238-8	MW-18.12_20201119	68
580-99238-9	MW-18.16_20201119	82
LCS 580-344508/2-A	Lab Control Sample	105
LCS 580-344659/2-A	Lab Control Sample	93
LCS 580-344700/2-A	Lab Control Sample	100
LCSD 580-344508/3-A	Lab Control Sample Dup	104
LCSD 580-344659/3-A	Lab Control Sample Dup	93
LCSD 580-344700/3-A	Lab Control Sample Dup	102
MB 580-344508/1-A	Method Blank	91
MB 580-344659/1-A	Method Blank	106
MB 580-344700/1-A	Method Blank	86

Surrogate Legend

OTPH = o-Terphenyl

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-344221/1-A
Matrix: Solid
Analysis Batch: 344378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
EDB	ND		0.0010		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
EDC	ND		0.0010		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
Ethylbenzene	ND		0.0020		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
Methyl tert-butyl ether	ND		0.0020		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
m-Xylene & p-Xylene	ND		0.010		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
n-Hexane	ND		0.020		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
o-Xylene	ND		0.0050		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
Toluene	ND		0.010		mg/Kg		11/27/20 15:05	11/27/20 19:49	1
Xylenes, Total	ND		0.010		mg/Kg		11/27/20 15:05	11/27/20 19:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 121*	*11/27/20 15:05*	*11/27/20 19:49*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*11/27/20 15:05*	*11/27/20 19:49*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*	*11/27/20 15:05*	*11/27/20 19:49*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*11/27/20 15:05*	*11/27/20 19:49*	*1*

Lab Sample ID: LCS 580-344221/2-A
Matrix: Solid
Analysis Batch: 344378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344221

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.0200	0.0194		mg/Kg		97	79 - 135		
EDB			0.0200	0.0191		mg/Kg		95	77 - 123		
EDC			0.0200	0.0185		mg/Kg		92	76 - 132		
Ethylbenzene			0.0200	0.0187		mg/Kg		94	80 - 135		
Methyl tert-butyl ether			0.0200	0.0194		mg/Kg		97	77 - 132		
m-Xylene & p-Xylene			0.0200	0.0160		mg/Kg		80	80 - 132		
n-Hexane			0.0200	0.0175	J	mg/Kg		88	41 - 150		
o-Xylene			0.0200	0.0178		mg/Kg		89	80 - 132		
Toluene			0.0200	0.0182		mg/Kg		91	75 - 137		
Xylenes, Total			0.0400	0.0338		mg/Kg		85	80 - 136		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 121*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-344221/3-A
Matrix: Solid
Analysis Batch: 344378

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344221

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.0200	0.0196		mg/Kg		98	79 - 135	1	31
EDB			0.0200	0.0186		mg/Kg		93	77 - 123	3	37
EDC			0.0200	0.0186		mg/Kg		93	76 - 132	1	29
Ethylbenzene			0.0200	0.0179		mg/Kg		90	80 - 135	4	37

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-344221/3-A
Matrix: Solid
Analysis Batch: 344378

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344221

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	0.0200	0.0201		mg/Kg		101	77 - 132	4	25
m-Xylene & p-Xylene	0.0200	0.0151	*	mg/Kg		75	80 - 132	6	38
n-Hexane	0.0200	0.0179	J	mg/Kg		90	41 - 150	2	36
o-Xylene	0.0200	0.0169		mg/Kg		85	80 - 132	5	39
Toluene	0.0200	0.0173		mg/Kg		86	75 - 137	5	34
Xylenes, Total	0.0400	0.0320		mg/Kg		80	80 - 136	5	19

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 121*
4-Bromofluorobenzene (Surr)	*111*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 580-344412/1-A
Matrix: Solid
Analysis Batch: 344564

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344412

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
EDB	ND		0.0010		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
EDC	ND		0.0010		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
Ethylbenzene	ND		0.0020		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
Methyl tert-butyl ether	ND		0.0020		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
m-Xylene & p-Xylene	ND		0.010		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
n-Hexane	ND		0.020		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
o-Xylene	ND		0.0050		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
Toluene	ND		0.010		mg/Kg		11/30/20 16:50	11/30/20 20:45	1
Xylenes, Total	ND		0.010		mg/Kg		11/30/20 16:50	11/30/20 20:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 121*	*11/30/20 16:50*	*11/30/20 20:45*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*11/30/20 16:50*	*11/30/20 20:45*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*	*11/30/20 16:50*	*11/30/20 20:45*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*	*11/30/20 16:50*	*11/30/20 20:45*	*1*

Lab Sample ID: LCS 580-344412/2-A
Matrix: Solid
Analysis Batch: 344564

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344412

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0200	0.0200		mg/Kg		100	79 - 135
EDB	0.0200	0.0186		mg/Kg		93	77 - 123
EDC	0.0200	0.0194		mg/Kg		97	76 - 132
Ethylbenzene	0.0200	0.0184		mg/Kg		92	80 - 135
Methyl tert-butyl ether	0.0200	0.0212		mg/Kg		106	77 - 132
m-Xylene & p-Xylene	0.0200	0.0164		mg/Kg		82	80 - 132
n-Hexane	0.0200	0.0182	J	mg/Kg		91	41 - 150
o-Xylene	0.0200	0.0182		mg/Kg		91	80 - 132

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-344412/2-A
Matrix: Solid
Analysis Batch: 344564

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344412

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.0200	0.0173		mg/Kg		87	75 - 137
Xylenes, Total	0.0400	0.0346		mg/Kg		87	80 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 121*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

Lab Sample ID: LCSD 580-344412/3-A
Matrix: Solid
Analysis Batch: 344564

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344412

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0200	0.0201		mg/Kg		101	79 - 135	1	31
EDB	0.0200	0.0192		mg/Kg		96	77 - 123	3	37
EDC	0.0200	0.0201		mg/Kg		100	76 - 132	3	29
Ethylbenzene	0.0200	0.0200		mg/Kg		100	80 - 135	8	37
Methyl tert-butyl ether	0.0200	0.0215		mg/Kg		107	77 - 132	1	25
m-Xylene & p-Xylene	0.0200	0.0170		mg/Kg		85	80 - 132	4	38
n-Hexane	0.0200	0.0189	J	mg/Kg		94	41 - 150	4	36
o-Xylene	0.0200	0.0191		mg/Kg		96	80 - 132	5	39
Toluene	0.0200	0.0184		mg/Kg		92	75 - 137	6	34
Xylenes, Total	0.0400	0.0361		mg/Kg		90	80 - 136	4	19

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 121*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: MB 580-344507/1-A
Matrix: Solid
Analysis Batch: 344567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
EDB	ND		0.0010		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
EDC	ND		0.0010		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
Ethylbenzene	ND		0.0020		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
Methyl tert-butyl ether	ND		0.0020		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
m-Xylene & p-Xylene	ND		0.010		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
n-Hexane	ND		0.020		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
o-Xylene	ND		0.0050		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
Toluene	ND		0.010		mg/Kg		12/01/20 17:11	12/01/20 20:01	1
Xylenes, Total	ND		0.010		mg/Kg		12/01/20 17:11	12/01/20 20:01	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-344507/1-A
Matrix: Solid
Analysis Batch: 344567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344507

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 121	12/01/20 17:11	12/01/20 20:01	1
4-Bromofluorobenzene (Surr)	100		80 - 120	12/01/20 17:11	12/01/20 20:01	1
Dibromofluoromethane (Surr)	103		80 - 120	12/01/20 17:11	12/01/20 20:01	1
Toluene-d8 (Surr)	95		80 - 120	12/01/20 17:11	12/01/20 20:01	1

Lab Sample ID: LCS 580-344507/2-A
Matrix: Solid
Analysis Batch: 344567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344507

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0200	0.0198		mg/Kg		99	79 - 135
EDB	0.0200	0.0189		mg/Kg		95	77 - 123
EDC	0.0200	0.0189		mg/Kg		95	76 - 132
Ethylbenzene	0.0200	0.0203		mg/Kg		101	80 - 135
Methyl tert-butyl ether	0.0200	0.0218		mg/Kg		109	77 - 132
m-Xylene & p-Xylene	0.0200	0.0189		mg/Kg		95	80 - 132
n-Hexane	0.0200	0.0184	J	mg/Kg		92	41 - 150
o-Xylene	0.0200	0.0194		mg/Kg		97	80 - 132
Toluene	0.0200	0.0198		mg/Kg		99	75 - 137
Xylenes, Total	0.0400	0.0383		mg/Kg		96	80 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 121
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	106		80 - 120
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: LCSD 580-344507/3-A
Matrix: Solid
Analysis Batch: 344567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344507

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0200	0.0185		mg/Kg		92	79 - 135	7	31
EDB	0.0200	0.0173		mg/Kg		86	77 - 123	9	37
EDC	0.0200	0.0178		mg/Kg		89	76 - 132	6	29
Ethylbenzene	0.0200	0.0181		mg/Kg		90	80 - 135	11	37
Methyl tert-butyl ether	0.0200	0.0190		mg/Kg		95	77 - 132	14	25
m-Xylene & p-Xylene	0.0200	0.0170		mg/Kg		85	80 - 132	11	38
n-Hexane	0.0200	0.0170	J	mg/Kg		85	41 - 150	8	36
o-Xylene	0.0200	0.0176		mg/Kg		88	80 - 132	10	39
Toluene	0.0200	0.0184		mg/Kg		92	75 - 137	8	34
Xylenes, Total	0.0400	0.0346		mg/Kg		87	80 - 136	10	19

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 121
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	94		80 - 120

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-344617/1-A
Matrix: Solid
Analysis Batch: 344651

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344617

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0020		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
EDB	ND		0.0010		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
EDC	ND		0.0010		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
Ethylbenzene	ND		0.0020		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
Methyl tert-butyl ether	ND		0.0020		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
m-Xylene & p-Xylene	ND		0.010		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
n-Hexane	ND		0.020		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
o-Xylene	ND		0.0050		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
Toluene	ND		0.010		mg/Kg		12/02/20 15:13	12/02/20 17:02	1
Xylenes, Total	ND		0.010		mg/Kg		12/02/20 15:13	12/02/20 17:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*	*12/02/20 15:13*	*12/02/20 17:02*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/02/20 15:13*	*12/02/20 17:02*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*12/02/20 15:13*	*12/02/20 17:02*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/02/20 15:13*	*12/02/20 17:02*	*1*

Lab Sample ID: LCS 580-344617/2-A
Matrix: Solid
Analysis Batch: 344651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344617

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.0200	0.0228		mg/Kg		114	79 - 135		
EDB			0.0200	0.0221		mg/Kg		110	77 - 123		
EDC			0.0200	0.0236		mg/Kg		118	76 - 132		
Ethylbenzene			0.0200	0.0226		mg/Kg		113	80 - 135		
Methyl tert-butyl ether			0.0200	0.0254		mg/Kg		127	77 - 132		
m-Xylene & p-Xylene			0.0200	0.0206		mg/Kg		103	80 - 132		
n-Hexane			0.0200	0.0180	J	mg/Kg		90	41 - 150		
o-Xylene			0.0200	0.0222		mg/Kg		111	80 - 132		
Toluene			0.0200	0.0214		mg/Kg		107	75 - 137		
Xylenes, Total			0.0400	0.0428		mg/Kg		107	80 - 136		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 121*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 580-344617/3-A
Matrix: Solid
Analysis Batch: 344651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344617

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.0200	0.0250		mg/Kg		125	79 - 135	9	31
EDB			0.0200	0.0228		mg/Kg		114	77 - 123	3	37
EDC			0.0200	0.0255		mg/Kg		127	76 - 132	8	29
Ethylbenzene			0.0200	0.0234		mg/Kg		117	80 - 135	4	37

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-344617/3-A
Matrix: Solid
Analysis Batch: 344651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344617

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			0.0200	0.0271	*	mg/Kg		136	77 - 132	7	25
m-Xylene & p-Xylene			0.0200	0.0208		mg/Kg		104	80 - 132	1	38
n-Hexane			0.0200	0.0194	J	mg/Kg		97	41 - 150	8	36
o-Xylene			0.0200	0.0227		mg/Kg		113	80 - 132	2	39
Toluene			0.0200	0.0223		mg/Kg		111	75 - 137	4	34
Xylenes, Total			0.0400	0.0435		mg/Kg		109	80 - 136	2	19

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 121*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*92*		*80 - 120*

Lab Sample ID: MB 580-344707/1-A
Matrix: Solid
Analysis Batch: 344815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344707

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND		0.010		mg/Kg		12/03/20 12:44	12/03/20 15:42	1
Xylenes, Total	ND		0.010		mg/Kg		12/03/20 12:44	12/03/20 15:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 121*	*12/03/20 12:44*	*12/03/20 15:42*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*	*12/03/20 12:44*	*12/03/20 15:42*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*	*12/03/20 12:44*	*12/03/20 15:42*	*1*
Toluene-d8 (Surr)	*90*		*80 - 120*	*12/03/20 12:44*	*12/03/20 15:42*	*1*

Lab Sample ID: LCS 580-344707/2-A
Matrix: Solid
Analysis Batch: 344815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344707

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene			0.0200	0.0183		mg/Kg		91	80 - 132
Xylenes, Total			0.0400	0.0381		mg/Kg		95	80 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 121*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

Lab Sample ID: LCSD 580-344707/3-A
Matrix: Solid
Analysis Batch: 344815

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344707

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m-Xylene & p-Xylene			0.0200	0.0188		mg/Kg		94	80 - 132	3	38
Xylenes, Total			0.0400	0.0387		mg/Kg		97	80 - 136	2	19

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		80 - 121
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
Toluene-d8 (Surr)	93		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-344085/1-A
Matrix: Solid
Analysis Batch: 344228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		11/25/20 14:59	11/27/20 09:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150	11/25/20 14:59	11/27/20 09:48	1

Lab Sample ID: LCS 580-344085/2-A
Matrix: Solid
Analysis Batch: 344228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344085

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	34.1		mg/Kg		85	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		50 - 150

Lab Sample ID: LCSD 580-344085/3-A
Matrix: Solid
Analysis Batch: 344228

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344085

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.2		mg/Kg		88	80 - 120	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		50 - 150

Lab Sample ID: MB 580-344456/1-A
Matrix: Solid
Analysis Batch: 344533

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344456

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		12/01/20 12:19	12/01/20 12:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150	12/01/20 12:19	12/01/20 12:19	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-344456/2-A
Matrix: Solid
Analysis Batch: 344533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344456

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	34.0		mg/Kg		85	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*

Lab Sample ID: LCSD 580-344456/3-A
Matrix: Solid
Analysis Batch: 344533

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344456

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	36.6		mg/Kg		91	80 - 120	7	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*

Lab Sample ID: MB 580-344580/3-A
Matrix: Solid
Analysis Batch: 344663

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		12/02/20 12:40	12/02/20 16:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*	*12/02/20 12:40*	*12/02/20 16:42*	*1*

Lab Sample ID: LCS 580-344580/1-A
Matrix: Solid
Analysis Batch: 344720

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344580

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	36.3		mg/Kg		91	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*

Lab Sample ID: LCSD 580-344580/2-A
Matrix: Solid
Analysis Batch: 344663

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344580

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.7		mg/Kg		89	80 - 120	2	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*50 - 150*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-344686/1-A
Matrix: Solid
Analysis Batch: 344781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		12/03/20 09:24	12/03/20 10:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*50 - 150*	*12/03/20 09:24*	*12/03/20 10:27*	*1*

Lab Sample ID: LCS 580-344686/2-A
Matrix: Solid
Analysis Batch: 344781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344686

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	37.5		mg/Kg		94	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*

Lab Sample ID: LCSD 580-344686/3-A
Matrix: Solid
Analysis Batch: 344781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344686

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	36.4		mg/Kg		91	80 - 120	3	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-344508/1-A
Matrix: Solid
Analysis Batch: 344607

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50		mg/Kg		12/01/20 17:22	12/02/20 17:24	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		12/01/20 17:22	12/02/20 17:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*12/01/20 17:22*	*12/02/20 17:24*	*1*

Lab Sample ID: LCS 580-344508/2-A
Matrix: Solid
Analysis Batch: 344607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344508

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	479		mg/Kg		96	70 - 125		
Motor Oil (>C24-C36)			500	500		mg/Kg		100	70 - 129		

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-344508/2-A
Matrix: Solid
Analysis Batch: 344607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344508

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	105		50 - 150

Lab Sample ID: LCSD 580-344508/3-A
Matrix: Solid
Analysis Batch: 344607

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344508

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	465		mg/Kg		93	70 - 125	3	16
Motor Oil (>C24-C36)			500	490		mg/Kg		98	70 - 129	2	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	104		50 - 150

Lab Sample ID: 580-99238-1 DU
Matrix: Solid
Analysis Batch: 344607

Client Sample ID: MW-17.5_20201117
Prep Type: Total/NA
Prep Batch: 344508

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			23	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	90		50 - 150

Lab Sample ID: MB 580-344659/1-A
Matrix: Solid
Analysis Batch: 344835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344659

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50		mg/Kg		12/02/20 17:53	12/04/20 18:42	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		12/02/20 17:53	12/04/20 18:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	106		50 - 150	12/02/20 17:53	12/04/20 18:42	1

Lab Sample ID: LCS 580-344659/2-A
Matrix: Solid
Analysis Batch: 344835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344659

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	468		mg/Kg		94	70 - 125		
Motor Oil (>C24-C36)			500	481		mg/Kg		96	70 - 129		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	93		50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-344659/3-A
Matrix: Solid
Analysis Batch: 344835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344659

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	467		mg/Kg		93	70 - 125	0	16
Motor Oil (>C24-C36)			500	475		mg/Kg		95	70 - 129	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*93*		*50 - 150*

Lab Sample ID: MB 580-344700/1-A
Matrix: Solid
Analysis Batch: 344760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50		mg/Kg		12/03/20 11:47	12/05/20 00:44	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		12/03/20 11:47	12/05/20 00:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*12/03/20 11:47*	*12/05/20 00:44*	*1*

Lab Sample ID: LCS 580-344700/2-A
Matrix: Solid
Analysis Batch: 344760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344700

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)			500	439		mg/Kg		88	70 - 125
Motor Oil (>C24-C36)			500	464		mg/Kg		93	70 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*100*		*50 - 150*

Lab Sample ID: LCSD 580-344700/3-A
Matrix: Solid
Analysis Batch: 344760

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344700

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	453		mg/Kg		91	70 - 125	3	16
Motor Oil (>C24-C36)			500	468		mg/Kg		94	70 - 129	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*102*		*50 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 580-344241/24-A
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344241

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		mg/Kg		11/28/20 08:11	12/01/20 01:45	1
Barium	ND		0.50		mg/Kg		11/28/20 08:11	12/01/20 01:45	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 580-344241/24-A
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344241

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0		mg/Kg		11/28/20 08:11	12/01/20 01:45	1
Chromium	ND		1.3		mg/Kg		11/28/20 08:11	12/01/20 01:45	1
Lead	ND		1.5		mg/Kg		11/28/20 08:11	12/01/20 01:45	1
Selenium	ND		5.0		mg/Kg		11/28/20 08:11	12/01/20 01:45	1
Silver	ND		2.5		mg/Kg		11/28/20 08:11	12/01/20 01:45	1

Lab Sample ID: LCS 580-344241/25-A
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344241

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	50.0	51.5		mg/Kg		103	80 - 120
Barium	50.0	53.1		mg/Kg		106	80 - 120
Cadmium	50.0	52.0		mg/Kg		104	80 - 120
Chromium	50.0	54.1		mg/Kg		108	80 - 120
Lead	50.0	54.0		mg/Kg		108	80 - 120
Selenium	50.0	51.0		mg/Kg		102	80 - 120
Silver	50.0	54.7		mg/Kg		109	80 - 120

Lab Sample ID: LCSD 580-344241/26-A
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344241

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	50.0	50.6		mg/Kg		101	80 - 120	2	20
Barium	50.0	52.7		mg/Kg		105	80 - 120	1	20
Cadmium	50.0	51.5		mg/Kg		103	80 - 120	1	20
Chromium	50.0	53.7		mg/Kg		107	80 - 120	1	20
Lead	50.0	53.4		mg/Kg		107	80 - 120	1	20
Selenium	50.0	49.7		mg/Kg		99	80 - 120	3	20
Silver	50.0	53.7		mg/Kg		107	80 - 120	2	20

Lab Sample ID: 580-99238-1 MS
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: MW-17.5_20201117
Prep Type: Total/NA
Prep Batch: 344241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.3		38.2	43.8		mg/Kg	☼	101	80 - 120
Barium	41		38.2	83.8		mg/Kg	☼	112	80 - 120
Cadmium	ND		38.2	38.7		mg/Kg	☼	101	80 - 120
Chromium	20		38.2	61.0		mg/Kg	☼	108	80 - 120
Lead	9.7		38.2	49.9		mg/Kg	☼	105	80 - 120
Selenium	ND		38.2	36.8		mg/Kg	☼	96	80 - 120
Silver	ND		38.2	40.7		mg/Kg	☼	107	80 - 120

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 580-99238-1 MSD
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: MW-17.5_20201117
Prep Type: Total/NA
Prep Batch: 344241

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.3		37.9	43.7		mg/Kg	☼	101	80 - 120	0	20
Barium	41		37.9	79.8		mg/Kg	☼	102	80 - 120	5	20
Cadmium	ND		37.9	39.3		mg/Kg	☼	103	80 - 120	2	20
Chromium	20		37.9	60.5		mg/Kg	☼	107	80 - 120	1	20
Lead	9.7		37.9	48.7		mg/Kg	☼	103	80 - 120	3	20
Selenium	ND		37.9	37.5		mg/Kg	☼	99	80 - 120	2	20
Silver	ND		37.9	40.9		mg/Kg	☼	108	80 - 120	1	20

Lab Sample ID: 580-99238-1 DU
Matrix: Solid
Analysis Batch: 344447

Client Sample ID: MW-17.5_20201117
Prep Type: Total/NA
Prep Batch: 344241

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	5.3			7.50	F5	mg/Kg	☼			35	20
Barium	41			43.0		mg/Kg	☼			5	20
Cadmium	ND			ND		mg/Kg	☼			NC	20
Chromium	20			21.4		mg/Kg	☼			8	20
Lead	9.7			16.2	F3	mg/Kg	☼			50	20
Selenium	ND			ND		mg/Kg	☼			NC	20
Silver	ND			ND		mg/Kg	☼			NC	20

GC/MS VOA

Prep Batch: 344221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	5035	
580-99238-2	MW-18.5_20201117	Total/NA	Solid	5035	
580-99238-3	MW-19.3_20201117	Total/NA	Solid	5035	
MB 580-344221/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344221/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344221/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	8260D	344221
580-99238-2	MW-18.5_20201117	Total/NA	Solid	8260D	344221
580-99238-3	MW-19.3_20201117	Total/NA	Solid	8260D	344221
MB 580-344221/1-A	Method Blank	Total/NA	Solid	8260D	344221
LCS 580-344221/2-A	Lab Control Sample	Total/NA	Solid	8260D	344221
LCSD 580-344221/3-A	Lab Control Sample Dup	Total/NA	Solid	8260D	344221

Prep Batch: 344412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-5	MW-17.15_20201118	Total/NA	Solid	5035	
580-99238-6	MW-19.10_20201118	Total/NA	Solid	5035	
MB 580-344412/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344412/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344412/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 344507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4	MW-17.10_20201118	Total/NA	Solid	5035	
580-99238-7	MW-19.5_20201119	Total/NA	Solid	5035	
580-99238-8	MW-18.12_20201119	Total/NA	Solid	5035	
MB 580-344507/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344507/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344507/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-5	MW-17.15_20201118	Total/NA	Solid	8260D	344412
580-99238-6	MW-19.10_20201118	Total/NA	Solid	8260D	344412
MB 580-344412/1-A	Method Blank	Total/NA	Solid	8260D	344412
LCS 580-344412/2-A	Lab Control Sample	Total/NA	Solid	8260D	344412
LCSD 580-344412/3-A	Lab Control Sample Dup	Total/NA	Solid	8260D	344412

Analysis Batch: 344567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4	MW-17.10_20201118	Total/NA	Solid	8260D	344507
580-99238-7	MW-19.5_20201119	Total/NA	Solid	8260D	344507
580-99238-8	MW-18.12_20201119	Total/NA	Solid	8260D	344507
MB 580-344507/1-A	Method Blank	Total/NA	Solid	8260D	344507
LCS 580-344507/2-A	Lab Control Sample	Total/NA	Solid	8260D	344507
LCSD 580-344507/3-A	Lab Control Sample Dup	Total/NA	Solid	8260D	344507

GC/MS VOA

Prep Batch: 344617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-9	MW-18.16_20201119	Total/NA	Solid	5035	
580-99238-10	Trip Blank_20201119	Total/NA	Solid	5035	
MB 580-344617/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344617/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344617/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-9	MW-18.16_20201119	Total/NA	Solid	8260D	344617
580-99238-10	Trip Blank_20201119	Total/NA	Solid	8260D	344617
MB 580-344617/1-A	Method Blank	Total/NA	Solid	8260D	344617
LCS 580-344617/2-A	Lab Control Sample	Total/NA	Solid	8260D	344617
LCSD 580-344617/3-A	Lab Control Sample Dup	Total/NA	Solid	8260D	344617

Prep Batch: 344707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1 - RA	MW-17.5_20201117	Total/NA	Solid	5035	
580-99238-2 - RA	MW-18.5_20201117	Total/NA	Solid	5035	
580-99238-3 - RA	MW-19.3_20201117	Total/NA	Solid	5035	
MB 580-344707/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344707/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344707/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1 - RA	MW-17.5_20201117	Total/NA	Solid	8260D	344707
580-99238-2 - RA	MW-18.5_20201117	Total/NA	Solid	8260D	344707
580-99238-3 - RA	MW-19.3_20201117	Total/NA	Solid	8260D	344707
MB 580-344707/1-A	Method Blank	Total/NA	Solid	8260D	344707
LCS 580-344707/2-A	Lab Control Sample	Total/NA	Solid	8260D	344707
LCSD 580-344707/3-A	Lab Control Sample Dup	Total/NA	Solid	8260D	344707

GC VOA

Prep Batch: 344085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	5035	
MB 580-344085/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344085/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344085/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	NWTPH-Gx	344085
MB 580-344085/1-A	Method Blank	Total/NA	Solid	NWTPH-Gx	344085
LCS 580-344085/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	344085
LCSD 580-344085/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	344085

Prep Batch: 344456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-2	MW-18.5_20201117	Total/NA	Solid	5035	

GC VOA (Continued)

Prep Batch: 344456 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-3	MW-19.3_20201117	Total/NA	Solid	5035	
MB 580-344456/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344456/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344456/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-2	MW-18.5_20201117	Total/NA	Solid	NWTPH-Gx	344456
580-99238-3	MW-19.3_20201117	Total/NA	Solid	NWTPH-Gx	344456
MB 580-344456/1-A	Method Blank	Total/NA	Solid	NWTPH-Gx	344456
LCS 580-344456/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	344456
LCSD 580-344456/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	344456

Prep Batch: 344580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4 - RA	MW-17.10_20201118	Total/NA	Solid	5035	
580-99238-4	MW-17.10_20201118	Total/NA	Solid	5035	
580-99238-5	MW-17.15_20201118	Total/NA	Solid	5035	
580-99238-6	MW-19.10_20201118	Total/NA	Solid	5035	
580-99238-7	MW-19.5_20201119	Total/NA	Solid	5035	
580-99238-8	MW-18.12_20201119	Total/NA	Solid	5035	
580-99238-9	MW-18.16_20201119	Total/NA	Solid	5035	
MB 580-344580/3-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344580/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344580/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4	MW-17.10_20201118	Total/NA	Solid	NWTPH-Gx	344580
580-99238-5	MW-17.15_20201118	Total/NA	Solid	NWTPH-Gx	344580
580-99238-6	MW-19.10_20201118	Total/NA	Solid	NWTPH-Gx	344580
580-99238-8	MW-18.12_20201119	Total/NA	Solid	NWTPH-Gx	344580
580-99238-9	MW-18.16_20201119	Total/NA	Solid	NWTPH-Gx	344580
MB 580-344580/3-A	Method Blank	Total/NA	Solid	NWTPH-Gx	344580
LCSD 580-344580/2-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	344580

Prep Batch: 344686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-10	Trip Blank_20201119	Total/NA	Solid	5035	
MB 580-344686/1-A	Method Blank	Total/NA	Solid	5035	
LCS 580-344686/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 580-344686/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 344720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4 - RA	MW-17.10_20201118	Total/NA	Solid	NWTPH-Gx	344580
580-99238-7	MW-19.5_20201119	Total/NA	Solid	NWTPH-Gx	344580
LCS 580-344580/1-A	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	344580

GC VOA

Analysis Batch: 344781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-10	Trip Blank_20201119	Total/NA	Solid	NWTPH-Gx	344686
MB 580-344686/1-A	Method Blank	Total/NA	Solid	NWTPH-Gx	344686
LCS 580-344686/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	344686
LCSD 580-344686/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	344686

GC Semi VOA

Prep Batch: 344508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	3546	
580-99238-2	MW-18.5_20201117	Total/NA	Solid	3546	
580-99238-3	MW-19.3_20201117	Total/NA	Solid	3546	
MB 580-344508/1-A	Method Blank	Total/NA	Solid	3546	
LCS 580-344508/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 580-344508/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
580-99238-1 DU	MW-17.5_20201117	Total/NA	Solid	3546	

Analysis Batch: 344607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	NWTPH-Dx	344508
580-99238-2	MW-18.5_20201117	Total/NA	Solid	NWTPH-Dx	344508
580-99238-3	MW-19.3_20201117	Total/NA	Solid	NWTPH-Dx	344508
MB 580-344508/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	344508
LCS 580-344508/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	344508
LCSD 580-344508/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Dx	344508
580-99238-1 DU	MW-17.5_20201117	Total/NA	Solid	NWTPH-Dx	344508

Prep Batch: 344659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4	MW-17.10_20201118	Total/NA	Solid	3546	
580-99238-5	MW-17.15_20201118	Total/NA	Solid	3546	
580-99238-6	MW-19.10_20201118	Total/NA	Solid	3546	
MB 580-344659/1-A	Method Blank	Total/NA	Solid	3546	
LCS 580-344659/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 580-344659/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Prep Batch: 344700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-7	MW-19.5_20201119	Total/NA	Solid	3546	
580-99238-8	MW-18.12_20201119	Total/NA	Solid	3546	
580-99238-9	MW-18.16_20201119	Total/NA	Solid	3546	
MB 580-344700/1-A	Method Blank	Total/NA	Solid	3546	
LCS 580-344700/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 580-344700/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 344760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-7	MW-19.5_20201119	Total/NA	Solid	NWTPH-Dx	344700
580-99238-8	MW-18.12_20201119	Total/NA	Solid	NWTPH-Dx	344700
580-99238-9	MW-18.16_20201119	Total/NA	Solid	NWTPH-Dx	344700
MB 580-344700/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	344700

GC Semi VOA (Continued)

Analysis Batch: 344760 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 580-344700/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	344700
LCSD 580-344700/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Dx	344700

Analysis Batch: 344835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-4	MW-17.10_20201118	Total/NA	Solid	NWTPH-Dx	344659
580-99238-5	MW-17.15_20201118	Total/NA	Solid	NWTPH-Dx	344659
580-99238-6	MW-19.10_20201118	Total/NA	Solid	NWTPH-Dx	344659
MB 580-344659/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	344659
LCS 580-344659/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	344659
LCSD 580-344659/3-A	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Dx	344659

Metals

Prep Batch: 344241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	3050B	
580-99238-2	MW-18.5_20201117	Total/NA	Solid	3050B	
580-99238-3	MW-19.3_20201117	Total/NA	Solid	3050B	
580-99238-4	MW-17.10_20201118	Total/NA	Solid	3050B	
580-99238-5	MW-17.15_20201118	Total/NA	Solid	3050B	
580-99238-6	MW-19.10_20201118	Total/NA	Solid	3050B	
580-99238-7	MW-19.5_20201119	Total/NA	Solid	3050B	
580-99238-8	MW-18.12_20201119	Total/NA	Solid	3050B	
580-99238-9	MW-18.16_20201119	Total/NA	Solid	3050B	
MB 580-344241/24-A	Method Blank	Total/NA	Solid	3050B	
LCS 580-344241/25-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-344241/26-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
580-99238-1 MS	MW-17.5_20201117	Total/NA	Solid	3050B	
580-99238-1 MSD	MW-17.5_20201117	Total/NA	Solid	3050B	
580-99238-1 DU	MW-17.5_20201117	Total/NA	Solid	3050B	

Analysis Batch: 344447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	6010D	344241
580-99238-2	MW-18.5_20201117	Total/NA	Solid	6010D	344241
580-99238-3	MW-19.3_20201117	Total/NA	Solid	6010D	344241
580-99238-4	MW-17.10_20201118	Total/NA	Solid	6010D	344241
580-99238-5	MW-17.15_20201118	Total/NA	Solid	6010D	344241
580-99238-6	MW-19.10_20201118	Total/NA	Solid	6010D	344241
580-99238-7	MW-19.5_20201119	Total/NA	Solid	6010D	344241
580-99238-8	MW-18.12_20201119	Total/NA	Solid	6010D	344241
580-99238-9	MW-18.16_20201119	Total/NA	Solid	6010D	344241
MB 580-344241/24-A	Method Blank	Total/NA	Solid	6010D	344241
LCS 580-344241/25-A	Lab Control Sample	Total/NA	Solid	6010D	344241
LCSD 580-344241/26-A	Lab Control Sample Dup	Total/NA	Solid	6010D	344241
580-99238-1 MS	MW-17.5_20201117	Total/NA	Solid	6010D	344241
580-99238-1 MSD	MW-17.5_20201117	Total/NA	Solid	6010D	344241
580-99238-1 DU	MW-17.5_20201117	Total/NA	Solid	6010D	344241

QC Association Summary

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

General Chemistry

Analysis Batch: 344466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99238-1	MW-17.5_20201117	Total/NA	Solid	D 2216	
580-99238-2	MW-18.5_20201117	Total/NA	Solid	D 2216	
580-99238-3	MW-19.3_20201117	Total/NA	Solid	D 2216	
580-99238-4	MW-17.10_20201118	Total/NA	Solid	D 2216	
580-99238-5	MW-17.15_20201118	Total/NA	Solid	D 2216	
580-99238-6	MW-19.10_20201118	Total/NA	Solid	D 2216	
580-99238-7	MW-19.5_20201119	Total/NA	Solid	D 2216	
580-99238-8	MW-18.12_20201119	Total/NA	Solid	D 2216	
580-99238-9	MW-18.16_20201119	Total/NA	Solid	D 2216	

Lab Chronicle

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Client Sample ID: MW-17.5_20201117
Date Collected: 11/17/20 11:10
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-17.5_20201117
Date Collected: 11/17/20 11:10
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-1
Matrix: Solid
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344221	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344378	11/27/20 22:48	CJB	TAL SEA
Total/NA	Prep	5035	RA		344707	11/20/20 14:40	JSM	TAL SEA
Total/NA	Analysis	8260D	RA	1	344815	12/03/20 16:57	CJB	TAL SEA
Total/NA	Prep	5035			344085	11/25/20 15:01	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344228	11/27/20 19:36	JSM	TAL SEA
Total/NA	Prep	3546			344508	12/01/20 17:22	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344607	12/02/20 18:23	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 01:54	TMH	TAL SEA

Client Sample ID: MW-18.5_20201117
Date Collected: 11/17/20 12:19
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-18.5_20201117
Date Collected: 11/17/20 12:19
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-2
Matrix: Solid
Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344221	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344378	11/27/20 23:14	CJB	TAL SEA
Total/NA	Prep	5035	RA		344707	11/20/20 14:40	JSM	TAL SEA
Total/NA	Analysis	8260D	RA	1	344815	12/03/20 17:23	CJB	TAL SEA
Total/NA	Prep	5035			344456	12/01/20 12:19	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344533	12/01/20 13:57	JSM	TAL SEA
Total/NA	Prep	3546			344508	12/01/20 17:22	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344607	12/02/20 19:03	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:23	TMH	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Client Sample ID: MW-19.3_20201117
Date Collected: 11/17/20 13:30
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-19.3_20201117
Date Collected: 11/17/20 13:30
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-3
Matrix: Solid
Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344221	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344378	11/27/20 23:40	CJB	TAL SEA
Total/NA	Prep	5035	RA		344707	11/20/20 14:40	JSM	TAL SEA
Total/NA	Analysis	8260D	RA	1	344815	12/03/20 17:48	CJB	TAL SEA
Total/NA	Prep	5035			344456	12/01/20 12:19	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344533	12/01/20 14:22	JSM	TAL SEA
Total/NA	Prep	3546			344508	12/01/20 17:22	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344607	12/02/20 19:23	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:27	TMH	TAL SEA

Client Sample ID: MW-17.10_20201118
Date Collected: 11/18/20 12:00
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-17.10_20201118
Date Collected: 11/18/20 12:00
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-4
Matrix: Solid
Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344507	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344567	12/02/20 02:26	JSM	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344663	12/02/20 20:23	JSM	TAL SEA
Total/NA	Prep	5035	RA		344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx	RA	1	344720	12/03/20 19:27	JSM	TAL SEA
Total/NA	Prep	3546			344659	12/02/20 17:53	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344835	12/05/20 02:25	JKM	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:30	TMH	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Client Sample ID: MW-17.15_20201118
Date Collected: 11/18/20 12:10
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-17.15_20201118
Date Collected: 11/18/20 12:10
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-5
Matrix: Solid
Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344412	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344564	11/30/20 23:19	CJ	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344663	12/02/20 20:48	JSM	TAL SEA
Total/NA	Prep	3546			344659	12/02/20 17:53	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344835	12/05/20 02:45	JKM	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:33	TMH	TAL SEA

Client Sample ID: MW-19.10_20201118
Date Collected: 11/18/20 14:30
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-19.10_20201118
Date Collected: 11/18/20 14:30
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-6
Matrix: Solid
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344412	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344564	11/30/20 23:45	CJ	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344663	12/02/20 21:12	JSM	TAL SEA
Total/NA	Prep	3546			344659	12/02/20 17:53	RJL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344835	12/05/20 03:05	JKM	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:36	TMH	TAL SEA

Client Sample ID: MW-19.5_20201119
Date Collected: 11/19/20 10:00
Date Received: 11/20/20 11:55

Lab Sample ID: 580-99238-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-19.5_20201119

Lab Sample ID: 580-99238-7
Date Collected: 11/19/20 10:00
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344507	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344567	12/02/20 03:44	JSM	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344720	12/03/20 19:03	JSM	TAL SEA
Total/NA	Prep	3546			344700	12/03/20 11:47	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344760	12/05/20 03:21	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:39	TMH	TAL SEA

Client Sample ID: MW-18.12_20201119

Lab Sample ID: 580-99238-8
Date Collected: 11/19/20 10:10
Matrix: Solid
Date Received: 11/20/20 11:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-18.12_20201119

Lab Sample ID: 580-99238-8
Date Collected: 11/19/20 10:10
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344507	11/20/20 14:40	ASJ	TAL SEA
Total/NA	Analysis	8260D		1	344567	12/02/20 04:10	JSM	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344663	12/03/20 01:41	JSM	TAL SEA
Total/NA	Prep	3546			344700	12/03/20 11:47	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344760	12/05/20 03:40	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:42	TMH	TAL SEA

Client Sample ID: MW-18.16_20201119

Lab Sample ID: 580-99238-9
Date Collected: 11/19/20 10:20
Matrix: Solid
Date Received: 11/20/20 11:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	344466	12/01/20 13:22	S1S	TAL SEA

Client Sample ID: MW-18.16_20201119

Lab Sample ID: 580-99238-9
Date Collected: 11/19/20 10:20
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344617	11/20/20 14:40	JSM	TAL SEA
Total/NA	Analysis	8260D		1	344651	12/02/20 19:12	JSM	TAL SEA
Total/NA	Prep	5035			344580	12/02/20 12:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344663	12/03/20 02:05	JSM	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Client Sample ID: MW-18.16_20201119

Lab Sample ID: 580-99238-9
Date Collected: 11/19/20 10:20
Matrix: Solid
Date Received: 11/20/20 11:55
Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			344700	12/03/20 11:47	S1S	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	344760	12/05/20 04:00	ADB	TAL SEA
Total/NA	Prep	3050B			344241	11/28/20 08:11	JCP	TAL SEA
Total/NA	Analysis	6010D		1	344447	12/01/20 02:45	TMH	TAL SEA

Client Sample ID: Trip Blank_20201119

Lab Sample ID: 580-99238-10
Date Collected: 11/19/20 00:00
Matrix: Solid
Date Received: 11/20/20 11:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			344617	11/20/20 14:40	JSM	TAL SEA
Total/NA	Analysis	8260D		1	344651	12/02/20 18:20	JSM	TAL SEA
Total/NA	Prep	5035			344686	12/03/20 09:24	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	344781	12/03/20 11:41	JSM	TAL SEA

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA Inc.
Job ID: 580-99238-1
Project/Site: ARCO Facility No. 00980

Laboratory: Eurofins TestAmerica, Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C553	02-18-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D	5035	Solid	n-Hexane
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Method Summary

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SEA
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL SEA
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SEA
6010D	Metals (ICP)	SW846	TAL SEA
D 2216	Percent Moisture	ASTM	TAL SEA
3050B	Preparation, Metals	SW846	TAL SEA
3546	Microwave Extraction	SW846	TAL SEA
5035	Closed System Purge and Trap	SW846	TAL SEA

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Antea USA Inc.
Project/Site: ARCO Facility No. 00980

Job ID: 580-99238-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-99238-1	MW-17.5_20201117	Solid	11/17/20 11:10	11/20/20 11:55	
580-99238-2	MW-18.5_20201117	Solid	11/17/20 12:19	11/20/20 11:55	
580-99238-3	MW-19.3_20201117	Solid	11/17/20 13:30	11/20/20 11:55	
580-99238-4	MW-17.10_20201118	Solid	11/18/20 12:00	11/20/20 11:55	
580-99238-5	MW-17.15_20201118	Solid	11/18/20 12:10	11/20/20 11:55	
580-99238-6	MW-19.10_20201118	Solid	11/18/20 14:30	11/20/20 11:55	
580-99238-7	MW-19.5_20201119	Solid	11/19/20 10:00	11/20/20 11:55	
580-99238-8	MW-18.12_20201119	Solid	11/19/20 10:10	11/20/20 11:55	
580-99238-9	MW-18.16_20201119	Solid	11/19/20 10:20	11/20/20 11:55	
580-99238-10	Trip Blank_20201119	Solid	11/19/20 00:00	11/20/20 11:55	

Loc: 580
99238

580-99238 Chain of Custody

bp rm Laboratory Management Program (LaMP) Chain of Custo

Soil, Sediment and Groundwater Samples

Page 1 of 2

BP Site Node Path: ARCO 980 **Req Due Date (mm/dd/yy):** Standard TAT Rush TAT Yes ____ No X

BP/RM Facility No: ARCO Facility No. 00980 **Lab Work Order Number:**

Lab Name:	Test America	BP/ARC Facility Address:	10822 Roosevelt Way NE	Consultant/Contractor:	Antea Group
Lab Address:	5755 8th Street East, Tacoma, WA 98424	City, State, ZIP Code:	Seattle, WA	Consultant/Contractor Project No:	00980SA201.20100
Lab PM:	Elaine Walker	WR329961/009VH-0006	Washington State Department of Ecology	Address:	2006 148th Ave NE, Redmond, WA 98052
Lab Phone:	253.248.4972	California Global ID No.:	NA	Consultant/Contractor PM:	Brad Jackson
Lab Shipping Accnt:	NA	Enfos Proposal No:	WR827288/009VH-0014	Phone: 503-863-2114	Email: Brad.Jackson@anteagroup.com
	Michael Dahlstrom Email:	michaeldahlstrom@hotmail.com			
	Grace				
Lab Bottle Order No:	NA	Accounting Mode:	Provision X OOC-BU ____ OOC-RM ____	Send/Submit EDD to:	Brad.Jackson@anteagroup.com
Other Info:	elaine.walker@testamericainc.com	Stage	2_Select (20) Activity Additional Data Collection (100)	Invoice To:	BP-RM ____ BP/ARC X
BP/RM PM:	Wade Melton				
PM Phone:	360-594-7978				
PM Email:	wade.melton@bp.com				

Sample Details | **Requested Analyses** | **Report Type & QC Level**

Report Type & QC Level: Limited (Standard) Package; Limited Plus Package; Full Package

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Filt	Pres	Analysis: BTEX by EPA 8260B	MTBE and n-hexane by EPA 8260B	NWTPH-Gx	NWTPH-Dx	Pb-T by EPA 6000/7000 Series	EDB	EDC	RCRA metals w/o Mercury	Comments
	MW-17_5_20201117	11/17/20	1110						4			X	X	X	X	X	X	X	X	
	MW-18_5_20201117	11/17/20	1219						4			X	X	X	X	X	X	X	X	
	MW-19_3_20201117	11/17/20	1330						4			X	X	X	X	X	X	X	X	
	MW-17_10_20201118	11/18/20	1200						4			X	X	X	X	X	X	X	X	
	MW-17_15_20201118	11/18/20	1210						4			X	X	X	X	X	X	X	X	
	MW-19_10_20201118	11/18/20	1430						4			X	X	X	X	X	X	X	X	
	MW-19_5_20201119	11/19/20	1000						4			X	X	X	X	X	X	X	X	

Therm ID: A1 Cor: -0.2° Unc: 0.7°
Cooler Dsc: LR
Packing: Bubble
Cust. Seal: Yes X No ____
Blue Ice, (Wet) Dry, None
FedEx: ____
UPS: ____
Lab Cour: X
Other: ____

Sampler's Name:	Marissa Bernard / Nathan Hart
Sampler's Company:	Antea Group
Ship Method:	Ship Date:
Shipment Tracking No:	

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Nathaniel Hart / Antea Group	11/20/20	1155	ETA SEA	11/20/20	1153

Special Instructions: Stir bars frozen: 11/17/20 : 1510 and 11/18/20 : 1730 and 11/19/20 : 1625

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

BP LaMP Soil/H2O COC July 2018

Laboratory Management Program (LaMP) Chain of Custody Record

Soil, Sediment and Groundwater Samples

Page 2 of 2

BP Site Node Path: ARCO 980
Req Due Date (mm/dd/yy): Standard TAT
Rush TAT Yes ____ No X

BP/RM Facility No: ARCO Facility No. 00980
Lab Work Order Number:

Lab Name:	Test America	BP/ARC Facility Address:	10822 Roosevelt Way NE	Consultant/Contractor:	Antea Group
Lab Address:	5755 8th Street East, Tacoma, WA 98424	City, State, ZIP Code:	Seattle, WA	Consultant/Contractor Project No:	00980SA201.20100
Lab PM:	Elaine Walker	WR329961/009VH-0006	Washington State Department of Ecology	Address:	2006 148th Ave NE, Redmond, WA 98052
Lab Phone:	253.248.4972	California Global ID No.:	NA	Consultant/Contractor PM:	Brad Jackson
Lab Shipping Accnt:	NA	Enfos Proposal No:	WR827288/009VH-0014	Phone: 503-863-2114	Email: Brad.Jackson@anteagroup.com
	Michael Dahlstrom Email:	michaeldahlstrom@hotmail.com			
	Grace				–
Lab Bottle Order No:	NA	Accounting Mode:	Provision X OOC-BU ____ OOC-RM ____	Send/Submit EDD to:	Brad.Jackson@anteagroup.com
Other Info:	elaine.walker@testamericainc.com	Stage 2_Select (20)	Activity Additional Data Collection (100)	Invoice To:	BP-RM ____ BP/ARC X
BP/RM PM:	Wade Melton				
PM Phone:	360-594-7978				
PM Email:	wade.melton@bp.com				

Sample Details | **Requested Analyses** | **Report Type & QC Level**

Limited (Standard) Package —
Limited Plus Package
Full Package

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Analysis (Filt / Pres)	BTEX by EPA 8260B	MTBE and n-hexane by EPA 8260B	NWTPH-Gx	NWTPH-Dx	Pb-T by EPA 6000/7000 Series	cVOC	EDC	RCRA metals w/o mercury	Comments
	MW-18-12-20201119	11/19/20	1010						4		X	X	X	X	X	X	X	X	
	MW-18-16-20201119	11/19/20	1020						4		X	X	X	X	X	X	X	X	
	Trip Blank-20201119	11/19/20	0000						3		X	X	X			X	X		

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Marissa Bernard/Nathan Ham	Nathaniel [signature] / Antea Group	11/20/20	1155	[signature] ETA SEA	11/20/2	1155
Sampler's Company: Antea Group						
Ship Method: Ship Date:						
Shipment Tracking No:						

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ________°F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

BP LaMP Soil/H2O COC July 2018

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 580-99238-1

Login Number: 99238
List Number: 1
Creator: Hobbs, Kenneth F

List Source: Eurofins TestAmerica, Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344221 Batch Start Date: 11/27/20 15:05 Batch Analyst: Johal, Amanpreet S

Batch Method: 5035 Batch End Date: 11/27/20 15:07

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	VOAMasterMix 00062	VoaSand 00069
MB 580-344221/1		5035, 8260D				5 g	5 mL		5 g
LCS 580-344221/2		5035, 8260D				5 g	5 mL	2 uL	5 g
LCSD 580-344221/3		5035, 8260D				5 g	5 mL	2 uL	5 g
580-99238-C-1	MW-17.5_20201117	5035, 8260D	T	+031.022 g	35.67 g	4.648 g	5 mL		
580-99238-C-2	MW-18.5_20201117	5035, 8260D	T	30.321 g	36.57 g	6.249 g	5 mL		
580-99238-C-3	MW-19.3_20201117	5035, 8260D	T	30.333 g	36.57 g	6.237 g	5 mL		

Batch Notes	
Balance ID	SEA239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	BT4
Preservative ID	DI WATER
Vial Lot Number	0103101f

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344412 Batch Start Date: 11/30/20 16:50 Batch Analyst: Johal, Amanpreet S

Batch Method: 5035 Batch End Date: 11/30/20 16:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	VOAMasterMix 00062	VoaSand 00069
MB 580-344412/1		5035, 8260D				5 g	5 mL		5 g
LCS 580-344412/2		5035, 8260D				5 g	5 mL	2 uL	5 g
LCSD 580-344412/3		5035, 8260D				5 g	5 mL	2 uL	5 g
580-99238-C-5	MW-17.15_20201118	5035, 8260D	T	31.267 g	37.57 g	6.303 g	5 mL		
580-99238-C-6	MW-19.10_20201118	5035, 8260D	T	30.113 g	36.13 g	6.017 g	5 mL		

Batch Notes	
Balance ID	SEA239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	BT4
Vial Lot Number	0103101f

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344507 Batch Start Date: 12/01/20 17:11 Batch Analyst: Johal, Amanpreet S

Batch Method: 5035 Batch End Date: 12/01/20 17:13

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	VOAMasterMix 00062	VoaSand 00069
MB 580-344507/1		5035, 8260D				5 g	5 mL		5 g
LCS 580-344507/2		5035, 8260D				5 g	5 mL	2 uL	5 g
LCSD 580-344507/3		5035, 8260D				5 g	5 mL	2 uL	5 g
580-99238-D-4	MW-17.10_20201118	5035, 8260D	T	+031.081 g	37.83 g	6.749 g	5 mL		
580-99238-D-7	MW-19.5_20201119	5035, 8260D	T	+030.180 g	37.13 g	6.95 g	5 mL		
580-99238-D-8	MW-18.12_20201119	5035, 8260D	T	+030.144 g	36.94 g	6.796 g	5 mL		

Batch Notes	
Balance ID	SEA239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	BT4
Vial Lot Number	0103101f

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344617 Batch Start Date: 12/02/20 15:13 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	VOAMasterMix 00062	VoaSand 00069
MB 580-344617/1		5035, 8260D				5 g	5 mL		5 g
LCS 580-344617/2		5035, 8260D				5 g	5 mL	2 uL	5 g
LCSD 580-344617/3		5035, 8260D				5 g	5 mL	2 uL	5 g
580-99238-C-9	MW-18.16_20201119	5035, 8260D	T	30.235 g	37.52 g	7.285 g	5 mL		
580-99238-B-10	Trip Blank 20201119	5035, 8260D	T			5 g	5 mL		

Batch Notes	
Balance ID	sea239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	bt4
Preservative ID	di h2o

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344707 Batch Start Date: 12/03/20 12:44 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date: 12/03/20 12:48

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	VOAMasterMix 00062	VoaSand 00069
MB 580-344707/1		5035, 8260D				5 g	5 mL		5 g
LCS 580-344707/2		5035, 8260D				5 g	5 mL	2 uL	5 g
LCSD 580-344707/3		5035, 8260D				5 g	5 mL	2 uL	5 g
580-99238-D-1	MW-17.5_20201117	5035, 8260D	T	31.133 g	36.23 g	5.097 g	5 mL		
580-99238-D-2	MW-18.5_20201117	5035, 8260D	T	30.218 g	36.58 g	6.362 g	5 mL		
580-99238-D-3	MW-19.3_20201117	5035, 8260D	T	31.081 g	38.63 g	7.549 g	5 mL		

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 580-344707/1		5035, 8260D							
LCS 580-344707/2		5035, 8260D							
LCSD 580-344707/3		5035, 8260D							
580-99238-D-1	MW-17.5_20201117	5035, 8260D	T						
580-99238-D-2	MW-18.5_20201117	5035, 8260D	T	over					
580-99238-D-3	MW-19.3_20201117	5035, 8260D	T	over					

Batch Notes	
Balance ID	sea239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	bt4
Preservative ID	di h2o

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344085 Batch Start Date: 11/25/20 14:59 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	MeOHSubtraction	MeOHVol	InitialAmount	FinalAmount
MB 580-344085/1		5035, NWTPH-Gx						10 g	10 mL
LCS 580-344085/2		5035, NWTPH-Gx						10 g	10 mL
LCSD 580-344085/3		5035, NWTPH-Gx						10 g	10 mL
580-99238-B-1	MW-17.5_20201117	5035, NWTPH-Gx	T	31.327 g	41.02 g	No	10 mL	9.693 g	10 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	GRO_LCS 00064	V2.4TFT-EX 00061	VoaSand 00069			
MB 580-344085/1		5035, NWTPH-Gx			10 mL	10 g			
LCS 580-344085/2		5035, NWTPH-Gx		200 uL	10 mL	10 g			
LCSD 580-344085/3		5035, NWTPH-Gx		200 uL	10 mL	10 g			
580-99238-B-1	MW-17.5_20201117	5035, NWTPH-Gx	T						

Batch Notes	
Balance ID	SEA239
Batch Comment	2574842
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	BT5
Vial Lot Number	0103101f

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344456 Batch Start Date: 12/01/20 12:19 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date: 12/01/20 12:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	MeOHSubtraction	MeOHVol	InitialAmount	FinalAmount
MB 580-344456/1		5035, NWTPH-Gx						10 g	10 mL
LCS 580-344456/2		5035, NWTPH-Gx						10 g	10 mL
LCSD 580-344456/3		5035, NWTPH-Gx						10 g	10 mL
580-99238-B-2	MW-18.5_20201117	5035, NWTPH-Gx	T	31.141 g	42.74 g	No	10 mL	11.599 g	10 mL
580-99238-B-3	MW-19.3_20201117	5035, NWTPH-Gx	T	31.548 g	43.73 g	No	10 mL	12.182 g	10 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	GRO_LCS 00064	V2.4TFT-EX 00061	AnalysisComment			
MB 580-344456/1		5035, NWTPH-Gx			10 mL				
LCS 580-344456/2		5035, NWTPH-Gx		200 uL	10 mL				
LCSD 580-344456/3		5035, NWTPH-Gx		200 uL	10 mL				
580-99238-B-2	MW-18.5_20201117	5035, NWTPH-Gx	T						
580-99238-B-3	MW-19.3_20201117	5035, NWTPH-Gx	T			over			

Batch Notes	
Balance ID	sea239
Batch Comment	2574842
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	bt7
Vial Lot Number	0103101F

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344580 Batch Start Date: 12/02/20 12:40 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date: 12/02/20 12:47

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	MeOHSubtraction	MeOHVol	InitialAmount	FinalAmount
LCS 580-344580/1		5035, NWTPH-Gx						10 g	10 mL
LCSD 580-344580/2		5035, NWTPH-Gx						10 g	10 mL
MB 580-344580/3		5035, NWTPH-Gx						10 g	10 mL
580-99238-B-4	MW-17.10_20201118	5035, NWTPH-Gx	T	31.181 g	43.53 g	No	10 mL	12.349 g	10 mL
580-99238-B-5	MW-17.15_20201118	5035, NWTPH-Gx	T	31.159 g	44.05 g	No	10 mL	12.891 g	10 mL
580-99238-B-6	MW-19.10_20201118	5035, NWTPH-Gx	T	31.668 g	43.25 g	No	10 mL	11.582 g	10 mL
580-99238-B-7	MW-19.5_20201119	5035, NWTPH-Gx	T	30.944 g	41.43 g	No	10 mL	10.486 g	10 mL
580-99238-B-8	MW-18.12_20201119	5035, NWTPH-Gx	T	31.172 g	41.17 g	No	10 mL	9.998 g	10 mL
580-99238-B-9	MW-18.16_20201119	5035, NWTPH-Gx	T	31.396 g	44.01 g	No	10 mL	12.614 g	10 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	GRO_LCS 00064	V2.4TFT-EX 00061	VoaSand 00069	AnalysisComment		
LCS 580-344580/1		5035, NWTPH-Gx		200 uL	10 mL	10 g			
LCSD 580-344580/2		5035, NWTPH-Gx		200 uL	10 mL	10 g			
MB 580-344580/3		5035, NWTPH-Gx			10 mL	10 g			
580-99238-B-4	MW-17.10_20201118	5035, NWTPH-Gx	T				over		
580-99238-B-5	MW-17.15_20201118	5035, NWTPH-Gx	T				over		
580-99238-B-6	MW-19.10_20201118	5035, NWTPH-Gx	T						
580-99238-B-7	MW-19.5_20201119	5035, NWTPH-Gx	T						
580-99238-B-8	MW-18.12_20201119	5035, NWTPH-Gx	T						
580-99238-B-9	MW-18.16_20201119	5035, NWTPH-Gx	T				over		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344580 Batch Start Date: 12/02/20 12:40 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date: 12/02/20 12:47

Batch Notes	
Balance ID	SEA239
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	BT7
Vial Lot Number	0103101F

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344686 Batch Start Date: 12/03/20 09:24 Batch Analyst: McKell, Justin S

Batch Method: 5035 Batch End Date: 12/03/20 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	MeOHSubtraction	MeOHVol	InitialAmount	FinalAmount	GRO_LCS 00064	V2.4TFT-EX 00061
MB 580-344686/1		5035, NWTPH-Gx				10 g	10 mL		10 mL
LCS 580-344686/2		5035, NWTPH-Gx				10 g	10 mL	200 uL	10 mL
LCSD 580-344686/3		5035, NWTPH-Gx				10 g	10 mL	200 uL	10 mL
580-99238-A-10	Trip Blank 20201119	5035, NWTPH-Gx	T	No	10 mL	10 g	10 mL		

Lab Sample ID	Client Sample ID	Method Chain	Basis	VoaSand 00069					
MB 580-344686/1		5035, NWTPH-Gx		10 g					
LCS 580-344686/2		5035, NWTPH-Gx		10 g					
LCSD 580-344686/3		5035, NWTPH-Gx		10 g					
580-99238-A-10	Trip Blank 20201119	5035, NWTPH-Gx	T						

Batch Notes	
Balance ID	sea239
Batch Comment	2574842
Blank Matrix ID	2668736
Pipette/Syringe/Dispenser ID	bt7
Vial Lot Number	0103101F

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344508 Batch Start Date: 12/01/20 17:22 Batch Analyst: Salehnia, Sonya 1

Batch Method: 3546 Batch End Date: 12/02/20 15:07

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	TPH Spike_RZ 00105	TPH_SURR 00054		
MB 580-344508/1		3546, NWTPH-Dx		10 g	10 mL		100 uL		
LCS 580-344508/2		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
LCSD 580-344508/3		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
580-99238-A-1	MW-17.5_20201117	3546, NWTPH-Dx	T	10.001 g	10 mL		100 uL		
580-99238-A-1 DU	MW-17.5_20201117	3546, NWTPH-Dx	T	10.194 g	10 mL		100 uL		
580-99238-A-2	MW-18.5_20201117	3546, NWTPH-Dx	T	10.431 g	10 mL		100 uL		
580-99238-A-3	MW-19.3_20201117	3546, NWTPH-Dx	T	10.107 g	10 mL		100 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344508 Batch Start Date: 12/01/20 17:22 Batch Analyst: Salehnia, Sonya 1

Batch Method: 3546 Batch End Date: 12/02/20 15:07

Batch Notes	
Balance ID	sea232
Batch Comment	hydromatrix: 2587992; Vial by: CH
Blank Matrix ID	2760179
Analyst ID - Concentration	CH
Concentration 1 Corrected Temperature	69.9-74.9 Degrees C
Equipment ID - Concentration 1	Steam bath 2
Analyst ID - Extraction	ss
Filter ID	2707788
Method/Fraction	3546/dx
Microwave Oven ID	mars3
Microwave Program ID	standard
Na2SO4 ID	2744776
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2762419
Analyst ID - Spike Analyst	ss
Analyst ID - Spike Witness Analyst	ch
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	661200
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Vial Lot Number	24158478

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344659 Batch Start Date: 12/02/20 17:53 Batch Analyst: Laplace, Richard J

Batch Method: 3546 Batch End Date: 12/03/20 20:52

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	TPH Spike_RZ 00105	TPH_SURR 00054		
MB 580-344659/1		3546, NWTPH-Dx		10 g	10 mL		100 uL		
LCS 580-344659/2		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
LCSD 580-344659/3		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
580-99238-A-4	MW-17.10_20201118	3546, NWTPH-Dx	T	10.886 g	10 mL		100 uL		
580-99238-A-5	MW-17.15_20201118	3546, NWTPH-Dx	T	10.036 g	10 mL		100 uL		
580-99238-A-6	MW-19.10_20201118	3546, NWTPH-Dx	T	10.262 g	10 mL		100 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344659 Batch Start Date: 12/02/20 17:53 Batch Analyst: Laplace, Richard J

Batch Method: 3546 Batch End Date: 12/03/20 20:52

Batch Notes	
Balance ID	sea232
Batch Comment	hydromatrix: 2587992; Vial by: ss
Blank Matrix ID	2760179
Analyst ID - Concentration	ss
Concentration 1 Corrected Temperature	69.9-74.9 Degrees C
Equipment ID - Concentration 1	Steam bath 2
Analyst ID - Extraction	rjl
Filter ID	2707788
Method/Fraction	3546/dx
Microwave Oven ID	mars1
Microwave Program ID	standard
Na2SO4 ID	2744776
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2762419
Analyst ID - Spike Analyst	rjl
Analyst ID - Spike Witness Analyst	ch
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	661200
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Vial Lot Number	24158478

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344700 Batch Start Date: 12/03/20 11:47 Batch Analyst: Salehnia, Sonya 1

Batch Method: 3546 Batch End Date: 12/03/20 21:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	TPH Spike_RZ 00105	TPH_SURR 00054		
MB 580-344700/1		3546, NWTPH-Dx		10 g	10 mL		100 uL		
LCS 580-344700/2		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
LCSD 580-344700/3		3546, NWTPH-Dx		10 g	10 mL	100 uL	100 uL		
580-99238-A-7	MW-19.5_20201119	3546, NWTPH-Dx	T	10.680 g	10 mL		100 uL		
580-99238-A-8	MW-18.12_20201119	3546, NWTPH-Dx	T	10.531 g	10 mL		100 uL		
580-99238-A-9	MW-18.16_20201119	3546, NWTPH-Dx	T	10.183 g	10 mL		100 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344700 Batch Start Date: 12/03/20 11:47 Batch Analyst: Salehnia, Sonya 1

Batch Method: 3546 Batch End Date: 12/03/20 21:10

Batch Notes	
Balance ID	sea232
Batch Comment	hydromatrix: 2587992; vialed by: rjl
Blank Matrix ID	2760179
Analyst ID - Concentration	rjl
Concentration 1 Corrected Temperature	69.4-74.4 Degrees C
Analyst ID - Clean Up	rjl
Equipment ID - Concentration 1	steambath 1
Analyst ID - Extraction	ss
Filter ID	2707788
Method/Fraction	3546/dx
Microwave Oven ID	mars1
Microwave Program ID	Fuels 01 Xpress
Na2SO4 ID	2744776
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2762419
Silica Gel ID	2674937
Analyst ID - Spike Analyst	ss
Analyst ID - Spike Witness Analyst	ch
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	61013-040-1
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Vial Lot Number	24158478

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344241 Batch Start Date: 11/28/20 08:11 Batch Analyst: Pimentel, Joy C

Batch Method: 3050B Batch End Date: 11/28/20 09:58

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ICP CAL 1 00009	ICP CAL 2 00008	MET Spike 3C 00024	
580-99238-A-1	MW-17.5_20201117	3050B, 6010D	T	1.4757 g	50 mL				
580-99238-A-1 DU	MW-17.5_20201117	3050B, 6010D	T	1.4565 g	50 mL				
580-99238-A-1 MS	MW-17.5_20201117	3050B, 6010D	T	1.4747 g	50 mL	0.5 mL	0.5 mL	0.5 mL	
580-99238-A-1 MSD	MW-17.5_20201117	3050B, 6010D	T	1.4851 g	50 mL	0.5 mL	0.5 mL	0.5 mL	
580-99238-A-2	MW-18.5_20201117	3050B, 6010D	T	1.4233 g	50 mL				
580-99238-A-3	MW-19.3_20201117	3050B, 6010D	T	1.3155 g	50 mL				
580-99238-A-4	MW-17.10_20201118	3050B, 6010D	T	1.4164 g	50 mL				
580-99238-A-5	MW-17.15_20201118	3050B, 6010D	T	1.3243 g	50 mL				
580-99238-A-6	MW-19.10_20201118	3050B, 6010D	T	1.3662 g	50 mL				
580-99238-A-7	MW-19.5_20201119	3050B, 6010D	T	1.5841 g	50 mL				
580-99238-A-8	MW-18.12_20201119	3050B, 6010D	T	1.5780 g	50 mL				
580-99238-A-9	MW-18.16_20201119	3050B, 6010D	T	1.4746 g	50 mL				
MB 580-344241/24		3050B, 6010D		1.0 g	50 mL				
LCS 580-344241/25		3050B, 6010D		1.0 g	50 mL	0.5 mL	0.5 mL	0.5 mL	
LCSD 580-344241/26		3050B, 6010D		1.0 g	50 mL	0.5 mL	0.5 mL	0.5 mL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344241 Batch Start Date: 11/28/20 08:11 Batch Analyst: Pimentel, Joy C

Batch Method: 3050B Batch End Date: 11/28/20 09:58

Batch Notes	
Balance ID	SEA228
Blank Soil Lot Number	2062632
Temperature - Corrected - End	94.5 Degrees C
Temperature - Corrected - Start	94.5 Degrees C
Digestion End Time	11/28/2020 09:58
Digestion Start Time	11/28/2020 08:58
Digestion Unit ID	BLOCK A
Digestion Tube/Cup ID	2535260
Hydrogen Peroxide ID	2698554
Hydrochloric Acid ID	2723687
Nitric Acid ID	2712015
Nominal Amount Used	1.0 g
Pipette/Syringe/Dispenser ID	METALS-PREP-2
Analyst ID - Spike Analyst	see above
Sufficient Volume for Batch QC	yes
Thermometer Location ID	A5
Thermometer ID	1108438
Temperature - Uncorrected - End	95 Degrees C
Temperature - Uncorrected - Start	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99238-1

SDG No.:

Batch Number: 344466 Batch Start Date: 12/01/20 13:22 Batch Analyst: Salehnia, Sonya 1

Batch Method: D 2216 Batch End Date: 12/02/20 09:59

Lab Sample ID	Client Sample ID	Method Chain	Basis	DishWeight	SampleMassWet	SampleMassDry			
580-99238-A-1	MW-17.5_20201117	D 2216	T	0.834 g	7.995 g	7.191 g			
580-99238-A-2	MW-18.5_20201117	D 2216	T	0.829 g	7.280 g	5.937 g			
580-99238-A-3	MW-19.3_20201117	D 2216	T	0.822 g	9.342 g	8.559 g			
580-99238-A-4	MW-17.10_20201118	D 2216	T	0.825 g	7.581 g	7.115 g			
580-99238-A-5	MW-17.15_20201118	D 2216	T	0.829 g	9.542 g	8.866 g			
580-99238-A-6	MW-19.10_20201118	D 2216	T	0.831 g	10.672 g	10.039 g			
580-99238-A-7	MW-19.5_20201119	D 2216	T	0.824 g	10.449 g	8.680 g			
580-99238-A-8	MW-18.12_20201119	D 2216	T	0.822 g	13.150 g	11.718 g			
580-99238-A-9	MW-18.16_20201119	D 2216	T	0.807 g	8.451 g	7.386 g			

Batch Notes	
Balance ID	sea232
Date samples were placed in the oven	12/01/2020
Oven Temp In	111.9 Degrees C
Time samples were place in the oven	17:21
Date samples were removed from oven	12/02/2020
Oven Temp Out	115.3 Degrees C
Time Samples were removed from oven	09:32
Oven ID	oven2
Thermometer ID	digital read out
Temperature - Start - Uncorrected	110.0 Degrees C
Temperature - End - Uncorrected	113.4 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Appendix E - Groundwater Laboratory Analytical Report and Chain-of-Custody Documentation

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ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-99804-1
Client Project/Site: BP -ARCO 980

For:
Antea USA Inc.
4006 148th Ave NE
Redmond, Washington 98052

Attn: Megan Richard

M. Elaine Walker

Authorized for release by:
12/30/2020 2:22:06 PM

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of Eurofins TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The signature on the cover page extends to the case narrative and all the data and forms in the package. The Chain of Custody is included and is an integral part of this report.

Elaine Walker
Project Manager II
12/30/2020 2:22:06 PM

Table of Contents

Definitions/Glossary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 580-99804-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative
580-99804-1

Receipt
Four samples were received on 12/15/2020 12:00 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.6º C.

Receipt Exceptions

The container labels for 2 VOA vials for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-18_8.47_20201214 (580-99804-2). One container labels lists MW-17, the other lists MSW-19 while the COC lists MW-18. All other information, including the rest of the ID, are correct and match.

GC/MS VOA
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: MW-18_8.47_20201214 (580-99804-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Client Sample ID: MW-17_11.10_20201214 — Lab Sample ID: 580-99804-1

No Detections.

Client Sample ID: MW-18_8.47_20201214 — Lab Sample ID: 580-99804-2

No Detections.

Client Sample ID: MW-19_8.17_20201214 — Lab Sample ID: 580-99804-3

No Detections.

Client Sample ID: Trip Blank_20201214 — Lab Sample ID: 580-99804-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-17_11.10_20201214

Lab Sample ID: 580-99804-1
Matrix: Water
Date Collected: 12/14/20 10:00
Date Received: 12/15/20 12:00

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/22/20 03:51	1
Toluene	ND		2.0		ug/L			12/22/20 03:51	1
Ethylbenzene	ND		3.0		ug/L			12/22/20 03:51	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/22/20 03:51	1
o-Xylene	ND		2.0		ug/L			12/22/20 03:51	1
Xylenes, Total	ND		3.0		ug/L			12/22/20 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/22/20 03:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*12/22/20 03:51*	*1*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*12/22/20 03:51*	*1*
Dibromofluoromethane (Surr)	*114*		*80 - 120*		*12/22/20 03:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/18/20 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*		*12/18/20 00:13*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		12/23/20 10:57	12/28/20 22:26	1
Motor Oil (>C24-C36)	ND		350		ug/L		12/23/20 10:57	12/28/20 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*12/23/20 10:57*	*12/28/20 22:26*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/17/20 19:33	12/18/20 15:17	5

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/18/20 19:24	12/21/20 16:05	5

Client Sample ID: MW-18_8.47_20201214

Lab Sample ID: 580-99804-2
Matrix: Water
Date Collected: 12/14/20 10:50
Date Received: 12/15/20 12:00

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/22/20 04:17	1
Toluene	ND		2.0		ug/L			12/22/20 04:17	1
Ethylbenzene	ND		3.0		ug/L			12/22/20 04:17	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/22/20 04:17	1
o-Xylene	ND		2.0		ug/L			12/22/20 04:17	1
Xylenes, Total	ND		3.0		ug/L			12/22/20 04:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/22/20 04:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 126*		*12/22/20 04:17*	*1*

Client Sample ID: MW-18_8.47_20201214

Lab Sample ID: 580-99804-2

Date Collected: 12/14/20 10:50
Date Received: 12/15/20 12:00

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*12/22/20 04:17*	*1*
Dibromofluoromethane (Surr)	*115*		*80 - 120*		*12/22/20 04:17*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/18/20 00:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*		*12/18/20 00:37*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		12/23/20 10:57	12/28/20 22:46	1
Motor Oil (>C24-C36)	ND		350		ug/L		12/23/20 10:57	12/28/20 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*15*	*S1-*	*50 - 150*	*12/23/20 10:57*	*12/28/20 22:46*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/17/20 19:33	12/18/20 15:21	5

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/18/20 19:24	12/21/20 16:09	5

Client Sample ID: MW-19_8.17_20201214

Lab Sample ID: 580-99804-3

Date Collected: 12/14/20 11:25
Date Received: 12/15/20 12:00

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/22/20 04:43	1
Toluene	ND		2.0		ug/L			12/22/20 04:43	1
Ethylbenzene	ND		3.0		ug/L			12/22/20 04:43	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/22/20 04:43	1
o-Xylene	ND		2.0		ug/L			12/22/20 04:43	1
Xylenes, Total	ND		3.0		ug/L			12/22/20 04:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/22/20 04:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*80 - 126*		*12/22/20 04:43*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/22/20 04:43*	*1*
Dibromofluoromethane (Surr)	*114*		*80 - 120*		*12/22/20 04:43*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/18/20 01:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*50 - 150*		*12/18/20 01:01*	*1*

Client Sample ID: MW-19_8.17_20201214

Lab Sample ID: 580-99804-3

Date Collected: 12/14/20 11:25
Date Received: 12/15/20 12:00

Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		12/23/20 10:57	12/28/20 23:06	1
Motor Oil (>C24-C36)	ND		360		ug/L		12/23/20 10:57	12/28/20 23:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*66*		*50 - 150*	*12/23/20 10:57*	*12/28/20 23:06*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/17/20 19:33	12/18/20 15:25	5

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/18/20 19:24	12/21/20 16:13	5

Client Sample ID: Trip Blank_20201214

Lab Sample ID: 580-99804-4

Date Collected: 12/14/20 00:01
Date Received: 12/15/20 12:00

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/22/20 00:23	1
Toluene	ND		2.0		ug/L			12/22/20 00:23	1
Ethylbenzene	ND		3.0		ug/L			12/22/20 00:23	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/22/20 00:23	1
o-Xylene	ND		2.0		ug/L			12/22/20 00:23	1
Xylenes, Total	ND		3.0		ug/L			12/22/20 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/22/20 00:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 126*		*12/22/20 00:23*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*12/22/20 00:23*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*12/22/20 00:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/17/20 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*		*12/17/20 18:55*	*1*

Surrogate Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(80-126)	(80-120)	(80-120)
580-99804-1	MW-17_11.10_20201214	95	112	87	114
580-99804-2	MW-18_8.47_20201214	95	112	87	115
580-99804-3	MW-19_8.17_20201214	96	115	82	114
580-99804-4	Trip Blank_20201214	97	108	88	108
LCS 580-346120/6	Lab Control Sample	101	94	103	94
LCSD 580-346120/7	Lab Control Sample Dup	103	95	103	96
MB 580-346120/5	Method Blank	97	105	92	106

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB2
Lab Sample ID	Client Sample ID	(50-150)
580-99804-1	MW-17_11.10_20201214	91
580-99804-2	MW-18_8.47_20201214	87
580-99804-3	MW-19_8.17_20201214	90
580-99804-4	Trip Blank_20201214	92
LCS 580-345819/13	Lab Control Sample	100
LCSD 580-345819/14	Lab Control Sample Dup	96
MB 580-345819/15	Method Blank	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH
Lab Sample ID	Client Sample ID	(50-150)
580-99804-1	MW-17_11.10_20201214	83
580-99804-2	MW-18_8.47_20201214	15 S1-
580-99804-3	MW-19_8.17_20201214	66
LCS 580-346323/2-A	Lab Control Sample	85
LCSD 580-346323/3-A	Lab Control Sample Dup	77
MB 580-346323/1-A	Method Blank	79

Surrogate Legend

OTPH = o-Terphenyl

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-346120/5
Matrix: Water
Analysis Batch: 346120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/21/20 22:40	1
Toluene	ND		2.0		ug/L			12/21/20 22:40	1
Ethylbenzene	ND		3.0		ug/L			12/21/20 22:40	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/21/20 22:40	1
o-Xylene	ND		2.0		ug/L			12/21/20 22:40	1
Xylenes, Total	ND		3.0		ug/L			12/21/20 22:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/21/20 22:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 126*		*12/21/20 22:40*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*12/21/20 22:40*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*12/21/20 22:40*	*1*

Lab Sample ID: LCS 580-346120/6
Matrix: Water
Analysis Batch: 346120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	9.11		ug/L		91	82 - 122		
Toluene			10.0	9.31		ug/L		93	80 - 120		
Ethylbenzene			10.0	9.59		ug/L		96	80 - 120		
m-Xylene & p-Xylene			10.0	8.98		ug/L		90	80 - 120		
o-Xylene			10.0	8.95		ug/L		90	80 - 125		
Xylenes, Total			20.0	17.9		ug/L		90	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 126*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*

Lab Sample ID: LCSD 580-346120/7
Matrix: Water
Analysis Batch: 346120

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	8.98		ug/L		90	82 - 122	2	14
Toluene			10.0	9.16		ug/L		92	80 - 120	2	13
Ethylbenzene			10.0	9.47		ug/L		95	80 - 120	1	14
m-Xylene & p-Xylene			10.0	8.90		ug/L		89	80 - 120	1	14
o-Xylene			10.0	8.84		ug/L		88	80 - 125	1	16
Xylenes, Total			20.0	17.7		ug/L		89	80 - 120	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 126*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-346120/7
Matrix: Water
Analysis Batch: 346120

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	96		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-345819/15
Matrix: Water
Analysis Batch: 345819

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/17/20 16:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		12/17/20 16:54	1

Lab Sample ID: LCS 580-345819/13
Matrix: Water
Analysis Batch: 345819

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	950		ug/L		95	79 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150

Lab Sample ID: LCSD 580-345819/14
Matrix: Water
Analysis Batch: 345819

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	924		ug/L		92	79 - 120	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-346323/1-A
Matrix: Water
Analysis Batch: 346498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110		ug/L		12/23/20 10:57	12/24/20 12:54	1
Motor Oil (>C24-C36)	ND		350		ug/L		12/23/20 10:57	12/24/20 12:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150	12/23/20 10:57	12/24/20 12:54	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-346323/2-A
Matrix: Water
Analysis Batch: 346498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346323

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			2000	1870		ug/L		94	50 - 120		
Motor Oil (>C24-C36)			2000	1870		ug/L		93	64 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*85*		*50 - 150*

Lab Sample ID: LCSD 580-346323/3-A
Matrix: Water
Analysis Batch: 346498

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 346323

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			2000	1890		ug/L		94	50 - 120	1	26
Motor Oil (>C24-C36)			2000	1890		ug/L		95	64 - 120	1	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*77*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-345862/21-A
Matrix: Water
Analysis Batch: 346045

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 345862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/17/20 19:33	12/18/20 13:39	5

Lab Sample ID: LCS 580-345862/22-A
Matrix: Water
Analysis Batch: 346045

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 345862

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			1000	1050		ug/L		105	80 - 120		

Lab Sample ID: LCSD 580-345862/23-A
Matrix: Water
Analysis Batch: 346045

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 345862

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			1000	1060		ug/L		106	80 - 120	1	20

Lab Sample ID: MB 580-345764/13-B
Matrix: Water
Analysis Batch: 346087

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 345978

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		4.0		ug/L		12/18/20 19:25	12/21/20 12:17	5

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-345764/14-B
Matrix: Water
Analysis Batch: 346087

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 345978

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			1000	998		ug/L		100	80 - 120		

Lab Sample ID: LCSD 580-345764/15-B
Matrix: Water
Analysis Batch: 346087

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 345978

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			1000	997		ug/L		100	80 - 120	0	20

Lab Sample ID: MB 580-345764/13-C
Matrix: Water
Analysis Batch: 346149

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 345979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.80		ug/L		12/18/20 19:27	12/21/20 17:22	1

Lab Sample ID: LCS 580-345764/14-C
Matrix: Water
Analysis Batch: 346149

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 345979

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			1000	1010		ug/L		101	80 - 120		

Lab Sample ID: LCSD 580-345764/15-C
Matrix: Water
Analysis Batch: 346149

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 345979

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			1000	1000		ug/L		100	80 - 120	0	20

QC Association Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

GC/MS VOA

Analysis Batch: 346120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total/NA	Water	8260D	
580-99804-2	MW-18_8.47_20201214	Total/NA	Water	8260D	
580-99804-3	MW-19_8.17_20201214	Total/NA	Water	8260D	
580-99804-4	Trip Blank_20201214	Total/NA	Water	8260D	
MB 580-346120/5	Method Blank	Total/NA	Water	8260D	
LCS 580-346120/6	Lab Control Sample	Total/NA	Water	8260D	
LCSD 580-346120/7	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 345819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total/NA	Water	NWTPH-Gx	
580-99804-2	MW-18_8.47_20201214	Total/NA	Water	NWTPH-Gx	
580-99804-3	MW-19_8.17_20201214	Total/NA	Water	NWTPH-Gx	
580-99804-4	Trip Blank_20201214	Total/NA	Water	NWTPH-Gx	
MB 580-345819/15	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 580-345819/13	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 580-345819/14	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 346323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total/NA	Water	3510C	
580-99804-2	MW-18_8.47_20201214	Total/NA	Water	3510C	
580-99804-3	MW-19_8.17_20201214	Total/NA	Water	3510C	
MB 580-346323/1-A	Method Blank	Total/NA	Water	3510C	
LCS 580-346323/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 580-346323/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 346498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-346323/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	346323
LCS 580-346323/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	346323
LCSD 580-346323/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	346323

Analysis Batch: 346639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total/NA	Water	NWTPH-Dx	346323
580-99804-2	MW-18_8.47_20201214	Total/NA	Water	NWTPH-Dx	346323
580-99804-3	MW-19_8.17_20201214	Total/NA	Water	NWTPH-Dx	346323

Metals

Filtration Batch: 345764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Dissolved	Water	FILTRATION	
580-99804-2	MW-18_8.47_20201214	Dissolved	Water	FILTRATION	
580-99804-3	MW-19_8.17_20201214	Dissolved	Water	FILTRATION	
MB 580-345764/13-B	Method Blank	Dissolved	Water	FILTRATION	
MB 580-345764/13-C	Method Blank	Dissolved	Water	FILTRATION	

Metals (Continued)

Filtration Batch: 345764 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 580-345764/14-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 580-345764/14-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCSD 580-345764/15-B	Lab Control Sample Dup	Dissolved	Water	FILTRATION	
LCSD 580-345764/15-C	Lab Control Sample Dup	Dissolved	Water	FILTRATION	

Prep Batch: 345862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total Recoverable	Water	3005A	
580-99804-2	MW-18_8.47_20201214	Total Recoverable	Water	3005A	
580-99804-3	MW-19_8.17_20201214	Total Recoverable	Water	3005A	
MB 580-345862/21-A	Method Blank	Total Recoverable	Water	3005A	
LCS 580-345862/22-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 580-345862/23-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 345978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Dissolved	Water	3005A	345764
580-99804-2	MW-18_8.47_20201214	Dissolved	Water	3005A	345764
580-99804-3	MW-19_8.17_20201214	Dissolved	Water	3005A	345764
MB 580-345764/13-B	Method Blank	Dissolved	Water	3005A	345764
LCS 580-345764/14-B	Lab Control Sample	Dissolved	Water	3005A	345764
LCSD 580-345764/15-B	Lab Control Sample Dup	Dissolved	Water	3005A	345764

Prep Batch: 345979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-345764/13-C	Method Blank	Dissolved	Water	200.8	345764
LCS 580-345764/14-C	Lab Control Sample	Dissolved	Water	200.8	345764
LCSD 580-345764/15-C	Lab Control Sample Dup	Dissolved	Water	200.8	345764

Analysis Batch: 346045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Total Recoverable	Water	6020B	345862
580-99804-2	MW-18_8.47_20201214	Total Recoverable	Water	6020B	345862
580-99804-3	MW-19_8.17_20201214	Total Recoverable	Water	6020B	345862
MB 580-345862/21-A	Method Blank	Total Recoverable	Water	6020B	345862
LCS 580-345862/22-A	Lab Control Sample	Total Recoverable	Water	6020B	345862
LCSD 580-345862/23-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	345862

Analysis Batch: 346087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-345764/13-B	Method Blank	Dissolved	Water	6020B	345978
LCS 580-345764/14-B	Lab Control Sample	Dissolved	Water	6020B	345978
LCSD 580-345764/15-B	Lab Control Sample Dup	Dissolved	Water	6020B	345978

Analysis Batch: 346149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-99804-1	MW-17_11.10_20201214	Dissolved	Water	6020B	345978
580-99804-2	MW-18_8.47_20201214	Dissolved	Water	6020B	345978
580-99804-3	MW-19_8.17_20201214	Dissolved	Water	6020B	345978
MB 580-345764/13-C	Method Blank	Dissolved	Water	6020B	345979
LCS 580-345764/14-C	Lab Control Sample	Dissolved	Water	6020B	345979

Metals (Continued)

Analysis Batch: 346149 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 580-345764/15-C	Lab Control Sample Dup	Dissolved	Water	6020B	345979

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Client Sample ID: MW-17_11.10_20201214

Lab Sample ID: 580-99804-1

Date Collected: 12/14/20 10:00

Matrix: Water

Date Received: 12/15/20 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	346120	12/22/20 03:51	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	345819	12/18/20 00:13	CJB	TAL SEA
Total/NA	Prep	3510C			346323	12/23/20 10:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	346639	12/28/20 22:26	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			345764	12/16/20 17:19	TMH	TAL SEA
Dissolved	Prep	3005A			345978	12/18/20 19:24	TMH	TAL SEA
Dissolved	Analysis	6020B		5	346149	12/21/20 16:05	FCW	TAL SEA
Total Recoverable	Prep	3005A			345862	12/17/20 19:33	TMH	TAL SEA
Total Recoverable	Analysis	6020B		5	346045	12/18/20 15:17	FCW	TAL SEA

Client Sample ID: MW-18_8.47_20201214

Lab Sample ID: 580-99804-2

Date Collected: 12/14/20 10:50

Matrix: Water

Date Received: 12/15/20 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	346120	12/22/20 04:17	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	345819	12/18/20 00:37	CJB	TAL SEA
Total/NA	Prep	3510C			346323	12/23/20 10:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	346639	12/28/20 22:46	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			345764	12/16/20 17:19	TMH	TAL SEA
Dissolved	Prep	3005A			345978	12/18/20 19:24	TMH	TAL SEA
Dissolved	Analysis	6020B		5	346149	12/21/20 16:09	FCW	TAL SEA
Total Recoverable	Prep	3005A			345862	12/17/20 19:33	TMH	TAL SEA
Total Recoverable	Analysis	6020B		5	346045	12/18/20 15:21	FCW	TAL SEA

Client Sample ID: MW-19_8.17_20201214

Lab Sample ID: 580-99804-3

Date Collected: 12/14/20 11:25

Matrix: Water

Date Received: 12/15/20 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	346120	12/22/20 04:43	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	345819	12/18/20 01:01	CJB	TAL SEA
Total/NA	Prep	3510C			346323	12/23/20 10:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	346639	12/28/20 23:06	ADB	TAL SEA
Dissolved	Filtration	FILTRATION			345764	12/16/20 17:19	TMH	TAL SEA
Dissolved	Prep	3005A			345978	12/18/20 19:24	TMH	TAL SEA
Dissolved	Analysis	6020B		5	346149	12/21/20 16:13	FCW	TAL SEA
Total Recoverable	Prep	3005A			345862	12/17/20 19:33	TMH	TAL SEA
Total Recoverable	Analysis	6020B		5	346045	12/18/20 15:25	FCW	TAL SEA

Lab Chronicle

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Client Sample ID: Trip Blank_20201214

Date Collected: 12/14/20 00:01
Date Received: 12/15/20 12:00

Lab Sample ID: 580-99804-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	346120	12/22/20 00:23	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	345819	12/17/20 18:55	CJB	TAL SEA

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Laboratory: Eurofins TestAmerica, Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C553	02-18-21

Method Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SEA
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL SEA
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SEA
6020B	Metals (ICP/MS)	SW846	TAL SEA
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SEA
5030B	Purge and Trap	SW846	TAL SEA
FILTRATION	Sample Filtration	None	TAL SEA

Protocol References:

None = None

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Antea USA Inc.
Project/Site: BP -ARCO 980

Job ID: 580-99804-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-99804-1	MW-17_11.10_20201214	Water	12/14/20 10:00	12/15/20 12:00	
580-99804-2	MW-18_8.47_20201214	Water	12/14/20 10:50	12/15/20 12:00	
580-99804-3	MW-19_8.17_20201214	Water	12/14/20 11:25	12/15/20 12:00	
580-99804-4	Trip Blank_20201214	Water	12/14/20 00:01	12/15/20 12:00	

Laboratory Management Program (LaMP) Chain of Custody Record

Soil, Sediment and Groundwater Samples

BP Site Node Path: ARCO 980 | **Req Due Date (mm/dd/yy):** Standard TAT | Rush TAT Yes ____ No X

BP/RM Facility No: ARCO Facility No. 00980 | **Lab Work Order Number:** 99804

Lab Name:	Test America	BP/ARC Facility Address:	10822 Roosevelt Way NE	Consultant/Contractor:	Antea Group
Lab Address:	5755 8th Street East, Tacoma, WA 98424	City, State, ZIP Code:	Seattle, WA	Consultant/Contractor Project No:	00980SA191.20100
Lab PM:	00980SA191.20100.ES	WR329961/009VH-0006	Washington State Department of Ecology	Address:	2006 148th Ave NE, Redmond, WA 98052
Lab Phone:	253.248.4872	California Global ID No.:	NA	Consultant/Contractor PM:	Brad Jackson
Lab Shipping Acct:	NA	Enfos Proposal No:	WR827288/009VH-0014	Phone: 503-863-2114	Email: Brad.Jackson@anteagroup.com
	Michael Dahlstrom Email:	michaeldahlstrom@hotmail.com			
	Grace				
Lab Bottle Order No:	NA	Accounting Mode:	Provision X OOC-BU ____ OOC-RM ____	Send/Submit EDD to:	Brad.Jackson@anteagroup.com
Other Info:	elaine.walker@testamericainc.com	Stage	2_Select (20) Activity Additional Data Collection (100)	Invoice To:	BP-RM ____ BP/ARC X
BP/RM PM:	Wade Melton				
PM Phone:	360-594-7978				
PM Email:	wade.melton@bp.com				

Sample Details | **Requested Analyses** | **Report Type & QC Level**

Report Type & QC Level: Limited (Standard) Package —— ; Limited Plus Package ; Full Package

Lab No.	Sample Description	Date	Time	Field Matrix	Start Depth	End Depth	Depth Unit	Grab (G) or Composite (C)	Total Number of Containers	Filt	Pres	Analysis	BTEX by EPA 8260	MTBE by EPA 8260	NWTPH-Gx	NWTPH-Dx	Pb-T by EPA 6020	Pb-D by EPA 6020	Comments
	MW-17_11.10_20201214	1000 ←→ 12/14/20		W				G					X		X	X	X	X	
	MW-18_8.47_20201214	1060 ←→ 12/14/20		W				G					X		X	X	X	X	
	MW-19_8.17_20201214	1125 ←→ 12/14/20		W				G					X		X	X	X	X	
	Trip-Blank	0000 ←→ 12/14/20		W									X		X				

580-99804 Chain of Custody

Sampler's Name:	Nathan Han	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	Antea Group	Nathaniel Han / Antea Group	12/15/20	1200	Josh Sh EFA-SEA	12/15/20	1200
Ship Method:	Courier Ship Date: 12/15/20						
Shipment Tracking No:							

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: _____ °F/C

Therm. ID: A1 Cor: -0.6 ° Unc: 0.3 ° / No

Cooler Dsc: LR

Packing: None FedEx: ____

Cust. Seal: Yes ____ No X UPS: ____

Blue Ice, Wet, Dry, None Lab Cour: X

Other: ____

Login Container Summary Report

Temperature readings: labeled in walkin

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-17_11.10_20201214	580-99804-A-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-B-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-C-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-D-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-E-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-F-1	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-17_11.10_20201214	580-99804-G-1	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-17_11.10_20201214	580-99804-H-1	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-17_11.10_20201214	580-99804-I-1	Plastic 250ml - with Nitric Acid	1.5			0331901E/000
MW-17_11.10_20201214	580-99804-J-1	Plastic 250ml – unpreserved - dis				0314701F
MW-18_8.47_20201214	580-99804-A-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-B-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-C-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-D-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-E-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-F-2	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-18_8.47_20201214	580-99804-G-2	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-18_8.47_20201214	580-99804-H-2	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-18_8.47_20201214	580-99804-I-2	Plastic 250ml - with Nitric Acid	1.5			0331901E/000
MW-18_8.47_20201214	580-99804-J-2	Plastic 250ml – unpreserved - dis				0314701F
MW-19_8.17_20201214	580-99804-A-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-B-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-C-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-D-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-E-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-F-3	Voa Vial 40ml - HCL/rubber septa				0226201F/590
MW-19_8.17_20201214	580-99804-G-3	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-19_8.17_20201214	580-99804-H-3	Amber Glass 250mL - hydrochloric acid	1.5			0520301F/590
MW-19_8.17_20201214	580-99804-I-3	Plastic 250ml - with Nitric Acid	1.5			0331901E/000
MW-19_8.17_20201214	580-99804-J-3	Plastic 250ml – unpreserved - dis				0314701F
Trip Blank	580-99804-A-4	Voa Vial 40ml - HCL/rubber septa				0226201F/590
Trip Blank	580-99804-B-4	Voa Vial 40ml - HCL/rubber septa				0226201F/590
Trip Blank	580-99804-C-4	Voa Vial 40ml - HCL/rubber septa				0226201F/590
Trip Blank	580-99804-D-4	Voa Vial 40ml - HCL/rubber septa				0226201F/590

Login Sample Receipt Checklist

Client: Antea USA Inc.

Job Number: 580-99804-1

Login Number: 99804
List Number: 1
Creator: Blankinship, Tom X

List Source: Eurofins TestAmerica, Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 346120 Batch Start Date: 12/21/20 21:23 Batch Analyst: McKell, Justin S

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	5X SUR/IS 00002	VOAMasterMix 00063	
MB 580-346120/5		8260D		5 mL	5 mL		1 uL		
LCS 580-346120/6		8260D		5 mL	5 mL		1 uL	10 uL	
LCSD 580-346120/7		8260D		5 mL	5 mL		1 uL	10 uL	
580-99804-A-4	Trip Blank 20201214	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-B-1	MW-17_11.10_20201214	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-D-2	MW-18_8.47_20201214	8260D	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-C-3	MW-19_8.17_20201214	8260D	T	5 mL	5 mL	<2 SU	1 uL		

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345819 Batch Start Date: 12/17/20 11:37 Batch Analyst: Bohn, Christina J

Batch Method: NWTPH-Gx Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	BFBGRO ARCHON 00045	GRO_LCS 00064	V2.4TFT-EX 00062
LCS 580-345819/13		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	1250 uL
LCSD 580-345819/14		NWTPH-Gx		5 mL	5 mL		1 uL	25 uL	1250 uL
MB 580-345819/15		NWTPH-Gx		5 mL	5 mL		1 uL		
580-99804-B-4	Trip Blank 20201214	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-A-1	MW-17_11.10_20201214	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-C-2	MW-18_8.47_20201214	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		
580-99804-B-3	MW-19_8.17_20201214	NWTPH-Gx	T	5 mL	5 mL	<2 SU	1 uL		

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 346323 Batch Start Date: 12/23/20 10:57 Batch Analyst: Tucker, Jonathon B

Batch Method: 3510C Batch End Date: 12/23/20 21:22

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 580-346323/1		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCS 580-346323/2		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
LCSD 580-346323/3		3510C, NWTPH-Dx				250 mL	1 mL	7 SU	2 SU
580-99804-G-1	MW-17_11.10_20201214	3510C, NWTPH-Dx	T	00413.05 g	00166.26 g	246.8 mL	1 mL	2 SU	2 SU
580-99804-G-2	MW-18_8.47_20201214	3510C, NWTPH-Dx	T	00425.35 g	00177.03 g	248.3 mL	1 mL	2 SU	2 SU
580-99804-G-3	MW-19_8.17_20201214	3510C, NWTPH-Dx	T	00419.75 g	00175.84 g	243.9 mL	1 mL	2 SU	2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	TPH_Water_Spk 00026	TPH_WaterSurr 00063			
MB 580-346323/1		3510C, NWTPH-Dx		n/a SU		100 uL			
LCS 580-346323/2		3510C, NWTPH-Dx		n/a SU	100 uL	100 uL			
LCSD 580-346323/3		3510C, NWTPH-Dx		n/a SU	100 uL	100 uL			
580-99804-G-1	MW-17_11.10_20201214	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-99804-G-2	MW-18_8.47_20201214	3510C, NWTPH-Dx	T	n/a SU		100 uL			
580-99804-G-3	MW-19_8.17_20201214	3510C, NWTPH-Dx	T	n/a SU		100 uL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 346323 Batch Start Date: 12/23/20 10:57 Batch Analyst: Tucker, Jonathon B

Batch Method: 3510C Batch End Date: 12/23/20 21:22

Batch Notes	
Acid Used for pH Adjustment ID	2750833
Balance ID	sea225
Batch Comment	vialed by JBT
Analyst ID - Concentration	JBT
Concentration 1 Corrected Temperature	69.9-74.9 Degrees C
Concentration 2 Corrected Temperature	19.6 Degrees C
Equipment ID - Concentration 1	steambath 2
Equipment ID - Concentration 2	turbovap 5
Analyst ID - Extraction	JBT/RJL
Filter ID	2707788
Method/Fraction	3510C/Dx
Na2SO4 ID	2744776
pH Indicator ID	6003004
Pipette/Syringe/Dispenser ID	mp4
Prep Solvent ID	2749437
Prep Solvent Volume Used	100 mL
Analyst ID - Spike Analyst	RJL
Analyst ID - Spike Witness Analyst	JBT
Sufficient Volume for Batch QC	yes
Thermometer ID - Concentration 1	661200
Thermometer ID - Concentration 2	DIGITALREADOUT
Concentration 1 Uncorrected Temperature	70-75 Degrees C
Concentration 2 Uncorrected Temperature	20 Degrees C
Vial Lot Number	24159736
Reagent Water ID	di

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345764 Batch Start Date: 12/16/20 17:19 Batch Analyst: Hua, Tammy M

Batch Method: FILTRATION Batch End Date: 12/17/20 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
MB 580-345764/13		FILTRATION, 200.8, 6020B		250 mL	250 mL				
LCS 580-345764/14		FILTRATION, 200.8, 6020B		250 mL	250 mL				
LCSD 580-345764/15		FILTRATION, 200.8, 6020B		250 mL	250 mL				

Batch Notes	
Filter ID	1264128
Nitric Acid ID	2671207

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345764 Batch Start Date: 12/16/20 17:19 Batch Analyst: Hua, Tammy M

Batch Method: FILTRATION Batch End Date: 12/17/20 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
580-99804-J-1	MW-17_11.10_20201214	FILTRATION, 3005A, 6020B	D	250 mL	250 mL				
580-99804-J-2	MW-18_8.47_20201214	FILTRATION, 3005A, 6020B	D	250 mL	250 mL				
580-99804-J-3	MW-19_8.17_20201214	FILTRATION, 3005A, 6020B	D	250 mL	250 mL				
MB 580-345764/13		FILTRATION, 3005A, 6020B		250 mL	250 mL				
LCS 580-345764/14		FILTRATION, 3005A, 6020B		250 mL	250 mL				
LCSD 580-345764/15		FILTRATION, 3005A, 6020B		250 mL	250 mL				

Batch Notes	
Filter ID	1264128
Nitric Acid ID	2671207

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345862 Batch Start Date: 12/17/20 19:33 Batch Analyst: Hua, Tammy M

Batch Method: 3005A Batch End Date: 12/18/20 00:13

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ICP CAL 1 00009	ICP CAL 2 00008	MET Spike 3C 00025	
580-99804-I-1	MW-17_11.10_20201214	3005A, 6020B	R	50 mL	50 mL				
580-99804-I-2	MW-18_8.47_20201214	3005A, 6020B	R	50 mL	50 mL				
580-99804-I-3	MW-19_8.17_20201214	3005A, 6020B	R	50 mL	50 mL				
MB 580-345862/21		3005A, 6020B		50 mL	50 mL				
LCS 580-345862/22		3005A, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	
LCSD 580-345862/23		3005A, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	

Batch Notes	
Temperature - Corrected - End	91.5 Degrees C
Temperature - Corrected - Start	91.5 Degrees C
Digestion End Time	12/18/2020 00:13
Digestion Start Time	12/17/2020 20:13
Digestion Unit ID	BLOCK e
Hydrochloric Acid ID	2723685
Nitric Acid ID	2643720
Pipette/Syringe/Dispenser ID	METALS-PREP-2
Analyst ID - Spike Analyst	see above
Analyst ID - Spike Witness Analyst	TH
Sufficient Volume for Batch QC	yes
Thermometer Location ID	e45
Thermometer ID	700647
Digestion Tube/Cup ID	2535260
Temperature - Uncorrected - End	91.0 Degrees C
Temperature - Uncorrected - Start	91.0 Degrees C

Basis	Basis Description
R	Total Recoverable

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345978 Batch Start Date: 12/18/20 19:24 Batch Analyst: Hua, Tammy M

Batch Method: 3005A Batch End Date: 12/18/20 23:59

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ICP CAL 1 00009	ICP CAL 2 00008	MET Spike 3C 00025	
580-99804-J-1-A	MW-17_11.10_20201214	3005A, 6020B	D	50 mL	50 mL				
580-99804-J-2-A	MW-18_8.47_20201214	3005A, 6020B	D	50 mL	50 mL				
580-99804-J-3-A	MW-19_8.17_20201214	3005A, 6020B	D	50 mL	50 mL				
MB 580-345764/13-A		3005A, 6020B		50 mL	50 mL				
LCS 580-345764/14-A		3005A, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	
LCSD 580-345764/15-A		3005A, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	

Batch Notes	
Temperature - Corrected - End	91.5 Degrees C
Temperature - Corrected - Start	91.5 Degrees C
Digestion End Time	12/18/2020 23:59
Digestion Start Time	12/18/2020 19:59
Digestion Unit ID	BLOCK b
Hydrochloric Acid ID	2723685
Nitric Acid ID	2643720
Pipette/Syringe/Dispenser ID	METALS-PREP-2
Analyst ID - Spike Analyst	see above
Analyst ID - Spike Witness Analyst	TH
Sufficient Volume for Batch QC	yes
Thermometer Location ID	b10
Thermometer ID	700647
Digestion Tube/Cup ID	2535260
Temperature - Uncorrected - End	91.0 Degrees C
Temperature - Uncorrected - Start	91.0 Degrees C

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Seattle Job No.: 580-99804-1

SDG No.:

Batch Number: 345979 Batch Start Date: 12/18/20 20:00 Batch Analyst: Hua, Tammy M

Batch Method: 200.8 Batch End Date: 12/19/20 00:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ICP CAL 1 00009	ICP CAL 2 00008	MET Spike 3C 00025	
MB 580-345764/13-A		200.8, 6020B		50 mL	50 mL				
LCS 580-345764/14-A		200.8, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	
LCSD 580-345764/15-A		200.8, 6020B		50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL	

Batch Notes	
First End time	see above
Lot # of hydrochloric acid	2723690
Lot # of Nitric Acid	2712015
Hot Block ID	block b
Oven, Bath or Block Temperature 1	93.5
Oven, Bath or Block Temperature 2	94.5
Pipette ID	METALS-PREP-2
First Start time	see above
Thermometer Location ID	b10
Thermometer ID	700647
Digestion Tube/Cup ID	2535260
Uncorrected Temperature	93.0 Celsius
Uncorrected Temperature 2	94 Celsius

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.