SUBSURFACE INVESTIGATION REPORT

Olympic Pipe Line Company Kent Block Valve
74th Avenue South & South 259th Street
Kent, Washington, 98032
Ecology Facility Site ID: 2401
Voluntary Cleanup Program ID: NW2708

Antea® Group Project No. WAKBVEA154
November, 18, 2015

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1.0 INTRODUCTION

1.1 Purpose and Scope of Work

On behalf of Remediation Management (a BP affiliated company) and Olympic Pipe Line Company (OPLC), Antea®Group (Antea Group) has prepared this *Subsurface Investigation Report* at the OPLC Kent Block Valve located near the intersection of 74th Avenue South & South 259th Street in Kent, King County, Washington (hereinafter referred to as the "Site"). The investigation was completed in response to an *Opinion Letter* dated June 12, 2013, issued by the Washington State Department of Ecology (Ecology). A copy of the *Opinion Letter* is included as Appendix A.

The investigation scope of work included the following:

- Conduct a Site visit with the Ecology site manager, Dale Myers on March 4, 2014;
- Secure an access agreement with the Valley Freeway Building property owners;
- Obtain a Right-of-Way (ROW) permit from the City of Kent;
- Obtain an access agreement with Puget Sound Energy (PSE);
- Prepare a site-specific Health and Safety Plan (HASP);
- Hold a Level Two Task Risk Assessment (TRA) meeting with Cascade Drilling, Inc. (Cascade),Applied Professional Services (APS), and Altus Traffic Solutions (Altus) for the associated work;
- Place a call to the One-Call Notification Center requesting the marking of all public utilities;
- Contract APS to identify all private subsurface utilities at the Site;
- Contract Cascade to conduct all subsurface drilling activities;
- Contract Altus to provide traffic control services per the ROW permit requirements;
- Pre-clearing soil boring locations to a minimum of 6.5 feet below ground surface (bgs) using a vacuum truck and air-knife;
- Advancing 14 investigative soil borings using a direct push drill rig and/or hand auger;
- Collecting soil samples and submitting select samples for quantitative chemical analyses;
- Interpreting the obtained data; and
- Preparing this report.

1.2 Site Description

The Site is located near the intersection of 74th Avenue South and South 259th Street in Kent, King County, Washington. The ROW where the block valve is located is owned by PSE and leased by OPLC. The block valve is part of an underground pipeline that supplies refined petroleum products from refineries in north Washington State to bulk fuel terminals and other facilities for distribution. Characterization of the release indicates that the actual Model Toxics Control Act (MTCA) Site location is an area extending approximately 60 feet to the southeast, 100 feet

to the east, and 530 feet to the southwest of Kent Block Valve (the Property). A Site Location Map is presented as Figure 1. An Expanded Site Map detailing the site features is presented as Figure 2.

1.3 Previous Investigations

1.3.1 August 1989 – Site Discovery

Prior to a real estate transaction, GeoEngineers conducted a site assessment in August 1989 on the adjacent property west of the Site. Site assessment activities included the installation of three groundwater monitoring wells (MW-1 through MW-3) on the adjacent property to the west. Groundwater laboratory analyses indicated elevated concentrations of benzene {2,400 parts per billion (ppb)} in MW-1. OPLC was subsequently informed of the results. OPLC inspected the pipeline and block valve and a pinhole-sized leak was observed in the threading of a bolt located on the west side of the block valve. Following repairs, OPLC excavated approximately 30 cubic yards of hydrocarbon impacted soil from the area immediately surrounding the block valve.

Additional information may be found in GeoEngineers Report of Geoenvironmental Services, Subsurface Contamination Study and Remedial Action Monitoring, dated October 1, 1990.

1.3.2 August through December 1989 – Subsurface Investigation and Excavations

OPLC contracted GeoEngineers to conduct a complete subsurface investigation to determine the extent of hydrocarbon impacts related to the release. GeoEngineers directed the advancement of borings, test pits, and trenches in the release area. Twenty five soil samples (OP-1 through OP-14, OP-16 through OP-24, OP-24B) were collected from the borings, test pits and trenches. Eight soil samples reportedly contained petroleum hydrocarbon concentrations in excess of Ecology's draft MTCA Method A Cleanup Levels at the time.

Once the impacted area(s) had been identified, two additional soil excavations were performed on the east and west sides of the pipeline and block valve between August 31 and September 27, 1989. Excavation of impacted soil extended to approximately six feet bgs on the east side of the pipeline and extended to depths between 16 feet and 24 feet bgs on the west side of the pipeline. Excavation was discontinued in the vicinity of the pipeline due to the risk of compromising the structural integrity of the pipeline. Additional excavation to remove the deeper layers of impacted soil to the west of the pipeline and block valve was discontinued due to the logistics associated with the removal of large thicknesses of overlying uncontaminated soil (up to 20 feet) in order to access the thin zone of impacted soil. Approximately 1,950 tons of soil was removed during the remedial excavations.

According to GeoEngineers, soil which was not impacted with petroleum hydrocarbons or which contained concentrations of petroleum hydrocarbons below Ecology's previous cleanup guidelines was stored on-site in temporary stockpiles for use as backfill material. Upon completion of the excavations, a 30-inch diameter recovery well (RW-1) was installed in the backfill of the western excavation; however, additional groundwater recovery equipment was not installed.

Between September and December 1989, GeoEngineers directed the installation of monitoring wells MW-4 through MW-19 to depths between 16.5 feet and 32.5 feet bgs. One soil sample was collected during the installation of well MW-9 at a depth of 33 feet bgs and did not contain petroleum hydrocarbon concentrations in excess of Ecology's previous cleanup guidelines. Soil samples were not collected from the other borings advanced during well

installation activities since field screening of soils did not indicate the presence of petroleum hydrocarbons. Groundwater data from the first year of monitoring and sampling indicated concentrations of petroleum hydrocarbons in excess of Ecology's previous cleanup guidelines in wells MW-1, MW-6, MW-8 through MW-11, and MW-13 through MW-16.

Additional information may be found in GeoEngineers Report of Geoenvironmental Services, Subsurface Contamination Study and Remedial Action Monitoring, dated October 1, 1990.

1.3.3 March and April 1990 – Well Abandonments

On March 27, 1990, monitoring wells MW-1, MW-4, MW-8 and MW-10 were abandoned. Monitoring well MW-2 was abandoned on April 4, 1990. The wells were abandoned due to the construction of the Valley Freeway Building.

1.3.4 1993 – Missing Monitoring Wells

In 1993, the recovery well and monitoring wells MW-6, MW-7, MW-11 and MW-12 were found paved over. MW-17, adjacent to the Green River, could also not be located. Seven monitoring wells remained: MW-9, MW-13 through MW-16, MW-18, and MW-19.

1.3.5 September 1999 – Additional Well Installation

On September 7, 1999, monitoring well MW-17A was installed at the Site to a depth of 30 feet bgs. One soil sample was collected during the installation activities at a depth of 24 feet bgs and analyzed for total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), and total petroleum hydrocarbons as oil (TPH-O). Analytical results from the soil sample submitted for analysis were below Ecology's MTCA Method A Cleanup Levels and the laboratory method reporting limits (MRLs).

Additional information may be found in GeoEngineer's Results of Groundwater Monitoring and Monitoring Well Replacement, dated October 1, 1999.

1.3.6 July 2001 – Additional Well Installation

On July 31, 2001, monitoring wells MW-20 and MW-21 were installed to depths of 20 ft bgs and 30 ft bgs, respectively. Based on field screening results, one soil sample collected from MW-21 at 16 feet bgs was submitted for laboratory analysis. Analytical results from the soil sample submitted for analysis were below Ecology's MTCA Method A Cleanup Levels and laboratory MRLs.

Additional information may be found in GeoEngineer's Supplemental Site Characterization, dated September 18, 2001.

1.3.7 June 2003 through August 2004 – Air-Sparge Well Installation and Remedial Activities

In 2003, air sparge wells BS-1 through BS-4 were installed to a depth of 40 ft bgs. Composite soil samples were collected during the installation of the sparge wells for waste disposal characterization. Monthly air sparging events

on BS-1 through BS-4 were initiated on January 21, 2004, with the purpose of increasing dissolved oxygen concentrations in the groundwater and to enhance volatilization of benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents in the groundwater. Air sparging activities occurred on a monthly basis through August 2004. On September 2 and 17, 2004, enhanced liquid recovery (ELR) events were performed. During these events, approximately 168 gallons of groundwater was extracted. Following the ELR events, oxygen-releasing compound (ORC) socks were placed in wells MW-15 and MW-16. The purpose of the ORC socks was to increase the amount of oxygen available for microbial respiration, thus facilitating the process of natural attenuation via aerobic degradation. An evaluation of the October 2004 groundwater analytical data indicated that concentrations of petroleum hydrocarbons were not decreasing significantly. Therefore, air sparging and ORC applications were subsequently discontinued.

Additional information may be found in GeoEngineer's June 2003 Drilling and Quarterly Groundwater Monitoring Report, dated August 11, 2003.

1.4 Current Site Status

Quarterly groundwater monitoring and sampling was conducted at the Site through the first quarter of 2014. Four consecutive quarters of groundwater concentrations below Ecology MTCA Method A Cleanup Levels was obtained on June 5, 2013, in all groundwater monitoring wells at the Site with the exception of MW-15. MW-15 was found damaged in September 2012, and samples were unable to be obtained in the third and fourth quarters of 2012. It is unknown how the damaged occurred, but Antea Group infers the damaged was occurred during upgrades to the sidewalk and landscaping in the area. Antea Group contracted Cascade Drilling of Woodinville, Washington to complete repairs to MW-15 during the first quarter of 2013, and quarterly groundwater sampling resumed. Three consecutive quarters of groundwater concentrations below MTCA Method A Cleanup Levels had been obtained in the third quarter of 2013; however, construction materials were located on the well in the fourth quarter of 2013 and it was unable to be sampled. Four quarters of groundwater concentrations below MTCA Method A Cleanup Levels was obtained in MW-15 with receipt of the analytical data collected in the first quarter of 2014. Groundwater sampling at the Site was suspended following the first quarter sampling event. The Site was enrolled in Ecology's Voluntary Cleanup Program (VCP) on April 2, 2013. Following submission of a Remedial Investigation Report by Antea Group on January 10, 2013, Ecology issued an Opinion Letter on June 12, 2013, indicating, among other items, that confirmatory soil sampling needed to be conducted at the Site. Additionally, the Opinion Letter requested that current soil conditions be characterized between OPLC's Kent Block Valve and the Valley Freeway Building.

2.0 PROJECT ACTIVITIES

2.1 Drilling and Soil Sampling

The objective of the subsurface investigation that took place on August 12 and August 13, 2015 was to confirm the degradation of historically impacted soil and to characterize current soil conditions near the Valley Freeway Building.

Antea Group advanced 14 soil borings to an approximate depth of 20 feet bgs to assess current soil conditions across the Site. All soil boring locations were based on historical impacts identified during the 1989 remedial excavation and groundwater monitoring events. Six borings were advanced adjacent to or between historically impacted soil sample points OP-1, OP-3, OP-5, OP-7, OP-12, OP-14, OP-16, OP-23, and OP-24. Nine borings were advanced adjacent to or between historically impacted groundwater monitoring wells MW-1, MW-6, MW-8, MW-10, MW-11, and MW-13 through MW-16. One additional boring was proposed next to MW-9, but could not be completed due to safety concerns regarding its location underneath high voltage transmission lines and its proximity to a 16 inch PSE high pressure gas line. Figure 3 depicts the locations of all the soil boring locations.

Per Remediation Management (RM) Defined Practice for Ground Disturbance (RM Ground Disturbance), Antea Group notified the One-Call Notification Center requesting the marking of all public utilities at the Site prior to the drilling event. Additionally, Antea Group contracted APS to identify all private subsurface utilities at the Site on the day of the drilling event. All borings were cleared to a minimum of 6.5 feet bgs utilizing a vacuum truck with air-knife and/or hand tools to reduce the probability of damaging underground utilities that may not have been identified through the public and/or private underground utility locating activities. Once the borings were cleared to 6.5 feet bgs, a licensed driller advanced the borings using a Geoprobe™ drilling rig. Upon completion of soil sampling, all borings were backfilled with hydrated bentonite chips and the original surface was restored.

Soil samples were collected during soil boring activities to evaluate current soil conditions with respect to petroleum hydrocarbons. An Antea Group geologist observed and logged the borings using the Unified Soil Classification System. Soil samples were collected continuously to the terminal depth of the boring. Soil samples for laboratory analyses were collected at depths where impacts have been historically observed and/or from soils just above the water table. Additional samples were collected based on field observations, PID readings, or other information. Soil samples were collected from the soil borings using new, disposable acetate liners. Soil samples were obtained from the acetate liner and hand auger using a syringe sampler and placed into laboratory-supplied 40-milliliter (mL) VOA vials preserved with methanol and sodium bisulfate in accordance with EPA Method 5035A. Additional soil was placed into 4 ounce laboratory-supplied glass soil jars. After collection, each soil sample was field screened for the presence of volatile organic compounds with a PID to aid in the facilitation of selecting representative soil samples for chemical analysis. 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 ten minutes prior to analyzing the air above the soil in the bag. The maximum vapor concentrations were recorded for each soil sample collected on the boring log. A total of 25 soil samples were submitted to Test America Laboratories (TA) in Tacoma, Washington for quantitative chemical analysis.

The field procedures used during the investigation is provided in Appendix B. Boring logs detailing soil horizons, sample recovery, and PID screening values are presented in Appendix C.

2.2 On-Site Containment of Drill Cuttings and Decontamination Water

Soil cuttings and decontamination water generated from the subsurface investigation were temporarily stored in 55-gallon drums onsite. The drums were properly labeled and sealed. On September 25, 2015, an Antea Group representative met Cascade personnel on-site for removal of the investigation derived waste. The drums were transported by Cascade to Burlington Environmental, LLC. of Kent, Washington for treatment and disposal of the soil cuttings and decontamination water. The soil and decontamination water disposal documents are included in Appendix D.

3.0 PROJECT RESULTS

3.1 Site Geology and Hydrogeology

The Site is located approximately 35 feet above mean sea level within the Green River basin of the Puget Lowlands. Local geology is classified as Quaternary Alluvium, which is classified as unconsolidated sand and silt, with varying amounts of gravel and cobbles (Washington Division of Geology and Earth Resources, 2005). Soils observed at the Site during the boring activities generally consisted of sand and/or silty-sand.

The Green River is the nearest surface water body and is located approximately 570 feet south of the Property. The Green River flows in a general northerly direction to Puget Sound approximately 15 miles north of the Site. The lower 12 miles of the Green River is referred to as the Duwamish River. With the exception of the parking lot for the warehouse facility (Valley Freeway Building) located to the west of the Property, the remainder of the Site is mostly unpaved.

3.2 Quantitative Soil Analysis

Test America analyzed the soil samples for the presence of the following constituents:

- BTEX by Environmental Protection Agency (EPA) Method 8260;
- TPH-G by Northwest Method NWTPH-Gx;
- TPH-D and TPH-O ranges using Northwest Method NWTPH-Dx with Silica Gel cleanup; and
- Total lead by EPA Method 6020.

Select soil samples were also analyzed for:

- Extractable petroleum hydrocarbons (EPH) by Northwest Method NWEPH; and
- Volatile petroleum hydrocarbons (VPH) by Northwest Method NWVPH.

Quantitative laboratory analysis indicated concentrations of TPH-G in excess of MTCA Method A Cleanup Levels in soil samples CB-4-6, CB-4-15, CB-5-5, CB-5-10, CB-5-15, CB-5-20, CB-6-15, CB-6-18, and CB-6-20. TPH-G concentrations in excess of MTCA Method A Cleanup Levels ranged from 35 mg/kg to 1,300 mg/kg. Benzene concentrations in excess of MTCA Method A Cleanup Levels were detected in soil samples CB-4-6, CB-4-20, CB-5-5, CB-5-10, CB-5-15, CB-6-15, and CB-6-18. Benzene concentrations ranged from 0.034 mg/kg to 0.39 mg/kg.

Concentrations of toluene, ethylbenzene, xylenes, TPH-D, TPH-O, and total lead were not detected in excess of MTCA Method A Cleanup Levels. Soil analytical results are summarized in Tables 1 and 2. The Soil Analytical Data Map is presented as Figure 3. A copy of the Soil Laboratory Analytical Report is included in Appendix E.

3.3 MTCA Method B Cleanup Levels

Antea Group elected to develop Method B Cleanup Levels for soil at the Site, as allowed under the MTCA Regulation and Statute (WAC 173-340-705). Confirmatory soil samples CB-4-6, CB-5-10, CB-6-18 and CB-6-20 were analyzed for EPH/VPH. The results of the EPH/VPH values were used in calculating a Site-specific Method B Cleanup Level for TPH. Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* and *Workbook Tools for Calculating Soil and Ground Water Cleanup Levels under the Model Toxics Control Act Cleanup Regulation* were referenced in calculating the Method B Cleanup Level. Per the guidance documents, the laboratory method detection limits (MDLs) were used in the Method B calculations. Approximate MDL results with the "J" qualifier were used as the value reported and EPH/VPH equivalent carbon (EC) fractions that were not detected above MDLs were assigned ½ the detection limit. The EC fractions for soil samples CB-4-6, CB-5-10, CB-6-18 and CB-6-20 were entered into Ecology's MTCA TPH 11.1 workbook and a Method B Cleanup Level was calculated for each soil sample. The TPH Method B Cleanup Levels for direct human contact for CB-4-6, CB-5-10, CB-6-18 and CB-6-20 were calculated at 3,255 mg/kg, 2,339 mg/kg, 3,535mg/kg, and 2,219 mg/kg, respectively. The median cleanup level for the four samples is 2,797 mg/kg. The calculated Method B Cleanup Levels for TPH in soil at the Site is therefore 2,797 mg/kg. According to Ecology's Cleanup Level and Risk Calculation (CLARC) Data Tables, the Method B Cleanup Levels for BTEX in soil are 18.2 mg/kg, 6,400 mg/kg, 8,000 mg/kg, and 16,000 mg/kg, respectively. All soil samples analyzed were below the Method B Cleanup Levels for BTEX. All soil samples collected at the site between August 12 and 13, 2015 do not contain concentrations of TPH or BTEX in excess of the MTCA Method B Cleanup Level for direct human contact calculated for the site.

The EPH/VPH results are summarized on Table 2. The MTCATPH 11.1 worksheets for CB-4-6, CB-5-10, CB-6-18 and CB-6-20 are presented as Appendix F. The CLARC Data Table for Method B Cleanup Levels is presented as Appendix G.

4.0 SUMMARY

On August 12 to August 13, 2015, 14 soil borings were advanced to approximately 20 feet bgs at the Site, in order to address the comments raised by Ecology in their June 12, 2013, *Opinion Letter*. The borings were completed to assess the current soil conditions on Site, and to specifically assess current soil conditions between the Block Valve Property and the Valley Freeway Building. A total of 25 soil samples were submitted to Test America for quantitative chemical analysis. Laboratory analytical results indicated petroleum hydrocarbon concentrations in the form of TPH-G and/or benzene in excess of Ecology's MTCA Method A Cleanup Levels in 10 soil samples. Confirmatory soil samples CB-4-6, CB-5-10, CB-6-18 and CB-6-20 were analyzed for EPH/VPH. The results of the EPH/VPH values were used in calculating a Site-specific Method B Cleanup Level for TPH. The median cleanup level for the four samples is 2,797 mg/kg. No hydrocarbon concentrations soil samples collected at the Site between August 12 and 13, 2015

exceeded the MTCA Method B Cleanup Levels for TPH or CLARC values for BTEX. It is Antea Group's professional opinion that the current soil conditions on Site have been adequately defined, and that the Site meets the substantive requirements for cleanup of soil and groundwater, and protection of human health and the environment.

5.0 REFERENCES

Report of Geoenvironmental Services, Subsurface Contamination Study and Remedial Action Monitoring – October 1, 1990, GeoEngineers.
Results of Groundwater Monitoring and Monitoring Well Replacement – October 1, 1999, GeoEngineers
Supplemental Site Characterization –September 18, 2001, GeoEngineers
June 2003 Drilling and Quarterly Groundwater Monitoring Report – August 11, 2003, GeoEngineers
Olympic Pipe Line Company Kent Block Valve Remedial Investigation Report – January 10, 2013, Antea Group

6.0 REMARKS

Any 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.

Should you have any questions, or require additional information concerning this report, please contact the undersigned at (425)498-7711.

Sincerely,

Prepared by:

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Date: November 18, 2015

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Date: November 18, 2015

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Tables

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

	CONSTITUENT	B	T	E	X	TPH-G	TPH-D	TPH-O	Lead
	UNIT	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date								
MTCA METHOD A CLEANUP LEVELS		**0.03**	**7**	**6**	**9**	**30/100***	**2000**	**2000**	**250**
CB-1-20	8/12/2015	< 0.027	< 0.067	< 0.067	< 0.067	< 6.1	< 33	< 66	2.7
CB-2-15	8/12/2015	< 0.027	<0.069	< 0.069	< 0.069	< 6.2	< 33	< 65	2.1
CB-3-15	8/12/2015	< 0.029	< 0.072	< 0.072	< 0.072	< 6.7	< 36	< 71	2.5
CB-4-6	8/12/2015	**0.041**	< 0.06	< 0.06	0.210	**110**	110 Y	360 Y	33
CB-4-15	8/12/2015	< 0.021	< 0.054	< 0.054	< 0.054	**35**	390 Y	< 57	4.0
CB-4-20	8/12/2015	**0.39**	< 0.090	1.4	4.1	29	< 42*	< 84	13
CB-5-5	8/12/2015	**0.15**	0.057	0.19	0.72	**180**	130 *Y	280 Y	23
CB-5-10	8/12/2015	**0.037**	< 0.058	0.12	0.15	**1300**	840 Y	120 Y	5.6
CB-5-15	8/12/2015	**0.034**	< 0.07	0.44	< 0.07	**150**	590 Y	< 67	4.0
CB-5-16	8/12/2015	< 0.021	< 0.054	< 0.054	< 0.054	28	< 31*	< 62	2.6
CB-5-20	8/12/2015	0.020 J	< 0.087	0.48	3.7	**47**	< 41*	< 81	6.3
CB-6-10	8/13/2015	< 0.016	< 0.04	< 0.04	< 0.04	6.7	< 26*	< 52	2.9
CB-6-15	8/13/2015	**0.039**	< 0.046	< 0.046	0.15	**62**	79 *Y	190 Y	15

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

	CONSTITUENT	B	T	E	X	TPH-G	TPH-D	TPH-O	Lead
	UNIT	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date								
MTCA METHOD A CLEANUP LEVELS		**0.03**	**7**	**6**	**9**	**30/100***	**2000**	**2000**	**250**
CB-6-18	8/13/2015	**0.06**	<0.055	0.11	0.21	**59**	150 Y	260 Y	16
CB-6-20	8/13/2015	< 0.021	< 0.053	0.28	0.053	**350**	270 *Y	< 63	4.8
CB-7-15	8/13/2015	< 0.029	< 0.073	< 0.073	< 0.073	< 6.0	< 33	< 66	3.8
CB-7-20	8/13/2015	< 0.05	< 0.13	< 0.13	< 0.13	< 13	< 36*	< 72	3.9
CB-8-10	8/13/2015	< 0.0073 J	< 0.084	< 0.084	< 0.084	< 6.9	< 36	< 72	6.8
CB-9-10	8/13/2015	< 0.0067 J	< 0.076	< 0.076	< 0.076	< 6.5	< 36	< 72	4.4
CB-9-15	8/13/2015	< 0.022	< 0.055	< 0.055	< 0.055	11	< 32*	< 64	2.7
CB-10-8	8/13/2015	< 0.026	< 0.064	< 0.064	< 0.064	< 5.4	< 31	< 62	3.2
CB-11-15	8/13/2015	< 0.023	< 0.057	< 0.057	< 0.057	< 13	< 31	< 61	4.0
CB-12-10	8/13/2015	< 0.024	< 0.061	< 0.061	< 0.061	< 22	< 29	< 57	3.3
CB-13-10	8/13/2015	< 0.024	< 0.06	< 0.06	< 0.06	< 75	< 26	< 51	2.0
CB-14-9	8/13/2015	< 0.029H	< 0.072H	< 0.072H	< 0.072H	< 6.6H	< 34H	< 68H	5.0

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

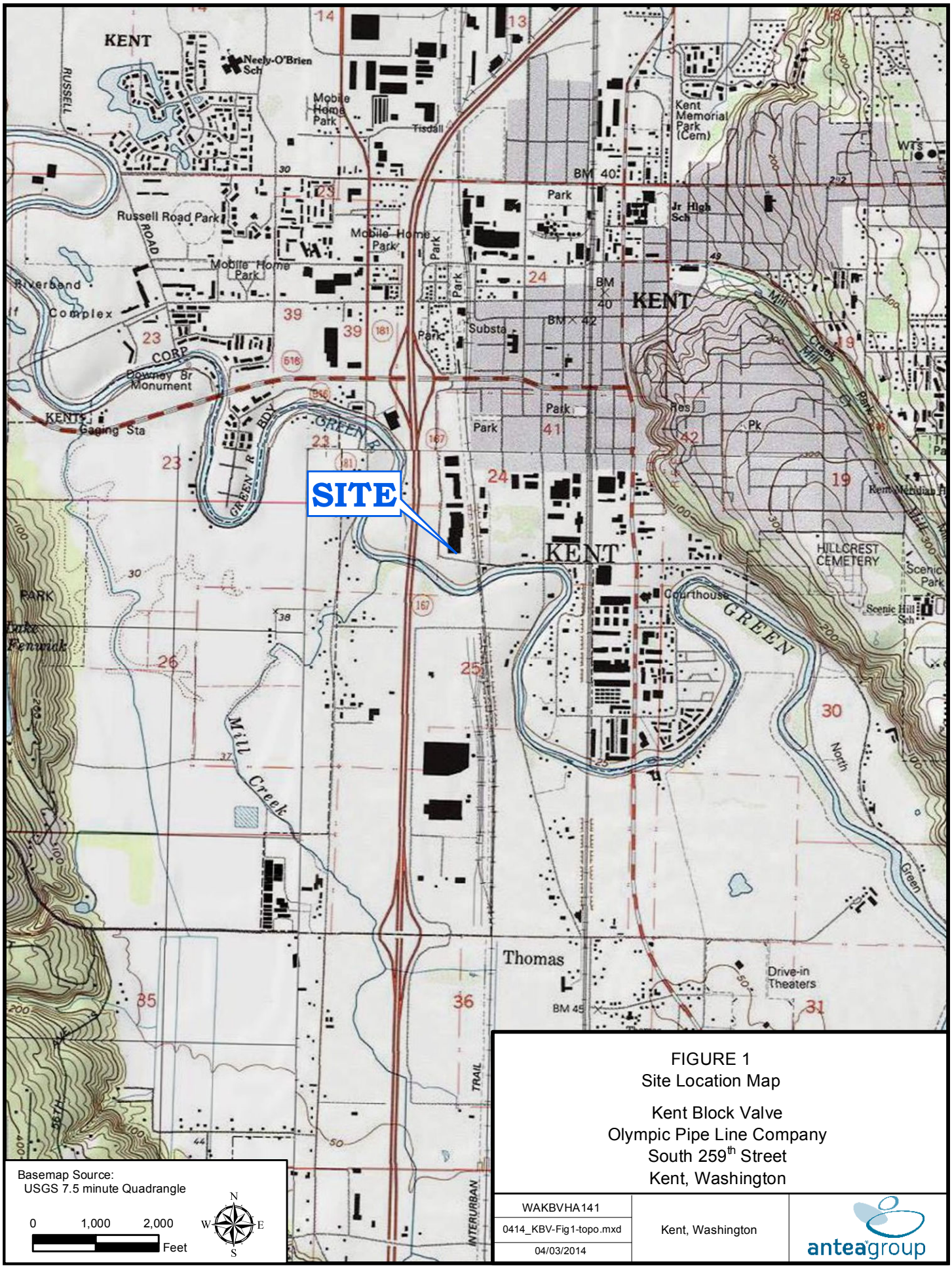
Notes:
B = Benzene
T = Toluene
E – Ethyl benzene
X = Xylenes, Total
TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx
TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx with silica gel cleanup
TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx with silica gel cleanup
30/100* = 100 mg/kg if no detectable levels of Benzene in the sample - otherwise 30 mg/kg
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
mg/kg = Milligrams per kilogram (ppm)
MTCA = Model Toxics Control Act
Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels
Y = The chromatographic response resembles a typical fuel pattern
* = LCS or LCSD is outside acceptance limits/RPD of the LCS and LCSD exceeds the control 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 valve.

Table 2
Extended Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

CONSTITUENT		Aliphatic C6-C8	Aliphatic C10-C12	Aliphatic C10-C12	Aliphatic C12-C16	Aliphatic C16-C21	Aliphatic C21-C34	Aliphatic C5-C6	Aliphatic C8-C10	Aromatic C12-C16	Aromatic C16-C21	Aromatic C21-C34	Aromatic C8-C10	Aromatic C10-C12	Aromatic C10-C12	Total VPH
		VPH	VPH	EPH	EPH	EPH	EPH	VPH	VPH	EPH	EPH	EPH	VPH	VPH	EPH	VPH
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	Date															
CB-4-6	8/12/2015	15	< 6.4	< 63F2F1	< 63F2F1	< 63F2F1	74 F2F1	< 6.4	19	< 63F2F1	< 63F2F1	81 F2F1	12	11	< 63F2F1	100
CB-5-10	8/12/2015	< 70	130	130	340	170	75	< 70	110	230	230	180	< 70	200	78	890
CB-6-18	8/13/2015	< 5.7	5.8	< 6.0	10	11	36	< 5.7	6.0	< 6.0F1	7.6	19	< 5.7	9.6	< 6.0F1	55
CB-6-20	8/13/2015	< 14	27	17	49	28	< 6.4	< 14	30	21	22	< 6.4	17	74	9.4	280

Notes:
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
mg/kg = Milligrams per kilogram (ppm)
F1 = MS and/or MSD Recovery is outside acceptance limits
F2 = MS/MSD RPD exceeds control limits
VPH = Volatile Petroleum Hydrocarbons, Duwamish Ranges
EPH = Extractable Petroleum Hydrocarbons

Figures



Basemap Source:
USGS 7.5 minute Quadrangle

0 1,000 2,000 Feet

N W E S

FIGURE 1
Site Location Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	anteagroup
0414_KBV-Fig1-topo.mxd		
04/03/2014		

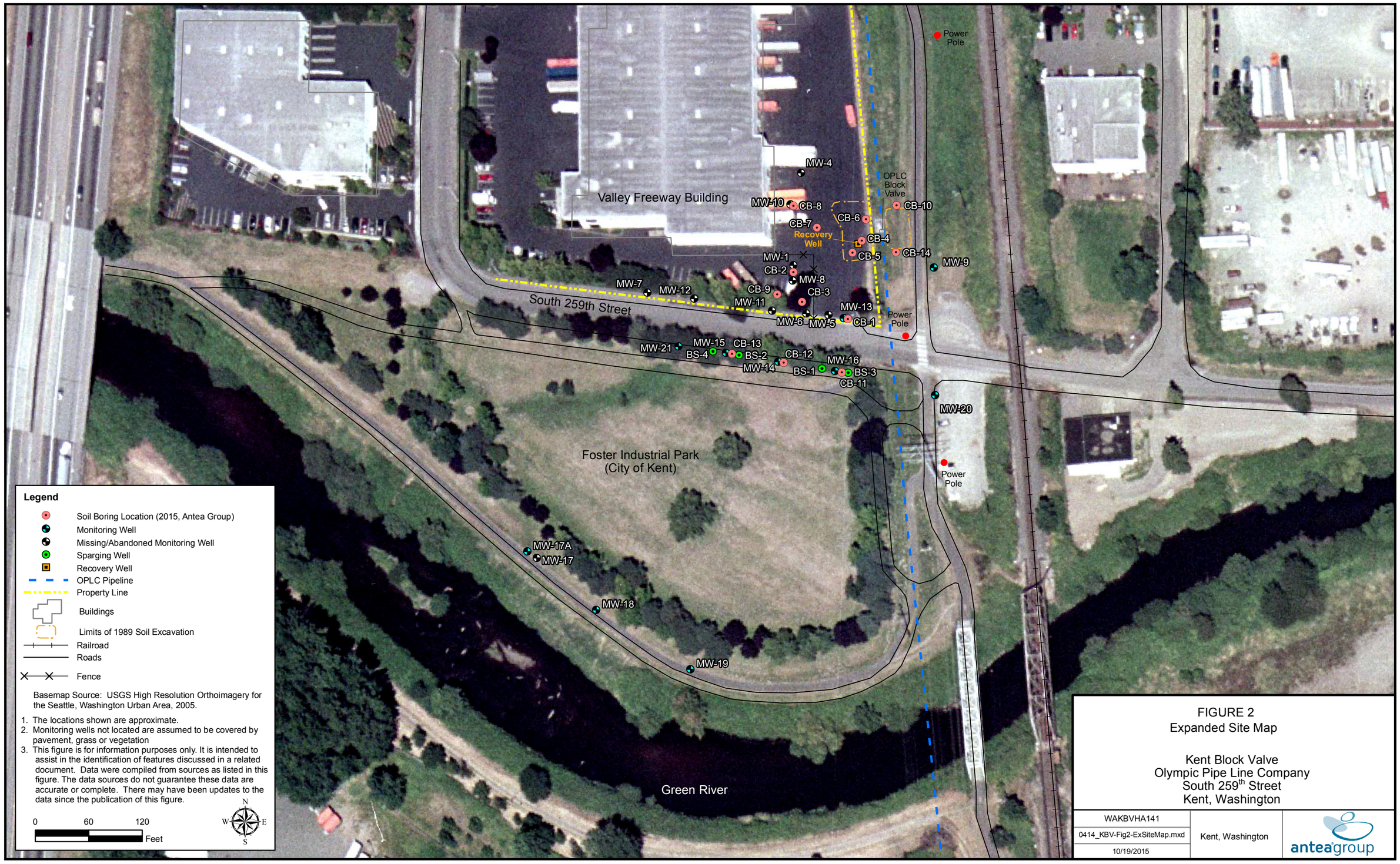


FIGURE 2
Expanded Site Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	antea group
0414_KBV-Fig2-ExSiteMap.mxd		
10/19/2015		

Legend

- Soil Boring Location (2015, Antea Group)
- Soil Sample Location (1989, GeoEngineers)
- Monitoring Well
- Missing/Abandoned Monitoring Well
- Limits of Excavation
- OPLC Pipeline
- Property Line
- Buildings
- Roads
- Fence

Sample ID	MTCA Method A Cleanup Levels
Date	
Depth	
B	0.03
T	7
E	6
X	9
TPH-G	30/100*
TPH-D	2000
TPH-O	2000
Lead	250

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 with silica gel cleanup
TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx with silica gel cleanup
30/100* = 100 mg/kg if no detectable levels of Benzene in the sample - otherwise 30 mg/kg
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
All results presented as milligrams per kilogram (mg/kg)
ND = Not detected
MTCA = Model Toxics Control Act
Results in bold indicate concentrations in excess of MTCA Method A Cleanup Levels
Y = The chromatographic response resembles a typical fuel pattern
* = LCS or LCSD is outside acceptance limits/RPD of the LCS and LCSD exceeds the control 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

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

1. The locations shown are approximate.
2. Monitoring wells not located are assumed to be covered by pavement, grass or vegetation
3. This figure is for information purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure.

0 15 30 Feet

N W E S

CB-8	
Date	8/13/2015
Depth	10 feet
B	< 0.0073 J
T	< 0.084
E	< 0.084
X	< 0.084
TPH-G	< 6.9
TPH-D	< 36
TPH-O	< 72
Lead	6.8

CB-7		
Date		
Depth	15 feet	20 feet
B	< 0.029	< 0.05
T	< 0.073	< 0.13
E	< 0.073	< 0.13
X	< 0.073	< 0.13
TPH-G	< 6.0	< 13
TPH-D	< 33	< 36*
TPH-O	< 66	< 72
Lead	3.8	3.9

CB-10	
Date	8/13/2015
Depth	8 feet
B	< 0.026
T	< 0.064
E	< 0.064
X	< 0.064
TPH-G	< 5.4
TPH-D	< 31
TPH-O	< 62
Lead	3.2

CB-6				
Date	8/13/2015	8/13/2015	8/13/2015	8/13/2015
Depth	10 feet	15 feet	18 feet	20 feet
B	< 0.016	**0.039**	**0.06**	< 0.021
T	< 0.04	< 0.046	< 0.055	< 0.053
E	< 0.04	< 0.046	0.11	0.28
X	< 0.04	0.15	0.21	0.053
TPH-G	6.7	**62**	**59**	**350**
TPH-D	< 26*	79 *Y	150 Y	270 *Y
TPH-O	< 52	190 Y	260 Y	< 63
Lead	2.9	15	16	4.8

CB-5					
Date	8/12/2015	8/12/2015	8/12/2015	8/12/2015	8/12/2015
Depth	5 feet	10 feet	15 feet	16 feet	20 feet
B	**0.15**	**0.037**	**0.034**	< 0.021	0.020 J
T	0.057	< 0.058	< 0.07	< 0.054	< 0.087
E	0.19	0.12	0.44	< 0.054	0.48
X	0.72	0.15	< 0.07	< 0.054	3.7
TPH-G	**180**	**1300**	**150**	28	**47**
TPH-D	130 *Y	840 Y	590 Y	< 31*	< 41*
TPH-O	280 Y	120 Y	< 67	< 62	< 81
Lead	23	5.6	4.0	2.6	6.3

CB-2	
Date	8/12/2015
Depth	15 feet
B	< 0.027
T	< 0.069
E	< 0.069
X	< 0.069
TPH-G	< 6.2
TPH-D	< 33
TPH-O	< 65
Lead	2.1

CB-4			
Date	8/12/2015	8/12/2015	8/12/2015
Depth	6 feet	15 feet	20 feet
B	**0.041**	< 0.021	**0.39**
T	< 0.06	< 0.054	< 0.09
E	< 0.06	< 0.054	1.4
X	0.21	< 0.054	4.1
TPH-G	**110**	**35**	29
TPH-D	110 Y	390 Y	< 42*
TPH-O	360 Y	< 57	< 84
Lead	33	4.0	13

CB-14	
Date	8/13/2015
Depth	9 feet
B	< 0.029H
T	< 0.072H
E	< 0.072H
X	< 0.072H
TPH-G	< 6.6H
TPH-D	< 34H
TPH-O	< 68H
Lead	5.0

CB-9		
Date	8/13/2015	8/13/2015
Depth	10 feet	15 feet
B	< 0.0067	< 0.022
T	< 0.076	< 0.055
E	< 0.076	< 0.055
X	< 0.076	< 0.055
TPH-G	< 6.5	11
TPH-D	< 36	< 32*
TPH-O	< 72	< 64
Lead	4.4	2.7

CB-3	
Date	8/12/2015
Depth	15 feet
B	< 0.029
T	< 0.072
E	< 0.072
X	< 0.072
TPH-G	< 6.7
TPH-D	< 36
TPH-O	< 71
Lead	2.5

CB-1	
Date	8/12/2015
Depth	20 feet
B	< 0.027
T	< 0.067
E	< 0.067
X	< 0.067
TPH-G	< 6.1
TPH-D	< 33
TPH-O	< 66
Lead	2.7

CB-13	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.06
E	< 0.06
X	< 0.06
TPH-G	< 75
TPH-D	< 26
TPH-O	< 51
Lead	2.0

CB-12	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.061
E	< 0.061
X	< 0.061
TPH-G	< 22
TPH-D	< 29
TPH-O	< 57
Lead	3.3

CB-11	
Date	8/13/2015
Depth	15 feet
B	< 0.023
T	< 0.057
E	< 0.057
X	< 0.057
TPH-G	< 13
TPH-D	< 31
TPH-O	< 61
Lead	4.0

FIGURE 3
Soil Analytical Data Map
August 12 & 13, 2015

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVDA131	Kent, Washington	antea group
0915_KBV-Fig-SA.mxd		
10/28/2015		

Appendix A

Washington State Department of Ecology Opinion Letter

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 12, 2013

RECEIVED BY:
JUL 26 2013
Antea Group - Seattle, WA

Mr. Bryan Taylor
Antea Group
4006 148th Avenue NE
Redmond, WA 98052

Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Investigation for the Following Hazardous Waste Site:

- Name: Olympic Pipe Line Co. Kent
- Address: 74th Avenue South and South 259th Street, Kent
- Facility/Site No.: 2401
- VCP No.: NW2705
- Cleanup Site No.: 3070

Dear Mr. Taylor:

Thank you for submitting documents regarding your remedial investigation for the Olympic Pipe Line Co. Kent (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does

not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your remedial investigation:

1. Olympic Pipe Line Company Kent Block Valve Remedial Investigation Report, dated January 10, 2013, prepared by Antea Group.

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Confirmational soil sampling throughout the facility to assess current soil conditions is required. Additionally, current soil conditions between the block valve property and the Valley Freeway Building remain unknown.
- Because the Site does not qualify for the exclusion, Site Specific Terrestrial Ecological Evaluation must be performed for this Site.
- To complete the soil vapor pathway investigation, refer to Ecology's "*Guidance for Evaluation Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*" Review Draft October 2009, Publication No. 09-09-047.
- Environmental sampling data for all cleanup sites must be submitted both in printed and electronic form. The electronic data can be submitted using Ecology's EIM Environmental Information Management web page http://www.ecy.wa.gov/eim/.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does**

not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (425) 649-4446 or by email at damy461@ecy.wa.gov.

Sincerely,

Dale Myers

Dale Myers
Site Manager
Toxics Cleanup Program

Appendix B

Summary of Field Procedures and Quality Assurance Plan

FIELD PROCEDURES

Prior to drilling, each boring location was cleared to a depth of at least 6.5 feet below ground surface (bgs) with an airknife/vacuum truck and hand auger. Following utility clearing, all borings were advanced using a Geoprobe™ direct-push drilling rig operated by Cascade Drilling, Inc. Discrete soil samples were collected from each boring to characterize site soils with respect to petroleum hydrocarbon impacts. Soil samples were collected from the soil borings using a hand auger or new, disposable acetate liners. The samples were labeled and immediately placed in cold storage until submitted to the laboratory for analysis. The samples were transported to Test America in Tacoma, Washington for analysis.

During the drilling program, soil samples were screened using a photo ionization detector (PID). 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. The soil samples were removed from the acetate liners and placed in plastic bags, sealed and brought to approximately ambient air temperature. The PID probe was inserted into an opening of the plastic bag and the reading noted. The soil within the bag was agitated during the reading process to aid in mobilization of volatile organic vapors. Although the PID is not capable of quantifying or identifying specific organic compounds, it is capable of measuring a variety of organic vapors frequently associated with petroleum hydrocarbons.

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:

1. U.S. Environmental Protection Agency (EPA) and State certification programs.
2. Participation in an inter-laboratory or "round-robin" quality assurance program.
3. 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 samples collected during this investigation were analyzed by the following methods:

1. Gasoline range hydrocarbons by Washington State Department of Ecology Method NWTPH-Gx;
2. Diesel and oil range hydrocarbons by Washington State Department of Ecology Method NWTPH-Dx with silica gel cleanup;
3. Benzene, toluene, ethyl benzene, xylenes (BTEX) by EPA Method 8260;
4. Total lead by EPA Method 6020; and
5. Extractable and volatile hydrocarbons by NWTPH-EPH and NWTPH-VPH, respectively (select soil samples only).

Appendix C

Boring Logs

antea group	WELL/BORING: CB-1	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Lauren Hamilton
Concrete						1					Surface = Asphalt Air Knifed to 7.5' bgs.
Bentonite			DRY	0.0	NA	5			SM		Silty SAND: brown; 20% silt; 80% very fine to fine sand; no odor.
			-	-	NA	8			SM		Silty SAND: dark brown; 10% silt; 90% very fine to coarse sand; trace subrounded; no odor.
			DRY MST	0.0	NA	10			ML		Clayey SILT: brown; 100% silt; moderate plasticity; iron staining; no odor.
						13					SILT: gray; 100% sil;t moderate plasticity; no odor.
			MST	0.0	NA	15			SM		Sandy SILT: gray; 90% silt; 10% very fine to fine sand.
						16			SM		Silty SAND: gray; 20% silt; 80% very fine to fine sand.
						17			ML		SILT: gray; 100% silt.
						19			SM		Silty SAND: 20% silt; 80% very fine to medium sand; no odor.
	▽		WET	0.0	NA	20			ML		Clayey SILT: gray; 20% silt; trace fine sand; moderate plasticity; no odor.

antea group	WELL/BORING: CB-2	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Lauren Hamilton

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Concrete						0					Surface = Asphalt
Bentonite			DRY	0.0	NA	5			SM		Silty SAND: gray; 20% silt; 80% very fine to fine sand; no odor.
						6					
						7			SM		Silty SAND: 20% silt; 80% very fine to coarse sand; no odor.
						8					Clayey SILT: gray; some iron staining; moderate plasticity; no odor.
						9					
			DRY	0.0	NA	10			ML		Clayey SILT: gray; trace very fine sand.
						11					Clayey SILT: brown with iron staining.
						12					
						13			ML		Sandy SILT: brown with iron staining; 80% silt; 20% very fine to coarse sand.
						14			SM		Silty SAND: brown; iron staining; very fine to fine sand.
	▽		MST WET	0.0	NA	15			SM		@14.5' turn gray; no odor. Silty SAND: gray; 20% silt; 80% very fine to medium sand; no odor.
						16					Silty SAND:
						17			ML		Clayey SILT: gray; moderate plasticity; no odor.
						18					
						19			SM		Silty SAND: gray; 35% silt; 65% very fine to fine sand; no odor.
			WET	0.0	NA	20			ML		Clayey SILT: gray; moderate plasticity; no odor.
						21					
						22			SM		Silty SAND: gray; 20% silt; 80% very fine to fine sand.

	WELL/BORING: CB-2	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Lauren Hamilton
Bentonite			WET	-	-	23			SW		SAND: gray; fine to coarse sand; subrounded; no odor.
						24					
						25					
						26					
						27					
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

antea group	WELL/BORING: CB-3	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	-
											SURVEY DATE:	-
											DTW:	-
											DESCRIPTION/LOGGED BY: Lauren Hamilton	
Concrete						1					Surface = Asphalt	
						2						
						3						
						4						
			DRY	0.0	NA	5			SM		Silty SAND: brown; 15% silt; 85% very fine to fine sand; no odor.	
						6			SM		Silty SAND: brown; 20% silt; very fine to coarse sand; no odor.	
						7						
						8			SP		SAND: 100% sand.	
						9			SM		Silty SAND: 20% silt; 80% sand.	
Bentonite			DRY	0.0	NA	10			SM		Silty SAND: brown; with iron staining; very fine sand; no odor.	
						11					Clayey SILT: brown; moderate plasticity; no odor.	
						12						
						13					Same as Above: gray.	
						14					Silty SAND: brown; 20% silt; 80% very fine to fine sand; no odor.	
			DRY	0.0	NA	15			SM		Sandy SILT: brown; 80% silt; 20% very fine to fine sand; no odor.	
						16						
						17						
	▽		WET	0.0	NA	18			SP		SAND: brown; 100% fine sand.	
						19			SM		Sandy SILT: 80% silt; 20% very fine to fine sand; no odor.	
			WET	-	-	20			SW		SAND: gray; fine to coarse sand; no odor.	
						21			ML		Clayey SILT: gray; moderate plasticity; no odor.	
						22						

antea group	WELL/BORING: CB-3	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Lauren Hamilton

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Bentonite			WET	-	-	23			SW		Sandy SILT: gray; 30% fine to coarse sand.
						24					
						25					
						26					
						27					
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

antea group	WELL/BORING: CB-4	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Lauren Hamilton

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Concrete						0					Surface = Asphalt
Bentonite			DRY	56.1	NA	5			SM		Sandy SILT: gray; 85% silt; 15% fine sand; trace pebbles/gravel; trace organics; odor.
						7					No Recovery 2 large rocks
			NA	NA	NA	10					No Recovery
			DRY	74.6	NA	14			SW		Gravelly SAND: gray; coarse gravel/rocks.
						15					SAND: fine to very coarse sand; odor.
						16			SW		SAND: gray/dark brown; fine to coarse sand; no odor.
	▽		WET			18			ML		Clayey SILT: gray; low plasticity; trace organics; no odor.
			WET	19.9	NA	20					

	WELL/BORING: CB-5	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Lauren Hamilton
Concrete						1					Surface = Asphalt
Bentonite			DRY	77.0	NA	5			SM		Sandy SILT: gray; 90% silt; 10% fine sand; trace gravel/pebbles; trace organics; odor.
						6					6.5-9' No Recovery
			DRY	395.6	NA	9			SW		Gravelly SAND: gray; 80% fine to very coarse sand; 20% gravel; odor.
						10					10-12' No Recovery
						12			SM		SAND: gray; very coarse sand; trace gravel; odor.
						13			SM		Silty SAND: gray; 20% silt; very fine to fine sand; low plasticity.
						14			ML		Clayey Sandy SILT: low plasticity; odor; sheen on sample. (13-15' there was a sheen on the soil)
			DRY	792	NA	15			ML		
			DRY	27.5	NA	16			ML		Silty SAND: gray; 20% silt; very fine to fine sand; slight odor.
	▽		WET	-	-	17			SM		Sandy SILT: gray; very fine to fine sand.
			MST			18			ML		Clayey SILT: brown; moderate plasticity; trace organics; no odor.
			MST	7.8	NA	20			SM		Sandy SILT: gray; 90% silt; 10% very fine to fine sand.
			-	22.7	NA	22					

	WELL/BORING: CB-5	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/12/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Lauren Hamilton
Bentonite			WET	-	-	23			SM		Sandy SILT: brown; 80% silt; 10% fine sand; trace organics.
						24					
						25					
						26					
						27					
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

antea group	WELL/BORING: CB-6	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Concrete						0					Surface = Asphalt
Bentonite			DRY	22.7	NA	5			SM		Silty SAND: brown; 30% silt; 70% very fine to fine sand; no odor.
			DRY	9.8	NA	9			SP		Gravelly SAND: gray; 80% fine to medium sand; 20% rounded to subrounded gravel.
			MST	44.4	NA	14			SP		Gravelly Silty SAND: gray; 15% silt; 75% very fine to fine sand; 10% rounded gravel.
			MST	33.2	NA	17			SP		Same as Above.
			MST	915	NA	19			SM		Silty SAND: gray; 40% silt; 60% very fine to fine sand; sheen.
						22			ML		Silt lens ~6"

	WELL/BORING: CB-6	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Taylor Roberts
Bentonite			MST	41.2	-	23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44			SP		SAND: black; 100% medium sand.

	WELL/BORING: CB-7	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Concrete						0					Surface = Asphalt
						1					
						2					
						3					
						4					
			DRY	0.5	NA	5			SP		SAND: brown; 100% very fine to fine sand.
						6					Wood debris
						7					
						8					Grades to SILT.
						9			ML		SILT: gray; 100% silt.
Bentonite			DRY	0.0	NA	10					
						11			SM		Silty SAND: brown; 20% silt; 80% very fine to mediums sand.
						12					
						13			SM		Silty SAND: gray; interbedded silt and sand layers; 20% silt; 80% fine sand.
			MST	0.0	NA	14					
						15					
						16					
						17			SM		Same as Above.
						18			ML		SILT: gray; 90% silt; trace fine sand; wood debris.
						19					
	▽		MST	0.5	NA	20			SP		SAND: gray; 100% very fine to medium sand. Silt lens ~4"
						21					SAND: gray; 100% very fine to fine sand.
						22					

	WELL/BORING: CB-7	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 25'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	-
											SURVEY DATE:	-
											DTW:	-
											DESCRIPTION/LOGGED BY: Taylor Roberts	
Bentonite			WET	4.2	-	23			SW		Grades to fine to coarse sand.	
						24					SAND: black; 100% sand.	
						25						
						26						
						27						
						28						
						29						
						30						
						31						
						32						
						33						
						34						
						35						
						36						
						37						
						38						
						39						
						40						
						41						
						42						
						43						
						44						

	WELL/BORING: CB-8	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Concrete						1					Surface = Asphalt
						2					
						3					
						4					
			MST	0.0	NA	5			SM		Silty SAND: brown; 30% silt; 70% very fine sand.
						6					
						7					
						8					
			DRY	0.0	NA	9			ML		Silty SAND: gray; 100% silt.
						10			SP		SAND: brown; 100% fine to coarse sand. Silt lens ~4"
						11					
						12					
						13			SP		
Bentonite	▽		WET	0.0	NA	14			ML		SILT: gray; 100% silt.
						15					
						16					Grades to Clayey Silt.
						17					Silty SAND: 30% silt; 70% very fine to fine sand.
						18			SM		
						19					
			WET	0.0	NA	20			ML		SAND: 100% fine to coarse sand.
						21					
						22					

antea group	WELL/BORING: CB-9	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Bentonite						1					Surface = Grass
						2					
						3					
						4					
			DRY	0.0	NA	5			SM		Silty SAND: brown; 20% silt; 80% very fine to mediums sand.
						6					
						7					Grades to very fine to fine sand.
						8					
			DRY	0.0	NA	9			ML		SILT: brown/gray; 100% silt.
						10					
						11					Grades to Clayey SILT: brown to gray.
						12					
						13					
			MST	0.0	NA	14			SM		Silty SAND: 40% silt; 60% very fine sand.
						15					
	▽					16					
						17					
						18					
						19					
			WET	0.0	NA	20			SM		Same as Above.
						21					
						22					

	WELL/BORING: CB-10	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Air Knife
	PROJECT: WAKBVEA154	SAMPLING METHOD: Hand Auger
	CLIENT: OPLC	BORING DIAMETER: 6"
	LOCATION: Kent Block Valve	BORING DEPTH: 8'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Bentonite						1					Surface = Grass Air Knife Crews Note: Hard welled sand 2'.
						2					
						3					
						4					
			DRY	0.0	NA	5			SP		SAND: brown; 100% very fine to medium sand.
						6					
						7					
			MST	0.0	NA	8			SM		Silty SAND: brown; 20% silt; 80% very fine to fine sand.
						9					
						10					
						11					
						12					
						13					
						14					
						15					
						16					
						17					
						18					
						19					
						20					
						21					
						22					

	WELL/BORING: CB-11	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Taylor Roberts
											CASING ELEVATION: -
											SURVEY DATE: -
											DTW: -
Bentonite						1					Surface = Grass
						2					
						3					
						4					
			DRY	0.0	NA	5			SP		SAND: brown; 100% very fine to fine sand.
						6					
						7			ML		SILT: brown; 100% silt.
						8					
			MST	0.0	NA	9			SP		SAND: gray/brown; 100% fine to medium sand.
						10					
						11			ML		SILT: brown; 100% silt.
						12					
						13					Grades to Clayey SILT
			MST	0.0	NA	14			ML		Clayey SILT: gray/brown; 20% clay; 80% silt.
						15					
						16					
	▽					17					
						18					Clayey SILT: gray; tightly packed.
			WET	0.0	NA	19			SP		SAND: black 100% very fine to mediums and.
						20					
						21					
						22					

	WELL/BORING: CB-12	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Bentonite						0					Surface = Grass
			DRY	0.0	NA	5			ML		SILT: brown; 100% silt.
			MST	0.0	NA	9			ML		Same as Above.
						12			ML		Clayey SILT: gray/brown; 20% clay; 80% silt.
	▽		MST	0.0	NA	14			ML		Same as Above.
						16			SP		SAND: brown; 100% very fine to medium sand.
						18			ML		SILT: gray/brown; 100% silt.
			WET	0.0	NA	20			SP		SAND: brown/black; 100% fine to medium sand.

antea group	WELL/BORING: CB-13	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Direct Push
	PROJECT: WAKBVEA154	SAMPLING METHOD: Acetate Sleeve
	CLIENT: OPLC	BORING DIAMETER: 2.25"
	LOCATION: Kent Block Valve	BORING DEPTH: 20'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Taylor Roberts
Bentonite						1					Surface = Grass
			DRY	0.0	NA	5			SP		SAND: brown; 100% very fine to medium sand.
			MST	0.0	NA	9			SP		SAND: gray/brown; 100% very fine to medium sand.
						12			ML		SILT: brown; 100% silt.
			WET	0.0	NA	14			ML		Grades to gray.
						16					Same as Above.
						17			ML		Clayey SILT: gray; 20% clay; 80% silt.
	▽		WET	0.0	NA	20			ML		SILT: dark gray; 100% silt.

9/21/2015

antea group	WELL/BORING: CB-14	Unique Ecology Well ID: NA
	INSTALLATION DATE: 8/13/2015	DRILLING METHOD: Airknife
	PROJECT: WAKBVEA154	SAMPLING METHOD: Hand Auger
	CLIENT: OPLC	BORING DIAMETER: 6"
	LOCATION: Kent Block Valve	BORING DEPTH: 9'
	CITY: Kent	WELL CASING: NA
	STATE: WA	WELL SCREEN: NA
	DRILLER: Cascade Drilling, Inc.	SAND PACK: NA

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Taylor Roberts

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Bentonite						1					Surface = Grass
						2					
						3					
						4					
			DRY	13.2	NA	5			SM		Silty SAND: gray/brown; 30% silt; 60% very fine to medium sand.
						6					
						7					
						8					
			MST	0.0	NA	9			ML		Clayey SILT: gray; 20% clay; 80% silt.
						10					
						11					
						12					
						13					
						14					
						15					
						16					
						17					
						18					
						19					
						20					
						21					
						22					

Appendix D

Soil and Water Disposal Forms

CASCADE DRILLING, L.P.
LEADERS IN SAFETY

CASCADE DRILLING DAILY WORK REPORT

19404 Woodinville Snohomish Rd NE, Woodinville, WA 98072
425-485-8908 # CASCADL91508

CLIENT	PROJECT NO	DATE	DAY
JOB LOCATION	DIG ALERT #	CD-LP#	

Well # / Bore #	Depth Drilled	DESCRIPTION OF WORK Please explain reasons for Down Time and Standby Time and Shop Time	HOURS Start	HOURS Stop	Total Hrs	Charge Hrs
		AM Shop Time				
		Travel to Site				
		Travel to Shop				
		PM Shop Time				
Total Ft.		TOTAL CHARGEABLE RIG HOURS				

RIG ENGINE HOURS: START ____ STOP ____ TOTAL ____

EQUIPMENT

DRILL RIG #		COMPRESSOR/JACKHAMMER	
SUPPORT TRUCK #	W201	SNOW FENCE RENTAL	
SUPPORT TRUCK #		CONTINUOUS SAMPLER	
TRAILER #		CONTINUOUS SAMPLER FOOTAGE	
BOBCAT		# OF CORE CUTS	
AUTO HAMMER		# OF BULLDOG CUTS	
GROUT MIXER		# OF SERVICE RUNS	
GROUT PUMP		# OF SAW CUTS	
PERISTALTIC PUMP		PORTABLE RESTROOM	
FORKLIFT/HOPPER			

LABOR

NAME	SIGNATURE	SHOP	DRILL	TOTAL HRS
Kenny G.				
Tim W.				

CREW WITH PER DIEM ____ CHARGEABLE EXTRA LABOR HRS ____

CASING

TYPE___SLOT___	2	4	
20' SCREEN			
10' SCREEN			
5' SCREEN			
20' BLANK			
10' BLANK			
5' BLANK			
5' PP SCREEN			
10' PP SCREEN			
SLIP CAP			
THREADED CAPS			
LOCKING CAPS			
DRIVE SHOE			
CENTRALIZERS			
LOCKS			

UTILITIES FOUND OR HIT

MATERIALS

ITEM	QTY	ITEM	QTY
SAND		WELL COVER 8"	
READYMIX		WELL COVER 12"	
QUICKSET		MONUMENT CASING	
PORTLAND		BOLLARDS	
ASPHALT		SOIL DRUMS	
BENTONITE GROUT		DEVELOPMENT DRUMS	
BENTONITE CHIPS		DECON DRUMS	
BENTONITE POWDER		HOLE COVER PLATES	
BENTONITE PELLETS		PLASTIC SHEETING	
BENTONITE GRANULAR		TRAFFIC CONTROL	
SAMPLER TUBES		CORE BOXES	
SHELBY TUBES		PLYWOOD	
PROBE POINTS "		SOIL SAMPLES	
GW PROBE POINTS		WATER SAMPLES	
MACRO LINERS		HYDROPUNCH SAMPLES	
SAMPLER SHOE		AUGER PLUGS	
		DRILL OUT BITS	

REMARKS

Client Signature _____ Operator Signature _____

***24 HOUR EMERGENCY RESPONSE, CALL (877) 577-2669 ***

Stericycle®
Environmental Solutions

SHIPPING PAPER

Lading Manifest: 719758-15

DELIVERY DATE	JOB # 2198024

SHIPPER / CUSTOMER OLYMPIC PIPELINE	POINT OF CONTACT Taylor Roberts
ADDRESS South 259th St.	PHONE # (425)498-7712
CITY, STATE, ZIP Kent WA 98032	
CARRIER / TRANSPORTER CASCADE DRILLING	PHONE # (425)485-8908
CONSIGNEE / FACILITY BURLINGTON ENVIRONMENTAL, LLC.	POINT OF CONTACT
ADDRESS 20245 77TH AVENUE SOUTH	PHONE # (253)872-8030
CITY, STATE, ZIP KENT , WA 98032	

HM	US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	Containers No.	Containers Type	Total Quantity	UOM
A	MATERIAL NOT REGULATED BY DOT		DM		P
B	MATERIAL NOT REGULATED BY DOT		DM		P
C					
D					

Special Handling Instruction and Additional Information:

a) 722347-00 - NON HAZARDOUS WATER - NA05 (2) b) 722345-00 - NON HAZARDOUS SOIL - LF01 (3)

Placards Provided YES_____ NO_____

SHIPPER'S CERTIFICATION: "I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations." I also certify that all times listed above are true and correct.

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Appendix E

Soil Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 580-52422-1
Client Project/Site: OPLC - Kent BV
Revision: 1

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

Attn: Mackie Stock

Authorized for release by:
9/24/2015 11:33:50 AM

Robert Greer, Project Manager I
(253)922-2310
robert.greer@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.

Robert Greer
Project Manager I
9/24/2015 11:33:50 AM

Table of Contents

Job ID: 580-52422-1

Laboratory: TestAmerica Seattle

Narrative

As per clients request on September 22, 2015, the report has been revised to report BTEX analysis to the MDL.

Job Narrative
580-52422-1

Comments
No additional comments.

Receipt
The samples were received on 8/13/2015 11:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.1º C and 4.3º C.

Receipt Exceptions

The chain of custody lists 5 containers for sample CB-1-5 (580-52422-1), CB-1-10 (580-52422-2), CB-1-15 (580-52422-3), CB-1-20 (580-52422-4), CB-2-5 (580-52422-5), CB-2-10 (580-52422-6), CB-2-15 (580-52422-7), CB-2-20 (580-52422-8), CB-3-5 (580-52422-9), CB-3-10 (580-52422-10), CB-3-15 (580-52422-11), CB-3-18 (580-52422-12), CB-4-6 (580-52422-13), CB-4-15 (580-52422-14), CB-4-20 (580-52422-15), CB-5-5 (580-52422-16), CB-5-10 (580-52422-17), CB-5-15 (580-52422-18), CB-5-16 (580-52422-19), CB-5-20 (580-52422-20), CB-5-22.5 (580-52422-21), CB-6-5 (580-52422-22), Composite-1 (580-52422-23), Composite-2 (580-52422-24), Trip Blanks (580-52422-25), CB-6-10 (580-52422-26), CB-6-15 (580-52422-27), CB-6-18 (580-52422-28), CB-6-20 (580-52422-29), CB-6-25 (580-52422-30), CB-7-5 (580-52422-31), CB-7-10 (580-52422-32), CB-7-15 (580-52422-33), CB-7-20 (580-52422-34), CB-7-24.5 (580-52422-35), CB-8-5 (580-52422-36), CB-8-10 (580-52422-37), CB-8-15 (580-52422-38), CB-8-20 (580-52422-39), CB-9-5 (580-52422-40), CB-9-10 (580-52422-41), CB-9-15 (580-52422-42), CB-10-5 (580-52422-43) and CB-10-8 (580-52422-44) but only 4 containers were received.

GC/MS VOA
Method(s) NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 197985 recovered above the upper control limit for Gasoline. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: CB-1-20 (580-52422-4), CB-2-15 (580-52422-7), CB-3-15 (580-52422-11), Trip Blanks (580-52422-25) and (CCV 580-197985/15).

Method(s) NWTPH-Gx: Surrogate recovery for the following samples was outside control limits: CB-4-6 (580-52422-13) and CB-5-15 (580-52422-18). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The following sample was diluted due to the nature of the sample matrix: CB-5-10 (580-52422-17). Elevated reporting limits (RLs) are provided.

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

GC Semi VOA
Method(s) NWTPH-Dx: In analytical batch 580-197914, the following samples from preparation batch 580-197922 and 580-197982 contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: CB-4-6 (580-52422-13).

Method(s) NWTPH-Dx: In analytical batch 580-197914, the following samples from preparation batch 580-197922 and 580-197982 contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: CB-4-15 (580-52422-14), CB-5-10 (580-52422-17) and CB-5-15 (580-52422-18).

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.

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

Job ID: 580-52422-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

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

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
Y	The chromatographic response resembles a typical fuel pattern.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Client Sample ID: CB-1-20
Date Collected: 08/12/15 09:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-4
Matrix: Solid
Percent Solids: 74.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	5.9	ug/Kg	☼	08/24/15 13:35	08/25/15 19:46	1
Toluene	ND		67	4.4	ug/Kg	☼	08/24/15 13:35	08/25/15 19:46	1
Ethylbenzene	ND		67	3.3	ug/Kg	☼	08/24/15 13:35	08/25/15 19:46	1
Xylenes, Total	ND		67	5.0	ug/Kg	☼	08/24/15 13:35	08/25/15 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/24/15 13:35*	*08/25/15 19:46*	*1*
Trifluorotoluene (Surr)	*91*		*65 - 140*	*08/24/15 13:35*	*08/25/15 19:46*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 120*	*08/24/15 13:35*	*08/25/15 19:46*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 132*	*08/24/15 13:35*	*08/25/15 19:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 136*	*08/24/15 13:35*	*08/25/15 19:46*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.1		mg/Kg	☼	08/14/15 12:49	08/14/15 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*50 - 150*	*08/14/15 12:49*	*08/14/15 17:23*	*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		33		mg/Kg	☼	08/14/15 08:53	08/14/15 16:56	1
Motor Oil (>C24-C36)	ND		66		mg/Kg	☼	08/14/15 08:53	08/14/15 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*08/14/15 08:53*	*08/14/15 16:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.7**		0.64		mg/Kg	☼	08/15/15 06:38	08/17/15 19:18	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**74**		0.10		%			08/18/15 11:35	1
Percent Moisture	**26**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-2-15
Date Collected: 08/12/15 10:25
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-7
Matrix: Solid
Percent Solids: 71.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	6.0	ug/Kg	☼	08/24/15 13:35	08/26/15 00:07	1
Toluene	**37**	**J**	69	4.5	ug/Kg	☼	08/24/15 13:35	08/26/15 00:07	1
Ethylbenzene	ND		69	3.4	ug/Kg	☼	08/24/15 13:35	08/26/15 00:07	1
Xylenes, Total	ND		69	5.1	ug/Kg	☼	08/24/15 13:35	08/26/15 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/24/15 13:35*	*08/26/15 00:07*	*1*
Trifluorotoluene (Surr)	*85*		*65 - 140*	*08/24/15 13:35*	*08/26/15 00:07*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 120*	*08/24/15 13:35*	*08/26/15 00:07*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 132*	*08/24/15 13:35*	*08/26/15 00:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 136*	*08/24/15 13:35*	*08/26/15 00:07*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.2		mg/Kg	☼	08/14/15 12:49	08/14/15 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*50 - 150*	*08/14/15 12:49*	*08/14/15 17:53*	*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		33		mg/Kg	☼	08/17/15 07:46	08/18/15 10:35	1
Motor Oil (>C24-C36)	ND		65		mg/Kg	☼	08/17/15 07:46	08/18/15 10:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*08/17/15 07:46*	*08/18/15 10:35*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.1**		0.62		mg/Kg	☼	08/15/15 06:38	08/17/15 19:55	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**72**		0.10		%			08/18/15 11:35	1
Percent Moisture	**28**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-3-15
Date Collected: 08/12/15 12:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-11
Matrix: Solid
Percent Solids: 69.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	6.3	ug/Kg	☼	08/24/15 13:35	08/26/15 00:35	1
Toluene	ND		72	4.7	ug/Kg	☼	08/24/15 13:35	08/26/15 00:35	1
Ethylbenzene	ND		72	3.6	ug/Kg	☼	08/24/15 13:35	08/26/15 00:35	1
Xylenes, Total	ND		72	5.4	ug/Kg	☼	08/24/15 13:35	08/26/15 00:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 00:35*	*1*
Trifluorotoluene (Surr)	*88*		*65 - 140*	*08/24/15 13:35*	*08/26/15 00:35*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 120*	*08/24/15 13:35*	*08/26/15 00:35*	*1*
Dibromofluoromethane (Surr)	*92*		*75 - 132*	*08/24/15 13:35*	*08/26/15 00:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 136*	*08/24/15 13:35*	*08/26/15 00:35*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.7		mg/Kg	☼	08/14/15 12:49	08/14/15 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*50 - 150*	*08/14/15 12:49*	*08/14/15 18:24*	*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		36		mg/Kg	☼	08/17/15 07:46	08/18/15 11:12	1
Motor Oil (>C24-C36)	ND		71		mg/Kg	☼	08/17/15 07:46	08/18/15 11:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*76*		*50 - 150*	*08/17/15 07:46*	*08/18/15 11:12*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.5**		0.64		mg/Kg	☼	08/15/15 06:38	08/17/15 19:59	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**70**		0.10		%			08/18/15 11:35	1
Percent Moisture	**30**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-4-6
Date Collected: 08/12/15 12:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-13
Matrix: Solid
Percent Solids: 79.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	41		24	5.2	ug/Kg	☼	08/24/15 13:35	08/26/15 01:04	1
Toluene	30	J	60	3.9	ug/Kg	☼	08/24/15 13:35	08/26/15 01:04	1
Ethylbenzene	27	J	60	3.0	ug/Kg	☼	08/24/15 13:35	08/26/15 01:04	1
Xylenes, Total	230		60	4.5	ug/Kg	☼	08/24/15 13:35	08/26/15 01:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 01:04*	*1*
Trifluorotoluene (Surr)	*88*		*65 - 140*	*08/24/15 13:35*	*08/26/15 01:04*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*	*08/24/15 13:35*	*08/26/15 01:04*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 132*	*08/24/15 13:35*	*08/26/15 01:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 136*	*08/24/15 13:35*	*08/26/15 01:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	110		5.1		mg/Kg	☼	08/17/15 14:13	08/17/15 21:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*189*	*X*	*50 - 150*	*08/17/15 14:13*	*08/17/15 21:49*	*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)	110	Y	31		mg/Kg	☼	08/14/15 08:53	08/14/15 17:32	1
Motor Oil (>C24-C36)	360	Y	63		mg/Kg	☼	08/14/15 08:53	08/14/15 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82*		*50 - 150*	*08/14/15 08:53*	*08/14/15 17:32*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	33		0.56		mg/Kg	☼	08/15/15 06:38	08/17/15 20:04	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79		0.10		%			08/18/15 11:35	1
Percent Moisture	21		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-4-15

Date Collected: 08/12/15 13:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-14

Matrix: Solid
Percent Solids: 85.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	12	J	21	4.7	ug/Kg	☼	08/24/15 13:35	08/26/15 01:33	1
Toluene	21	J	54	3.5	ug/Kg	☼	08/24/15 13:35	08/26/15 01:33	1
Ethylbenzene	18	J	54	2.7	ug/Kg	☼	08/24/15 13:35	08/26/15 01:33	1
Xylenes, Total	50	J	54	4.0	ug/Kg	☼	08/24/15 13:35	08/26/15 01:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/24/15 13:35*	*08/26/15 01:33*	*1*
Trifluorotoluene (Surr)	*86*		*65 - 140*	*08/24/15 13:35*	*08/26/15 01:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*	*08/24/15 13:35*	*08/26/15 01:33*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 132*	*08/24/15 13:35*	*08/26/15 01:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 136*	*08/24/15 13:35*	*08/26/15 01:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	35		4.5		mg/Kg	☼	08/17/15 14:13	08/17/15 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*50 - 150*	*08/17/15 14:13*	*08/17/15 20:47*	*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)	390	Y	28		mg/Kg	☼	08/14/15 08:53	08/14/15 17:50	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	☼	08/14/15 08:53	08/14/15 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*56*		*50 - 150*	*08/14/15 08:53*	*08/14/15 17:50*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.0		0.54		mg/Kg	☼	08/15/15 06:38	08/17/15 20:13	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	86		0.10		%			08/18/15 11:35	1
Percent Moisture	14		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-5-10
Date Collected: 08/12/15 14:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-17
Matrix: Solid
Percent Solids: 81.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	37		23	5.1	ug/Kg	☼	08/24/15 13:35	08/26/15 02:02	1
Toluene	26	J	58	3.8	ug/Kg	☼	08/24/15 13:35	08/26/15 02:02	1
Ethylbenzene	120		58	2.9	ug/Kg	☼	08/24/15 13:35	08/26/15 02:02	1
Xylenes, Total	190		58	4.3	ug/Kg	☼	08/24/15 13:35	08/26/15 02:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/24/15 13:35*	*08/26/15 02:02*	*1*
Trifluorotoluene (Surr)	*91*		*65 - 140*	*08/24/15 13:35*	*08/26/15 02:02*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 120*	*08/24/15 13:35*	*08/26/15 02:02*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 132*	*08/24/15 13:35*	*08/26/15 02:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 136*	*08/24/15 13:35*	*08/26/15 02:02*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1300		56		mg/Kg	☼	08/17/15 14:13	08/17/15 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*133*		*50 - 150*	*08/17/15 14:13*	*08/17/15 23:22*	*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)	840	Y	30		mg/Kg	☼	08/14/15 08:53	08/14/15 18:08	1
Motor Oil (>C24-C36)	120	Y	60		mg/Kg	☼	08/14/15 08:53	08/14/15 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*50 - 150*	*08/14/15 08:53*	*08/14/15 18:08*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.6		0.52		mg/Kg	☼	08/15/15 06:38	08/17/15 20:09	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81		0.10		%			08/18/15 11:35	1
Percent Moisture	19		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-5-15

Date Collected: 08/12/15 14:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-18

Matrix: Solid
Percent Solids: 71.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	34		28	6.1	ug/Kg	☼	08/24/15 13:35	08/26/15 02:30	1
Toluene	14	J	70	4.5	ug/Kg	☼	08/24/15 13:35	08/26/15 02:30	1
Ethylbenzene	440		70	3.5	ug/Kg	☼	08/24/15 13:35	08/26/15 02:30	1
Xylenes, Total	58	J	70	5.2	ug/Kg	☼	08/24/15 13:35	08/26/15 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/24/15 13:35*	*08/26/15 02:30*	*1*
Trifluorotoluene (Surr)	*87*		*65 - 140*	*08/24/15 13:35*	*08/26/15 02:30*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 120*	*08/24/15 13:35*	*08/26/15 02:30*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 132*	*08/24/15 13:35*	*08/26/15 02:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 136*	*08/24/15 13:35*	*08/26/15 02:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	150		6.0		mg/Kg	☼	08/17/15 14:13	08/17/15 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*161*	*X*	*50 - 150*	*08/17/15 14:13*	*08/17/15 22:51*	*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)	590	Y	33		mg/Kg	☼	08/14/15 08:53	08/14/15 18:26	1
Motor Oil (>C24-C36)	ND		67		mg/Kg	☼	08/14/15 08:53	08/14/15 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*08/14/15 08:53*	*08/14/15 18:26*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.0		0.63		mg/Kg	☼	08/15/15 06:38	08/17/15 20:18	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	71		0.10		%			08/18/15 11:35	1
Percent Moisture	29		0.10		%			08/18/15 11:35	1

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Client Sample ID: Trip Blanks

Date Collected: 08/12/15 00:01
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-25
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	3.5	ug/Kg		08/24/15 13:35	08/25/15 19:17	1
Toluene	**3.0**	**J**	40	2.6	ug/Kg		08/24/15 13:35	08/25/15 19:17	1
Ethylbenzene	ND		40	2.0	ug/Kg		08/24/15 13:35	08/25/15 19:17	1
Xylenes, Total	ND		40	3.0	ug/Kg		08/24/15 13:35	08/25/15 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/25/15 19:17*	*1*
Trifluorotoluene (Surr)	*91*		*65 - 140*	*08/24/15 13:35*	*08/25/15 19:17*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*	*08/24/15 13:35*	*08/25/15 19:17*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 132*	*08/24/15 13:35*	*08/25/15 19:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 136*	*08/24/15 13:35*	*08/25/15 19:17*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/14/15 12:49	08/14/15 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*50 - 150*	*08/14/15 12:49*	*08/14/15 16:52*	*1*

Client Sample ID: CB-6-18

Date Collected: 08/13/15 08:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-28

Matrix: Solid
Percent Solids: 82.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	60		22	4.8	ug/Kg	☼	08/24/15 13:35	08/26/15 02:59	1
Toluene	34	J	55	3.6	ug/Kg	☼	08/24/15 13:35	08/26/15 02:59	1
Ethylbenzene	110		55	2.8	ug/Kg	☼	08/24/15 13:35	08/26/15 02:59	1
Xylenes, Total	240		55	4.1	ug/Kg	☼	08/24/15 13:35	08/26/15 02:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/24/15 13:35*	*08/26/15 02:59*	*1*
Trifluorotoluene (Surr)	*88*		*65 - 140*	*08/24/15 13:35*	*08/26/15 02:59*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*	*08/24/15 13:35*	*08/26/15 02:59*	*1*
Dibromofluoromethane (Surr)	*90*		*75 - 132*	*08/24/15 13:35*	*08/26/15 02:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 136*	*08/24/15 13:35*	*08/26/15 02:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	59		4.6		mg/Kg	☼	08/17/15 14:13	08/17/15 21:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*		*50 - 150*	*08/17/15 14:13*	*08/17/15 21:18*	*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)	150	Y	30		mg/Kg	☼	08/21/15 09:57	08/22/15 00:43	1
Motor Oil (>C24-C36)	260	Y	60		mg/Kg	☼	08/21/15 09:57	08/22/15 00:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*08/21/15 09:57*	*08/22/15 00:43*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16		0.53		mg/Kg	☼	08/15/15 06:38	08/17/15 20:22	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	83		0.10		%			08/18/15 11:35	1
Percent Moisture	17		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-7-15

Date Collected: 08/13/15 09:25
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-33

Matrix: Solid
Percent Solids: 75.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	6.4	ug/Kg	☼	08/24/15 13:35	08/26/15 03:28	1
Toluene	**32**	**J**	73	4.7	ug/Kg	☼	08/24/15 13:35	08/26/15 03:28	1
Ethylbenzene	**5.1**	**J**	73	3.6	ug/Kg	☼	08/24/15 13:35	08/26/15 03:28	1
Xylenes, Total	**18**	**J**	73	5.5	ug/Kg	☼	08/24/15 13:35	08/26/15 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 03:28*	*1*
Trifluorotoluene (Surr)	*87*		*65 - 140*	*08/24/15 13:35*	*08/26/15 03:28*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 120*	*08/24/15 13:35*	*08/26/15 03:28*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 132*	*08/24/15 13:35*	*08/26/15 03:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 136*	*08/24/15 13:35*	*08/26/15 03:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.0		mg/Kg	☼	08/17/15 14:13	08/17/15 20:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*50 - 150*	*08/17/15 14:13*	*08/17/15 20:17*	*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		33		mg/Kg	☼	08/21/15 09:57	08/22/15 01:19	1
Motor Oil (>C24-C36)	ND		66		mg/Kg	☼	08/21/15 09:57	08/22/15 01:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*08/21/15 09:57*	*08/22/15 01:19*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.8**		0.60		mg/Kg	☼	08/15/15 06:38	08/17/15 20:27	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**75**		0.10		%			08/18/15 11:35	1
Percent Moisture	**25**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-8-10
Date Collected: 08/13/15 10:10
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-37
Matrix: Solid
Percent Solids: 68.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	7.3	ug/Kg	☼	08/24/15 13:35	08/26/15 03:57	1
Toluene	ND		84	5.5	ug/Kg	☼	08/24/15 13:35	08/26/15 03:57	1
Ethylbenzene	ND		84	4.2	ug/Kg	☼	08/24/15 13:35	08/26/15 03:57	1
Xylenes, Total	ND		84	6.3	ug/Kg	☼	08/24/15 13:35	08/26/15 03:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 03:57*	*1*
Trifluorotoluene (Surr)	*89*		*65 - 140*	*08/24/15 13:35*	*08/26/15 03:57*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 120*	*08/24/15 13:35*	*08/26/15 03:57*	*1*
Dibromofluoromethane (Surr)	*91*		*75 - 132*	*08/24/15 13:35*	*08/26/15 03:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 136*	*08/24/15 13:35*	*08/26/15 03:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.9		mg/Kg	☼	08/17/15 14:13	08/17/15 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*50 - 150*	*08/17/15 14:13*	*08/17/15 19:46*	*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		36		mg/Kg	☼	08/23/15 09:15	08/24/15 11:29	1
Motor Oil (>C24-C36)	ND		72		mg/Kg	☼	08/23/15 09:15	08/24/15 11:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*50 - 150*	*08/23/15 09:15*	*08/24/15 11:29*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**6.8**		0.66		mg/Kg	☼	08/15/15 06:38	08/17/15 20:31	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**69**		0.10		%			08/18/15 11:35	1
Percent Moisture	**31**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-9-10
Date Collected: 08/13/15 10:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-41
Matrix: Solid
Percent Solids: 69.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		31	6.7	ug/Kg	☼	08/24/15 13:35	08/26/15 04:26	1
Toluene	**6.6**	**J**	76	5.0	ug/Kg	☼	08/24/15 13:35	08/26/15 04:26	1
Ethylbenzene	ND		76	3.8	ug/Kg	☼	08/24/15 13:35	08/26/15 04:26	1
Xylenes, Total	ND		76	5.7	ug/Kg	☼	08/24/15 13:35	08/26/15 04:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 04:26*	*1*
Trifluorotoluene (Surr)	*87*		*65 - 140*	*08/24/15 13:35*	*08/26/15 04:26*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*	*08/24/15 13:35*	*08/26/15 04:26*	*1*
Dibromofluoromethane (Surr)	*91*		*75 - 132*	*08/24/15 13:35*	*08/26/15 04:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 136*	*08/24/15 13:35*	*08/26/15 04:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.5		mg/Kg	☼	08/17/15 14:13	08/17/15 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*	*08/17/15 14:13*	*08/17/15 19:15*	*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		36		mg/Kg	☼	08/23/15 09:15	08/24/15 11:47	1
Motor Oil (>C24-C36)	ND		72		mg/Kg	☼	08/23/15 09:15	08/24/15 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*08/23/15 09:15*	*08/24/15 11:47*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.4**		0.62		mg/Kg	☼	08/15/15 06:38	08/17/15 20:36	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**69**		0.10		%			08/18/15 11:35	1
Percent Moisture	**31**		0.10		%			08/18/15 11:35	1

Client Sample ID: CB-10-8

Date Collected: 08/13/15 10:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-44

Matrix: Solid
Percent Solids: 76.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	5.6	ug/Kg	☼	08/24/15 13:35	08/26/15 04:54	1
Toluene	**12**	**J**	64	4.2	ug/Kg	☼	08/24/15 13:35	08/26/15 04:54	1
Ethylbenzene	ND		64	3.2	ug/Kg	☼	08/24/15 13:35	08/26/15 04:54	1
Xylenes, Total	ND		64	4.8	ug/Kg	☼	08/24/15 13:35	08/26/15 04:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/24/15 13:35*	*08/26/15 04:54*	*1*
Trifluorotoluene (Surr)	*86*		*65 - 140*	*08/24/15 13:35*	*08/26/15 04:54*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*	*08/24/15 13:35*	*08/26/15 04:54*	*1*
Dibromofluoromethane (Surr)	*89*		*75 - 132*	*08/24/15 13:35*	*08/26/15 04:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 136*	*08/24/15 13:35*	*08/26/15 04:54*	*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	☼	08/17/15 14:13	08/17/15 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*50 - 150*	*08/17/15 14:13*	*08/17/15 18:44*	*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		31		mg/Kg	☼	08/21/15 09:57	08/22/15 01:55	1
Motor Oil (>C24-C36)	ND		62		mg/Kg	☼	08/21/15 09:57	08/22/15 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82*		*50 - 150*	*08/21/15 09:57*	*08/22/15 01:55*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.2**		0.54		mg/Kg	☼	08/15/15 06:38	08/17/15 20:54	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**77**		0.10		%			08/18/15 11:35	1
Percent Moisture	**23**		0.10		%			08/18/15 11:35	1

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

Lab Sample ID: MB 580-198797/1-A
Matrix: Solid
Analysis Batch: 198892

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	3.5	ug/Kg		08/24/15 13:35	08/25/15 17:50	1
Toluene	ND		40	2.6	ug/Kg		08/24/15 13:35	08/25/15 17:50	1
Ethylbenzene	ND		40	2.0	ug/Kg		08/24/15 13:35	08/25/15 17:50	1
Xylenes, Total	ND		40	3.0	ug/Kg		08/24/15 13:35	08/25/15 17:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*	*08/24/15 13:35*	*08/25/15 17:50*	*1*
Trifluorotoluene (Surr)	*95*		*65 - 140*	*08/24/15 13:35*	*08/25/15 17:50*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*	*08/24/15 13:35*	*08/25/15 17:50*	*1*
Dibromofluoromethane (Surr)	*92*		*75 - 132*	*08/24/15 13:35*	*08/25/15 17:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 136*	*08/24/15 13:35*	*08/25/15 17:50*	*1*

Lab Sample ID: LCS 580-198797/2-A
Matrix: Solid
Analysis Batch: 198892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	800	818		ug/Kg		102	70 - 128
Toluene	800	810		ug/Kg		101	75 - 126
Ethylbenzene	800	833		ug/Kg		104	78 - 126
Xylenes, Total	1600	1690		ug/Kg		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*93*		*65 - 140*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*
Dibromofluoromethane (Surr)	*99*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 136*

Lab Sample ID: LCSD 580-198797/3-A
Matrix: Solid
Analysis Batch: 198892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198797

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	800	811		ug/Kg		101	70 - 128	1	19
Toluene	800	808		ug/Kg		101	75 - 126	0	19
Ethylbenzene	800	821		ug/Kg		103	78 - 126	1	23
Xylenes, Total	1600	1660		ug/Kg		103	70 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*93*		*65 - 140*
4-Bromofluorobenzene (Surr)	*96*		*70 - 120*
Dibromofluoromethane (Surr)	*100*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 136*

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

Lab Sample ID: 580-52422-4 MS
Matrix: Solid
Analysis Batch: 198892

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 198797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		1340	1540		ug/Kg	☼	115	75 - 125
Toluene	ND		1340	1540		ug/Kg	☼	115	70 - 125
Ethylbenzene	ND		1340	1550		ug/Kg	☼	116	75 - 125
Xylenes, Total	ND		2680	3150		ug/Kg	☼	117	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
Trifluorotoluene (Surr)	*89*		*65 - 140*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*
Dibromofluoromethane (Surr)	*100*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 136*

Lab Sample ID: 580-52422-4 MSD
Matrix: Solid
Analysis Batch: 198892

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 198797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		1340	1430		ug/Kg	☼	106	75 - 125	8	30
Toluene	ND		1340	1410		ug/Kg	☼	105	70 - 125	8	30
Ethylbenzene	ND		1340	1440		ug/Kg	☼	108	75 - 125	7	30
Xylenes, Total	ND		2680	2880		ug/Kg	☼	107	70 - 130	9	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*93*		*65 - 140*
4-Bromofluorobenzene (Surr)	*96*		*70 - 120*
Dibromofluoromethane (Surr)	*99*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 136*

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

Lab Sample ID: MB 580-197962/1-A
Matrix: Solid
Analysis Batch: 197985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 197962

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/14/15 12:49	08/14/15 15:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*50 - 150*	*08/14/15 12:49*	*08/14/15 15:19*	*1*

Lab Sample ID: LCS 580-197962/2-A
Matrix: Solid
Analysis Batch: 197985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 197962

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	32.9		mg/Kg		82	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150

Lab Sample ID: LCSD 580-197962/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 197985 — **Prep Batch: 197962**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	32.7		mg/Kg		82	68 - 120	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150

Lab Sample ID: MB 580-198135/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198136 — **Prep Batch: 198135**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/17/15 14:13	08/17/15 17:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150	08/17/15 14:13	08/17/15 17:11	1

Lab Sample ID: LCS 580-198135/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198136 — **Prep Batch: 198135**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	33.7		mg/Kg		84	68 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

Lab Sample ID: LCSD 580-198135/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198136 — **Prep Batch: 198135**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	33.9		mg/Kg		85	68 - 120	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

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

Lab Sample ID: MB 580-197922/1-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198091 — **Prep Batch: 197922**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/14/15 08:53	08/17/15 13:48	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/14/15 08:53	08/17/15 13:48	1

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

Lab Sample ID: MB 580-197922/1-B
Matrix: Solid
Analysis Batch: 198091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 197922

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150	08/14/15 08:53	08/17/15 13:48	1

Lab Sample ID: LCS 580-197922/2-B
Matrix: Solid
Analysis Batch: 197914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 197922

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	435		mg/Kg		87	64 - 127		
Motor Oil (>C24-C36)			502	503		mg/Kg		100	70 - 125		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	92		50 - 150

Lab Sample ID: LCSD 580-197922/3-B
Matrix: Solid
Analysis Batch: 197914

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 197922

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	480		mg/Kg		96	64 - 127	10	16
Motor Oil (>C24-C36)			502	558		mg/Kg		111	70 - 125	10	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	98		50 - 150

Lab Sample ID: 580-52422-4 DU
Matrix: Solid
Analysis Batch: 197914

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 197922

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	☼			NC	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	81		50 - 150

Lab Sample ID: MB 580-198095/1-B
Matrix: Solid
Analysis Batch: 198185

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198095

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/17/15 07:46	08/18/15 10:17	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/17/15 07:46	08/18/15 10:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150	08/17/15 07:46	08/18/15 10:17	1

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

Lab Sample ID: LCS 580-198095/2-B
Matrix: Solid
Analysis Batch: 198185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198095

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	488		mg/Kg		98	64 - 127
Motor Oil (>C24-C36)	502	522		mg/Kg		104	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*85*		*50 - 150*

Lab Sample ID: LCSD 580-198095/3-B
Matrix: Solid
Analysis Batch: 198185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198095

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	483		mg/Kg		97	64 - 127	1	16
Motor Oil (>C24-C36)	502	516		mg/Kg		103	70 - 125	1	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*84*		*50 - 150*

Lab Sample ID: 580-52422-7 DU
Matrix: Solid
Analysis Batch: 198185

Client Sample ID: CB-2-15
Prep Type: Total/NA
Prep Batch: 198095

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	☼	NC	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*71*		*50 - 150*

Lab Sample ID: MB 580-198608/1-B
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/21/15 09:57	08/22/15 00:25	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/21/15 09:57	08/22/15 00:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*08/21/15 09:57*	*08/22/15 00:25*	*1*

Lab Sample ID: LCS 580-198608/2-B
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	503	459		mg/Kg		91	64 - 127
Motor Oil (>C24-C36)	503	497		mg/Kg		99	70 - 125

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

Lab Sample ID: LCS 580-198608/2-B
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198608

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*90*		*50 - 150*

Lab Sample ID: LCSD 580-198608/3-B
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198608

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			503	505		mg/Kg		100	64 - 127	10	16
Motor Oil (>C24-C36)			503	547		mg/Kg		109	70 - 125	10	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*101*		*50 - 150*

Lab Sample ID: 580-52422-33 MS
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: CB-7-15
Prep Type: Total/NA
Prep Batch: 198608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	ND		628	470		mg/Kg	☼	75	70 - 125		
Motor Oil (>C24-C36)	ND		628	499		mg/Kg	☼	79	64 - 127		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*81*		*50 - 150*

Lab Sample ID: 580-52422-28 DU
Matrix: Solid
Analysis Batch: 198575

Client Sample ID: CB-6-18
Prep Type: Total/NA
Prep Batch: 198608

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	150	Y		150		mg/Kg	☼			3	35
Motor Oil (>C24-C36)	260	Y		342		mg/Kg	☼			26	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*91*		*50 - 150*

Lab Sample ID: MB 580-198718/1-B
Matrix: Solid
Analysis Batch: 198747

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198718

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/23/15 09:15	08/24/15 10:35	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/23/15 09:15	08/24/15 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*08/23/15 09:15*	*08/24/15 10:35*	*1*

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

Lab Sample ID: LCS 580-198718/2-B
Matrix: Solid
Analysis Batch: 198747

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	503	475		mg/Kg		94	64 - 127
Motor Oil (>C24-C36)	503	486		mg/Kg		97	70 - 125

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

Lab Sample ID: LCSD 580-198718/3-B
Matrix: Solid
Analysis Batch: 198747

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198718

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	503	480		mg/Kg		95	64 - 127	1	16
Motor Oil (>C24-C36)	503	490		mg/Kg		97	70 - 125	1	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*105*		*50 - 150*

Lab Sample ID: 580-52422-41 MS
Matrix: Solid
Analysis Batch: 198747

Client Sample ID: CB-9-10
Prep Type: Total/NA
Prep Batch: 198718

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	ND		724	645		mg/Kg	☼	86	70 - 125
Motor Oil (>C24-C36)	ND		724	659		mg/Kg	☼	91	64 - 127

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

Lab Sample ID: 580-52422-41 DU
Matrix: Solid
Analysis Batch: 198747

Client Sample ID: CB-9-10
Prep Type: Total/NA
Prep Batch: 198718

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	3	35
Motor Oil (>C24-C36)	ND		ND		mg/Kg	☼	NC	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-198034/20-A
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198034

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		08/15/15 06:38	08/17/15 19:00	10

Lab Sample ID: LCS 580-198034/21-A
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198034

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			50.0	49.3		mg/Kg		99	80 - 120		

Lab Sample ID: LCSD 580-198034/22-A
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198034

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			50.0	49.5		mg/Kg		99	80 - 120	0	20

Lab Sample ID: 580-52422-4 MS
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 198034

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	2.7		64.0	70.0		mg/Kg	☼	105	80 - 120		

Lab Sample ID: 580-52422-4 MSD
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 198034

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	2.7		63.2	76.1		mg/Kg	☼	116	80 - 120	8	20

Lab Sample ID: 580-52422-4 DU
Matrix: Solid
Analysis Batch: 198180

Client Sample ID: CB-1-20
Prep Type: Total/NA
Prep Batch: 198034

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Lead	2.7			2.75		mg/Kg	☼			3	20

Client Sample ID: CB-1-20

Lab Sample ID: 580-52422-4

Date Collected: 08/12/15 09:35

Matrix: Solid

Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-1-20

Lab Sample ID: 580-52422-4

Date Collected: 08/12/15 09:35

Matrix: Solid

Date Received: 08/13/15 11:35

Percent Solids: 74.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/25/15 19:46	STA	TAL SEA
Total/NA	Prep	5035			197962	08/14/15 12:49	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	197985	08/14/15 17:23	TL1	TAL SEA
Total/NA	Prep	3546			197922	08/14/15 08:53	CTT	TAL SEA
Total/NA	Cleanup	3630C			197982	08/14/15 14:18	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	197914	08/14/15 16:56	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 19:18	FCW	TAL SEA

Client Sample ID: CB-2-15

Lab Sample ID: 580-52422-7

Date Collected: 08/12/15 10:25

Matrix: Solid

Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-2-15

Lab Sample ID: 580-52422-7

Date Collected: 08/12/15 10:25

Matrix: Solid

Date Received: 08/13/15 11:35

Percent Solids: 71.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 00:07	STA	TAL SEA
Total/NA	Prep	5035			197962	08/14/15 12:49	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	197985	08/14/15 17:53	TL1	TAL SEA
Total/NA	Prep	3550B			198095	08/17/15 07:46	CTT	TAL SEA
Total/NA	Cleanup	3630C			198141	08/17/15 15:55	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198185	08/18/15 10:35	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 19:55	FCW	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Client Sample ID: CB-3-15
Date Collected: 08/12/15 12:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-3-15
Date Collected: 08/12/15 12:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-11
Matrix: Solid
Percent Solids: 69.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 00:35	STA	TAL SEA
Total/NA	Prep	5035			197962	08/14/15 12:49	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	197985	08/14/15 18:24	TL1	TAL SEA
Total/NA	Prep	3550B			198095	08/17/15 07:46	CTT	TAL SEA
Total/NA	Cleanup	3630C			198141	08/17/15 15:55	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198185	08/18/15 11:12	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 19:59	FCW	TAL SEA

Client Sample ID: CB-4-6
Date Collected: 08/12/15 12:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-4-6
Date Collected: 08/12/15 12:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-13
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			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 01:04	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 21:49	TL1	TAL SEA
Total/NA	Prep	3546			197922	08/14/15 08:53	CTT	TAL SEA
Total/NA	Cleanup	3630C			197982	08/14/15 14:18	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	197914	08/14/15 17:32	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:04	FCW	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Client Sample ID: CB-4-15

Lab Sample ID: 580-52422-14
Date Collected: 08/12/15 13:30
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-4-15

Lab Sample ID: 580-52422-14
Date Collected: 08/12/15 13:30
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 01:33	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 20:47	TL1	TAL SEA
Total/NA	Prep	3546			197922	08/14/15 08:53	CTT	TAL SEA
Total/NA	Cleanup	3630C			197982	08/14/15 14:18	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	197914	08/14/15 17:50	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:13	FCW	TAL SEA

Client Sample ID: CB-5-10

Lab Sample ID: 580-52422-17
Date Collected: 08/12/15 14:30
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-5-10

Lab Sample ID: 580-52422-17
Date Collected: 08/12/15 14:30
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 02:02	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 23:22	TL1	TAL SEA
Total/NA	Prep	3546			197922	08/14/15 08:53	CTT	TAL SEA
Total/NA	Cleanup	3630C			197982	08/14/15 14:18	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	197914	08/14/15 18:08	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:09	FCW	TAL SEA

Client Sample ID: CB-5-15
Date Collected: 08/12/15 14:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-5-15
Date Collected: 08/12/15 14:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-18
Matrix: Solid
Percent Solids: 71.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 02:30	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 22:51	TL1	TAL SEA
Total/NA	Prep	3546			197922	08/14/15 08:53	CTT	TAL SEA
Total/NA	Cleanup	3630C			197982	08/14/15 14:18	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	197914	08/14/15 18:26	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:18	FCW	TAL SEA

Client Sample ID: Trip Blanks
Date Collected: 08/12/15 00:01
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-25
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/25/15 19:17	STA	TAL SEA
Total/NA	Prep	5035			197962	08/14/15 12:49	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	197985	08/14/15 16:52	TL1	TAL SEA

Client Sample ID: CB-6-18
Date Collected: 08/13/15 08:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-28
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-6-18
Date Collected: 08/13/15 08:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-28
Matrix: Solid
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 02:59	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 21:18	TL1	TAL SEA

Client Sample ID: CB-6-18

Lab Sample ID: 580-52422-28
Date Collected: 08/13/15 08:45
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			198608	08/21/15 09:57	CTT	TAL SEA
Total/NA	Cleanup	3630C			198684	08/21/15 19:27	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198575	08/22/15 00:43	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:22	FCW	TAL SEA

Client Sample ID: CB-7-15

Lab Sample ID: 580-52422-33
Date Collected: 08/13/15 09:25
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-7-15

Lab Sample ID: 580-52422-33
Date Collected: 08/13/15 09:25
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 75.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 03:28	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 20:17	TL1	TAL SEA
Total/NA	Prep	3546			198608	08/21/15 09:57	CTT	TAL SEA
Total/NA	Cleanup	3630C			198684	08/21/15 19:27	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198575	08/22/15 01:19	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:27	FCW	TAL SEA

Client Sample ID: CB-8-10

Lab Sample ID: 580-52422-37
Date Collected: 08/13/15 10:10
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-8-10

Lab Sample ID: 580-52422-37
Date Collected: 08/13/15 10:10
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 68.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 03:57	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA

Client Sample ID: CB-8-10

Lab Sample ID: 580-52422-37
Date Collected: 08/13/15 10:10
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 68.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 19:46	TL1	TAL SEA
Total/NA	Prep	3550B			198718	08/23/15 09:15	DCV	TAL SEA
Total/NA	Cleanup	3630C			198752	08/24/15 08:57	EKK	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198747	08/24/15 11:29	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:31	FCW	TAL SEA

Client Sample ID: CB-9-10

Lab Sample ID: 580-52422-41
Date Collected: 08/13/15 10:45
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-9-10

Lab Sample ID: 580-52422-41
Date Collected: 08/13/15 10:45
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 69.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 04:26	STA	TAL SEA
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 19:15	TL1	TAL SEA
Total/NA	Prep	3550B			198718	08/23/15 09:15	DCV	TAL SEA
Total/NA	Cleanup	3630C			198752	08/24/15 08:57	EKK	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198747	08/24/15 11:47	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:36	FCW	TAL SEA

Client Sample ID: CB-10-8

Lab Sample ID: 580-52422-44
Date Collected: 08/13/15 10:50
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198224	08/18/15 11:35	CTT	TAL SEA

Client Sample ID: CB-10-8

Lab Sample ID: 580-52422-44
Date Collected: 08/13/15 10:50
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198797	08/24/15 13:35	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198892	08/26/15 04:54	STA	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Client Sample ID: CB-10-8
Date Collected: 08/13/15 10:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-44
Matrix: Solid
Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198135	08/17/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198136	08/17/15 18:44	TL1	TAL SEA
Total/NA	Prep	3546			198608	08/21/15 09:57	CTT	TAL SEA
Total/NA	Cleanup	3630C			198684	08/21/15 19:27	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198575	08/22/15 01:55	EKK	TAL SEA
Total/NA	Prep	3050B			198034	08/15/15 06:38	MKN	TAL SEA
Total/NA	Analysis	6020A		10	198180	08/17/15 20:54	FCW	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260C	5035	Solid	Xylenes, Total
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Sample Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-52422-4	CB-1-20	Solid	08/12/15 09:35	08/13/15 11:35
580-52422-7	CB-2-15	Solid	08/12/15 10:25	08/13/15 11:35
580-52422-11	CB-3-15	Solid	08/12/15 12:30	08/13/15 11:35
580-52422-13	CB-4-6	Solid	08/12/15 12:35	08/13/15 11:35
580-52422-14	CB-4-15	Solid	08/12/15 13:30	08/13/15 11:35
580-52422-17	CB-5-10	Solid	08/12/15 14:30	08/13/15 11:35
580-52422-18	CB-5-15	Solid	08/12/15 14:40	08/13/15 11:35
580-52422-25	Trip Blanks	Solid	08/12/15 00:01	08/13/15 11:35
580-52422-28	CB-6-18	Solid	08/13/15 08:45	08/13/15 11:35
580-52422-33	CB-7-15	Solid	08/13/15 09:25	08/13/15 11:35
580-52422-37	CB-8-10	Solid	08/13/15 10:10	08/13/15 11:35
580-52422-41	CB-9-10	Solid	08/13/15 10:45	08/13/15 11:35
580-52422-44	CB-10-8	Solid	08/13/15 10:50	08/13/15 11:35

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

187001

Page 1 of 5

BP/ARC Project Name: KENT BLOCK VALVE
Req Due Date (mm/dd/yy): 24 HOUR | 5DAY Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBVEA154
Lab Work Order Number: 52422

Lab Name: TEST AMERICA	BP/ARC Facility Address: 74th Ave S & S 259th St	Consultant/Contractor: ANTEA GROUP.
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: ROBERT GREER	Lead Regulatory Agency: WA DEPT of Ecology	Address: 4006 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NIA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 | WR293375	Phone: 206.894.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple	
EBM Phone: 925-275-3801	
EBM Email: paul.supple@bp.com	

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580-52422 Chain of Custody

		Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor		No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: NWTPH-Gx	NWTPH-Dx Silica gel cl?	BTEX 8260B	T-LEAD 6020	NWTPH	NWCPH	RCRA-8 metals			Report Type & QC Level
-1	CB-1-5	8.12.15	0850	X				4	3				1		X	X	X	X						HOLD
	CB-1-10	8.12.15	0915	X				4	3				1		X	X	X	X						HOLD
-3	CB-1-15	8.12.15	0930	X				4	3				1		X	X	X	X						HOLD
	CB-1-20	8.12.15	0935	X				4	3				1		X	X	X	X						
-5	CB-2-5	8.12.15	0920	X				4	3				1		X	X	X	X						HOLD
	CB-2-10	8.12.15	1020	X				4	3				1		X	X	X	X						HOLD
-7	CB-2-15	8.12.15	1025	X				4	3				1		X	X	X	X						
	CB-2-20	8.12.15	1035	X				4	3				1		X	X	X	X						HOLD
-9	CB-3-5	8.12.15	0950	X				4	3				1		X	X	X	X						HOLD
	CB-3-10	8.12.15	1220	X				4	3				1		X	X	X	X						HOLD

Comments
Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: L.Hamilton / T.Roberts						
Sampler's Company: Antea Group		8/13/15	1135		8/13/15	1135
Shipment Method: Drop Off Ship Date: 8/13/15						
Shipment Tracking No:						

Special Instructions: 24 hour TAT for Composite Samples. 5 Day TAT for all Samples not on "HOLD"

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

9/24/2015

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BP/ARC Project Name: Kent Block Valve
Req Due Date (mm/dd/yy): 24 Hour/5DAY Rush TAT: Yes X No
BP/ARC Facility No: WAKBV&A154
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & S 259th St	Consultant/Contractor: Antea Group
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBV&A154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4006 148th Ave NE Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 009VD-0005 | WR2933375	Phone: 206.854.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute(40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925-275-3801
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx 3x Silica Gel	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	RCRA-8 Metals	Report Type & QC Level / Comments
-11	CB-3-15	8.12.15	1330	X			4	3				1	X	X	X	X				
	CB-3-18	8.12.15	1240	X			4	3				1	X	X	X	X				HOLD
-13	CB-4-6	8.12.15	1235	X			4	3				1	X	X	X	X				
	CB-4-15	8.12.15	1330	X			5	4				1	X	X	X	X				
-15	CB-4-20	8.12.15	1345	X			4	3				1	X	X	X	X				HOLD
	CB-5-5	8.12.15	1335	X			4	3				1	X	X	X	X				HOLD
-17	CB-5-10	8.12.15	1430	X			4	3				1	X	X	X	X				
	CB-5-15	8.12.15	1440	X			4	3				1	X	X	X	X				
-19	CB-5-16	8.12.15	1448	X			4	3				1	X	X	X	X				HOLD
	CB-5-20	8.12.15	1450	X			4	3				1	X	X	X	X				HOLD

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Sampler's Name: Lauren Hamilton | Taylor	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group Roberts	Antea	8/13/15	1135		8/13/15	1135
Shipment Method: Drop Off Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite Samples / 5DAY TAT for all Samples not on "HOLD"

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

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BP/ARC Project Name: Kent Block Valve
Req Due Date (mm/dd/yy): 5DAY TAT/24HOUR Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBVEA154
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74TH Ave S & S 259th St	Consultant/Contractor: ARCADIS GROUP
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4056 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 008UD-0005/WR293375	Phone: 206.854.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@arcadis-group.com
Other Info:	Stage: Execute(40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3801
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: NWTPH-Gx	NWTPH-Dx Silica Gel	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	PCRA-8 metals			Report Type & QC Level / Comments
-21	CB-5-22.5	8.12.15	1505	X				4	3				1		X	X	X	X						HOLD
	CB-6-5	8.12.15	1445	X				4	3				1		X	X	X	X						HOLD
-23	Composite-1	8.12.15	1310	X				4	3				1		X	X	X	X			X			24 HOUR TAT
	Composite-2	8.12.15	1630		X			9			1	8			X	X	X	X			X			24 HOUR TAT
-25	Trip blanks	8.12.15	0000					3					3		X	X	X							~~24 HOUR TAT~~ TR
	CB-6-10	8.13.15	0835	X				4	3				1		X	X	X	X						HOLD
-27	CB-6-15	8.13.15	0840	X				4	3				1		X	X	X	X						HOLD
	CB-6-18	8.13.15	0845	X				4	3				1		X	X	X	X						
-29	CB-6-20	8.13.15	0850	X				4	3				1		X	X	X	X						HOLD
	CB-6-25	8.13.15	0900	X				4	3				1		X	X	X	X						HOLD

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Sampler's Name: L.Hamilton/T.Roberts	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Artea Group	[signature] Artea Group	8/13/15	1135	[signature]	8/13/15	1135
Shipment Method: Drop Off Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 HOUR TAT for composite Samples. 5DAY TAT for all samples NOT HOLD on

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 "HOLD"

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BP/ARC Project Name: KENT Block VALVE
Req Due Date (mm/dd/yy): 5DAY/24HourTAT
Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBVEA154
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & 259th St.	Consultant/Contractor: ANTEA GROUP
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA. Dept of Ecology	Address: 40016 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 / NR 293375.	Phone: 206.884.0899
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (90)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3801
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx with Silica	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	LCCA-8 Metals	Report Type & QC Level / Comments
Page 40 of 43	CB-7-5	8.13.15	0815	X			4	3				1	X	X	X	X				HOLD
	CB-7-10	8.13.15	0920	X			4	3				1	X	X	X	X				HOLD
-33	CB-7-15	8.13.15	0925	X			4	3				1	X	X	X	X				
	CB-7-20	8.13.15	0935	X			4	3				1	X	X	X	X				HOLD
-35	CB-7-24.5	8.13.15	0945	X			4	3				1	X	X	X	X				HOLD
	CB-8-5	8.13.15	0100	X			4	3				1	X	X	X	X				HOLD
-37	CB-8-10	8.13.15	1010	X			4	3				1	X	X	X	X				
	CB-8-15	8.13.15	1013	X			4	3				1	X	X	X	X				HOLD
-39	CB-8-20	8.13.15	1020	X			4	3				1	X	X	X	X				HOLD
	CB-9-5	8.13.15	0910	X			4	3				1	X	X	X	X				HOLD

Standard ___
Full Data Package ___

Comments
Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L.Hamilton/T.Roberts	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea		8/13/15	1135		8/13/15	11:35
Shipment Method: Drop off. Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite. 5DAY TAT for all Samples that are not on HOLD

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

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TAT

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BP/ARC Project Name: Kent Block Valve
BP/ARC Facility No: WAKBVEA154
Req Due Date (mm/dd/yy): 5DAY/24Hour TAT Rush TAT: Yes ___ No ___
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & S 259th St.	Consultant/Contractor: Antea Group
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4006 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 / WR293375	Phone: 206.859.0899
Lab Bottle Order No: NA1	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execution (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3901
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx w/ Silica	BTEX 8260B	T. Lead 6020	NWVPH	NWEPH	RCRA-8 Metals	Report Type & QC Level
-41	CB-9-10	8.13.15	1045	X			4	3				1	X	X	X	X				
	CB-9-15	8.13.15	1055	X			4	3				1	X	X	X	X				HOLD
-43	CB-10-5	8.13.15	1025	X			4	3				1	X	X	X	X				HOLD
	CB-10-8	8.13.15	1050	X			4	3				1	X	X	X	X				

Standard ___
Full Data Package ___

Comments
Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: Lauren Taylor	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea		8/13/15	1135		8/13/15	1135
Shipment Method: Drop off Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite Samples/ 5DAY TAT for Samples that are not on "HOLD"

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

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Anka Kent Black Calve 8/13/15 1135

w/o cs AZ
Cooler/TB Dig/IR cor 4.1 unc 4.2
Cooler Dsc 1a Kent/Blk @ Lab 1135
Wet/Packs Packing Bubble
Company Cour.

w/o cs AZ
Cooler/TB Dig/IR cor 4.3 unc 4.4
Cooler Dsc 1a Wht/Blk @ Lab 1135
Wet/Packs Packing Bubble
Company Cour.

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-52422-1

Login Number: 52422
List Number: 1
Creator: Blankinship, Tom X

List Source: 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	5 containers listed for sample -14. Only 4 received.
Samples are received within Holding Time.	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	

TestAmerica

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ANALYTICAL REPORT

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

TestAmerica Job ID: 580-52472-1
Client Project/Site: OPLC - Kent BV

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

Attn: Mackie Stock

Authorized for release by:
9/1/2015 3:25:57 PM
Christabel Escarez, Project Manager I
(253)922-2310
christabel.escarez@testamericainc.com

Designee for

Robert Greer, Project Manager I
(253)922-2310
robert.greer@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.

Christabel Escarez
Project Manager I
9/1/2015 3:25:57 PM

Table of Contents

Case Narrative

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-1

Job ID: 580-52472-1

Laboratory: TestAmerica Seattle

Narrative

Receipt
The samples were received on 8/14/2015 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8º C.

Receipt Exceptions
A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). The trip blank was not assigned analyses.

GC/MS VOA
Method(s) 8260C: The BFB tune report associated with analytical batch 198888 (BFB 580-198888/4) shows m/z 175 failing; Ion Abundance Criteria show 5 to 9% of m/z 174 and % Relative Abundance shows 3.2 (4.5*). This value meets method criteria and is the result of a rounding/significant figure precision error. 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
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No 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.

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

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Client Sample ID: CB-11-15
Date Collected: 08/13/15 13:40
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-4
Matrix: Solid
Percent Solids: 79.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23		ug/Kg	☼	08/25/15 11:29	08/25/15 18:45	1
Toluene	ND		57		ug/Kg	☼	08/25/15 11:29	08/25/15 18:45	1
Ethylbenzene	ND		57		ug/Kg	☼	08/25/15 11:29	08/25/15 18:45	1
Xylenes, Total	ND		57		ug/Kg	☼	08/25/15 11:29	08/25/15 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/25/15 11:29*	*08/25/15 18:45*	*1*
Trifluorotoluene (Surr)	*95*		*65 - 140*	*08/25/15 11:29*	*08/25/15 18:45*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 120*	*08/25/15 11:29*	*08/25/15 18:45*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 132*	*08/25/15 11:29*	*08/25/15 18:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*71 - 136*	*08/25/15 11:29*	*08/25/15 18:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		13		mg/Kg	☼	08/27/15 14:13	08/27/15 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*	*08/27/15 14:13*	*08/27/15 16:50*	*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		31		mg/Kg	☼	08/27/15 17:01	08/28/15 11:40	1
Motor Oil (>C24-C36)	ND		61		mg/Kg	☼	08/27/15 17:01	08/28/15 11:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*08/27/15 17:01*	*08/28/15 11:40*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.0**		0.48		mg/Kg	☼	08/19/15 13:49	08/21/15 10:04	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**79**		0.10		%			08/24/15 15:21	1
Percent Moisture	**21**		0.10		%			08/24/15 15:21	1

Client Sample ID: CB-12-10
Date Collected: 08/13/15 14:15
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-7
Matrix: Solid
Percent Solids: 84.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24		ug/Kg	☼	08/25/15 11:29	08/25/15 19:18	1
Toluene	ND		61		ug/Kg	☼	08/25/15 11:29	08/25/15 19:18	1
Ethylbenzene	ND		61		ug/Kg	☼	08/25/15 11:29	08/25/15 19:18	1
Xylenes, Total	ND		61		ug/Kg	☼	08/25/15 11:29	08/25/15 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*80 - 120*	*08/25/15 11:29*	*08/25/15 19:18*	*1*
Trifluorotoluene (Surr)	*94*		*65 - 140*	*08/25/15 11:29*	*08/25/15 19:18*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 120*	*08/25/15 11:29*	*08/25/15 19:18*	*1*
Dibromofluoromethane (Surr)	*95*		*75 - 132*	*08/25/15 11:29*	*08/25/15 19:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*71 - 136*	*08/25/15 11:29*	*08/25/15 19:18*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		22		mg/Kg	☼	08/27/15 14:13	08/27/15 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*	*08/27/15 14:13*	*08/27/15 17:21*	*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		29		mg/Kg	☼	08/25/15 15:13	08/27/15 00:19	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	☼	08/25/15 15:13	08/27/15 00:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*50 - 150*	*08/25/15 15:13*	*08/27/15 00:19*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.3**		0.50		mg/Kg	☼	08/19/15 13:49	08/21/15 10:08	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84**		0.10		%			08/24/15 15:21	1
Percent Moisture	**16**		0.10		%			08/24/15 15:21	1

Client Sample ID: CB-13-10
Date Collected: 08/13/15 15:05
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-11
Matrix: Solid
Percent Solids: 94.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24		ug/Kg	☼	08/25/15 11:29	08/25/15 19:51	1
Toluene	ND		60		ug/Kg	☼	08/25/15 11:29	08/25/15 19:51	1
Ethylbenzene	ND		60		ug/Kg	☼	08/25/15 11:29	08/25/15 19:51	1
Xylenes, Total	ND		60		ug/Kg	☼	08/25/15 11:29	08/25/15 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/25/15 11:29*	*08/25/15 19:51*	*1*
Trifluorotoluene (Surr)	*95*		*65 - 140*	*08/25/15 11:29*	*08/25/15 19:51*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 120*	*08/25/15 11:29*	*08/25/15 19:51*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 132*	*08/25/15 11:29*	*08/25/15 19:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 136*	*08/25/15 11:29*	*08/25/15 19:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		75		mg/Kg	☼	08/27/15 14:13	08/27/15 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*	*08/27/15 14:13*	*08/27/15 17:52*	*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		26		mg/Kg	☼	08/25/15 15:13	08/27/15 01:13	1
Motor Oil (>C24-C36)	ND		51		mg/Kg	☼	08/25/15 15:13	08/27/15 01:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*73*		*50 - 150*	*08/25/15 15:13*	*08/27/15 01:13*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.0**		0.46		mg/Kg	☼	08/19/15 13:49	08/21/15 10:13	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**94**		0.10		%			08/24/15 15:21	1
Percent Moisture	**6.0**		0.10		%			08/24/15 15:21	1

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

Lab Sample ID: MB 580-198893/1-A
Matrix: Solid
Analysis Batch: 198888

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16		ug/Kg		08/25/15 11:29	08/25/15 15:27	1
Toluene	ND		40		ug/Kg		08/25/15 11:29	08/25/15 15:27	1
Ethylbenzene	ND		40		ug/Kg		08/25/15 11:29	08/25/15 15:27	1
Xylenes, Total	ND		40		ug/Kg		08/25/15 11:29	08/25/15 15:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/25/15 11:29*	*08/25/15 15:27*	*1*
Trifluorotoluene (Surr)	*96*		*65 - 140*	*08/25/15 11:29*	*08/25/15 15:27*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 120*	*08/25/15 11:29*	*08/25/15 15:27*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 132*	*08/25/15 11:29*	*08/25/15 15:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 136*	*08/25/15 11:29*	*08/25/15 15:27*	*1*

Lab Sample ID: LCS 580-198893/2-A
Matrix: Solid
Analysis Batch: 198888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198893

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	697		ug/Kg		87	70 - 128		
Toluene			800	668		ug/Kg		84	75 - 126		
Ethylbenzene			800	679		ug/Kg		85	78 - 126		
Xylenes, Total			1600	1460		ug/Kg		91	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*95*		*65 - 140*
4-Bromofluorobenzene (Surr)	*113*		*70 - 120*
Dibromofluoromethane (Surr)	*99*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 136*

Lab Sample ID: LCSD 580-198893/3-A
Matrix: Solid
Analysis Batch: 198888

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198893

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	730		ug/Kg		91	70 - 128	5	19
Toluene			800	690		ug/Kg		86	75 - 126	3	19
Ethylbenzene			800	682		ug/Kg		85	78 - 126	1	23
Xylenes, Total			1600	1400		ug/Kg		88	70 - 130	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*95*		*65 - 140*
4-Bromofluorobenzene (Surr)	*99*		*70 - 120*
Dibromofluoromethane (Surr)	*102*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 136*

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

Lab Sample ID: MB 580-199219/2-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 199222 — **Prep Batch: 199219**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/27/15 14:14	08/27/15 15:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*	*08/27/15 14:14*	*08/27/15 15:17*	*1*

Lab Sample ID: LCS 580-199219/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 199222 — **Prep Batch: 199219**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	32.1		mg/Kg		80	68 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*50 - 150*

Lab Sample ID: LCSD 580-199219/4-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 199222 — **Prep Batch: 199219**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	32.1		mg/Kg		80	68 - 120	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*50 - 150*

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

Lab Sample ID: MB 580-198929/1-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198994 — **Prep Batch: 198929**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/25/15 15:13	08/27/15 00:01	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/25/15 15:13	08/27/15 00:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*08/25/15 15:13*	*08/27/15 00:01*	*1*

Lab Sample ID: LCS 580-198929/2-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 198994 — **Prep Batch: 198929**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	503	464		mg/Kg		92	64 - 127
Motor Oil (>C24-C36)	503	529		mg/Kg		105	70 - 125

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

Lab Sample ID: LCS 580-198929/2-B
Matrix: Solid
Analysis Batch: 198994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198929

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	91		50 - 150

Lab Sample ID: LCSD 580-198929/3-B
Matrix: Solid
Analysis Batch: 198994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			503	443		mg/Kg		88	64 - 127	5	16
Motor Oil (>C24-C36)			503	501		mg/Kg		99	70 - 125	5	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	87		50 - 150

Lab Sample ID: 580-52472-7 MS
Matrix: Solid
Analysis Batch: 198994

Client Sample ID: CB-12-10
Prep Type: Total/NA
Prep Batch: 198929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	ND		595	597		mg/Kg	☼	98	70 - 125		
Motor Oil (>C24-C36)	ND		595	702		mg/Kg	☼	118	64 - 127		

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	92		50 - 150

Lab Sample ID: 580-52472-7 DU
Matrix: Solid
Analysis Batch: 198994

Client Sample ID: CB-12-10
Prep Type: Total/NA
Prep Batch: 198929

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			26	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			NC	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	77		50 - 150

Lab Sample ID: MB 580-199248/1-B
Matrix: Solid
Analysis Batch: 199156

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199248

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/27/15 17:01	08/28/15 11:22	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/27/15 17:01	08/28/15 11:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150	08/27/15 17:01	08/28/15 11:22	1

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

Lab Sample ID: LCS 580-199248/2-B
Matrix: Solid
Analysis Batch: 199156

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199248

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			503	441		mg/Kg		88	64 - 127		
Motor Oil (>C24-C36)			503	478		mg/Kg		95	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*90*		*50 - 150*

Lab Sample ID: LCSD 580-199248/3-B
Matrix: Solid
Analysis Batch: 199156

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199248

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			503	458		mg/Kg		91	64 - 127	4	16
Motor Oil (>C24-C36)			503	495		mg/Kg		98	70 - 125	4	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*88*		*50 - 150*

Lab Sample ID: 580-52472-4 MS
Matrix: Solid
Analysis Batch: 199156

Client Sample ID: CB-11-15
Prep Type: Total/NA
Prep Batch: 199248

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	ND		609	587		mg/Kg	☼	96	70 - 125		
Motor Oil (>C24-C36)	ND		609	640		mg/Kg	☼	105	64 - 127		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*

Lab Sample ID: 580-52472-4 DU
Matrix: Solid
Analysis Batch: 199156

Client Sample ID: CB-11-15
Prep Type: Total/NA
Prep Batch: 199248

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			33	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			NC	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*81*		*50 - 150*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-198407/13-A
Matrix: Solid
Analysis Batch: 198635

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198407

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		08/19/15 13:49	08/21/15 08:42	10

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-198407/14-A
Matrix: Solid
Analysis Batch: 198635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198407

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	47.5		mg/Kg		95	80 - 120

Lab Sample ID: LCSD 580-198407/15-A
Matrix: Solid
Analysis Batch: 198635

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198407

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	47.4		mg/Kg		95	80 - 120	0	20

Lab Sample ID: LCSSRM 580-198407/16-A
Matrix: Solid
Analysis Batch: 198635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198407

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	133	127		mg/Kg		95.6	72.9 - 127.8

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-1

Client Sample ID: CB-11-15
Date Collected: 08/13/15 13:40
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198823	08/24/15 15:21	CTT	TAL SEA

Client Sample ID: CB-11-15
Date Collected: 08/13/15 13:40
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-4
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			198893	08/25/15 11:29	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198888	08/25/15 18:45	K1K	TAL SEA
Total/NA	Prep	5035			199219	08/27/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199222	08/27/15 16:50	D1R	TAL SEA
Total/NA	Prep	3546			199248	08/27/15 17:01	DCV	TAL SEA
Total/NA	Cleanup	3630C			199282	08/28/15 08:53	CTT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199156	08/28/15 11:40	EKK	TAL SEA
Total/NA	Prep	3050B			198407	08/19/15 13:49	PAB	TAL SEA
Total/NA	Analysis	6020A		10	198635	08/21/15 10:04	FCW	TAL SEA

Client Sample ID: CB-12-10
Date Collected: 08/13/15 14:15
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198823	08/24/15 15:21	CTT	TAL SEA

Client Sample ID: CB-12-10
Date Collected: 08/13/15 14:15
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-7
Matrix: Solid
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198893	08/25/15 11:29	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198888	08/25/15 19:18	K1K	TAL SEA
Total/NA	Prep	5035			199219	08/27/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199222	08/27/15 17:21	D1R	TAL SEA
Total/NA	Cleanup	3630C			199040	08/25/15 15:13	DCV	TAL SEA
Total/NA	Prep	3546			198929	08/25/15 15:13	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198994	08/27/15 00:19	EKK	TAL SEA
Total/NA	Prep	3050B			198407	08/19/15 13:49	PAB	TAL SEA
Total/NA	Analysis	6020A		10	198635	08/21/15 10:08	FCW	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-1

Client Sample ID: CB-13-10
Date Collected: 08/13/15 15:05
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	198823	08/24/15 15:21	CTT	TAL SEA

Client Sample ID: CB-13-10
Date Collected: 08/13/15 15:05
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-11
Matrix: Solid
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			198893	08/25/15 11:29	DGY	TAL SEA
Total/NA	Analysis	8260C		1	198888	08/25/15 19:51	K1K	TAL SEA
Total/NA	Prep	5035			199219	08/27/15 14:13	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199222	08/27/15 17:52	D1R	TAL SEA
Total/NA	Cleanup	3630C			199040	08/25/15 15:13	DCV	TAL SEA
Total/NA	Prep	3546			198929	08/25/15 15:13	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	198994	08/27/15 01:13	EKK	TAL SEA
Total/NA	Prep	3050B			198407	08/19/15 13:49	PAB	TAL SEA
Total/NA	Analysis	6020A		10	198635	08/21/15 10:13	FCW	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260C	5035	Solid	Xylenes, Total
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Sample Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-52472-4	CB-11-15	Solid	08/13/15 13:40	08/14/15 12:00
580-52472-7	CB-12-10	Solid	08/13/15 14:15	08/14/15 12:00
580-52472-11	CB-13-10	Solid	08/13/15 15:05	08/14/15 12:00

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record 188772

BP/ARC Project Name: Kent Block Valve.
BP/ARC Facility No: WAKBVGA154
Req Due Date (mm/dd/yy): 5 Day TAT
Rush TAT: Yes X No ___
Lab Work Order Number:

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S. & S. 259th St.
Lab Address: 5755 8th St. E., Tacoma	City, State, ZIP Code: Kent, WA.
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept. of Ecology
Lab Phone: 253.922.2310.	California Global ID No.: NA
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-00051WR293375
Lab Bottle Order No: NA.	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___
Other Info:	Stage: Execute (40) Activity: Projectspend (80)

Consultant/Contractor:	Antea Group
Consultant/Contractor Project No:	WAKBVGA154
Address:	4006 148th Ave NE, Redmond
Consultant/Contractor PM:	Megan Richard.
Phone:	206.854.0399
Email EDD To:	megan.richard@anteagroup.com
Invoice To:	BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3801
EBM Email: paul.supple@bp.com.

Report Type & QC Level: Standard ___ Full Data Package ___

Comments — Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	NWTPH-Gx	NWTPH-Dx w/silica gel	BTEX 8260B	Total Lead 6020	NWVPH	NWEPH	Comments
	CB-9-20	8/13/15	1110	X			4	3				1	X	X	X	X			HOLD
	CB-11-5	8/13/15	1312	X			4	3				1	X	X	X	X			HOLD
	CB-11-10	8/13/15	1330	X			4	3				1	X	X	X	X			HOLD
	CB-11-15	8/13/15	1340	X			4	3				1	X	X	X	X			
	CB-11-20	8/13/15	1345	X			4	3				1	X	X	X	X			HOLD
	CB-12-5	8/13/15	1342	X			4	3				1	X	X	X	X			HOLD
	CB-12-10	8/13/15	1415	X			4	3				1	X	X	X	X			
	CB-12-15	8/13/15	1420	X			4	3				1	X	X	X	X			HOLD
	CB-12-20	8/13/15	1426	X			3	2				1	X		X				HOLD
	CB-13-5	8/13/15	1405	X			4	3				1	X	X	X	X			HOLD

Sampler's Name: T. Roberts / L. Hamilton
Sampler's Company: Antea Group
Shipment Method: Pick up Ship Date: 8/14/15
Shipment Tracking No:
Special Instructions:

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
T Roberts / ANTEA	8-14-15	1200	[signature] / TASEA	8/14/15	1200

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Y | C | Trip Blank: Yes / N

Cooler/TB Dig/IR cor 5.8 °C unc 5.9 °C Az
Cooler Dsc Lc Blue/wht@Lab 1605
Wet/Packs Packing Other w/o

580-52472 Chain of Custody

9/1/2015

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record 188773

BP/ARC Project Name: Kent Block Valve
Req Due Date (mm/dd/yy): 5day TAT Rush TAT: Yes X No
BP/ARC Facility No: WAKBV9A154
Lab Work Order Number:

Lab Name: Test America.	BP/ARC Facility Address: 74th Ave S. & S. 259th St.	Consultant/Contractor: Antea Group.
Lab Address: 5755 8th St. E., Tacoma, WA	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBV9A154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept. of Ecology	Address: 4006 148th Ave NE., Redmond, WA
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005/WR293375	Phone: 206.854.0894
Lab Bottle Order No: NA.	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: megan.richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple.
EBM Phone: 925.275.3801
EBM Email: paul.supple@bp.com.

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-GX w/silica gel	NWTPH-Dx w/silica gel	BTEX + 8260B	Total Lead (6020)	NWVPH	NWEPH	Report Type & QC Level / Comments
Page 19 of 20	CB-13-10	8/13/15	1505	X			4	3				1	X	X	X	X			
	CB-13-15	8/13/15	1510	X			4	3				1	X	X	X	X			HOLD
	CB-13-20	8/13/15	1515	X			4	3				1	X	X	X	X			HOLD
	CB-14-5	8/13/15	1508	X			4	3				1	X	X	X	X			HOLD
	CB-14-9	8/13/15	1600	X			4	3				1	X	X	X	X			

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L. Hamilton / T. Roberts.
Sampler's Company: Antea Group.
Shipment Method: Pick up. Ship Date: 8/14/15
Shipment Tracking No:

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Roberts / Antea	8.14.15	1200	TA SEA	8/14/15	1200

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

Laboratory Copy

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-52472-1

Login Number: 52472
List Number: 1
Creator: Neri, Tom

List Source: 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	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 580-52472-2
Client Project/Site: OPLC - Kent BV

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

Attn: Mackie Stock

Authorized for release by:
9/11/2015 2:11:21 PM

Robert Greer, Project Manager I
(253)922-2310
robert.greer@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.

Robert Greer
Project Manager I
9/11/2015 2:11:21 PM

Table of Contents

Job ID: 580-52472-2

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-52472-2

Comments
No additional comments.

Receipt
The samples were received on 8/14/2015 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8º C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

GC/MS VOA
Method(s) 8260C: The following sample was analyzed outside of holding time due to laboratory PM error: CB-14-9 (580-52472-15).

Method(s) NWTPH-Gx: The following sample was analyzed outside of holding time due to laboratory PM error: CB-14-9 (580-52472-15).

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

GC Semi VOA
Method(s) NWTPH-Dx: The following sample was analyzed outside of holding time due to laboratory PM error: CB-14-9 (580-52472-15).

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.

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

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

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-2

Qualifiers

GC/MS VOA

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

GC VOA

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

GC Semi VOA

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

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-2

Client Sample ID: CB-14-9
Date Collected: 08/13/15 16:00
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-15
Matrix: Solid
Percent Solids: 70.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	H	29		ug/Kg	☼	09/08/15 11:09	09/09/15 02:20	1
Toluene	ND	H	72		ug/Kg	☼	09/08/15 11:09	09/09/15 02:20	1
Ethylbenzene	ND	H	72		ug/Kg	☼	09/08/15 11:09	09/09/15 02:20	1
Xylenes, Total	ND	H	72		ug/Kg	☼	09/08/15 11:09	09/09/15 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*09/08/15 11:09*	*09/09/15 02:20*	*1*
Trifluorotoluene (Surr)	*94*		*65 - 140*	*09/08/15 11:09*	*09/09/15 02:20*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*	*09/08/15 11:09*	*09/09/15 02:20*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 132*	*09/08/15 11:09*	*09/09/15 02:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 136*	*09/08/15 11:09*	*09/09/15 02:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H	6.6		mg/Kg	☼	09/02/15 15:48	09/02/15 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*50 - 150*	*09/02/15 15:48*	*09/02/15 20:00*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	H	34		mg/Kg	☼	09/02/15 10:36	09/03/15 09:18	1
Motor Oil (>C24-C36)	ND	H	68		mg/Kg	☼	09/02/15 10:36	09/03/15 09:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*09/02/15 10:36*	*09/03/15 09:18*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.0**		0.49		mg/Kg	☼	09/01/15 16:52	09/02/15 13:30	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**70**		0.10		%			09/01/15 19:42	1
Percent Moisture	**30**		0.10		%			09/01/15 19:42	1

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

Lab Sample ID: MB 580-200195/1-A
Matrix: Solid
Analysis Batch: 200192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 200195

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16		ug/Kg		09/08/15 11:09	09/08/15 13:45	1
Toluene	ND		40		ug/Kg		09/08/15 11:09	09/08/15 13:45	1
Ethylbenzene	ND		40		ug/Kg		09/08/15 11:09	09/08/15 13:45	1
Xylenes, Total	ND		40		ug/Kg		09/08/15 11:09	09/08/15 13:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*09/08/15 11:09*	*09/08/15 13:45*	*1*
Trifluorotoluene (Surr)	*102*		*65 - 140*	*09/08/15 11:09*	*09/08/15 13:45*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*	*09/08/15 11:09*	*09/08/15 13:45*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 132*	*09/08/15 11:09*	*09/08/15 13:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 136*	*09/08/15 11:09*	*09/08/15 13:45*	*1*

Lab Sample ID: LCS 580-200195/2-A
Matrix: Solid
Analysis Batch: 200192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 200195

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	705		ug/Kg		88	70 - 128		
Toluene			800	681		ug/Kg		85	75 - 126		
Ethylbenzene			800	677		ug/Kg		85	78 - 126		
Xylenes, Total			1600	1340		ug/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
Trifluorotoluene (Surr)	*97*		*65 - 140*
4-Bromofluorobenzene (Surr)	*102*		*70 - 120*
Dibromofluoromethane (Surr)	*102*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 136*

Lab Sample ID: LCSD 580-200195/3-A
Matrix: Solid
Analysis Batch: 200192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 200195

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	704		ug/Kg		88	70 - 128	0	19
Toluene			800	692		ug/Kg		86	75 - 126	2	19
Ethylbenzene			800	672		ug/Kg		84	78 - 126	1	23
Xylenes, Total			1600	1340		ug/Kg		83	70 - 130	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
Trifluorotoluene (Surr)	*99*		*65 - 140*
4-Bromofluorobenzene (Surr)	*102*		*70 - 120*
Dibromofluoromethane (Surr)	*100*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 136*

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

Lab Sample ID: MB 580-199750/1-A
Matrix: Solid
Analysis Batch: 199814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199750

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		09/02/15 11:41	09/02/15 13:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*	*09/02/15 11:41*	*09/02/15 13:27*	*1*

Lab Sample ID: LCS 580-199750/2-A
Matrix: Solid
Analysis Batch: 199814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199750

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	34.2		mg/Kg		86	68 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*50 - 150*

Lab Sample ID: LCSD 580-199750/3-A
Matrix: Solid
Analysis Batch: 199814

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199750

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	33.4		mg/Kg		84	68 - 120	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*50 - 150*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-199740/1-A
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		09/02/15 10:36	09/03/15 08:24	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		09/02/15 10:36	09/03/15 08:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*61*		*50 - 150*	*09/02/15 10:36*	*09/03/15 08:24*	*1*

Lab Sample ID: LCS 580-199740/2-A
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199740

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			503	456		mg/Kg		91	64 - 127		
Motor Oil (>C24-C36)			503	506		mg/Kg		101	70 - 125		

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

Lab Sample ID: LCS 580-199740/2-A
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199740

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

Lab Sample ID: LCSD 580-199740/3-A
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199740

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			503	481		mg/Kg		96	64 - 127	5	16
Motor Oil (>C24-C36)			503	524		mg/Kg		104	70 - 125	3	17

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

Lab Sample ID: 580-52472-15 MS
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: CB-14-9
Prep Type: Total/NA
Prep Batch: 199740

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	ND	H	693	588		mg/Kg	☼	85	70 - 125
Motor Oil (>C24-C36)	ND	H	694	654		mg/Kg	☼	94	64 - 127

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*90*		*50 - 150*

Lab Sample ID: 580-52472-15 DU
Matrix: Solid
Analysis Batch: 199854

Client Sample ID: CB-14-9
Prep Type: Total/NA
Prep Batch: 199740

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

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

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-199675/21-A
Matrix: Solid
Analysis Batch: 199800

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.25		mg/Kg		09/01/15 16:52	09/02/15 11:11	5

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-199675/22-A
Matrix: Solid
Analysis Batch: 199800

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199675

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			50.0	47.2		mg/Kg		94	80 - 120		

Lab Sample ID: LCSD 580-199675/23-A
Matrix: Solid
Analysis Batch: 199800

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199675

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			50.0	47.0		mg/Kg		94	80 - 120	0	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-52472-15 DU
Matrix: Solid
Analysis Batch: 199739

Client Sample ID: CB-14-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	71			71		%				0.09	20
Percent Moisture	29			29		%				0.2	20

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-2

Client Sample ID: CB-14-9

Date Collected: 08/13/15 16:00
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199698	09/01/15 19:42	PAB	TAL SEA

Client Sample ID: CB-14-9

Date Collected: 08/13/15 16:00
Date Received: 08/14/15 12:00

Lab Sample ID: 580-52472-15

Matrix: Solid
Percent Solids: 70.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			200195	09/08/15 11:09	DGY	TAL SEA
Total/NA	Analysis	8260C		1	200192	09/09/15 02:20	CJ	TAL SEA
Total/NA	Prep	5035			199750	09/02/15 15:48	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199814	09/02/15 20:00	D1R	TAL SEA
Total/NA	Prep	3550B			199740	09/02/15 10:36	DCV	TAL SEA
Total/NA	Cleanup	3630C			199753	09/02/15 11:44	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199854	09/03/15 09:18	ERZ	TAL SEA
Total/NA	Prep	3050B			199675	09/01/15 16:52	PAB	TAL SEA
Total/NA	Analysis	6020A		10	199800	09/02/15 13:30	FCW	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-2

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260C	5035	Solid	Xylenes, Total
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Sample Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52472-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-52472-15	CB-14-9	Solid	08/13/15 16:00	08/14/15 12:00

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record 188772

Page 1 of 2

BP/ARC Project Name: Kent Black Valve. | Req Due Date (mm/dd/yy): 5 Day TAT | Rush TAT: Yes X No
BP/ARC Facility No: WAKBVGA154 | Lab Work Order Number:

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S. & S. 259th St.	Consultant/Contractor: Antea Group
Lab Address: 5755 8th St. E., Tacoma	City, State, ZIP Code: Kent, WA.	Consultant/Contractor Project No: WAKBVGA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept. of Ecology	Address: 4000 148th Ave NE, Redmond
Lab Phone: 253.922.2310.	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 WR293375	Phone: 206.854.0399
Lab Bottle Order No: NA.	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: megan.richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3801
EBM Email: paul.supple@bp.com.

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx w/silica gel	BTEX 8260B	Total Lead 6020	NWVPH	NWEPH	Report Type & QC Level / Comments
Page 14 of 16	CB-9-20	8/13/15	1110	X			4	3				1	X	X	X	X			HOLD
	CB-11-5	8/13/15	1312	X			4	3				1	X	X	X	X			HOLD
	CB-11-10	8/13/15	1330	X			4	3				1	X	X	X	X			HOLD
	CB-11-15	8/13/15	1340	X			4	3				1	X	X	X	X			
	CB-11-20	8/13/15	1345	X			4	3				1	X	X	X	X			HOLD
	CB-12-5	8/13/15	1342	X			4	3				1	X	X	X	X			HOLD
	CB-12-10	8/13/15	1415	X			4	3				1	X	X	X	X			
	CB-12-15	8/13/15	1420	X			4	3				1	X	X	X	X			HOLD
	CB-12-20	8/13/15	1426	X			3	2				1	X		X				HOLD
	CB-13-5	8/13/15	1405	X			4	3				1	X	X	X	X			HOLD

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: T. Roberts / L. Hamilton	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group	J Roberts / ANTEA	8/14/15	1200	THSEH	8/14/15	1200
Shipment Method: PICK up Ship Date: 8/14/15						
Shipment Tracking No:						

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Y | C | Trip Blank: Yes / N

580-52472 Chain of Custody

Cooler/TB Dig/IR cor 5.8 °C unc 5.9 °C
Cooler Dsc Lc Blackstone@Lab 1605
Wet/Packs Packing Other

8/14/15 1205

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record 188773

BP/ARC Project Name: Kent Block Valve
Req Due Date (mm/dd/yy): 5day TAT Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBV9A154
Lab Work Order Number:

Lab Name: Test America.	BP/ARC Facility Address: 74th Ave S. & S. 259th St.	Consultant/Contractor: Antea Group.
Lab Address: 5755 8th St. E., Tacoma, WA	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBV9A154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept. of Ecology	Address: 4006 148th Ave NE., Redmond, WA
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 003VD-0005INR293375	Phone: 206.854.0894
Lab Bottle Order No: NA.	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: megan.richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple.
EBM Phone: 925.275.3801
EBM Email: paul.supple@bp.com.

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-GX w/silica	NWTPH-Dx gel.	BTEX - 8260B	Total Lead (6020)	NWVPH	NWEPH	Report Type & QC Level / Comments
Page 15 of 16	CB-13-10	8/13/15	1505	X			4	3				1	X	X	X	X			
	CB-13-15	8/13/15	1510	X			4	3				1	X	X	X	X			HOLD
	CB-13-20	8/13/15	1515	X			4	3				1	X	X	X	X			HOLD
	CB-14-5	8/13/15	1508	X			4	3				1	X	X	X	X			HOLD
	CB-14-9	8/13/15	1600	X			4	3				1	X	X	X	X			

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L. Hamilton / T. Roberts.
Sampler's Company: Antea Group.
Shipment Method: Pick up. Ship Date: 8/14/15
Shipment Tracking No:

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Roberts / Antea	8.14.15	1200	TA SEA	8/14/15	1200

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

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-52472-2

Login Number: 52472
List Number: 1
Creator: Neri, Tom

List Source: 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	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 580-52422-3
Client Project/Site: OPLC - Kent BV
Revision: 1

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

Attn: Mackie Stock

Authorized for release by:
9/24/2015 11:45:56 AM

Robert Greer, Project Manager I
(253)922-2310
robert.greer@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.

Robert Greer
Project Manager I
9/24/2015 11:45:56 AM

Table of Contents

Job ID: 580-52422-3

Laboratory: TestAmerica Seattle

Narrative

As per clients request on September 22, 2015, the report has been revised to report BTEX analysis to the MDL.

Job Narrative
580-52422-3

Comments
No additional comments.

Receipt
The samples were received on 8/13/2015 11:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.1º C and 4.3º C.

GC/MS VOA
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 580-199036 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) NWTPH/VPH: The following samples was diluted to bring the concentration of target analytes within the calibration range: CB-5-10 (580-52422-17) and CB-6-20 (580-52422-29). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH/VPH: Surrogate 4-bromofluorobenzene recovery for the following samples was outside control limits: CB-4-6 (580-52422-13) and CB-6-20 (580-52422-29). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: Surrogate recovery for the following samples was outside control limits: CB-5-5 (580-52422-16), CB-6-15 (580-52422-27) and CB-6-20 (580-52422-29). 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.

GC Semi VOA
Method(s) NWTPH-Dx: In analytical batch 580-199162, the following samples from preparation batch 580-199072 and 580-199159 contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: CB-6-15 (580-52422-27).

Method(s) NWTPH-Dx: In analytical batch 580-199162, the following samples from preparation batch 580-199072 and 580-199159 contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: CB-5-5 (580-52422-16).

Method(s) NWTPH-Dx: In analytical batch 580-199162, the %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 580-199072 and 580-199159 recovered outside control limits for the following analytes: #2 Diesel (C10-C24). The affected analyte recoveries were within acceptance limits in the LCS and LCSD; therefore, the data have been qualified and reported.

Method(s) NWTPH/EPH: In analytical batch 580-200198, surrogate recovery of o-Terphenyl for the following samples from preparation batch 580-199118 and 580-199255 was outside control limits: CB-5-10 (580-52422-17). Evidence of matrix interference due to non-target analytes is present, as observed in the nature of the sample extract, which required a dilution during the fractionation process; 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.

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

Job ID: 580-52422-3 (Continued)

Laboratory: TestAmerica Seattle (Continued)

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

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
*	RPD of the LCS and LCSD exceeds the control limits
Y	The chromatographic response resembles a typical fuel pattern.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Client Sample ID: CB-4-6
Date Collected: 08/12/15 12:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-13
Matrix: Solid
Percent Solids: 79.2

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons, Duwamish Ranges (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
C10-C12 Aromatics	**11**		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
C8-C10 Aliphatics	**19**		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
C8-C10 Aromatics	**12**		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
C5-C6 Aliphatics	ND		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
C6-C8 Aliphatics	**15**		6.4		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1
Total VPH	**100**		45		mg/Kg	☼	08/26/15 11:42	08/26/15 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BFB - PID	*112*		*60 - 140*	*08/26/15 11:42*	*08/26/15 14:55*	*1*
4-Bromofluorobenzene	*198*	*X*	*60 - 140*	*08/26/15 11:42*	*08/26/15 14:55*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C10-C12 Aromatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C12-C16 Aliphatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C12-C16 Aromatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C16-C21 Aliphatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C16-C21 Aromatics	ND	F2 F1	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C21-C34 Aliphatics	**74**	**F2 F1**	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1
C21-C34 Aromatics	**81**	**F2 F1**	63		mg/Kg	☼	08/26/15 18:46	09/09/15 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*71*		*60 - 140*	*08/26/15 18:46*	*09/09/15 15:41*	*1*
1-Chlorooctadecane	*89*		*60 - 140*	*08/26/15 18:46*	*09/09/15 15:41*	*1*

Client Sample ID: CB-4-20
Date Collected: 08/12/15 13:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-15
Matrix: Solid
Percent Solids: 58.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	390		36	7.9	ug/Kg	☼	08/26/15 12:46	08/26/15 16:45	1
Toluene	40	J	90	5.8	ug/Kg	☼	08/26/15 12:46	08/26/15 16:45	1
Ethylbenzene	1400		90	4.5	ug/Kg	☼	08/26/15 12:46	08/26/15 16:45	1
Xylenes, Total	4100		90	6.7	ug/Kg	☼	08/26/15 12:46	08/26/15 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/15 12:46*	*08/26/15 16:45*	*1*
Trifluorotoluene (Surr)	*107*		*65 - 140*	*08/26/15 12:46*	*08/26/15 16:45*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 120*	*08/26/15 12:46*	*08/26/15 16:45*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 132*	*08/26/15 12:46*	*08/26/15 16:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 136*	*08/26/15 12:46*	*08/26/15 16:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	29		9.0		mg/Kg	☼	08/26/15 15:44	08/26/15 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*50 - 150*	*08/26/15 15:44*	*08/26/15 17:44*	*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	*	42		mg/Kg	☼	08/26/15 13:04	08/27/15 10:59	1
Motor Oil (>C24-C36)	ND		84		mg/Kg	☼	08/26/15 13:04	08/27/15 10:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*08/26/15 13:04*	*08/27/15 10:59*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	13		0.75		mg/Kg	☼	08/27/15 06:52	08/27/15 16:37	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	59		0.10		%			08/26/15 13:13	1
Percent Moisture	41		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-5-5

Date Collected: 08/12/15 13:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-16

Matrix: Solid
Percent Solids: 79.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	150		21	4.6	ug/Kg	☼	08/26/15 12:46	08/26/15 17:28	1
Toluene	57		52	3.4	ug/Kg	☼	08/26/15 12:46	08/26/15 17:28	1
Ethylbenzene	190		52	2.6	ug/Kg	☼	08/26/15 12:46	08/26/15 17:28	1
Xylenes, Total	720		52	3.9	ug/Kg	☼	08/26/15 12:46	08/26/15 17:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/15 12:46*	*08/26/15 17:28*	*1*
Trifluorotoluene (Surr)	*111*		*65 - 140*	*08/26/15 12:46*	*08/26/15 17:28*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 120*	*08/26/15 12:46*	*08/26/15 17:28*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 132*	*08/26/15 12:46*	*08/26/15 17:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*71 - 136*	*08/26/15 12:46*	*08/26/15 17:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	180		5.2		mg/Kg	☼	08/26/15 15:44	08/26/15 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*189*	*X*	*50 - 150*	*08/26/15 15:44*	*08/26/15 18:15*	*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)	130	* Y	31		mg/Kg	☼	08/26/15 13:04	08/27/15 11:56	1
Motor Oil (>C24-C36)	280	Y	62		mg/Kg	☼	08/26/15 13:04	08/27/15 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*08/26/15 13:04*	*08/27/15 11:56*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	23		0.54		mg/Kg	☼	08/27/15 06:52	08/27/15 16:41	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79		0.10		%			08/26/15 13:13	1
Percent Moisture	21		0.10		%			08/26/15 13:13	1

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-5-10
Date Collected: 08/12/15 14:30
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-17
Matrix: Solid
Percent Solids: 81.1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons, Duwamish Ranges (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**130**		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
C10-C12 Aromatics	**200**		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
C8-C10 Aliphatics	**110**		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
C8-C10 Aromatics	ND		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
C5-C6 Aliphatics	ND		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
C6-C8 Aliphatics	ND		70		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1
Total VPH	**890**		490		mg/Kg	☼	08/26/15 11:42	08/26/15 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BFB - PID	*103*		*60 - 140*	*08/26/15 11:42*	*08/26/15 15:25*	*1*
4-Bromofluorobenzene	*140*		*60 - 140*	*08/26/15 11:42*	*08/26/15 15:25*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**130**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C10-C12 Aromatics	**78**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C12-C16 Aliphatics	**340**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C12-C16 Aromatics	**230**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C16-C21 Aliphatics	**170**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C16-C21 Aromatics	**230**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C21-C34 Aliphatics	**75**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1
C21-C34 Aromatics	**180**		60		mg/Kg	☼	08/26/15 18:46	09/09/15 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*159*	*X*	*60 - 140*	*08/26/15 18:46*	*09/09/15 16:59*	*1*
1-Chlorooctadecane	*120*		*60 - 140*	*08/26/15 18:46*	*09/09/15 16:59*	*1*

Client Sample ID: CB-5-16
Date Collected: 08/12/15 14:48
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-19
Matrix: Solid
Percent Solids: 78.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		21	4.7	ug/Kg	☼	08/26/15 12:46	08/26/15 17:55	1
Toluene	ND		54	3.5	ug/Kg	☼	08/26/15 12:46	08/26/15 17:55	1
Ethylbenzene	ND		54	2.7	ug/Kg	☼	08/26/15 12:46	08/26/15 17:55	1
Xylenes, Total	**14**	**J**	54	4.0	ug/Kg	☼	08/26/15 12:46	08/26/15 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/15 12:46*	*08/26/15 17:55*	*1*
Trifluorotoluene (Surr)	*110*		*65 - 140*	*08/26/15 12:46*	*08/26/15 17:55*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*	*08/26/15 12:46*	*08/26/15 17:55*	*1*
Dibromofluoromethane (Surr)	*108*		*75 - 132*	*08/26/15 12:46*	*08/26/15 17:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 136*	*08/26/15 12:46*	*08/26/15 17:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**28**		5.4		mg/Kg	☼	08/26/15 15:44	08/26/15 18:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*50 - 150*	*08/26/15 15:44*	*08/26/15 18:46*	*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	*	31		mg/Kg	☼	08/26/15 13:04	08/27/15 12:15	1
Motor Oil (>C24-C36)	ND		62		mg/Kg	☼	08/26/15 13:04	08/27/15 12:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*50 - 150*	*08/26/15 13:04*	*08/27/15 12:15*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.6**		0.59		mg/Kg	☼	08/27/15 06:52	08/27/15 16:46	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**78**		0.10		%			08/26/15 13:13	1
Percent Moisture	**22**		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-5-20
Date Collected: 08/12/15 14:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-20
Matrix: Solid
Percent Solids: 61.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	J	35	7.6	ug/Kg	☼	08/26/15 12:46	08/26/15 19:16	1
Toluene	7.0	J	87	5.7	ug/Kg	☼	08/26/15 12:46	08/26/15 19:16	1
Ethylbenzene	480		87	4.4	ug/Kg	☼	08/26/15 12:46	08/26/15 19:16	1
Xylenes, Total	3700		87	6.5	ug/Kg	☼	08/26/15 12:46	08/26/15 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/15 12:46*	*08/26/15 19:16*	*1*
Trifluorotoluene (Surr)	*106*		*65 - 140*	*08/26/15 12:46*	*08/26/15 19:16*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 120*	*08/26/15 12:46*	*08/26/15 19:16*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 132*	*08/26/15 12:46*	*08/26/15 19:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 136*	*08/26/15 12:46*	*08/26/15 19:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	47		8.7		mg/Kg	☼	08/26/15 15:44	08/26/15 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*50 - 150*	*08/26/15 15:44*	*08/26/15 19:16*	*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	*	41		mg/Kg	☼	08/26/15 13:04	08/27/15 12:34	1
Motor Oil (>C24-C36)	ND		81		mg/Kg	☼	08/26/15 13:04	08/27/15 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*08/26/15 13:04*	*08/27/15 12:34*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.3		0.72		mg/Kg	☼	08/27/15 06:52	08/27/15 16:50	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	61		0.10		%			08/26/15 13:13	1
Percent Moisture	39		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-6-10
Date Collected: 08/13/15 08:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-26
Matrix: Solid
Percent Solids: 93.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.9	J	16	3.5	ug/Kg	☼	08/26/15 12:46	08/26/15 19:43	1
Toluene	18	J	40	2.6	ug/Kg	☼	08/26/15 12:46	08/26/15 19:43	1
Ethylbenzene	2.9	J	40	2.0	ug/Kg	☼	08/26/15 12:46	08/26/15 19:43	1
Xylenes, Total	5.1	J	40	3.0	ug/Kg	☼	08/26/15 12:46	08/26/15 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/15 12:46*	*08/26/15 19:43*	*1*
Trifluorotoluene (Surr)	*105*		*65 - 140*	*08/26/15 12:46*	*08/26/15 19:43*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 120*	*08/26/15 12:46*	*08/26/15 19:43*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 132*	*08/26/15 12:46*	*08/26/15 19:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 136*	*08/26/15 12:46*	*08/26/15 19:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	6.7		4.0		mg/Kg	☼	08/26/15 15:44	08/26/15 19:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*50 - 150*	*08/26/15 15:44*	*08/26/15 19:47*	*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	*	26		mg/Kg	☼	08/26/15 13:04	08/27/15 12:53	1
Motor Oil (>C24-C36)	ND		52		mg/Kg	☼	08/26/15 13:04	08/27/15 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*08/26/15 13:04*	*08/27/15 12:53*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.9		0.47		mg/Kg	☼	08/27/15 06:52	08/27/15 16:55	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93		0.10		%			08/26/15 13:13	1
Percent Moisture	6.7		0.10		%			08/26/15 13:13	1

Client Sample Results

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-6-15
Date Collected: 08/13/15 08:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-27
Matrix: Solid
Percent Solids: 82.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	39		18	4.0	ug/Kg	☼	08/26/15 12:46	08/26/15 20:10	1
Toluene	23	J	46	3.0	ug/Kg	☼	08/26/15 12:46	08/26/15 20:10	1
Ethylbenzene	27	J	46	2.3	ug/Kg	☼	08/26/15 12:46	08/26/15 20:10	1
Xylenes, Total	170		46	3.4	ug/Kg	☼	08/26/15 12:46	08/26/15 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/15 12:46*	*08/26/15 20:10*	*1*
Trifluorotoluene (Surr)	*108*		*65 - 140*	*08/26/15 12:46*	*08/26/15 20:10*	*1*
4-Bromofluorobenzene (Surr)	*110*		*70 - 120*	*08/26/15 12:46*	*08/26/15 20:10*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 132*	*08/26/15 12:46*	*08/26/15 20:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 136*	*08/26/15 12:46*	*08/26/15 20:10*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	62		4.6		mg/Kg	☼	08/26/15 15:44	08/26/15 20:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*154*	*X*	*50 - 150*	*08/26/15 15:44*	*08/26/15 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)	79	* Y	30		mg/Kg	☼	08/26/15 13:04	08/27/15 13:31	1
Motor Oil (>C24-C36)	190	Y	60		mg/Kg	☼	08/26/15 13:04	08/27/15 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*50 - 150*	*08/26/15 13:04*	*08/27/15 13:31*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15		0.52		mg/Kg	☼	08/26/15 13:15	08/27/15 20:01	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82		0.10		%			08/26/15 13:13	1
Percent Moisture	18		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-6-18
Date Collected: 08/13/15 08:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-28
Matrix: Solid
Percent Solids: 82.6

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons, Duwamish Ranges (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**5.8**		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
C10-C12 Aromatics	**9.6**		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
C8-C10 Aliphatics	**6.0**		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
C8-C10 Aromatics	ND		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
C5-C6 Aliphatics	ND		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
C6-C8 Aliphatics	ND		5.7		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1
Total VPH	**55**		40		mg/Kg	☼	08/26/15 11:42	08/26/15 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BFB - PID	*102*		*60 - 140*	*08/26/15 11:42*	*08/26/15 15:56*	*1*
4-Bromofluorobenzene	*139*		*60 - 140*	*08/26/15 11:42*	*08/26/15 15:56*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C10-C12 Aromatics	ND	F1	6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C12-C16 Aliphatics	**10**		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C12-C16 Aromatics	ND	F1	6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C16-C21 Aliphatics	**11**		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C16-C21 Aromatics	**7.6**		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C21-C34 Aliphatics	**36**		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1
C21-C34 Aromatics	**19**		6.0		mg/Kg	☼	08/27/15 11:09	09/09/15 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*60 - 140*	*08/27/15 11:09*	*09/09/15 20:26*	*1*
1-Chlorooctadecane	*73*		*60 - 140*	*08/27/15 11:09*	*09/09/15 20:26*	*1*

Client Sample ID: CB-6-20
Date Collected: 08/13/15 08:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-29
Matrix: Solid
Percent Solids: 77.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		21	4.6	ug/Kg	☼	08/26/15 12:46	08/26/15 20:36	1
Toluene	**40**	**J**	53	3.4	ug/Kg	☼	08/26/15 12:46	08/26/15 20:36	1
Ethylbenzene	**280**		53	2.6	ug/Kg	☼	08/26/15 12:46	08/26/15 20:36	1
Xylenes, Total	**65**		53	3.9	ug/Kg	☼	08/26/15 12:46	08/26/15 20:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/15 12:46*	*08/26/15 20:36*	*1*
Trifluorotoluene (Surr)	*114*		*65 - 140*	*08/26/15 12:46*	*08/26/15 20:36*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 120*	*08/26/15 12:46*	*08/26/15 20:36*	*1*
Dibromofluoromethane (Surr)	*111*		*75 - 132*	*08/26/15 12:46*	*08/26/15 20:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 136*	*08/26/15 12:46*	*08/26/15 20:36*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons, Duwamish Ranges (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**27**		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
C10-C12 Aromatics	**74**		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
C8-C10 Aliphatics	**30**		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
C8-C10 Aromatics	**17**		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
C5-C6 Aliphatics	ND		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
C6-C8 Aliphatics	ND		14		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1
Total VPH	**280**		99		mg/Kg	☼	08/26/15 11:42	08/26/15 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BFB - PID	*112*		*60 - 140*	*08/26/15 11:42*	*08/26/15 18:55*	*1*
4-Bromofluorobenzene	*168*	*X*	*60 - 140*	*08/26/15 11:42*	*08/26/15 18:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**350**		5.3		mg/Kg	☼	08/26/15 15:44	08/26/15 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*242*	*X*	*50 - 150*	*08/26/15 15:44*	*08/26/15 21:19*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**17**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C10-C12 Aromatics	**9.4**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C12-C16 Aliphatics	**49**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C12-C16 Aromatics	**21**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C16-C21 Aliphatics	**28**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C16-C21 Aromatics	**22**		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C21-C34 Aliphatics	ND		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1
C21-C34 Aromatics	ND		6.4		mg/Kg	☼	08/27/15 11:09	09/09/15 21:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*60 - 140*	*08/27/15 11:09*	*09/09/15 21:45*	*1*
1-Chlorooctadecane	*78*		*60 - 140*	*08/27/15 11:09*	*09/09/15 21:45*	*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)	**270**	*** Y**	32		mg/Kg	☼	08/26/15 13:04	08/27/15 13:50	1

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-6-20
Date Collected: 08/13/15 08:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-29
Matrix: Solid
Percent Solids: 77.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Motor Oil (>C24-C36)	ND		63		mg/Kg	☼	08/26/15 13:04	08/27/15 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*08/26/15 13:04*	*08/27/15 13:50*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.8**		0.57		mg/Kg	☼	08/27/15 06:52	08/27/15 16:59	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**77**		0.10		%			08/26/15 13:13	1
Percent Moisture	**23**		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-7-20

Date Collected: 08/13/15 09:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-34

Matrix: Solid
Percent Solids: 67.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		50	11	ug/Kg	☼	08/26/15 12:46	08/26/15 21:03	1
Toluene	**9.8**	**J**	130	8.2	ug/Kg	☼	08/26/15 12:46	08/26/15 21:03	1
Ethylbenzene	**8.6**	**J**	130	6.3	ug/Kg	☼	08/26/15 12:46	08/26/15 21:03	1
Xylenes, Total	**29**	**J**	130	9.5	ug/Kg	☼	08/26/15 12:46	08/26/15 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/15 12:46*	*08/26/15 21:03*	*1*
Trifluorotoluene (Surr)	*105*		*65 - 140*	*08/26/15 12:46*	*08/26/15 21:03*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*	*08/26/15 12:46*	*08/26/15 21:03*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 132*	*08/26/15 12:46*	*08/26/15 21:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 136*	*08/26/15 12:46*	*08/26/15 21:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		13		mg/Kg	☼	08/26/15 15:44	08/27/15 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*50 - 150*	*08/26/15 15:44*	*08/27/15 18:23*	*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	*	36		mg/Kg	☼	08/26/15 13:04	08/27/15 14:09	1
Motor Oil (>C24-C36)	ND		72		mg/Kg	☼	08/26/15 13:04	08/27/15 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*50 - 150*	*08/26/15 13:04*	*08/27/15 14:09*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.9**		0.64		mg/Kg	☼	08/27/15 06:52	08/27/15 17:04	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**68**		0.10		%			08/26/15 13:13	1
Percent Moisture	**32**		0.10		%			08/26/15 13:13	1

Client Sample ID: CB-9-15

Date Collected: 08/13/15 10:55
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-42

Matrix: Solid
Percent Solids: 76.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		22	4.8	ug/Kg	☼	08/26/15 12:46	08/26/15 21:30	1
Toluene	ND		55	3.6	ug/Kg	☼	08/26/15 12:46	08/26/15 21:30	1
Ethylbenzene	ND		55	2.7	ug/Kg	☼	08/26/15 12:46	08/26/15 21:30	1
Xylenes, Total	ND		55	4.1	ug/Kg	☼	08/26/15 12:46	08/26/15 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/15 12:46*	*08/26/15 21:30*	*1*
Trifluorotoluene (Surr)	*106*		*65 - 140*	*08/26/15 12:46*	*08/26/15 21:30*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*	*08/26/15 12:46*	*08/26/15 21:30*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 132*	*08/26/15 12:46*	*08/26/15 21:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 136*	*08/26/15 12:46*	*08/26/15 21:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**11**		5.5		mg/Kg	☼	08/26/15 15:44	08/26/15 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*50 - 150*	*08/26/15 15:44*	*08/26/15 22:20*	*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	*	32		mg/Kg	☼	08/26/15 13:04	08/27/15 14:28	1
Motor Oil (>C24-C36)	ND		64		mg/Kg	☼	08/26/15 13:04	08/27/15 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*79*		*50 - 150*	*08/26/15 13:04*	*08/27/15 14:28*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.7**		0.58		mg/Kg	☼	08/27/15 06:52	08/27/15 17:08	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**76**		0.10		%			08/26/15 13:13	1
Percent Moisture	**24**		0.10		%			08/26/15 13:13	1

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

Lab Sample ID: MB 580-199068/1-A
Matrix: Solid
Analysis Batch: 199036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199068

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	3.5	ug/Kg		08/26/15 12:46	08/26/15 15:24	1
Toluene	ND		40	2.6	ug/Kg		08/26/15 12:46	08/26/15 15:24	1
Ethylbenzene	ND		40	2.0	ug/Kg		08/26/15 12:46	08/26/15 15:24	1
Xylenes, Total	ND		40	3.0	ug/Kg		08/26/15 12:46	08/26/15 15:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/15 12:46*	*08/26/15 15:24*	*1*
Trifluorotoluene (Surr)	*102*		*65 - 140*	*08/26/15 12:46*	*08/26/15 15:24*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 120*	*08/26/15 12:46*	*08/26/15 15:24*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 132*	*08/26/15 12:46*	*08/26/15 15:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 136*	*08/26/15 12:46*	*08/26/15 15:24*	*1*

Lab Sample ID: LCS 580-199068/2-A
Matrix: Solid
Analysis Batch: 199036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199068

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	828		ug/Kg		103	70 - 128		
Toluene			800	782		ug/Kg		98	75 - 126		
Ethylbenzene			800	789		ug/Kg		99	78 - 126		
Xylenes, Total			1600	1580		ug/Kg		99	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*65 - 140*
4-Bromofluorobenzene (Surr)	*105*		*70 - 120*
Dibromofluoromethane (Surr)	*107*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 136*

Lab Sample ID: LCSD 580-199068/3-A
Matrix: Solid
Analysis Batch: 199036

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199068

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	803		ug/Kg		100	70 - 128	3	19
Toluene			800	720		ug/Kg		90	75 - 126	8	19
Ethylbenzene			800	742		ug/Kg		93	78 - 126	6	23
Xylenes, Total			1600	1470		ug/Kg		92	70 - 130	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*94*		*80 - 120*
Trifluorotoluene (Surr)	*105*		*65 - 140*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*
Dibromofluoromethane (Surr)	*104*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 136*

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

Lab Sample ID: 580-52422-19 MS
Matrix: Solid
Analysis Batch: 199036

Client Sample ID: CB-5-16
Prep Type: Total/NA
Prep Batch: 199068

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		1070	1250		ug/Kg	☼	117	75 - 125
Toluene	ND		1070	1140		ug/Kg	☼	106	70 - 125
Ethylbenzene	ND		1070	1150		ug/Kg	☼	108	75 - 125
Xylenes, Total	14	J	2150	2330		ug/Kg	☼	108	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*65 - 140*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*
Dibromofluoromethane (Surr)	*106*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 136*

Lab Sample ID: 580-52422-19 MSD
Matrix: Solid
Analysis Batch: 199036

Client Sample ID: CB-5-16
Prep Type: Total/NA
Prep Batch: 199068

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		1070	1220		ug/Kg	☼	113	75 - 125	3	30
Toluene	ND		1070	1060		ug/Kg	☼	99	70 - 125	7	30
Ethylbenzene	ND		1070	1090		ug/Kg	☼	102	75 - 125	6	30
Xylenes, Total	14	J	2150	2150		ug/Kg	☼	99	70 - 130	8	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*94*		*80 - 120*
Trifluorotoluene (Surr)	*105*		*65 - 140*
4-Bromofluorobenzene (Surr)	*109*		*70 - 120*
Dibromofluoromethane (Surr)	*105*		*75 - 132*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 136*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons, Duwamish Ranges (GC)

Lab Sample ID: MB 580-199037/1-A
Matrix: Solid
Analysis Batch: 199041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199037

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
C10-C12 Aromatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
C8-C10 Aliphatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
C8-C10 Aromatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
C5-C6 Aliphatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
C6-C8 Aliphatics	ND		5.0		mg/Kg		08/26/15 11:42	08/26/15 14:26	1
Total VPH	ND		35		mg/Kg		08/26/15 11:42	08/26/15 14:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BFB - PID	*100*		*60 - 140*	*08/26/15 11:42*	*08/26/15 14:26*	*1*
4-Bromofluorobenzene	*100*		*60 - 140*	*08/26/15 11:42*	*08/26/15 14:26*	*1*

Lab Sample ID: LCS 580-199037/2-A
Matrix: Solid
Analysis Batch: 199041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199037

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	4.00	3.99	J	mg/Kg		100	70 - 130
C10-C12 Aromatics	4.00	3.33	J	mg/Kg		83	70 - 130
C8-C10 Aliphatics	8.00	9.47		mg/Kg		118	70 - 130
C8-C10 Aromatics	16.0	14.6		mg/Kg		91	70 - 130
C5-C6 Aliphatics	8.00	7.91		mg/Kg		99	70 - 130
C6-C8 Aliphatics	4.00	4.00	J	mg/Kg		100	70 - 130
Total VPH	64.0	60.8		mg/Kg		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BFB - PID	*102*		*60 - 140*
4-Bromofluorobenzene	*103*		*60 - 140*

Lab Sample ID: LCSD 580-199037/3-A
Matrix: Solid
Analysis Batch: 199041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199037

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	4.00	4.04	J	mg/Kg		101	70 - 130	1	25
C10-C12 Aromatics	4.00	3.33	J	mg/Kg		83	70 - 130	0	25
C8-C10 Aliphatics	8.00	9.91		mg/Kg		124	70 - 130	5	25
C8-C10 Aromatics	16.0	14.8		mg/Kg		92	70 - 130	1	25
C5-C6 Aliphatics	8.00	7.93		mg/Kg		99	70 - 130	0	25
C6-C8 Aliphatics	4.00	4.06	J	mg/Kg		101	70 - 130	2	25
Total VPH	64.0	61.2		mg/Kg		96	70 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
BFB - PID	*101*		*60 - 140*
4-Bromofluorobenzene	*102*		*60 - 140*

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

Lab Sample ID: MB 580-199096/1-A
Matrix: Solid
Analysis Batch: 199099

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/26/15 15:44	08/26/15 16:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*50 - 150*	*08/26/15 15:44*	*08/26/15 16:12*	*1*

Lab Sample ID: LCS 580-199096/2-A
Matrix: Solid
Analysis Batch: 199099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	32.8		mg/Kg		82	68 - 120

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

Lab Sample ID: LCS 580-199096/2-A
Matrix: Solid
Analysis Batch: 199099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199096

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		50 - 150

Lab Sample ID: LCSD 580-199096/3-A
Matrix: Solid
Analysis Batch: 199099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199096

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	33.2		mg/Kg		83	68 - 120	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

Lab Sample ID: MB 580-199219/2-A
Matrix: Solid
Analysis Batch: 199222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199219

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		08/27/15 14:14	08/27/15 15:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		50 - 150	08/27/15 14:14	08/27/15 15:17	1

Lab Sample ID: LCS 580-199219/3-A
Matrix: Solid
Analysis Batch: 199222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199219

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	32.1		mg/Kg		80	68 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

Lab Sample ID: LCSD 580-199219/4-A
Matrix: Solid
Analysis Batch: 199222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199219

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	32.1		mg/Kg		80	68 - 120	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-199118/1-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C10-C12 Aromatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C12-C16 Aromatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C16-C21 Aliphatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C16-C21 Aromatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C21-C34 Aliphatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1
C21-C34 Aromatics	ND		5.0		mg/Kg		08/26/15 18:46	09/09/15 14:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*77*		*60 - 140*	*08/26/15 18:46*	*09/09/15 14:22*	*1*
1-Chlorooctadecane	*90*		*60 - 140*	*08/26/15 18:46*	*09/09/15 14:22*	*1*

Lab Sample ID: LCS 580-199118/2-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	6.67	6.49		mg/Kg		97	70 - 130
C10-C12 Aromatics	6.70	6.56		mg/Kg		98	70 - 130
C12-C16 Aliphatics	13.4	15.1		mg/Kg		113	70 - 130
C12-C16 Aromatics	20.1	22.0		mg/Kg		110	70 - 130
C16-C21 Aliphatics	20.0	24.8		mg/Kg		124	70 - 130
C16-C21 Aromatics	33.4	41.7		mg/Kg		125	70 - 130
C21-C34 Aliphatics	40.1	47.6		mg/Kg		119	70 - 130
C21-C34 Aromatics	53.5	66.2		mg/Kg		124	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*117*		*60 - 140*
1-Chlorooctadecane	*103*		*60 - 140*

Lab Sample ID: LCSD 580-199118/3-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199118

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	6.67	5.99		mg/Kg		90	70 - 130	8	25
C10-C12 Aromatics	6.70	5.73		mg/Kg		85	70 - 130	14	25
C12-C16 Aliphatics	13.4	14.2		mg/Kg		106	70 - 130	6	25
C12-C16 Aromatics	20.1	20.1		mg/Kg		100	70 - 130	9	25
C16-C21 Aliphatics	20.0	23.3		mg/Kg		116	70 - 130	6	25
C16-C21 Aromatics	33.4	39.2		mg/Kg		117	70 - 130	6	25
C21-C34 Aliphatics	40.1	45.1		mg/Kg		113	70 - 130	5	25
C21-C34 Aromatics	53.5	61.5		mg/Kg		115	70 - 130	7	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*112*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 580-199118/3-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199118

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctadecane	99		60 - 140

Lab Sample ID: 580-52422-13 MS
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: CB-4-6
Prep Type: Total/NA
Prep Batch: 199118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	ND	F2 F1	8.35	ND		mg/Kg	☼	99	70 - 130
C10-C12 Aromatics	ND	F2 F1	8.39	ND		mg/Kg	☼	70	70 - 130
C12-C16 Aliphatics	ND	F2 F1	16.8	ND	F1	mg/Kg	☼	172	70 - 130
C12-C16 Aromatics	ND	F2 F1	25.1	ND		mg/Kg	☼	90	70 - 130
C16-C21 Aliphatics	ND	F2 F1	25.1	ND		mg/Kg	☼	107	70 - 130
C16-C21 Aromatics	ND	F2 F1	41.8	ND		mg/Kg	☼	93	70 - 130
C21-C34 Aliphatics	74	F2 F1	50.2	139		mg/Kg	☼	130	70 - 130
C21-C34 Aromatics	81	F2 F1	67.0	170	F1	mg/Kg	☼	133	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	70		60 - 140
1-Chlorooctadecane	79		60 - 140

Lab Sample ID: 580-52422-13 MSD
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: CB-4-6
Prep Type: Total/NA
Prep Batch: 199118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	ND	F2 F1	8.39	ND	F1 F2	mg/Kg	☼	454	70 - 130	100	25
C10-C12 Aromatics	ND	F2 F1	8.43	ND	F1 F2	mg/Kg	☼	203	70 - 130	80	25
C12-C16 Aliphatics	ND	F2 F1	16.8	71.6	F1 F2	mg/Kg	☼	425	70 - 130	85	25
C12-C16 Aromatics	ND	F2 F1	25.2	ND	F1 F2	mg/Kg	☼	164	70 - 130	58	25
C16-C21 Aliphatics	ND	F2 F1	25.2	63.5	F1 F2	mg/Kg	☼	198	70 - 130	44	25
C16-C21 Aromatics	ND	F2 F1	42.0	113	F1 F2	mg/Kg	☼	230	70 - 130	68	25
C21-C34 Aliphatics	74	F2 F1	50.4	326	F1 F2	mg/Kg	☼	499	70 - 130	80	25
C21-C34 Aromatics	81	F2 F1	67.3	580	F1 F2	mg/Kg	☼	742	70 - 130	109	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	68		60 - 140
1-Chlorooctadecane	61		60 - 140

Lab Sample ID: MB 580-199193/1-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199193

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C10-C12 Aromatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C12-C16 Aromatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 580-199193/1-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199193

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C16-C21 Aliphatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C16-C21 Aromatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C21-C34 Aliphatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1
C21-C34 Aromatics	ND		5.0		mg/Kg		08/27/15 11:09	09/09/15 19:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*60 - 140*	*08/27/15 11:09*	*09/09/15 19:08*	*1*
1-Chlorooctadecane	*85*		*60 - 140*	*08/27/15 11:09*	*09/09/15 19:08*	*1*

Lab Sample ID: LCS 580-199193/2-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199193

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aliphatics			6.67	5.21		mg/Kg		78	70 - 130		
C10-C12 Aromatics			6.70	4.76	J	mg/Kg		71	70 - 130		
C12-C16 Aliphatics			13.4	12.4		mg/Kg		92	70 - 130		
C12-C16 Aromatics			20.1	15.8		mg/Kg		79	70 - 130		
C16-C21 Aliphatics			20.0	20.5		mg/Kg		102	70 - 130		
C16-C21 Aromatics			33.4	30.2		mg/Kg		90	70 - 130		
C21-C34 Aliphatics			40.1	40.1		mg/Kg		100	70 - 130		
C21-C34 Aromatics			53.5	47.0		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*87*		*60 - 140*
1-Chlorooctadecane	*87*		*60 - 140*

Lab Sample ID: LCSD 580-199193/3-B
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199193

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			6.67	4.97	J	mg/Kg		75	70 - 130	5	25
C10-C12 Aromatics			6.70	5.30		mg/Kg		79	70 - 130	11	25
C12-C16 Aliphatics			13.4	11.9		mg/Kg		89	70 - 130	3	25
C12-C16 Aromatics			20.1	18.2		mg/Kg		91	70 - 130	14	25
C16-C21 Aliphatics			20.0	19.7		mg/Kg		98	70 - 130	4	25
C16-C21 Aromatics			33.4	35.9		mg/Kg		108	70 - 130	17	25
C21-C34 Aliphatics			40.1	38.4		mg/Kg		96	70 - 130	4	25
C21-C34 Aromatics			53.5	56.1		mg/Kg		105	70 - 130	18	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*103*		*60 - 140*
1-Chlorooctadecane	*83*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-52422-28 MS
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: CB-6-18
Prep Type: Total/NA
Prep Batch: 199193

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	ND		7.99	8.91		mg/Kg	☼	76	70 - 130
C10-C12 Aromatics	ND	F1	8.03	6.32	F1	mg/Kg	☼	52	70 - 130
C12-C16 Aliphatics	10		16.0	28.6		mg/Kg	☼	114	70 - 130
C12-C16 Aromatics	ND	F1	24.0	19.1	F1	mg/Kg	☼	67	70 - 130
C16-C21 Aliphatics	11		24.0	37.5		mg/Kg	☼	109	70 - 130
C16-C21 Aromatics	7.6		40.0	40.8		mg/Kg	☼	83	70 - 130
C21-C34 Aliphatics	36		48.0	92.7		mg/Kg	☼	119	70 - 130
C21-C34 Aromatics	19		64.1	79.2		mg/Kg	☼	94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*65*		*60 - 140*
1-Chlorooctadecane	*69*		*60 - 140*

Lab Sample ID: 580-52422-28 MSD
Matrix: Solid
Analysis Batch: 200198

Client Sample ID: CB-6-18
Prep Type: Total/NA
Prep Batch: 199193

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	ND		7.98	8.70		mg/Kg	☼	73	70 - 130	2	25
C10-C12 Aromatics	ND	F1	8.02	ND	F1	mg/Kg	☼	48	70 - 130	5	25
C12-C16 Aliphatics	10		16.0	25.4		mg/Kg	☼	94	70 - 130	12	25
C12-C16 Aromatics	ND	F1	24.0	18.6	F1	mg/Kg	☼	65	70 - 130	2	25
C16-C21 Aliphatics	11		24.0	32.6		mg/Kg	☼	88	70 - 130	14	25
C16-C21 Aromatics	7.6		40.0	36.8		mg/Kg	☼	73	70 - 130	10	25
C21-C34 Aliphatics	36		48.0	77.7		mg/Kg	☼	88	70 - 130	18	25
C21-C34 Aromatics	19		64.0	67.9		mg/Kg	☼	77	70 - 130	15	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*68*		*60 - 140*
1-Chlorooctadecane	*71*		*60 - 140*

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

Lab Sample ID: MB 580-199072/1-B
Matrix: Solid
Analysis Batch: 199162

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199072

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		08/26/15 13:04	08/27/15 10:39	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		08/26/15 13:04	08/27/15 10:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*08/26/15 13:04*	*08/27/15 10:39*	*1*

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

Lab Sample ID: LCS 580-199072/2-B
Matrix: Solid
Analysis Batch: 199162

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199072

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			503	412		mg/Kg		82	64 - 127		
Motor Oil (>C24-C36)			503	499		mg/Kg		99	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*95*		*50 - 150*

Lab Sample ID: LCSD 580-199072/3-B
Matrix: Solid
Analysis Batch: 199162

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199072

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			503	496	*	mg/Kg		98	64 - 127	18	16
Motor Oil (>C24-C36)			503	586		mg/Kg		116	70 - 125	16	17

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

Lab Sample ID: 580-52422-15 MS
Matrix: Solid
Analysis Batch: 199162

Client Sample ID: CB-4-20
Prep Type: Total/NA
Prep Batch: 199072

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	ND	*	844	680		mg/Kg	☼	76	70 - 125		
Motor Oil (>C24-C36)	ND		844	844		mg/Kg	☼	91	64 - 127		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*86*		*50 - 150*

Lab Sample ID: 580-52422-15 DU
Matrix: Solid
Analysis Batch: 199162

Client Sample ID: CB-4-20
Prep Type: Total/NA
Prep Batch: 199072

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND	*		ND	*	mg/Kg	☼			13	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			9	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*77*		*50 - 150*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-199076/22-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199076

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		08/26/15 13:15	08/27/15 18:30	10

Lab Sample ID: LCS 580-199076/23-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199076

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	46.7		mg/Kg		93	80 - 120

Lab Sample ID: LCSD 580-199076/24-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199076

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	46.4		mg/Kg		93	80 - 120	1	20

Lab Sample ID: LCSSRM 580-199076/25-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199076

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	133	125		mg/Kg		93.7	72.9 - 127.8

Lab Sample ID: MB 580-199141/20-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 199141

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		08/27/15 06:52	08/27/15 15:29	10

Lab Sample ID: LCS 580-199141/21-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199141

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	46.3		mg/Kg		93	80 - 120

Lab Sample ID: LCSD 580-199141/22-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 199141

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	47.2		mg/Kg		94	80 - 120	2	20

Lab Sample ID: LCSSRM 580-199141/23-A
Matrix: Solid
Analysis Batch: 199268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 199141

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	133	128		mg/Kg		96.0	72.9 - 127.8

Client Sample ID: CB-4-6

Lab Sample ID: 580-52422-13
Date Collected: 08/12/15 12:35
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199037	08/26/15 11:42	IWH	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	199041	08/26/15 14:55	D1R	TAL SEA
Total/NA	Prep	3550B			199118	08/26/15 18:46	CTT	TAL SEA
Total/NA	Fraction	EPH Frac			199255	08/27/15 18:36	KZ1	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	200198	09/09/15 15:41	EKK	TAL SEA

Client Sample ID: CB-4-20

Lab Sample ID: 580-52422-15
Date Collected: 08/12/15 13:45
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-4-20

Lab Sample ID: 580-52422-15
Date Collected: 08/12/15 13:45
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 58.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 16:45	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 17:44	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 10:59	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:37	FCW	TAL SEA

Client Sample ID: CB-5-5

Lab Sample ID: 580-52422-16
Date Collected: 08/12/15 13:35
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-5-5

Lab Sample ID: 580-52422-16
Date Collected: 08/12/15 13:35
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 17:28	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-5-5

Lab Sample ID: 580-52422-16
Date Collected: 08/12/15 13:35
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 18:15	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 11:56	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:41	FCW	TAL SEA

Client Sample ID: CB-5-10

Lab Sample ID: 580-52422-17
Date Collected: 08/12/15 14:30
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199037	08/26/15 11:42	IWH	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	199041	08/26/15 15:25	D1R	TAL SEA
Total/NA	Prep	3550B			199118	08/26/15 18:46	CTT	TAL SEA
Total/NA	Fraction	EPH Frac			199255	08/27/15 18:36	KZ1	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	200198	09/09/15 16:59	EKK	TAL SEA

Client Sample ID: CB-5-16

Lab Sample ID: 580-52422-19
Date Collected: 08/12/15 14:48
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-5-16

Lab Sample ID: 580-52422-19
Date Collected: 08/12/15 14:48
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 17:55	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 18:46	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 12:15	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:46	FCW	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-5-20
Date Collected: 08/12/15 14:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-5-20
Date Collected: 08/12/15 14:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-20
Matrix: Solid
Percent Solids: 61.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 19:16	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 19:16	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 12:34	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:50	FCW	TAL SEA

Client Sample ID: CB-6-10
Date Collected: 08/13/15 08:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-26
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-6-10
Date Collected: 08/13/15 08:35
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-26
Matrix: Solid
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 19:43	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 19:47	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 12:53	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:55	FCW	TAL SEA

Client Sample ID: CB-6-15
Date Collected: 08/13/15 08:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-6-15
Date Collected: 08/13/15 08:40
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-27
Matrix: Solid
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 20:10	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 20:48	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 13:31	EKK	TAL SEA
Total/NA	Prep	3050B			199076	08/26/15 13:15	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 20:01	FCW	TAL SEA

Client Sample ID: CB-6-18
Date Collected: 08/13/15 08:45
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-28
Matrix: Solid
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199037	08/26/15 11:42	IWH	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	199041	08/26/15 15:56	D1R	TAL SEA
Total/NA	Prep	3550B			199193	08/27/15 11:09	RBL	TAL SEA
Total/NA	Fraction	EPH Frac			199347	08/28/15 14:38	KZ1	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	200198	09/09/15 20:26	EKK	TAL SEA

Client Sample ID: CB-6-20
Date Collected: 08/13/15 08:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-29
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-6-20
Date Collected: 08/13/15 08:50
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-29
Matrix: Solid
Percent Solids: 77.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 20:36	CJ	TAL SEA
Total/NA	Prep	5035			199037	08/26/15 11:42	IWH	TAL SEA

Client Sample ID: CB-6-20

Lab Sample ID: 580-52422-29
Date Collected: 08/13/15 08:50
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 77.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH/VPH		1	199041	08/26/15 18:55	D1R	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 21:19	HDK	TAL SEA
Total/NA	Prep	3550B			199193	08/27/15 11:09	RBL	TAL SEA
Total/NA	Fraction	EPH Frac			199347	08/28/15 14:38	KZ1	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	200198	09/09/15 21:45	EKK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 13:50	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 16:59	FCW	TAL SEA

Client Sample ID: CB-7-20

Lab Sample ID: 580-52422-34
Date Collected: 08/13/15 09:35
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Client Sample ID: CB-7-20

Lab Sample ID: 580-52422-34
Date Collected: 08/13/15 09:35
Matrix: Solid
Date Received: 08/13/15 11:35
Percent Solids: 67.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 21:03	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199222	08/27/15 18:23	D1R	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 14:09	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 17:04	FCW	TAL SEA

Client Sample ID: CB-9-15

Lab Sample ID: 580-52422-42
Date Collected: 08/13/15 10:55
Matrix: Solid
Date Received: 08/13/15 11:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	199075	08/26/15 13:13	DCV	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Client Sample ID: CB-9-15

Date Collected: 08/13/15 10:55
Date Received: 08/13/15 11:35

Lab Sample ID: 580-52422-42

Matrix: Solid
Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			199068	08/26/15 12:46	DGY	TAL SEA
Total/NA	Analysis	8260C		1	199036	08/26/15 21:30	CJ	TAL SEA
Total/NA	Prep	5035			199096	08/26/15 15:44	HDK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	199099	08/26/15 22:20	HDK	TAL SEA
Total/NA	Prep	3546			199072	08/26/15 13:04	DCV	TAL SEA
Total/NA	Cleanup	3630C			199159	08/27/15 08:36	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	199162	08/27/15 14:28	EKK	TAL SEA
Total/NA	Prep	3050B			199141	08/27/15 06:52	MKN	TAL SEA
Total/NA	Analysis	6020A		10	199268	08/27/15 17:08	FCW	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260C	5035	Solid	Xylenes, Total
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids
NWTPH/VPH	5035	Solid	Total VPH

Sample Summary

Client: Antea USA, Inc.
Project/Site: OPLC - Kent BV

TestAmerica Job ID: 580-52422-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-52422-13	CB-4-6	Solid	08/12/15 12:35	08/13/15 11:35
580-52422-15	CB-4-20	Solid	08/12/15 13:45	08/13/15 11:35
580-52422-16	CB-5-5	Solid	08/12/15 13:35	08/13/15 11:35
580-52422-17	CB-5-10	Solid	08/12/15 14:30	08/13/15 11:35
580-52422-19	CB-5-16	Solid	08/12/15 14:48	08/13/15 11:35
580-52422-20	CB-5-20	Solid	08/12/15 14:50	08/13/15 11:35
580-52422-26	CB-6-10	Solid	08/13/15 08:35	08/13/15 11:35
580-52422-27	CB-6-15	Solid	08/13/15 08:40	08/13/15 11:35
580-52422-28	CB-6-18	Solid	08/13/15 08:45	08/13/15 11:35
580-52422-29	CB-6-20	Solid	08/13/15 08:50	08/13/15 11:35
580-52422-34	CB-7-20	Solid	08/13/15 09:35	08/13/15 11:35
580-52422-42	CB-9-15	Solid	08/13/15 10:55	08/13/15 11:35

Greer, Robert A.

From: Bryan Taylor [Bryan.Taylor@anteagroup.com]
Sent: Wednesday, August 26, 2015 10:34 AM
To: Greer, Robert A.
Cc: Megan Richard
Subject: RE: Kent Block Valve Soil Data
Attachments: 20150826102141774.pdf

Robert,

The revised COC is attached. It is difficult to read so I've listed the additional analysis requested. Please let me know if you have any questions. I believe we are outside hold time at noon.

- Run additional EPH/VPH analysis on the following samples:
  1. CB-4-6 RUN EPH/VPH
  2. CB-5-10 RUN EPH/VPH
  3. CB-6-18 RUN EPH/VPH

- Run these samples for requested analysis:
  1. CB-4-20 RUN BTEX, Gx, Dx, and Total Lead
  2. CB-5-5 RUN BTEX, Gx, Dx, and Total Lead
  3. CB-5-16 RUN BTEX, Gx, Dx, and Total Lead
  4. CB-5-20 RUN BTEX, Gx, Dx, and Total Lead
  5. CB-6-10 RUN BTEX, Gx, Dx, and Total Lead
  6. CB-6-15 RUN BTEX, Gx, Dx, and Total Lead
  7. CB-6-20 RUN BTEX, Gx, Dx, and Total Lead + EPH/VPH
  8. CB-7-20 RUN BTEX, Gx, Dx, and Total Lead
  9. CB-9-15 RUN BTEX, Gx, Dx, and Total Lead

Please confirm you received the request and can meet the hold time issue. Thanks

Bryan Taylor | Consultant | USA
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Bryan.Taylor@anteagroup.com | www.anteagroup.com

anteagroup
Member of Inogen® | www.inogenet.com

From: Greer, Robert A. [mailto:Robert.Greer@testamericainc.com]
Sent: Tuesday, August 25, 2015 4:46 PM
To: Bryan Taylor
Cc: Megan Richard
Subject: RE: Kent Block Valve Soil Data

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

187001

Page 1 of 5

BP/ARC Project Name: KENT BLOCK VALVE
Req Due Date (mm/dd/yy): 24 HOUR | 5DAY Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBVEA154
Lab Work Order Number: 52422

Lab Name: TEST AMERICA	BP/ARC Facility Address: 74TH AVE S & S 259TH ST	Consultant/Contractor: ANTEA GROUP.
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: ROBERT GREER	Lead Regulatory Agency: WA DEPT of Ecology	Address: 4006 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NIA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 | WR293375	Phone: 206.894.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___
BP/ARC EBM: Paul Supple		
EBM Phone: 925-275-3801		
EBM Email: paul.supple@bp.com		

			Matrix				No. Containers / Preservative						Requested Analyses									Report Type & QC Level
																						Standard ___
																						Full Data Package ___
			Soil / Solid	Water / Liquid	Air / Vapor		Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	NWTPH-Gx	NWTPH-Dx Silica gel cl?	BTEX 8260B	T-LEAD 6020	NWTPH	NWCPH	RCRA-8 metals			
	Date	Time																				
-1	CB-1-5	8.12.15	0850	X				4	3				1	X	X	X	X						HOLD
	CB-1-10	8.12.15	0915	X				4	3				1	X	X	X	X						HOLD
-3	CB-1-15	8.12.15	0930	X				4	3				1	X	X	X	X						HOLD
	CB-1-20	8.12.15	0935	X				4	3				1	X	X	X	X						
-5	CB-2-5	8.12.15	0920	X				4	3				1	X	X	X	X						HOLD
	CB-2-10	8.12.15	1020	X				4	3				1	X	X	X	X						HOLD
-7	CB-2-15	8.12.15	1025	X				4	3				1	X	X	X	X						
	CB-2-20	8.12.15	1035	X				4	3				1	X	X	X	X						HOLD
-9	CB-3-5	8.12.15	0950	X				4	3				1	X	X	X	X						HOLD
	CB-3-10	8.12.15	1220	X				4	3				1	X	X	X	X						HOLD

Comments
Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L.Hamilton / T.Roberts	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group		8/13/15	1135		8/13/15	1135
Shipment Method: Drop Off Ship Date: 8/13/15						
Shipment Tracking No:						

Special Instructions: 24 hour TAT for Composite Samples. 5 Day TAT for all Samples not on "HOLD"

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

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BP/ARC Project Name: Kent Block Valve
Req Due Date (mm/dd/yy): 24 Hour/5DAY Rush TAT: Yes X No
BP/ARC Facility No: WAKBV&A154
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & S 259th St	Consultant/Contractor: Antea Group
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBV&A154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4006 148th Ave NE Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 009VD-0005 | WR2933375	Phone: 206.854.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute(40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925-275-3801
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx Silica Gel	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	RCRA-8 Metals	Report Type & QC Level / Comments
-11	CB-3-15	8.12.15	1330	X			4	3				1	X	X	X	X				
	CB-3-18	8.12.15	1240	X			4	3				1	X	X	X	X				HOLD
-13	CB-4-6	8.12.15	1235	X			4	3				1	X	X	X	X				
	CB-4-15	8.12.15	1330	X			5	4				1	X	X	X	X				
-15	CB-4-20	8.12.15	1345	X			4	3				1	X	X	X	X				HOLD
	CB-5-5	8.12.15	1335	X			4	3				1	X	X	X	X				HOLD
-17	CB-5-10	8.12.15	1430	X			4	3				1	X	X	X	X				
	CB-5-15	8.12.15	1440	X			4	3				1	X	X	X	X				
-19	CB-5-16	8.12.15	1448	X			4	3				1	X	X	X	X				HOLD
	CB-5-20	8.12.15	1450	X			4	3				1	X	X	X	X				HOLD

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Lauren Hamilton | Taylor						
Sampler's Company: Antea Group | Roberts	Antea	8/13/15	1135		8/13/15	1135
Shipment Method: Drop Off	Ship Date: 8.13.15					
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite Samples / 5DAY TAT for all Samples not on "HOLD"

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

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BP/ARC Project Name: Kent Block Valve — Req Due Date (mm/dd/yy): 5DAY TAT/24HOUR — Rush TAT: Yes X No ___

BP/ARC Facility No: WAKBVEA154 — Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & S 259th St	Consultant/Contractor: ANTEA GROUP
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4006 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 008UD-0005/WR293375	Phone: 206.854.0399
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___
BP/ARC EBM: Paul Supple		
EBM Phone: 925.275.3801		
EBM Email: Paul.Supple@bp.com		

Report Type & QC Level: Standard ___ Full Data Package ___

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	NWTPH-Gx	NWTPH-Dx w/ Silica Gel	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	RCRA-8 metals	Comments
-21	CB-5-22.5	8.12.15	1505	X			4	3				1	X	X	X	X				HOLD
	CB-6-5	8.12.15	1445	X			4	3				1	X	X	X	X				HOLD
-23	Composite-1	8.12.15	1310	X			4	3				1	X	X	X	X			X	24 Hour TAT
	Composite-2	8.12.15	1630		X		9			1	8		X	X	X	X			X	24 Hour TAT
-25	Trip blanks	8.12.15	0000				3					3	X	~~X~~	X					~~24 Hour TAT~~ TR
	CB-6-10	8.13.15	0835	X			4	3				1	X	X	X	X				HOLD
-27	CB-6-15	8.13.15	0840	X			4	3				1	X	X	X	X				HOLD
	CB-6-18	8.13.15	0845	X			4	3				1	X	X	X	X				
-29	CB-6-20	8.13.15	0850	X			4	3				1	X	X	X	X				HOLD
	CB-6-25	8.13.15	0900	X			4	3				1	X	X	X	X				HOLD

Comments — Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L. Hamilton / T. Roberts

Sampler's Company: Antea Group

Shipment Method: Drop Off — Ship Date: 8.13.15

Shipment Tracking No:

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
[signature] Antea Group	8/13/15	1135	[signature]	8/13/15	1135

Special Instructions: 24 Hour TAT for composite samples. 5DAY TAT for all samples not on "HOLD"

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

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1 2 3 4 5 6 7 8 9 10 11

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BP/ARC Project Name: KENT BLOCK VALVE
Req Due Date (mm/dd/yy): 5DAY/24HOUR TAT
Rush TAT: Yes X No ___
BP/ARC Facility No: WAKBVEA154
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & 259th St.	Consultant/Contractor: ANTEA GROUP
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA. Dept of Ecology	Address: 40016 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard.
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 / NR 293375	Phone: 206.857.0899
Lab Bottle Order No: NA	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execute (40) Activity: Project Spend (900)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3801
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx with Silica	BTEX 8260B	T-LEAD 6020	NWVPH	NWEPH	LCCA-8 Metals	Report Type & QC Level / Comments
Page 42 of 45																				
-31	CB-7-5	8.13.15	0815	X			4	3			HCl	1	X	X	X	X				HOLD
	CB-7-10	8.13.15	0920	X			4	3			HCl	1	X	X	X	X				HOLD
-33	CB-7-15	8.13.15	0925	X			4	3			HCl	1	X	X	X	X				
	CB-7-20	8.13.15	0935	X			4	3				1	X	X	X	X				HOLD
-35	CB-7-24.5	8.13.15	0945	X			4	3				1	X	X	X	X				HOLD
	CB-8-5	8.13.15	0100	X			4	3				1	X	X	X	X				HOLD
-37	CB-8-10	8.13.15	1010	X			4	3				1	X	X	X	X				
	CB-8-15	8.13.15	1013	X			4	3				1	X	X	X	X				HOLD
-39	CB-8-20	8.13.15	1020	X			4	3				1	X	X	X	X				HOLD
	CB-9-5	8.13.15	0910	X			4	3				1	X	X	X	X				HOLD

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: L.Hamilton/T.Roberts	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea		8/13/15	1135		8/13/15	11:35
Shipment Method: Drop off. Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite. 5DAY TAT for all Samples that are not on HOLD

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

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187003 TAT

BP/ARC Project Name: Kent Block Valve
BP/ARC Facility No: WAKBVEA154
Req Due Date (mm/dd/yy): 5DAY/24Hour Rush TAT: Yes ___ No ___
Lab Work Order Number: 52422

Lab Name: Test America	BP/ARC Facility Address: 74th Ave S & S 259th St	Consultant/Contractor: Antea Group
Lab Address: 5755 8th St E, Tacoma	City, State, ZIP Code: Kent, WA	Consultant/Contractor Project No: WAKBVEA154
Lab PM: Robert Greer	Lead Regulatory Agency: WA Dept of Ecology	Address: 4006 148th Ave NE, Redmond
Lab Phone: 253.922.2310	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard
Lab Shipping Accnt: NA	Enfos Proposal No: 008VD-0005 / WR293375	Phone: 206.859.0899
Lab Bottle Order No: NA1	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: Megan.Richard@anteagroup.com
Other Info:	Stage: Execution (40) Activity: Project Spend (80)	Invoice To: BP/ARC ___ Contractor ___

BP/ARC EBM: Paul Supple
EBM Phone: 925.275.3901
EBM Email: Paul.Supple@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: NWTPH-Gx	NWTPH-Dx w/ Silica	BTEX 8260B	T. Lead 6020	NWVPH	NWEPH	RCRA-8 Metals	Report Type & QC Level
-41	CB-9-10	8.13.15	1045	X			4	3				1	X	X	X	X				
	CB-9-15	8.13.15	1055	X			4	3				1	X	X	X	X				HOLD
-43	CB-10-5	8.13.15	1025	X			4	3				1	X	X	X	X				HOLD
	CB-10-8	8.13.15	1050	X			4	3				1	X	X	X	X				

Standard ___
Full Data Package ___

Comments
Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: Lauren Taylor	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea		8/13/15	1135		8/13/15	1135
Shipment Method: Drop Off Ship Date: 8.13.15						
Shipment Tracking No:						

Special Instructions: 24 Hour TAT for Composite Samples/ 5DAY TAT for Samples that are not on "HOLD"

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

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9/24/2015

Anka Kent Black Calve 8/13/15 1135

w/o cs AZ
Cooler/TB Dig/IR cor 4.1 unc 4.2
Cooler Dsc Lg Kent/Blk @ Lab 1135
Wet/Packs Packing Bubble
Company Cour.

w/o cs AZ.
Cooler/TB Dig/IR cor 4.3 unc 4.4
Cooler Dsc Lg Wht/Blk @ Lab 1135
Wet/Packs Packing Bubble
Company Cour.

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-52422-3

Login Number: 52422
List Number: 1
Creator: Blankinship, Tom X

List Source: 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	5 containers listed for sample -14. Only 4 received.
Samples are received within Holding Time.	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	

Appendix F

MTCATPH 11.1 Method B Worksheet

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 08/12/15
Site Name: Kent Block Valve
Sample Name: CB-4-6

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	3.2	0.93%
AL_EC >6-8	15	4.35%
AL_EC >8-10	19	5.51%
AL_EC >10-12	3.2	0.93%
AL_EC >12-16	31.5	9.14%
AL_EC >16-21	31.5	9.14%
AL_EC >21-34	74	21.47%
AR_EC >8-10	12	3.48%
AR_EC >10-12	11	3.19%
AR_EC >12-16	31.5	9.14%
AR_EC >16-21	31.5	9.14%
AR_EC >21-34	81	23.50%
Benzene	0.041	0.01%
Toluene	0.03	0.01%
Ethylbenzene	0.03	0.01%
Total Xylenes	0.21	0.06%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	344.711	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Values that were non-detect were entered as half of the detection limit.
Substances that were not analyzed were entered as "0".
Default values were used in sections 3 and 4.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 8/12/2015
Site Name: Kent Block Valve
Sample Name: CB-4-6
Measured Soil TPH Concentration, mg/kg: **344.711**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,255	2.26E-09	1.06E-01	Pass
	Method C	42,065	3.02E-10	8.19E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	284	7.34E-06	7.30E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**3,254.61**	**42,065.35**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	3.25E+03	2.13E-08	1.00E+00	YES	4.21E+04	3.69E-08	1.00E+00
Total Risk=1E-5	*NO*	1.53E+06	1.00E-05	4.69E+02	*NO*	1.14E+07	1.00E-05	2.71E+02
Risk of Benzene= 1E-6	*NO*	1.53E+05	1.00E-06	4.69E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Benzene MCL = 5 ug/L**
Protective Ground Water Concentration, ug/L	**261.57**
Protective Soil Concentration, mg/kg	**283.99**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	3.38E+02	1.47E-05	1.00E+00	9.48E+02
Total Risk = 1E-5	*NO*	3.06E+02	1.00E-05	8.40E-01	5.21E+02
Total Risk = 1E-6	YES	9.25E+01	1.00E-06	2.22E-01	3.84E+01
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	2.62E+02	6.29E-06	6.79E-01	2.84E+02
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	3.98E+02	3.32E-05	1.52E+00	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 08/12/15
Site Name: Kent Block Valve
Sample Name: CB-5-10

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	35	1.98%
AL_EC >6-8	35	1.98%
AL_EC >8-10	110	6.21%
AL_EC >10-12	130	7.34%
AL_EC >12-16	340	19.21%
AL_EC >16-21	170	9.60%
AL_EC >21-34	75	4.24%
AR_EC >8-10	35	1.98%
AR_EC >10-12	200	11.30%
AR_EC >12-16	230	12.99%
AR_EC >16-21	230	12.99%
AR_EC >21-34	180	10.17%
Benzene	0.037	0.00%
Toluene	0.029	0.00%
Ethylbenzene	0.12	0.01%
Total Xylenes	0.15	0.01%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1770.336	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Values that were non-detect were entered as half of the detection limit.
Substances that were not analyzed were entered as "0".
Default values were used in section 3 and 4.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 8/12/2015
Site Name: Kent Block Valve
Sample Name: CB-5-10
Measured Soil TPH Concentration, mg/kg: **1,770.336**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,339	2.04E-09	7.57E-01	Pass
	Method C	32,197	2.73E-10	5.50E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	162	3.19E-06	1.40E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,338.60**	**32,197.37**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.34E+03	2.69E-09	1.00E+00	YES	3.22E+04	4.96E-09	1.00E+00
Total Risk=1E-5	*NO*	8.69E+06	1.00E-05	3.72E+03	*NO*	6.49E+07	1.00E-05	2.02E+03
Risk of Benzene= 1E-6	*NO*	8.69E+05	1.00E-06	3.72E+02	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**270.47**
Protective Soil Concentration, mg/kg	**162.46**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.70E+02	6.75E-07	1.00E+00	1.62E+02
Total Risk = 1E-5	*NO*	4.19E+02	5.01E-06	1.49E+00	100% NAPL
Total Risk = 1E-6	*NO*	3.10E+02	1.00E-06	1.13E+00	2.59E+02
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	4.19E+02	5.01E-06	1.49E+00	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	4.19E+02	5.01E-06	1.49E+00	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 08/13/15
Site Name: Kent Block Valve
Sample Name: CB-6-18

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	2.85	2.44%
AL_EC >6-8	2.85	2.44%
AL_EC >8-10	6	5.13%
AL_EC >10-12	5.8	4.96%
AL_EC >12-16	10	8.55%
AL_EC >16-21	11	9.41%
AL_EC >21-34	36	30.78%
AR_EC >8-10	2.85	2.44%
AR_EC >10-12	9.6	8.21%
AR_EC >12-16	3	2.57%
AR_EC >16-21	7.6	6.50%
AR_EC >21-34	19	16.25%
Benzene	0.06	0.05%
Toluene	0.0275	0.02%
Ethylbenzene	0.11	0.09%
Total Xylenes	0.21	0.18%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	116.9575	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Values that were non-detect were entered as half of the detection limit.
Substances that were not analyzed were entered as "0".
Default values were used in sections 3 and 4.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: 500 ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 8/13/2015
Site Name: Kent Block Valve
Sample Name: CB-6-18
Measured Soil TPH Concentration, mg/kg: **116.958**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,535	3.30E-09	3.31E-02	Pass
	Method C	49,785	4.42E-10	2.35E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	57	1.25E-05	1.03E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	1,156	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**3,535.34**	**49,784.87**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	3.54E+03	9.99E-08	1.00E+00	YES	4.98E+04	1.88E-07	1.00E+00
Total Risk=1E-5	*NO*	3.54E+05	1.00E-05	1.00E+02	*NO*	2.64E+06	1.00E-05	5.31E+01
Risk of Benzene= 1E-6	*NO*	3.54E+04	1.00E-06	1.00E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Benzene MCL = 5 ug/L**
Protective Ground Water Concentration, ug/L	**148.75**
Protective Soil Concentration, mg/kg	**56.51**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.31E+02	1.20E-05	1.00E+00	1.11E+02
Total Risk = 1E-5	*NO*	2.06E+02	1.00E-05	8.85E-01	9.19E+01
Total Risk = 1E-6	YES	3.02E+01	1.00E-06	1.23E-01	8.76E+00
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	1.49E+02	6.29E-06	6.28E-01	5.65E+01
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	7.16E-05	2.98E+00	**1.16E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 08/13/15
Site Name: Kent Block Valve
Sample Name: CB-6-20

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	7	2.42%
AL_EC >6-8	7	2.42%
AL_EC >8-10	30	10.39%
AL_EC >10-12	27	9.35%
AL_EC >12-16	49	16.97%
AL_EC >16-21	28	9.70%
AL_EC >21-34	3.2	1.11%
AR_EC >8-10	17	5.89%
AR_EC >10-12	74	25.63%
AR_EC >12-16	21	7.27%
AR_EC >16-21	22	7.62%
AR_EC >21-34	3.2	1.11%
Benzene	0.0105	0.00%
Toluene	0.0265	0.01%
Ethylbenzene	0.28	0.10%
Total Xylenes	0.053	0.02%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	288.77	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Values that were non-detect were entered as half of the detection limit.
Substances that were not analyzed were entered as "0".
Default values were used in sections 3 and 4.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 8/13/2015
Site Name: Kent Block Valve
Sample Name: CB-6-20
Measured Soil TPH Concentration, mg/kg: **288.770**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,219	5.78E-10	1.30E-01	Pass
	Method C	34,794	7.74E-11	8.30E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	35	1.87E-06	2.44E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	135	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,218.82**	**34,793.64**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.22E+03	4.44E-09	1.00E+00	YES	3.48E+04	9.33E-09	1.00E+00
Total Risk=1E-5	*NO*	4.99E+06	1.00E-05	2.25E+03	*NO*	3.73E+07	1.00E-05	1.07E+03
Risk of Benzene= 1E-6	*NO*	4.99E+05	1.00E-06	2.25E+02	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**235.33**
Protective Soil Concentration, mg/kg	**34.91**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.35E+02	2.79E-07	1.00E+00	3.49E+01
Total Risk = 1E-5	*NO*	7.59E+02	7.71E-06	2.91E+00	100% NAPL
Total Risk = 1E-6	*NO*	5.01E+02	1.00E-06	2.06E+00	1.36E+02
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	7.46E+02	6.29E-06	2.85E+00	3.73E+03
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 72000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	9.97E-07	2.05E+00	**1.35E+02**

Appendix G

CLARC Data Table

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
acenaphthene	83-32-9		4.80E+03		6.00E-02	I		
acenaphthylene	208-96-8							
acephate	30560-19-1		3.20E+02	1.15E+02	4.00E-03	I	8.70E-03	I
acetaldehyde	75-07-0							
acetochlor	34256-82-1		1.60E+03		2.00E-02	I		
acetone	67-64-1		7.20E+04		9.00E-01	I		
acetone cyanohydrin	75-86-5							
acetonitrile	75-05-8							
acetophenone	98-86-2		8.00E+03		1.00E-01	I		
acifluorfen, sodium	62476-59-9		1.04E+03		1.30E-02	I		
acrolein	107-02-8		4.00E+01		5.00E-04	I		
acrylamide	79-06-1		1.60E+02	2.00E+00	2.00E-03	I	5.00E-01	I
acrylic acid	79-10-7		4.00E+04		5.00E-01	I		
acrylonitrile	107-13-1		3.20E+03	1.85E+00	4.00E-02	A	5.40E-01	I
alachlor	15972-60-8		8.00E+02	1.79E+01	1.00E-02	I	5.60E-02	C
alar	1596-84-5		1.20E+04	5.56E+01	1.50E-01	I	1.80E-02	C
aldicarb	116-06-3		8.00E+01		1.00E-03	I		
aldicarb sulfone	1646-88-4		8.00E+01		1.00E-03	I		
aldrin	309-00-2		2.40E+00	5.88E-02	3.00E-05	I	1.70E+01	I
ally	74223-64-6		2.00E+04		2.50E-01	I		
allyl alcohol	107-18-6		4.00E+02		5.00E-03	I		
allyl chloride	107-05-1			4.76E+01			2.10E-02	C
aluminum	7429-90-5		8.00E+04		1.00E+00	P		
aluminum phosphide	20859-73-8		3.20E+01		4.00E-04	I		
amdro	67485-29-4		2.40E+01		3.00E-04	I		
ametryn	834-12-8		7.20E+02		9.00E-03	I		
aminophenol;m-	591-27-5		6.40E+03		8.00E-02	P		
aminopyridine;4-	504-24-5							
amitraz	33089-61-1		2.00E+02		2.50E-03	I		
ammonia	7664-41-7							
ammonium perchlorate	7790-98-9		5.60E+01		7.00E-04	I		
ammonium sulfamate	7773-06-0		1.60E+04		2.00E-01	I		
aniline	62-53-3		5.60E+02	1.75E+02	7.00E-03	P	5.70E-03	I
anthracene	120-12-7		2.40E+04		3.00E-01	I		
antimony	7440-36-0		3.20E+01		4.00E-04	I		
antimony pentoxide	1314-60-9		4.00E+01		5.00E-04	H		
antimony potassium tartrate	28300-74-5		7.20E+01		9.00E-04	H		
antimony tetroxide	1332-81-6		3.20E+01		4.00E-04	H		
antimony trioxide	1309-64-4							

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
apollo	74115-24-5		1.04E+03		1.30E-02	I		
aramite	140-57-8		4.00E+03	4.00E+01	5.00E-02	H	2.50E-02	I
aroclor 1016	12674-11-2		5.60E+00	1.43E+01	7.00E-05	I	7.00E-02	S
aroclor 1254	11097-69-1		1.60E+00	5.00E-01	2.00E-05	I	2.00E+00	S
aroclor 1260	11096-82-5			5.00E-01			2.00E+00	S
arsenic, inorganic	7440-38-2	2.00E+01	2.40E+01	6.67E-01	3.00E-04	I	1.50E+00	I
arsine	7784-42-1		2.80E-01		3.50E-06	C		
assure	76578-14-8		7.20E+02		9.00E-03	I		
asulam	3337-71-1		4.00E+03		5.00E-02	I		
atrazine	1912-24-9		2.80E+03	4.35E+00	3.50E-02	I	2.30E-01	C
avermectin B1	65195-55-3		3.20E+01		4.00E-04	I		
azobenzene	103-33-3			9.09E+00			1.10E-01	I
barium and compounds	7440-39-3		1.60E+04		2.00E-01	I		
barium cyanide	542-62-1							
baygon	114-26-1		3.20E+02		4.00E-03	I		
bayleton	43121-43-3		2.40E+03		3.00E-02	I		
baythroid	68359-37-5		2.00E+03		2.50E-02	I		
benefin	1861-40-1		2.40E+04		3.00E-01	I		
benomyl	17804-35-2		4.00E+03		5.00E-02	I		
bentazon	25057-89-0		2.40E+03		3.00E-02	I		
benzaldehyde	100-52-7		8.00E+03		1.00E-01	I		
benzene	71-43-2	3.00E-02	3.20E+02	1.82E+01	4.00E-03	I	5.50E-02	I
benzenethiol	108-98-5		8.00E+01		1.00E-03	P		
benzidine	92-87-5		2.40E+02	4.35E-03	3.00E-03	I	2.30E+02	I
benzo(g,h,i)perylene	191-24-2							
benzo[a]anthracene	56-55-3			1.37E+00			7.30E-01	E
benzo[a]pyrene	50-32-8	1.00E-01		1.37E-01			7.30E+00	I
benzo[b]fluoranthene	205-99-2			1.37E+00			7.30E-01	E
benzo[k]fluoranthene	207-08-9			1.37E+01			7.30E-02	E
benzoic acid	65-85-0		3.20E+05		4.00E+00	I		
benzotrichloride	98-07-7			7.69E-02			1.30E+01	I
benzyl alcohol	100-51-6		8.00E+03		1.00E-01	P		
benzyl chloride	100-44-7		1.60E+02	5.88E+00	2.00E-03	P	1.70E-01	I
beryllium	7440-41-7		1.60E+02		2.00E-03	I		
beta-chloronaphthalene	91-58-7		6.40E+03		8.00E-02	I		
bidrin	141-66-2		8.00E+00		1.00E-04	I		
biphenthrin	82657-04-3		1.20E+03		1.50E-02	I		
biphenyl;1,1-	92-52-4		4.00E+04	1.25E+02	5.00E-01	I	8.00E-03	I
bis(2-chloro-1-methyl-ethyl)ether	108-60-1		3.20E+03	1.43E+01	4.00E-02	I	7.00E-02	H

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
bis(2-chloroethyl)ether	111-44-4			9.09E-01			1.10E+00	I
bis(2-chloroisopropyl) ether	39638-32-9							
bis(2-ethylhexyl) phthalate	117-81-7		1.60E+03	7.14E+01	2.00E-02	I	1.40E-02	I
bis(chloromethyl)ether	542-88-1			4.55E-03			2.20E+02	I
bisphenol a	80-05-7		4.00E+03		5.00E-02	I		
boron	7440-42-8		1.60E+04		2.00E-01	I		
bromate	15541-45-4		3.20E+02	1.43E+00	4.00E-03	I	7.00E-01	I
bromodichloromethane	75-27-4		1.60E+03	1.61E+01	2.00E-02	I	6.20E-02	I
bromoethene	593-60-2							
bromoform	75-25-2		1.60E+03	1.27E+02	2.00E-02	I	7.90E-03	I
bromomethane	74-83-9		1.12E+02		1.40E-03	I		
bromophos	2104-96-3		4.00E+02		5.00E-03	H		
bromoxynil	1689-84-5		1.60E+03		2.00E-02	I		
bromoxynil octanoate	1689-99-2		1.60E+03		2.00E-02	I		
butadiene;1,3-	106-99-0			2.94E-01			3.40E+00	C
butanol;n-	71-36-3		8.00E+03		1.00E-01	I		
butyl benzyl phthalate	85-68-7		1.60E+04	5.26E+02	2.00E-01	I	1.90E-03	P
butylate	2008-41-5		4.00E+03		5.00E-02	I		
butylphthalyl butylglycolate	85-70-1		8.00E+04		1.00E+00	I		
butyric acid;4-(2-methyl-4-chlorophenoxy)-	94-81-5		8.00E+02		1.00E-02	I		
cacodylic acid	75-60-5		1.60E+03		2.00E-02	A		
cadmium (soil and nonpotable surface water)	7440-43-9a	2.00E+00	8.00E+01		1.00E-03	I		
cadmium (potable groundwater and surface water)	7440-43-9				5.00E-04	I		
calcium cyanide	592-01-8		8.00E+01		1.00E-03	I		
caprolactam	105-60-2		4.00E+04		5.00E-01	I		
captafol	2425-06-1		1.60E+02	6.67E+00	2.00E-03	I	1.50E-01	C
captan	133-06-2		1.04E+04	4.35E+02	1.30E-01	I	2.30E-03	C
carbaryl	63-25-2		8.00E+03		1.00E-01	I		
carbazole	86-74-8							
carbofuran	1563-66-2		4.00E+02		5.00E-03	I		
carbon disulfide	75-15-0		8.00E+03		1.00E-01	I		
carbon tetrachloride	56-23-5		3.20E+02	1.43E+01	4.00E-03	I	7.00E-02	I
carbophenothion	786-19-6							
carbosulfan	55285-14-8		8.00E+02		1.00E-02	I		
carboxin	5234-68-4		8.00E+03		1.00E-01	I		
chloral	75-87-6							
chloral hydrate	302-17-0		8.00E+03		1.00E-01	I		
chloramben	133-90-4		1.20E+03		1.50E-02	I		
chloranil	118-75-2			2.50E+00			4.00E-01	H

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)		RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
chlordane	57-74-9		4.00E+01	2.86E+00		5.00E-04	I	3.50E-01	I
chloride	16887-00-6								
chlorimuron-ethyl	90982-32-4		1.60E+03			2.00E-02	I		
chlorine	7782-50-5		8.00E+03			1.00E-01	I		
chlorine cyanide	506-77-4		4.00E+03			5.00E-02	I		
chlorine dioxide	10049-04-4		2.40E+03			3.00E-02	I		
chlorite	7758-19-2		2.40E+03			3.00E-02	I		
chloro-1,1-difluoroethane;1-	75-68-3								
chloro-1,3-butadiene;2-	126-99-8		1.60E+03			2.00E-02	H		
chloro-2-methylaniline hydrochloride;4-	3165-93-3			2.17E+00				4.60E-01	H
chloro-2-methylaniline;4-	95-69-2		2.40E+02	1.00E+01		3.00E-03	X	1.00E-01	P
chloroacetic acid	79-11-8		1.60E+02			2.00E-03	H		
chloroacetophenone;2-	532-27-4								
chloroaniline;p-	106-47-8		3.20E+02	5.00E+00		4.00E-03	I	2.00E-01	P
chlorobenzene	108-90-7		1.60E+03			2.00E-02	I		
chlorobenzilate	510-15-6		1.60E+03	9.09E+00		2.00E-02	I	1.10E-01	C
chlorobenzoic acid;p-	74-11-3		2.40E+03			3.00E-02	X		
chlorobenzotrifluoride;4-	98-56-6		2.40E+02			3.00E-03	P		
chlorobutane;1-	109-69-3		3.20E+03			4.00E-02	P		
chlorodifluoromethane	75-45-6								
chloroform	67-66-3		8.00E+02	3.23E+01		1.00E-02	I	3.10E-02	C
chloromethane	74-87-3								
chloromethyl methyl ether	107-30-2			4.17E-01				2.40E+00	C
chloronitrobenzene;o-	88-73-3		2.40E+02	3.33E+00		3.00E-03	P	3.00E-01	P
chloronitrobenzene;p-	100-00-5		8.00E+01	1.59E+02		1.00E-03	P	6.30E-03	P
chlorophenol;2-	95-57-8		4.00E+02			5.00E-03	I		
chlorophenyl methyl sulfide;p-	123-09-1								
chlorophenyl methyl sulfone;p-	98-57-7								
chlorophenyl methyl sulfoxide;p-	934-73-6								
chloropropane;2-	75-29-6								
chlorothalonil	1897-45-6		1.20E+03	3.23E+02		1.50E-02	I	3.10E-03	C
chlorotoluene;o-	95-49-8		1.60E+03			2.00E-02	I		
chlorpropham	101-21-3		1.60E+04			2.00E-01	I		
chlorpyrifos	2921-88-2		8.00E+01			1.00E-03	A		
chlorpyrifos-methyl	5598-13-0		8.00E+02			1.00E-02	H		
chlorsulfuron	64902-72-3		4.00E+03			5.00E-02	I		
chlorthiophos	21923-23-9		6.40E+01			8.00E-04	H		
chromium (total)	7440-47-3								
chromium(III)	16065-83-1	2.00E+03	1.20E+05			1.50E+00	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
chromium(VI)	18540-29-9	1.90E+01	2.40E+02		3.00E-03	I		
chrysene	218-01-9			1.37E+02			7.30E-03	E
coke oven emissions	8007-45-2							
coal tar creosote	8001-58-9							
copper	7440-50-8		3.20E+03		4.00E-02	H		
copper cyanide	544-92-3		4.00E+02		5.00E-03	I		
cresol;m-	108-39-4		4.00E+03		5.00E-02	I		
cresol;o-	95-48-7		4.00E+03		5.00E-02	I		
cresol;p-	106-44-5		8.00E+03		1.00E-01	A		
crotonaldehyde	123-73-9		8.00E+01	5.26E-01	1.00E-03	P	1.90E+00	H
cumene	98-82-8		8.00E+03		1.00E-01	I		
cyanazine	21725-46-2		1.60E+02	1.19E+00	2.00E-03	H	8.40E-01	H
cyanide	57-12-5		4.80E+01		6.00E-04	I		
cyanogen	460-19-5		8.00E+01		1.00E-03	I		
cyanogen bromide	506-68-3		7.20E+03		9.00E-02	I		
cyclohexane	110-82-7							
cyclohexanone	108-94-1		4.00E+05		5.00E+00	I		
cyclohexylamine	108-91-8		1.60E+04		2.00E-01	I		
cyclopentadiene	542-92-7							
cyhalothrin/karate	68085-85-8		4.00E+02		5.00E-03	I		
cypermethrin	52315-07-8		8.00E+02		1.00E-02	I		
cyromazine	66215-27-8		6.00E+02		7.50E-03	I		
dacthal	1861-32-1		8.00E+02		1.00E-02	I		
dalapon, sodium salt	75-99-0		2.40E+03		3.00E-02	I		
danitol	39515-41-8		2.00E+03		2.50E-02	I		
db;2,4-	94-82-6		6.40E+02		8.00E-03	I		
ddd	72-54-8			4.17E+00			2.40E-01	I
dde	72-55-9			2.94E+00			3.40E-01	I
ddt	50-29-3	3.00E+00	4.00E+01	2.94E+00	5.00E-04	I	3.40E-01	I
decabromodiphenyl ether	1163-19-5		5.60E+02	1.43E+03	7.00E-03	I	7.00E-04	I
demeton	8065-48-3		3.20E+00		4.00E-05	I		
di(2-ethylhexyl)adipate	103-23-1		4.80E+04	8.33E+02	6.00E-01	I	1.20E-03	I
diallate	2303-16-4			1.64E+01			6.10E-02	H
diazinon	333-41-5		5.60E+01		7.00E-04	A		
dibenzo[a,h]anthracene	53-70-3			1.37E-01			7.30E+00	E
dibenzofuran	132-64-9		8.00E+01		1.00E-03	X		
dibromo-3-chloropropane;1,2-	96-12-8		1.60E+01	1.25E+00	2.00E-04	P	8.00E-01	P
dibromobenzene;1,4-	106-37-6		8.00E+02		1.00E-02	I		
dibromochloromethane	124-48-1		1.60E+03	1.19E+01	2.00E-02	I	8.40E-02	I

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
di-butyl phthalate	84-74-2		8.00E+03		1.00E-01	I		
dicamba	1918-00-9		2.40E+03		3.00E-02	I		
dichloro-2-butene;1,4-	764-41-0							
dichlorobenzene;1,2-	95-50-1		7.20E+03		9.00E-02	I		
dichlorobenzene;1,3-	541-73-1							
dichlorobenzene;1,4-	106-46-7		5.60E+03	1.85E+02	7.00E-02	A	5.40E-03	C
dichlorobenzidine;3,3'-	91-94-1			2.22E+00			4.50E-01	I
dichlorodifluoromethane	75-71-8		1.60E+04		2.00E-01	I		
dichloroethane;1,1-	75-34-3		1.60E+04	1.75E+02	2.00E-01	P	5.70E-03	C
dichloroethane;1,2-	107-06-2		4.80E+02	1.10E+01	6.00E-03	X	9.10E-02	I
dichloroethylene,1,2- (mixed isomers)	540-59-0		7.20E+02		9.00E-03	H		
dichloroethylene;1,1-	75-35-4		4.00E+03		5.00E-02	I		
dichloroethylene;1,2-,cis	156-59-2		1.60E+02		2.00E-03	I		
dichloroethylene;1,2-,trans	156-60-5		1.60E+03		2.00E-02	I		
dichlorophenol;2,4-	120-83-2		2.40E+02		3.00E-03	I		
dichlorophenoxyacetic acid;2,4-	94-75-7		8.00E+02		1.00E-02	I		
dichloropropane;1,2-	78-87-5		7.20E+03	2.78E+01	9.00E-02	A	3.60E-02	C
dichloropropanol;2,3-	616-23-9		2.40E+02		3.00E-03	I		
dichloropropene;1,3-	542-75-6		2.40E+03	1.00E+01	3.00E-02	I	1.00E-01	I
dichlorvos	62-73-7		4.00E+01	3.45E+00	5.00E-04	I	2.90E-01	I
dicofol	115-32-2							
dicyclopentadiene	77-73-6		6.40E+02		8.00E-03	P		
dieldrin	60-57-1		4.00E+00	6.25E-02	5.00E-05	I	1.60E+01	I
diethyl phthalate	84-66-2		6.40E+04		8.00E-01	I		
diethylene glycol	111-46-6							
diethylene glycol dinitrate	693-21-0							
diethylene glycol monobutyl ether	112-34-5		2.40E+03		3.00E-02	P		
diethylene glycol monoethyl ether	111-90-0		4.80E+03		6.00E-02	P		
diethylformamide	617-84-5		8.00E+01		1.00E-03	P		
diethyl-p-nitrophenylphosphate	311-45-5							
diethylstilbesterol	56-53-1			2.86E-03			3.50E+02	C
difenzoquat	43222-48-6		6.40E+03		8.00E-02	I		
diflubenzuron	35367-38-5		1.60E+03		2.00E-02	I		
difluoroethane;1,1-	75-37-6							
diisopropyl methylphosphonate	1445-75-6		6.40E+03		8.00E-02	I		
dimethipin	55290-64-7		1.60E+03		2.00E-02	I		
dimethoate	60-51-5		1.60E+01		2.00E-04	I		
dimethoxybenzidine;3,3'-	119-90-4			6.25E-01			1.60E+00	P
dimethyl phthalate	131-11-3							

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
dimethyl terephthalate	120-61-6		8.00E+03		1.00E-01	I		
dimethylamine	124-40-3							
dimethylaniline hydrochloride;2,4-	21436-96-4			1.72E+00			5.80E-01	H
dimethylaniline;2,4-	95-68-1		1.60E+02	5.00E+00	2.00E-03	X	2.00E-01	P
dimethylaniline;N,N-	121-69-7		1.60E+02		2.00E-03	I		
dimethylbenzidine;3,3'-	119-93-7			9.09E-02			1.10E+01	P
dimethylformamide;N,N-	68-12-2		8.00E+03		1.00E-01	P		
dimethylhydrazine;1,1-	57-14-7		8.00E+00		1.00E-04	X		
dimethylhydrazine;1,2-	540-73-8			1.82E-03			5.50E+02	C
dimethylphenol;2,4-	105-67-9		1.60E+03		2.00E-02	I		
dimethylphenol;2,6-	576-26-1		4.80E+01		6.00E-04	I		
dimethylphenol;3,4-	95-65-8		8.00E+01		1.00E-03	I		
dinitrobenzene;m-	99-65-0		8.00E+00		1.00E-04	I		
dinitrobenzene;o-	528-29-0		8.00E+00		1.00E-04	P		
dinitrobenzene;p-	100-25-4		8.00E+00		1.00E-04	P		
dinitro-o-cyclohexyl phenol;4,6-	131-89-5		1.60E+02		2.00E-03	I		
dinitrophenol;2,4-	51-28-5		1.60E+02		2.00E-03	I		
dinitrotoluene mixture; 2,4-/2,6-	25321-14-6		7.20E+01	2.22E+00	9.00E-04	X	4.50E-01	X
dinitrotoluene;2,4-	121-14-2		1.60E+02	3.23E+00	2.00E-03	I	3.10E-01	C
dinitrotoluene;2,6-	606-20-2		2.40E+01	6.67E-01	3.00E-04	X	1.50E+00	P
di-n-octyl phthalate	117-84-0		8.00E+02		1.00E-02	P		
dinoseb	88-85-7		8.00E+01		1.00E-03	I		
dioxane;1,4-	123-91-1		2.40E+03	1.00E+01	3.00E-02	I	1.00E-01	I
diphenamid	957-51-7		2.40E+03		3.00E-02	I		
diphenylamine	122-39-4		2.00E+03		2.50E-02	I		
diphenylhydrazine;1,2-	122-66-7			1.25E+00			8.00E-01	I
diquat	85-00-7		1.76E+02		2.20E-03	I		
direct black 38	1937-37-7			1.35E-01			7.40E+00	C
direct blue 6	2602-46-2			1.35E-01			7.40E+00	C
direct brown 95	16071-86-6			1.49E-01			6.70E+00	C
direct sky blue	2610-05-1							
disulfoton	298-04-4		3.20E+00		4.00E-05	I		
dithiane;1,4-	505-29-3		8.00E+02		1.00E-02	I		
diuron	330-54-1		1.60E+02		2.00E-03	I		
dodine	2439-10-3		3.20E+02		4.00E-03	I		
endosulfan	115-29-7		4.80E+02		6.00E-03	I		
endothall	145-73-3		1.60E+03		2.00E-02	I		
endrin	72-20-8		2.40E+01		3.00E-04	I		
epichlorohydrin	106-89-8		4.80E+02	1.01E+02	6.00E-03	P	9.90E-03	I

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
epoxybutane	106-88-7							
ethephon	16672-87-0		4.00E+02		5.00E-03	I		
ethion	563-12-2		4.00E+01		5.00E-04	I		
ethoxyethanol acetate;2-	111-15-9		8.00E+03		1.00E-01	P		
ethoxyethanol;2-	110-80-5		7.20E+03		9.00E-02	P		
ethyl acetate	141-78-6		7.20E+04		9.00E-01	I		
ethyl acrylate	140-88-5			2.08E+01			4.80E-02	H
ethyl chloride	75-00-3							
ethyl dipropylthiocarbamate;S-	759-94-4		2.00E+03		2.50E-02	I		
ethyl ether	60-29-7		1.60E+04		2.00E-01	I		
ethyl methacrylate	97-63-2		7.20E+03		9.00E-02	H		
ethyl p-nitrophenyl phenylphosphorothioate	2104-64-5		8.00E-01		1.00E-05	I		
ethylbenzene	100-41-4	6.00E+00	8.00E+03		1.00E-01	I		
ethylene cyanohydrin	109-78-4		5.60E+03		7.00E-02	P		
ethylene diamine	107-15-3		7.20E+03		9.00E-02	P		
ethylene dibromide (EDB)	106-93-4	5.00E-03	7.20E+02	5.00E-01	9.00E-03	I	2.00E+00	I
ethylene glycol	107-21-1		1.60E+05		2.00E+00	I		
ethylene glycol monobutyl ether (EGBE)	111-76-2		8.00E+03		1.00E-01	I		
ethylene oxide	75-21-8			3.23E+00			3.10E-01	C
ethylene thiourea	96-45-7		6.40E+00	2.22E+01	8.00E-05	I	4.50E-02	C
ethylphthalyl ethylglycolate	84-72-0		2.40E+05		3.00E+00	I		
express	101200-48-0		6.40E+02		8.00E-03	I		
fenamiphos	22224-92-6		2.00E+01		2.50E-04	I		
fensulfothion	115-90-2							
fluometuron	2164-17-2		1.04E+03		1.30E-02	I		
fluoranthene	206-44-0		3.20E+03		4.00E-02	I		
fluorene	86-73-7		3.20E+03		4.00E-02	I		
fluoride	16984-48-8		3.20E+03		4.00E-02	C		
fluorine, soluble fluoride	7782-41-4		4.80E+03		6.00E-02	I		
fluridone	59756-60-4		6.40E+03		8.00E-02	I		
flurprimidol	56425-91-3		1.60E+03		2.00E-02	I		
flutolanil	66332-96-5		4.80E+03		6.00E-02	I		
fluvalinate	69409-94-5		8.00E+02		1.00E-02	I		
folpet	133-07-3		8.00E+03	2.86E+02	1.00E-01	I	3.50E-03	I
fomesafen	72178-02-0			5.26E+00			1.90E-01	I
fonfos	944-22-9		1.60E+02		2.00E-03	I		
formaldehyde	50-00-0		1.60E+04		2.00E-01	I		
formic acid	64-18-6		7.20E+04		9.00E-01	P		
fosetyl-al	39148-24-8		2.40E+05		3.00E+00	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
furan	110-00-9		8.00E+01		1.00E-03	I		
furazolidone	67-45-8			2.63E-01			3.80E+00	H
furfural	98-01-1		2.40E+02		3.00E-03	I		
furium	531-82-8			6.67E-01			1.50E+00	C
furmecyclox	60568-05-0			3.33E+01			3.00E-02	I
glufosinate-ammonium	77182-82-2		3.20E+01		4.00E-04	I		
glycidaldehyde	765-34-4		3.20E+01		4.00E-04	I		
glyphosate	1071-83-6		8.00E+03		1.00E-01	I		
gross alpha particle activity	unavailable20							
gross beta particle activity	unavailable21							
haloxyfop-methyl	69806-40-2		4.00E+00		5.00E-05	I		
harmony	79277-27-3		1.04E+03		1.30E-02	I		
heptachlor	76-44-8		4.00E+01	2.22E-01	5.00E-04	I	4.50E+00	I
heptachlor epoxide	1024-57-3		1.04E+00	1.10E-01	1.30E-05	I	9.10E+00	I
heptane;n-	142-82-5							
hexabromobenzene	87-82-1		1.60E+02		2.00E-03	I		
hexabromodiphenyl ether; 2,2',4,4',5,5'-	68631-49-2		1.60E+01		2.00E-04	I		
hexachlorobenzene	118-74-1		6.40E+01	6.25E-01	8.00E-04	I	1.60E+00	I
hexachlorobutadiene	87-68-3		8.00E+01	1.28E+01	1.00E-03	P	7.80E-02	I
hexachlorocyclohexane;alpha	319-84-6		6.40E+02	1.59E-01	8.00E-03	A	6.30E+00	I
hexachlorocyclohexane;beta-	319-85-7			5.56E-01			1.80E+00	I
hexachlorocyclohexane;delta-	319-86-8							
hexachlorocyclohexane;technical	608-73-1			5.56E-01			1.80E+00	I
hexachlorocyclopentadiene	77-47-4		4.80E+02		6.00E-03	I		
hexachlorodibenzo-p-dioxin, mixture	19408-74-3			1.61E-04			6.20E+03	I
hexachloroethane	67-72-1		5.60E+01	2.50E+01	7.00E-04	I	4.00E-02	I
hexachlorophene	70-30-4		2.40E+01		3.00E-04	I		
hexamethylene diisocyanate;1,6-	822-06-0							
hexane;n-	110-54-3		4.80E+03		6.00E-02	H		
hexazinone	51235-04-2		2.64E+03		3.30E-02	I		
hydrazine	302-01-2			3.33E-01			3.00E+00	I
hydrazine sulfate	10034-93-2			3.33E-01			3.00E+00	I
hydrogen chloride	7647-01-0							
hydrogen cyanide	74-90-8		4.80E+01		6.00E-04	I		
hydrogen sulfide	7783-06-4							
hydroquinone	123-31-9		3.20E+03	1.67E+01	4.00E-02	P	6.00E-02	P
imazalil	35554-44-0		1.04E+03		1.30E-02	I		
imazaquin	81335-37-7		2.00E+04		2.50E-01	I		
indeno[1,2,3-cd]pyrene	193-39-5			1.37E+00			7.30E-01	E

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
iprodione	36734-19-7		3.20E+03		4.00E-02	I		
iron	7439-89-6		5.60E+04		7.00E-01	P		
isobutyl alcohol	78-83-1		2.40E+04		3.00E-01	I		
isophorone	78-59-1		1.60E+04	1.05E+03	2.00E-01	I	9.50E-04	I
isopropalin	33820-53-0		1.20E+03		1.50E-02	I		
isopropyl methyl phosphonic acid	1832-54-8		8.00E+03		1.00E-01	I		
isoxaben (not in HSDB)	82558-50-7		4.00E+03		5.00E-02	I		
lactofen	77501-63-4		1.60E+02		2.00E-03	I		
lead	7439-92-1	2.50E+02						
lead alkyls	unavailable02							
lindane	58-89-9	1.00E-02	2.40E+01	9.09E-01	3.00E-04	I	1.10E+00	C
linuron	330-55-2		1.60E+02		2.00E-03	I		
lithium perchlorate	7791-03-9		5.60E+01		7.00E-04	I		
londax	83055-99-6		1.60E+04		2.00E-01	I		
malathion	121-75-5		1.60E+03		2.00E-02	I		
maleic anhydride	108-31-6		8.00E+03		1.00E-01	I		
maleic hydrazide	123-33-1		4.00E+04		5.00E-01	I		
malononitrile	109-77-3		8.00E+00		1.00E-04	P		
mancozeb	8018-01-7		2.40E+03		3.00E-02	H		
maneb	12427-38-2		4.00E+02		5.00E-03	I		
manganese	7439-96-5		1.12E+04		1.40E-01	I		
mephosfolan	950-10-7		7.20E+00		9.00E-05	H		
mepiquat chloride	24307-26-4		2.40E+03		3.00E-02	I		
mercuric chloride	7487-94-7		2.40E+01		3.00E-04	I		
mercury	7439-97-6	2.00E+00						
merphos	150-50-5		2.40E+00		3.00E-05	I		
metalaxyl	57837-19-1		4.80E+03		6.00E-02	I		
methacrylonitrile	126-98-7		8.00E+00		1.00E-04	I		
methamidosphos	10265-92-6		4.00E+00		5.00E-05	I		
methanol	67-56-1		1.60E+05		2.00E+00	I		
methidathion	950-37-8		8.00E+01		1.00E-03	I		
methomyl	16752-77-5		2.00E+03		2.50E-02	I		
methoxy-5-nitroaniline;2-	99-59-2			2.04E+01			4.90E-02	C
methoxychlor	72-43-5		4.00E+02		5.00E-03	I		
methoxyethanol acetate;2-	110-49-6		6.40E+02		8.00E-03	P		
methoxyethanol;2-	109-86-4		4.00E+02		5.00E-03	P		
methyl acetate	79-20-9		8.00E+04		1.00E+00	X		
methyl acrylate	96-33-3		2.40E+03		3.00E-02	H		
methyl ethyl ketone	78-93-3		4.80E+04		6.00E-01	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
methyl isobutyl ketone	108-10-1		6.40E+03		8.00E-02	H		
methyl mercury	22967-92-6		8.00E+00		1.00E-04	I		
methyl methacrylate	80-62-6		1.12E+05		1.40E+00	I		
methyl naphthalene;1-	90-12-0		5.60E+03	3.45E+01	7.00E-02	A	2.90E-02	P
methyl naphthalene;2-	91-57-6		3.20E+02		4.00E-03	I		
methyl parathion	298-00-0		2.00E+01		2.50E-04	I		
methyl styrene	25013-15-4		4.80E+02		6.00E-03	H		
methyl styrene, alpha	98-83-9		5.60E+03		7.00E-02	H		
methyl tert-butyl ether	1634-04-4	1.00E-01		5.56E+02			1.80E-03	C
methyl-4-chlorophenoxy-acetic acid;2-	94-74-6		4.00E+01		5.00E-04	I		
methyl-5-nitroaniline;2-	99-55-8		1.60E+03	1.11E+02	2.00E-02	X	9.00E-03	P
methylaniline hydrochloride;2-	636-21-5			7.69E+00			1.30E-01	C
methylaniline;2-	95-53-4							
methylcyclohexane	108-87-2							
methylene bis(2-chloroaniline);4,4'-	101-14-4		1.60E+02	1.00E+01	2.00E-03	P	1.00E-01	P
methylene bis(n,n'-dimethyl)aniline;4,4'-	101-61-1			2.17E+01			4.60E-02	I
methylene bromide	74-95-3		8.00E+02		1.00E-02	H		
methylene chloride	75-09-2	2.00E-02	4.80E+02	5.00E+02	6.00E-03	I	2.00E-03	I
methylene diphenyl diisocyanate (MDI)	101-68-8							
methylene diphenyl diisocyanate (PMDI)	9016-87-9							
methylenebisbenzenamine;4,4-	101-77-9			6.25E-01			1.60E+00	C
methylhydrazine	60-34-4		8.00E+01		1.00E-03	P		
metolachlor	51218-45-2		1.20E+04		1.50E-01	I		
metribuzin	21087-64-9		2.00E+03		2.50E-02	I		
mevinphos	7786-34-7							
mirex	2385-85-5		1.60E+01	5.56E-02	2.00E-04	I	1.80E+01	C
molinate	2212-67-1		1.60E+02		2.00E-03	I		
molybdenum	7439-98-7		4.00E+02		5.00E-03	I		
monochloramine	10599-90-3		8.00E+03		1.00E-01	I		
monochlorobutanes (not in HSDB)	unavailable03							
naled	300-76-5		1.60E+02		2.00E-03	I		
naphthalene	91-20-3	5.00E+00	1.60E+03		2.00E-02	I		
napropamide	15299-99-7		8.00E+03		1.00E-01	I		
n-butylbenzene	104-51-8		4.00E+03		5.00E-02	P		
niagara blue 4B	2429-74-5							
nickel refinery dust	unavailable04		8.80E+02		1.10E-02	C		
nickel soluble salts	7440-02-0		1.60E+03		2.00E-02	I		
nickel subsulfide	12035-72-2		8.80E+02	5.88E-01	1.10E-02	C	1.70E+00	C
nitrate	14797-55-8		1.28E+05		1.60E+00	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
nitric oxide	10102-43-9							
nitrite	14797-65-0		8.00E+03		1.00E-01	I		
nitroaniline, 2-	88-74-4		8.00E+02		1.00E-02	X		
nitrobenzene	98-95-3		1.60E+02		2.00E-03	I		
nitrofurantoin	67-20-9		5.60E+03		7.00E-02	H		
nitrofurazone	59-87-0			7.69E-01			1.30E+00	C
nitrogen dioxide	10102-44-0							
nitroguanidine	556-88-7		8.00E+03		1.00E-01	I		
nitropropane;2-	79-46-9							
nitrosodiethanolamine;N-	1116-54-7			3.57E-01			2.80E+00	I
nitrosodiethylamine;N-	55-18-5			6.67E-03			1.50E+02	I
nitrosodimethylamine;N-	62-75-9		6.40E-01	1.96E-02	8.00E-06	P	5.10E+01	I
nitroso-di-n-butylamine;N-	924-16-3			1.85E-01			5.40E+00	I
nitroso-di-n-propylamine;N-	621-64-7			1.43E-01			7.00E+00	I
nitrosodiphenylamine;N-	86-30-6			2.04E+02			4.90E-03	I
nitrosomethylvinylamine,n-	4549-40-0							
nitroso-n-ethylurea;n-	759-73-9			3.70E-02			2.70E+01	C
nitroso-N-methylethylamine;N-	10595-95-6			4.55E-02			2.20E+01	I
nitroso-n-methylurea,n-	684-93-5			8.33E-03			1.20E+02	C
nitrosopyrrolidine;N-	930-55-2			4.76E-01			2.10E+00	I
nitrotoluene, m-	99-08-1		8.00E+00		1.00E-04	X		
nitrotoluene, o-	88-72-2		7.20E+01	4.55E+00	9.00E-04	P	2.20E-01	P
nitrotoluene, p-	99-99-0		3.20E+02	6.25E+01	4.00E-03	P	1.60E-02	P
nitrotoluenes;o-,m-,p-	1321-12-6							
norflurazon	27314-13-2		3.20E+03		4.00E-02	I		
nustar	85509-19-9		5.60E+01		7.00E-04	I		
octabromodiphenyl ether	32536-52-0		2.40E+02		3.00E-03	I		
octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	2691-41-0		4.00E+03		5.00E-02	I		
octamethylpyrophosphoramide	152-16-9		1.60E+02		2.00E-03	H		
oryzalin	19044-88-3		4.00E+03		5.00E-02	I		
oxadiazon	19666-30-9		4.00E+02		5.00E-03	I		
oxamyl	23135-22-0		2.00E+03		2.50E-02	I		
oxyfluorfen	42874-03-3		2.40E+02		3.00E-03	I		
paclobutrazol	76738-62-0		1.04E+03		1.30E-02	I		
pah	unavailable05							
paraquat	4685-14-7							
parathion	56-38-2		4.80E+02		6.00E-03	H		
pebulate	1114-71-2		4.00E+03		5.00E-02	H		
pendimethalin	40487-42-1		3.20E+03		4.00E-02	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
pentabromo-6-chloro-cyclohexane;1,2,3,4,5-	87-84-3			4.35E+01			2.30E-02	H
pentabromodiphenyl ether; 2,2',4,4',5-	60348-60-9		8.00E+00		1.00E-04	I		
pentabromodiphenyl ethers	32534-81-9		1.60E+02		2.00E-03	I		
pentachlorobenzene	608-93-5		6.40E+01		8.00E-04	I		
pentachloronitrobenzene	82-68-8		2.40E+02	3.85E+00	3.00E-03	I	2.60E-01	H
pentachlorophenol	87-86-5		4.00E+02	2.50E+00	5.00E-03	I	4.00E-01	I
perchlorate and perchlorate salts	7601-90-3		5.60E+01		7.00E-04	I		
permethrin	52645-53-1		4.00E+03		5.00E-02	I		
perthane	72-56-0							
pH	unavailable19							
phenanthrene	85-01-8							
phenmedipham	13684-63-4		2.00E+04		2.50E-01	I		
phenol	108-95-2		2.40E+04		3.00E-01	I		
phenylenediamine, p-	106-50-3		1.52E+04		1.90E-01	H		
phenylenediamine;m-	108-45-2		4.80E+02		6.00E-03	I		
phenylenediamine;o-	95-54-5			2.13E+01			4.70E-02	H
phenylmercuric acetate	62-38-4		6.40E+00		8.00E-05	I		
phenylphenol;2-	90-43-7			5.26E+02			1.90E-03	H
phorate	298-02-2		1.60E+01		2.00E-04	H		
phosmet	732-11-6		1.60E+03		2.00E-02	I		
phosphine	7803-51-2		2.40E+01		3.00E-04	I		
phosphoric acid	7664-38-2		3.92E+06		4.90E+01	P		
phosphorus	7723-14-0		1.60E+00		2.00E-05	I		
phthalic acid;p-	100-21-0		8.00E+04		1.00E+00	H		
phthalic anhydride	85-44-9		1.60E+05		2.00E+00	I		
picloram	1918-02-1		5.60E+03		7.00E-02	I		
pirimiphos-methyl	29232-93-7		8.00E+02		1.00E-02	I		
polybrominated biphenyls	67774-32-7		5.60E-01	3.33E-02	7.00E-06	H	3.00E+01	C
polychlorinated biphenyls (PCBs)	1336-36-3	1.00E+00		5.00E-01			2.00E+00	I
potassium cyanide	151-50-8		1.60E+02		2.00E-03	I		
potassium perchlorate	7778-74-7		5.60E+01		7.00E-04	I		
potassium silver cyanide	506-61-6		4.00E+02		5.00E-03	I		
prochloraz (not in HSDB)	67747-09-5		7.20E+02	6.67E+00	9.00E-03	I	1.50E-01	I
profluralin	26399-36-0		4.80E+02		6.00E-03	H		
prometon	1610-18-0		1.20E+03		1.50E-02	I		
prometryn	7287-19-6		3.20E+02		4.00E-03	I		
pronamide	23950-58-5		6.00E+03		7.50E-02	I		
propachlor	1918-16-7		1.04E+03		1.30E-02	I		
propanil	709-98-8		4.00E+02		5.00E-03	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
propargite	2312-35-8		1.60E+03		2.00E-02	I		
propargyl alcohol	107-19-7		1.60E+02		2.00E-03	I		
propazine	139-40-2		1.60E+03		2.00E-02	I		
propham	122-42-9		1.60E+03		2.00E-02	I		
propiconazole	60207-90-1		1.04E+03		1.30E-02	I		
propionic acid;(2-methyl-4-chlorophenoxy)2-	93-65-2		8.00E+01		1.00E-03	I		
propylbenzene;n-	103-65-1		8.00E+03		1.00E-01	X		
propylene glycol	57-55-6		1.60E+06		2.00E+01	P		
propylene glycol dinitrate;1,2-	6423-43-4							
propylene glycol monoethyl ether	52125-53-8		5.60E+04		7.00E-01	H		
propylene glycol monomethyl ether	107-98-2		5.60E+04		7.00E-01	H		
propylene oxide	75-56-9			4.17E+00			2.40E-01	I
pursuit	81335-77-5		2.00E+04		2.50E-01	I		
pydrin	51630-58-1		2.00E+03		2.50E-02	I		
pyrene	129-00-0		2.40E+03		3.00E-02	I		
pyridine	110-86-1		8.00E+01		1.00E-03	I		
quinalphos	13593-03-8		4.00E+01		5.00E-04	I		
quinoline	91-22-5			3.33E-01			3.00E+00	I
radium 226	unavailable24							
radium 226 and 228	unavailable23							
rdx	121-82-4		2.40E+02	9.09E+00	3.00E-03	I	1.10E-01	I
refractory ceramic fibers	unavailable07							
resmethrin	10453-86-8		2.40E+03		3.00E-02	I		
ronnel	299-84-3		4.00E+03		5.00E-02	H		
rotenone	83-79-4		3.20E+02		4.00E-03	I		
s,s,s-Tributylphosphorotrithioate	78-48-8		2.40E+00		3.00E-05	I		
savey	78587-05-0		2.00E+03		2.50E-02	I		
sec-butylbenzene	135-98-8		8.00E+03		1.00E-01	X		
selenious acid	7783-00-8		4.00E+02		5.00E-03	I		
selenium and compounds	7782-49-2		4.00E+02		5.00E-03	I		
selenourea	630-10-4							
sethoxydim	74051-80-2		7.20E+03		9.00E-02	I		
silver	7440-22-4		4.00E+02		5.00E-03	I		
silver cyanide	506-64-9		8.00E+03		1.00E-01	I		
simazine	122-34-9		4.00E+02	8.33E+00	5.00E-03	I	1.20E-01	H
sodium azide	26628-22-8		3.20E+02		4.00E-03	I		
sodium cyanide	143-33-9		8.00E+01		1.00E-03	I		
sodium diethyldithiocarbamate	148-18-5		2.40E+03	3.70E+00	3.00E-02	I	2.70E-01	H
sodium fluoroacetate	62-74-8		1.60E+00		2.00E-05	I		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
sodium metavanadate	13718-26-8		8.00E+01		1.00E-03	H		
sodium perchlorate	7601-89-0		5.60E+01		7.00E-04	I		
strontium	7440-24-6		4.80E+04		6.00E-01	I		
strychnine	57-24-9		2.40E+01		3.00E-04	I		
styrene	100-42-5		1.60E+04		2.00E-01	I		
sulfate	unavailable17							
systhane	88671-89-0		2.00E+03		2.50E-02	I		
tcdd;2,3,7,8- (Low organic) (dioxin)	1746-01-6		9.30E-05	1.28E-05	7.00E-10	I	1.30E+05	C
tebuthiuron	34014-18-1		5.60E+03		7.00E-02	I		
temephos	3383-96-8		1.60E+03		2.00E-02	H		
terbacil	5902-51-2		1.04E+03		1.30E-02	I		
terbufos	13071-79-9		2.00E+00		2.50E-05	H		
terbutryn	886-50-0		8.00E+01		1.00E-03	I		
tert-butylbenzene	98-06-6		8.00E+03		1.00E-01	X		
tetrabromodiphenyl ether 2,2',4,4'	5436-43-1		8.00E+00		1.00E-04	I		
tetrachlorobenzene;1,2,4,5-	95-94-3		2.40E+01		3.00E-04	I		
tetrachloroethane;1,1,1,2-	630-20-6		2.40E+03	3.85E+01	3.00E-02	I	2.60E-02	I
tetrachloroethane;1,1,2,2-	79-34-5		1.60E+03	5.00E+00	2.00E-02	I	2.00E-01	I
tetrachloroethylene (PCE)	127-18-4	5.00E-02	4.80E+02	4.76E+02	6.00E-03	I	2.10E-03	I
tetrachlorophenol;2,3,4,6-	58-90-2		2.40E+03		3.00E-02	I		
tetrachlorotoluene;p,a,a,a,-	5216-25-1			5.00E-02			2.00E+01	H
tetrachlorvinphos	961-11-5		2.40E+03	4.17E+01	3.00E-02	I	2.40E-02	H
tetraethyl dithiopyrophosphate	3689-24-5		4.00E+01		5.00E-04	I		
tetraethyl lead	78-00-2		8.00E-03		1.00E-07	I		
tetrafluoroethane;1,1,1,2-	811-97-2							
thallic oxide	1314-32-5							
thallium acetate	563-68-8		4.80E-01		6.00E-06	X		
thallium carbonate	6533-73-9		1.60E+00		2.00E-05	X		
thallium chloride	7791-12-0		4.80E-01		6.00E-06	X		
thallium nitrate	10102-45-1		5.60E-01		7.00E-06	X		
thallium selenite	12039-52-0							
thallium(I) sulfate	7446-18-6		1.60E+00		2.00E-05	X		
thallium, soluble salts	7440-28-0		8.00E-01		1.00E-05	X		
thiobencarb	28249-77-6		8.00E+02		1.00E-02	I		
thiocyanomethylthiobenzothiazole;2-	21564-17-0		2.40E+03		3.00E-02	H		
thiofanox	39196-18-4		2.40E+01		3.00E-04	H		
thiophanate-methyl	23564-05-8		6.40E+03		8.00E-02	I		
thiram	137-26-8		4.00E+02		5.00E-03	I		
tin	7440-31-5		4.80E+04		6.00E-01	H		

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
tnt	118-96-7		4.00E+01	3.33E+01	5.00E-04	I	3.00E-02	I
toluene	108-88-3	7.00E+00	6.40E+03		8.00E-02	I		
toluene diisocyanate mixture;2,4-/2,6-	26471-62-5							
toluenediamine;2,4-	95-80-7							
toluenediamine;2,5-	95-70-5		1.60E+01	5.56E+00	2.00E-04	X	1.80E-01	X
toluenediamine;2,6-	823-40-5							
toluidine;p-	106-49-0		3.20E+02	3.33E+01	4.00E-03	X	3.00E-02	P
total dissolved solids	unavailable18							
toxaphene	8001-35-2			9.09E-01			1.10E+00	I
tp;2,4,5-	93-72-1		6.40E+02		8.00E-03	I		
tph, diesel range organics	unavailable09	2.00E+03						
tph, heavy oils	unavailable10	2.00E+03						
tph, mineral oil	unavailable11	4.00E+03						
tph: gasoline range organics, benzene present*	unavailable25	3.00E+01						
tph: gasoline range organics, no detectable benzene*	unavailable08	1.00E+02						
tralomethrin	66841-25-6		6.00E+02		7.50E-03	I		
triallate	2303-17-5		1.04E+03		1.30E-02	I		
triasulfuron	82097-50-5		8.00E+02		1.00E-02	I		
tribromobenzene;1,2,4-	615-54-3		4.00E+02		5.00E-03	I		
tributyltin oxide	56-35-9		2.40E+01		3.00E-04	I		
trichloro-1,2,2-trifluoroethane;1,1,2-	76-13-1		2.40E+06		3.00E+01	I		
trichloroaniline hydrochloride;2,4,6-	33663-50-2			3.45E+01			2.90E-02	H
trichloroaniline;2,4,6-	634-93-5		2.40E+00	1.43E+02	3.00E-05	X	7.00E-03	X
trichlorobenzene;1,2,4-	120-82-1		8.00E+02	3.45E+01	1.00E-02	I	2.90E-02	P
trichloroethane;1,1,1-	71-55-6	2.00E+00	1.60E+05		2.00E+00	I		
trichloroethane;1,1,2-	79-00-5		3.20E+02	1.75E+01	4.00E-03	I	5.70E-02	I
trichloroethylene (TCE)	79-01-6	3.00E-02	4.00E+01	1.20E+01	5.00E-04	I	Guidance	I
trichlorofluoromethane	75-69-4		2.40E+04		3.00E-01	I		
trichlorophenol;2,4,5-	95-95-4		8.00E+03		1.00E-01	I		
trichlorophenol;2,4,6-	88-06-2		8.00E+01	9.09E+01	1.00E-03	P	1.10E-02	I
trichlorophenoxyacetic acid;2,4,5-	93-76-5		8.00E+02		1.00E-02	I		
trichloropropane;1,1,2-	598-77-6		4.00E+02		5.00E-03	I		
trichloropropane;1,2,3-	96-18-4		3.20E+02	3.33E-02	4.00E-03	I	3.00E+01	I
trichloropropene;1,2,3-	96-19-5		2.40E+02		3.00E-03	X		
tridiphane	58138-08-2		2.40E+02		3.00E-03	I		
triethylamine	121-44-8							
trifluralin	1582-09-8		6.00E+02	1.30E+02	7.50E-03	I	7.70E-03	I
trihalomethanes, total (TTHMs)	unavailable13							
trimethyl phosphate	512-56-1		8.00E+02	5.00E+01	1.00E-02	P	2.00E-02	P

Chemical Name	CAS #	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Non cancer (mg/kg)	Soil Method B Cancer (mg/kg)	RfDo Oral Reference Dose (mg/kg-day)	Source	CPFo Oral Cancer Potency Factor (kg-day/mg)	Source
trimethylbenzene;1,2,4-	95-63-6							
trimethylbenzene;1,3,5-	108-67-8		8.00E+02		1.00E-02	X		
trinitrobenzene;1,3,5-	99-35-4		2.40E+03		3.00E-02	I		
trinitrophenylmethylnitramine	479-45-8		1.60E+02		2.00E-03	P		
uranium, soluble salts	unavailable12		2.40E+02		3.00E-03	I		
vanadium	7440-62-2		4.00E+02		5.00E-03	S		
vanadium pentoxide	1314-62-1		7.20E+02		9.00E-03	I		
vanadyl sulfate	27774-13-6							
vernam	1929-77-7		8.00E+01		1.00E-03	I		
vinclozolin	50471-44-8		2.00E+03		2.50E-02	I		
vinyl acetate	108-05-4		8.00E+04		1.00E+00	H		
vinyl chloride	75-01-4		2.40E+02	Guidance	3.00E-03	I	Guidance	I
warfarin	81-81-2		2.40E+01		3.00E-04	I		
white mineral oil	8012-95-1		2.40E+05		3.00E+00	P		
xylene;m-	108-38-3		1.60E+04		2.00E-01	S		
xylene;o-	95-47-6		1.60E+04		2.00E-01	S		
xylene;p-	106-42-3		1.60E+04		2.00E-01	S		
xylenes	1330-20-7	9.00E+00	1.60E+04		2.00E-01	I		
zinc	7440-66-6		2.40E+04		3.00E-01	I		
zinc cyanide	557-21-1		4.00E+03		5.00E-02	I		
zinc phosphide	1314-84-7		2.40E+01		3.00E-04	I		
zineb	12122-67-7		4.00E+03		5.00E-02	I		

Red Font = Based on Cal-EPA or ATSDR toxicity values

May-14