

ARCO 5810
Bremerton

Release 351922



SUBSURFACE INVESTIGATION REPORT

ARCO Facility No. 5810
2101 6th Street
Bremerton, Washington

Antea Group Project No. 05810EA11A
December 29, 2011

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Subsurface Investigation Report

ARCO Facility No. 5810

2101 6th Street

Bremerton, WA

Antea Group Project No. 05810EA11A

1.0 INTRODUCTION

1.1 Purpose and Scope of Work

Antea™ Group (Antea) conducted a subsurface investigation for Atlantic Richfield Company at ARCO Facility No. 5810 during the second and third quarters of 2011. The objective of the investigation was to characterize the current conditions on the subject property with respect to the presence or absence of petroleum hydrocarbon compounds in the subsurface soils.

The subsurface investigation scope of work included the following:

- Preparing a detailed Site Assessment Work Plan;
- Preparing a Site Health and Safety Plan, Work Risk Assessment and Task Safety Environmental Analysis;
- Identifying subsurface utilities at the site and coordinating investigation activities;
- Advancing three soil borings (AB-1, AB-2, and AB-3) after pre-clearing each location to a minimum of 6.5 feet below ground surface (bgs) using a vacuum truck and air-knife;
- Collecting soil samples and submitting representative samples for quantitative hydrocarbon analyses;
- Analyzing the soil samples for both MTCA Method A and Method B cleanup criteria;
- Interpreting the data obtained; and
- Preparing this report.

1.2 Site Description

The site is an operating ARCO retail gasoline facility bound by 6th Street to the north, 5th Street to the South, Naval Avenue to the east and residential to the west (Figure 1 and Figure 2). The site vicinity is predominantly commercial and residential, and the topography of the site is generally flat. Site features include the station building, six dispenser islands under a single canopy, four underground storage tanks (USTs) and associated fueling system components. The surface of the site is concrete and asphalt with some landscaped areas around the perimeter.

1.3 Former Environmental Activities

Soil sampling was conducted during underground storage tank (UST) replacement activities in 1989. Samples collected from the UST basin indicated petroleum hydrocarbons above the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels. The impacted soil was over-excavated and a confirmatory soil sample indicated the impacts were removed. The results were provided in a correspondence to Ecology from O'Sullivan Construction, Inc., dated July 10, 1989.

Nine soil borings were advanced by Geotech Consultants as part of a geotechnical study prior to site re-construction in March of 1991. Soil samples collected during drilling indicated petroleum hydrocarbons in three of the nine borings at depths ranging from 14 feet to 30 feet below ground surface (bgs) in the northeast corner of the property. The deepest boring depth was 48.5 feet bgs and groundwater was not encountered. Groundwater was estimated by Geotech Consultants at 150 feet bgs. The results were submitted to Ecology in the reports titled *Preliminary Hydrocarbon Evaluation*, dated July 30, 1991 and *Proposed Vapor Extraction System and Cost Estimate*, dated July 30, 1991.

A Soil Vapor Extraction (SVE) system operation and maintenance report submitted by Emcon, dated March 17, 1997, indicated that an SVE system was installed in 1993. According to the report, the SVE system operated in 1993 and then from February of 1995 through July of 1996. The SVE system removed a reported total of 308 gallons of hydrocarbons.

In December of 2000, soil samples collected during facility upgrade activities did not indicate any petroleum hydrocarbons above MTCA Method A cleanup levels. The results were provided by Secor International, Inc. in a report entitled *Results of Soil Sampling Report*, dated January 10, 2001.

In September of 2005, soil samples were collected beneath two dispenser islands that were being added to the facility. The results did not indicate petroleum hydrocarbons in any of the soil samples collected as reported by Delta Consultants in a document entitled *Environmental Oversight during Retail Facility Upgrade Activities*, dated February 27, 2006.

Groundwater was not encountered during any historical activities conducted at the site. The maximum depth historically explored was 48.5 feet bgs.

2.0 PROJECT ACTIVITIES

2.1 Drilling and Soil Sampling

The current subsurface investigation involved advancing a total of three soil borings (AB-1, AB-2 and AB-3) to a maximum depth of 51.5 feet bgs. The boring locations are shown on the Site Map (Figure 3).

Cascade Drilling, Inc. (Cascade), of Woodinville, Washington advanced the borings on May 10 and 11, 2011. Cascade cleared the boring locations with a vacuum truck and air knife to a minimum depth of 6.5 feet bgs on May 10, 2011. All five foot soil samples were collected using a hand auger advanced into the undisturbed soil ahead of the pre-cleared boring. Additional soil samples were collected at five foot intervals with a 2.5 inch diameter split spoon soil sampler driven ahead of the drilling augers. Both the hand auger and soil sampler were washed with soap and water followed by a clean water rinse before each use.

Soil samples were collected to characterize subsurface lithology and obtain samples for chemical analyses. An Antea geologist observed and logged the borings using the Unified Soil Classification System. Discreet soil samples were collected for analytical testing. After collection, each soil sample was field screened for the presence of volatile organic compounds with a photoionization detector (PID) to facilitate selecting representative soil samples for chemical analysis. A total of eleven soil samples were submitted to TestAmerica Analytical Laboratories (TestAmerica) of Fife, Washington for quantitative chemical analysis.

The field procedures used during the investigation are provided in Appendix A. Boring logs describing soil horizons, sample recovery and PID screening values are presented in Appendix B. The laboratory analytical report is included 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 on site. The drums were securely sealed and stored in a location designated by the station manager. Cemex of Everett, Washington transported the soil cuttings and decontamination water to their facility for thermal treatment and disposal. The soil and decontamination water disposal documents are included in Appendix D.

3.0 PROJECT RESULTS

3.1 Regional Hydrogeologic Conditions

The site is located within an area that has been geologically mapped as Vashon Till as shown on the Washington State Department of Natural Resources *Geologic Map of Washington State-2006*. The area is located in the Puget Sound Lowland geomorphic province, which consists mainly of glacially-deposited sediments. The Puget Sound Lowland is a basin lying between the Cascade Mountains to the east and the Olympic Mountains (coastal range) to the west. At least five major advances of continental glacial ice have been identified as having occurred in the Puget Sound Lowland. Geologic units resulting from these glacial events include complex sequences of lacustrine deposits, advance outwash, glaciomarine drift, till, and recessional outwash. More recent erosional processes have deposited alluvial sand and gravel, primarily along river valleys.

The site vicinity is underlain by Vashon Till, which is a Pleistocene continental glacial drift consisting mainly of gravelly, sandy silt to silty sand with varied quantities of clay and scattered cobbles and boulders. This dense till is commonly referred to as “hardpan” in drilling and construction documents.

3.2 Subsurface Lithologic Conditions

Antea observed a mixture of silty sands and poorly-graded sands in each boring. A more detailed description of the material is presented on the soil boring logs in Appendix B and in Geologic Cross Section A-A' (Figure 4).

3.3 Quantitative Soil Analyses

Antea collected a total of eleven soil samples from the three soil borings. TestAmerica analyzed the soil samples for the presence of gasoline range hydrocarbons by NWTPH-Gx; diesel and oil range hydrocarbons by NWTPH-Dx with silica gel cleanup; benzene, toluene, ethylbenzene and total xylenes (BTEX), methyl tert-butyl ether (MTBE), 1,2 Dibromoethane (EDB), and 1,2-Dichloroethane (EDC) by EPA Method 8260B; and total lead by EPA Method 6020.

Quantitative laboratory analysis detected petroleum hydrocarbons above MTCA Method A clean-up levels in only one of the eleven soil samples collected from soil boring AB-3 at 25 feet bgs. Benzene was detected at 1.7 milligrams per kilogram (mg/kg); toluene was detected at 77 mg/kg; ethyl benzene was detected at 110 mg/kg; total xylenes were detected at 550 mg/kg; and gasoline range hydrocarbons were detected at 8,000 mg/kg. The results of the soil analyses are summarized in Table 1 and on Figure 5. The laboratory analytical report is included in Appendix C.

For MTCA Method B calculations, TestAmerica analyzed four of the eleven soil samples for extractable petroleum hydrocarbons by NWTPH/EPH; volatile petroleum hydrocarbons by NWTPH/VPH; and Naphthalenes by EPA Method 8270C. The results of the additional soil analyses are summarized in Table 2 and included in Appendix C.

3.4 Method B Summary

Due to the nature of the site conditions and the limited, confined residual soil impacts, MTCA Method B was used to calculate alternative site specific cleanup levels. Ecology's MTCA TPH spreadsheet was utilized to calculate soil cleanup levels based on the median concentration of 3 soil samples (Appendix E - Table 2). For the vapor intrusion pathway, a vapor attenuation factor (VAF) of 10,000 was assumed. Cleanup levels are based on the non-carcinogen Hazard Index (HI) = 1. The following adjustments were made to the soil data set:

- Non-detect (ND) values were assigned a value of half the reporting limit.
- Ethylbenzene and Xylene results were subtracted from the AR EC 8-10 fraction ("double counting").
- Naphthalene results were subtracted from AR EC 12-16 fraction ("double counting").

Per Ecology guidance, in order to achieve Method B site specific cleanup levels for site closure potential, soil-to-groundwater (leaching) cleanup levels must be achieved. The TPH cleanup level calculation for soil-to-groundwater (leaching) pathway was 24 mg/kg, which is lower than Ecology's MTCA Method A cleanup level of 30 mg/kg. The calculations are not favorable for using Method B cleanup criteria due to the fact that only one sample had

elevated hydrocarbon levels. The median calculation using the other soil sample results at one half of the laboratory reporting limits skewed the calculated results to lower than standard Method A cleanup levels. The Method B Calculations are included in Appendix E for reference.

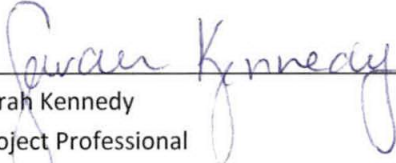
4.0 CONCLUSIONS

Three soil borings were advanced at ARCO Facility No. 5810 on May 10 and 11, 2011 and eleven soil samples were submitted to TestAmerica for chemical analyses. Quantitative laboratory analyses detected petroleum hydrocarbons above MTCA Method A clean-up levels in one soil sample collected from boring AB-3 at 25 feet bgs and in one soil sample collected from boring AB-2 at 50 feet bgs. Groundwater was not encountered to the maximum depth investigated of 51.5 feet bgs.

Additional analyses were conducted to assess potential MTCA Method B site specific cleanup levels for site closure using the median of representative soil samples. The calculated TPH site cleanup level by Ecology's Method B criteria was not favorable based on the limited data points available and the single soil sample with elevated hydrocarbon concentrations. Historical and current soil sampling results at this site indicate one localized area with residual soil concentrations above MTCA Method A cleanup levels, northeast of the dispenser islands with no identified exposure pathways.

5.0 REMARKS

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

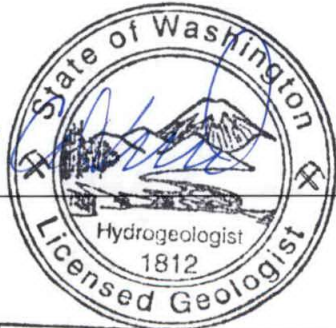


Sarah Kennedy
Project Professional

Reviewed by:



Markham Hurd, L.G.
Consultant



Markham Carroll Hurd

Tables

Table 1	Summary of Soil Analytical Data
Table 2	Summary of Soil Analytical Data – VPH/EPH

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
ARCO FACILITY NO. 5810
2101 6TH ST
BREMERTON, WASHINGTON

Sample ID	Date Sampled	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	1,2 Dibromoethane (mg/kg)	1,2 Dichloroethane (mg/kg)	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)	Total Lead (mg/kg)	Comments
AB-1-20.0	5/11/2011	20.0	<0.015	<0.036	<0.036	<0.036	<0.00094	<0.00094	<0.00094	<3.6	<27	<53	2.2	
AB-1-50.0	5/11/2011	50.0	<0.016	<0.039	<0.039	<0.039	<0.0011	<0.0011	<0.0011	<3.9	<26	<53	1.7	
AB-2-20.0	5/10/2011	20.0	<0.016	<0.040	<0.040	<0.040	<0.0011	<0.0011	<0.0011	8.3	<26	<52	6.4	
AB-2-30.0	5/10/2011	30.0	<0.015	<0.036	<0.036	0.069	<0.0011	<0.0011	<0.0011	18	<27	<54	2.3	
AB-2-40.0	5/10/2011	40.0	<0.015	<0.037	<0.037	<0.037	<0.0011	<0.0011	<0.0011	16	<26	<53	1.8	
AB-2-50.0	5/10/2011	50.0	<0.026	<0.066	<0.066	<0.066	<0.00087	<0.00087	<0.00087	68	<26	<52	2.0	
AB-3-15.0	5/10/2011	15.0	<0.014	<0.035	<0.035	<0.035	<0.00082	<0.00082	<0.00082	8.0	<27	<54	12	
AB-3-25.0	5/10/2011	25.0	1.7	77	110	550	<1.9	<0.76	<0.76	8,000	1,300	<57	12	
AB-3-30.0	5/10/2011	30.0	<0.018	0.21	0.15	0.83	<0.0012	<0.0012	<0.0012	7.5	<29	<57	1.9	
AB-3-40.0	5/10/2011	40.0	<0.015	0.043	0.11	0.68	<0.00099	<0.00099	<0.00099	16	<27	<54	2.9	
AB-3-50.0	5/10/2011	50.0	<0.015	<0.038	<0.038	0.076	<0.00096	<0.00096	<0.00096	<3.8	<26	<53	2.2	
MTCA Method A Cleanup Levels			0.03	7.0	6.0	9.0	0.1	0.005	-	100/30*	2,000	2,000	250	

*100 mg/kg if no detectable levels of Benzene in the sample- otherwise 30 mg/kg.

Notes: Benzene, toluene, ethylbenzene, total xylenes, methyl tert-butyl ether (MTBE), 1,2-Dichloroethane (EDC) and 1,2-Dibromoethane (EDC) analyzed by EPA Method 8260B.

TPH-G = Gasoline range hydrocarbons analyzed by the Northwest method NWTPH-Gx.

TPH-D = Diesel range hydrocarbons analyzed by the Northwest method NWTPH-Dx.

TPH-O = Oil range hydrocarbons analyzed by the Northwest method NWTPH-Dx.

Total lead analyzed by EPA Method 6020.

<1.00 = Concentrations were not detected above the method detection limit.

mg/kg = Milligrams per kilogram.

TABLE 2
SUMMARY OF SOIL ANALYTICAL DATA - VPH/EPH
ARCO FACILITY NO. 5810
2101 6TH ST
BREMERTON, WASHINGTON

Sample ID	Date Sampled	Sample Depth (feet)	Volatile and Semivolatile Organic Compounds			
			Hexane (mg/Kg)	Naphthalene (mg/Kg)	1-Methyl naphthalene (mg/Kg)	2-Methyl naphthalene (mg/Kg)
AB-2-30.0	5/10/2011	30.0	<0.0054	<0.022	<0.032	<0.022
AB-2-50.0	5/10/2011	50.0	<0.0043	<0.021	<0.031	<0.021
AB-3-25.0	5/10/2011	25.0	110	38	18	32
AB-3-30.0	5/10/2011	30.0	0.0093	<0.023	<0.034	<0.023

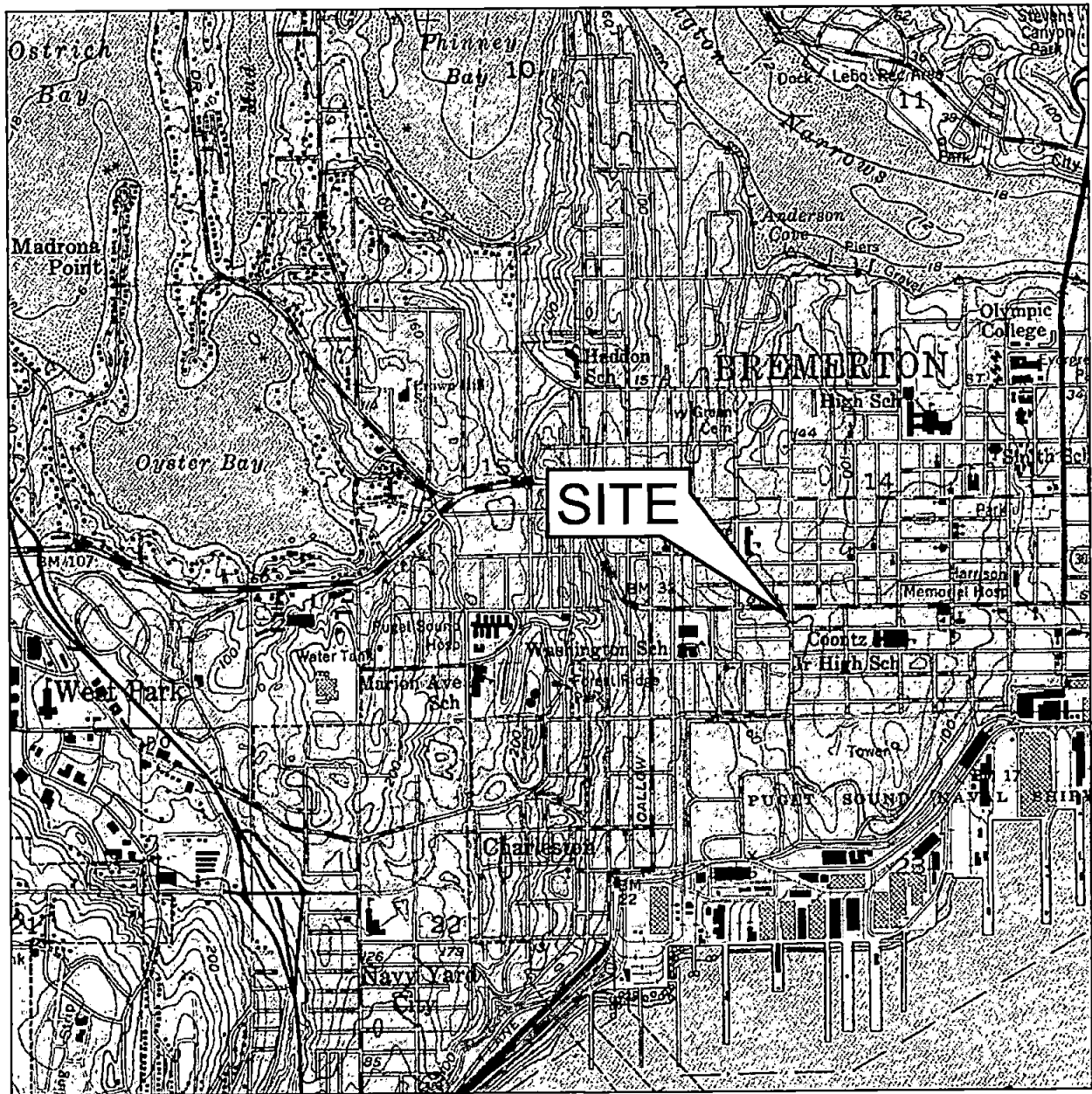
Sample ID Date Sampled Sample Depth (feet)			Volatile Petroleum Hydrocarbons (VPH)							
			C5-C6	C6-C8	C8-C10	C8-C10	C10-C12	C10-C12	C12-C13	Total VPH
			Aliphatics	Aliphatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aromatics	
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
AB-2-30.0	5/10/2011	30.0	<1.8	6.2	7.8	3.9	5.5	4.7	2.9	31
AB-2-50.0	5/10/2011	50.0	<3.3	<3.3	3.6	<3.3	3.8	5.5	4.0	23
AB-3-25.0	5/10/2011	25.0	280	1,100	660	1,200	550	790	<190	4,800
AB-3-30.0	5/10/2011	30.0	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<16

Sample ID Date Sampled Sample Depth (feet)			Extractable Petroleum Hydrocarbons (EPH)							
			C10-C12	C10-C12	C12-C16	C12-C16	C16-C21	C16-C21	C21-C34	C21-C34
			Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
AB-2-30.0	5/10/2011	30.0	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5
AB-2-50.0	5/10/2011	50.0	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3
AB-3-25.0	5/10/2011	25.0	460	170	94	100	<5.8	8.0	<5.8	<5.8
AB-3-30.0	5/10/2011	30.0	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9

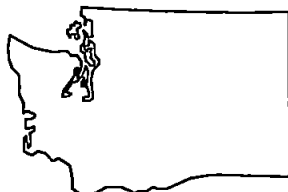
Notes: Hexane analyzed by EPA method 8260B.
Naphthalene, 1-Methylnaphthalene and 2-Methylnaphthalene analyzed by EPA method 8270C.
C5-C6 Aliphatics, C6-C8 Aliphatics, C8-C10 Aliphatics, C8-C10 Aromatics, C10-C12 Aliphatics, C10-C12 Aromatics, C12-C13 Aromatics and Total VPH analyzed by the Northwest method NWTPH/VPH.
C10-C12 Aliphatics, C10-C12 Aromatics, C12-C16 Aliphatics, C12-C16 Aromatics, C16-C21 Aliphatics, C16-C21 Aromatics, C21-C34 Aliphatics and C21-C34 Aromatics analyzed by the Northwest method NWTPH/EPH.
mg/Kg = milligrams per kilograms.
<0.0054 = concentrations were not detected above the method reporting limit.

Figures

- | | |
|----------|---|
| Figure 1 | Site Location Map |
| Figure 2 | Site Aerial Map |
| Figure 3 | Site Map |
| Figure 4 | Geologic Cross Section A-A' |
| Figure 5 | Soil Analytical Data Map – 5/10-11/2011 |



GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 EDMONDS EAST, WA.
 7.5 MINUTE TOPOGRAPHIC
 PHOTOREVISED 1983



QUADRANGLE LOCATION



FIGURE 1

SITE LOCATION MAP

ARCO FACILITY NO. 5810
 2101 6TH STREET
 BREMERTON, WA.

PROJECT NO. 05810DA111	DRAWN BY DGR 3/22/11
FILE NO. Site Locator 5810	PREPARED BY SBM
REVISION NO. 2	REVIEWED BY



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, BREMERTON QUADRANT



GENERAL NOTES:
AERIAL PHOTOGRAPH
DATED 1994

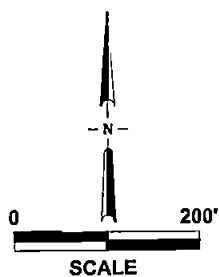


FIGURE 2

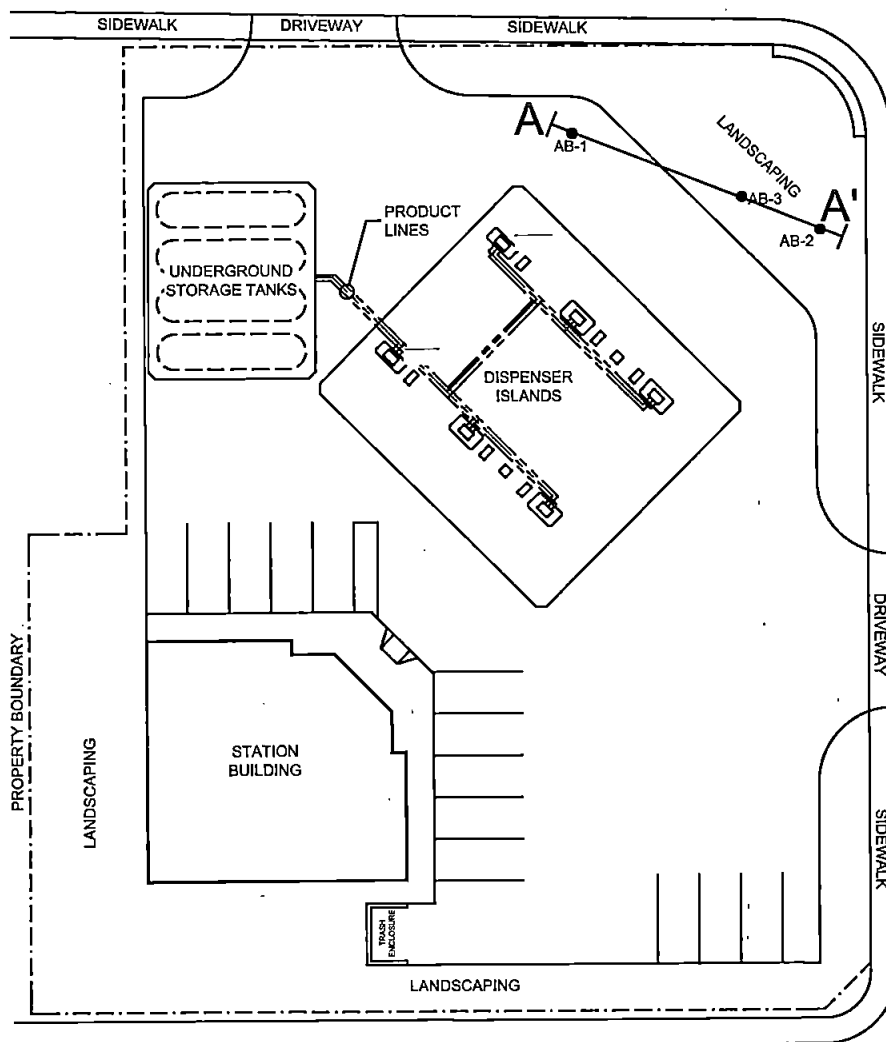
SITE AERIAL MAP

ARCO FACILITY NO. 5810
2101 6th STREET
BREMERTON, WA.

PROJECT NO. 05810DA111	DRAWN BY DGR 3/22/11
FILE NO. 5810-SAM	PREPARED BY SBM
REVISION NO. 1	REVIEWED BY



WEST 6th STREET



LEGEND:

AB-3 ● SOIL BORING LOCATION

A—A' GEOLOGIC CROSS SECTION TRACE



APPROX. SCALE

FIGURE 3
SITE MAP
ARCO FACILITY NO. 5810
2101 6th STREET
BREMERTON, WA.

PROJECT NO.
05810EA112
FILE NO.
AR-5810 -XS
REVISION NO.
2

DRAWN BY
DGR 7/11/11
PREPARED BY
SK
REVIEWED BY



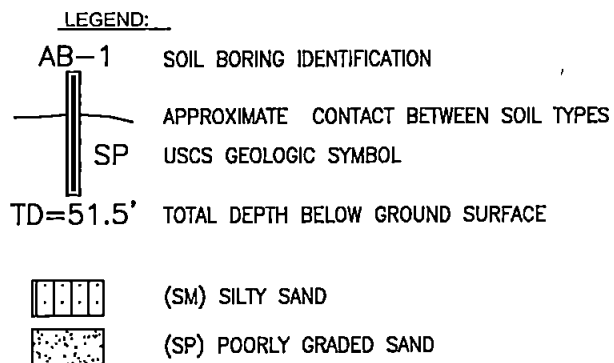
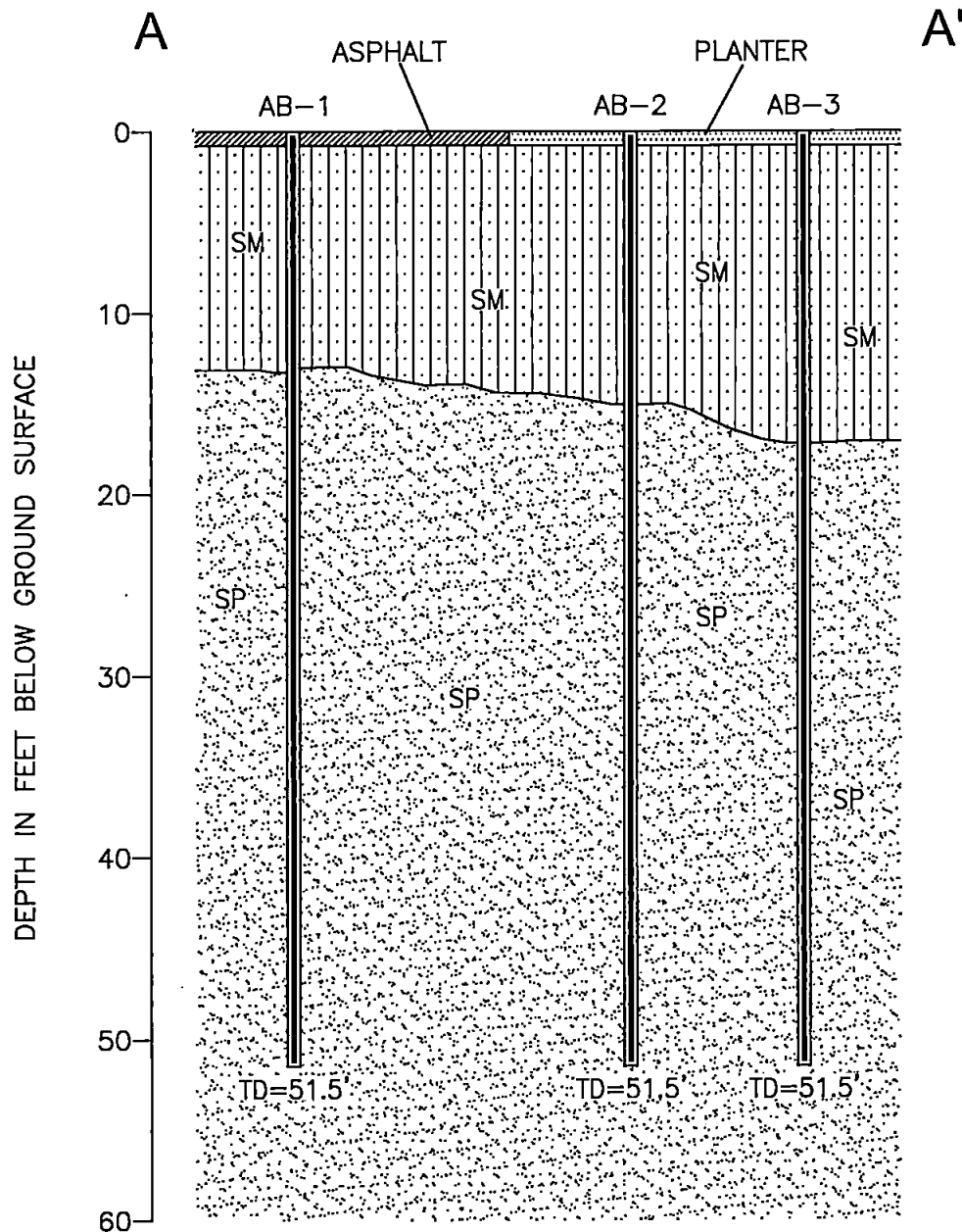
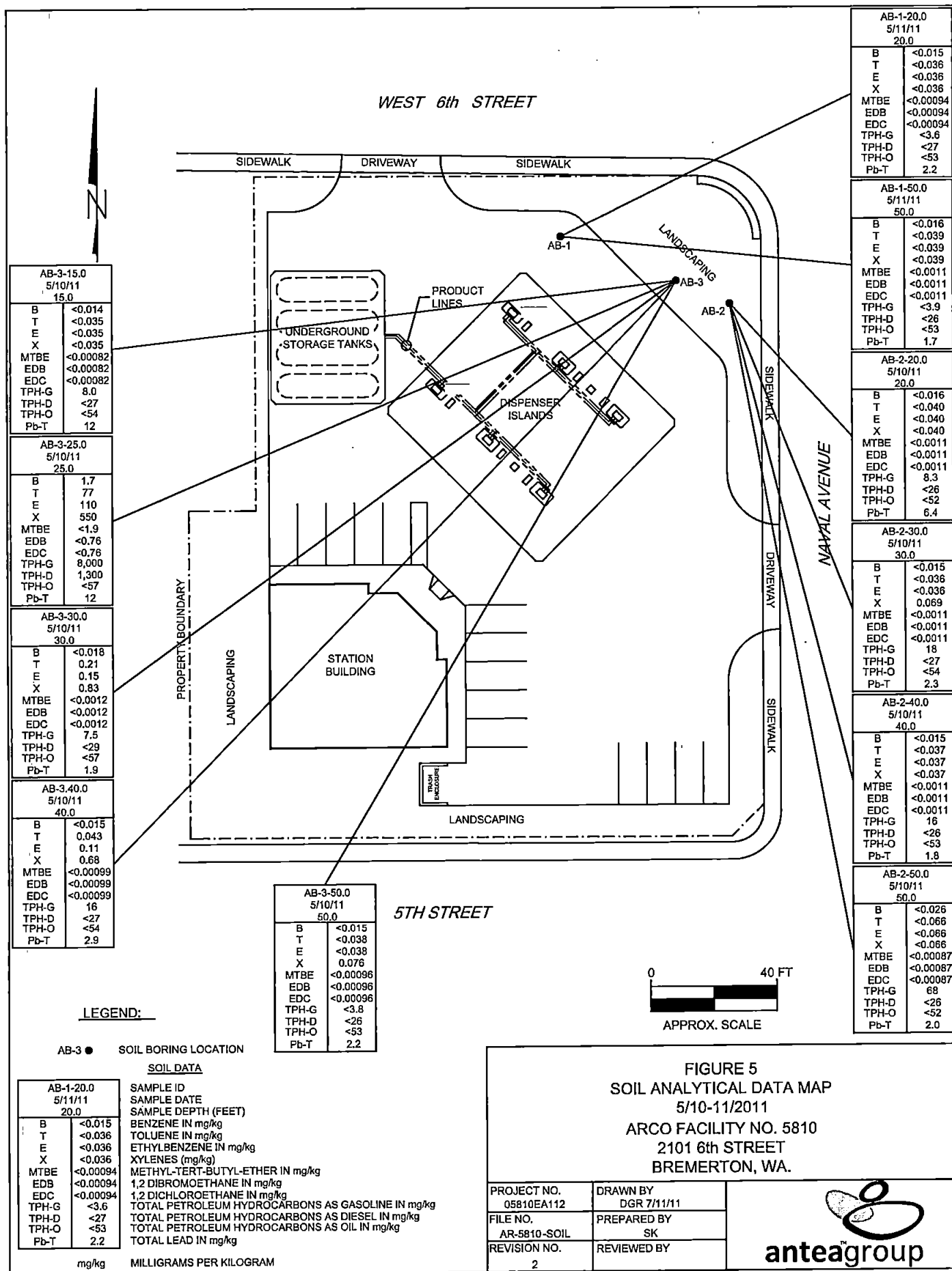


FIGURE 4
GEOLOGIC CROSS SECTION A-A'

ARCO FACILITY NO. 5810
2101 6th STREET
BREMERTON, WA.

PROJECT NO. 05810DA111	DRAWN BY DGR 6/17/11
FILE NO. AR-5810_XS	PREPARED BY SK
REVISION NO. 0	REVIEWED BY





Appendix A

Summary of Field Procedures and Quality Assurance Plan

FIELD PROCEDURES

Discrete soil samples were collected from each boring in approximately five-foot intervals to characterize site soils with respect to petroleum hydrocarbon impacts. All samples submitted for analyses were collected using a hand auger or a 2 1/2-inch I.D. by 18-inch long split-spoon sampler. The samples were labeled and immediately placed in cold storage until submitted to the laboratory for analysis. The soil samples were collected in accordance with EPA Method 5035B. The samples were transported to the laboratory under chain-of-custody procedures to document sample integrity. TestAmerica Analytical Laboratories of Fife, Washington, performed all laboratory analyses.

During the drilling program, soil samples were screened using a photo ionization detector (PID). The PID was a Thermo, Inc., Model 580 B organic vapor meter equipped with a 10.2 electron volt (eV) ultraviolet (UV) lamp and calibrated to benzene standards with isobutylene for direct readings in parts per million (ppm). The operating range of the detector is from 0 to 2,000 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 sampler 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. All samples were analyzed by TestAmerica Analytical Laboratories located in Fife, Washington.

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:

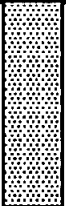
1. U.S. Environmental Protection Agency (EPA) and State certification programs.
2. Participation in an inter-laboratory or "round-robin" quality assurance program.
3. Verification of results with an alternative method. For example, calcium may be determined by atomic absorption, ion chromatography, or 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), methyl tert-butyl ether (MTBE), 1,2-Dibromoethane (EDB) and 1,2-Dichloroethane (EDC) by EPA Method 8260B;
4. Total lead by EPA Method 6020;
5. Extractable petroleum hydrocarbons by NWTPH/EPH;
6. Volatile petroleum hydrocarbons by NWTPH/VPH; and
7. Napthalene's by EPA Method 8270C.

WELL/BORING LOCATION MAP		Antea Group				WELL/BORING: AB-1					
INSTALLATION DATE: 5/9/11, 5/11/11		DRILLING METHOD: Hollow Stem Auger									
PROJECT: ARCO 5810		SAMPLING METHOD: Split Spoon									
CLIENT: Atlantic Richfield Company		BORING DIAMETER: 8.25 inches									
LOCATION: 2101 6 th Street		BORING DEPTH: 51.5 feet									
CITY: Bremerton		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	NA
										SURVEY DATE:	NA
										DTW:	NA
DESCRIPTION/LOGGED BY: Mackie Manivong											
Asphalt = original surface											
Concrete											
DRY 1.0 -											
SILTY SAND with Gravel: brown; mostly fine sand; ~15% silt; few gravel; iron staining visible within to 2.0 feet bgs.											
MST 0.0 50/6"											
SILTY SAND with Gravel: brown; mostly fine sand; ~20% silt; ~15% fine gravel; some iron staining; very dense.											
MST 0.0 50/6"											
SAND: brown; poorly-graded medium sand; trace silt; very dense.											
MST 0.0 50/6"											
Same as Above: silt lens.											
MST 0.0 50/6"											
Same as Above: no silt lens.											
MST 0.0 50/6"											
Same as Above: trace gravel.											
MST 0.0 50/5"											
Same as Above.											
MST 0.0 60/5"											
Same as Above: trace silt.											
Bentonite											

WELL/BORING LOCATION MAP				Antea Group				WELL/BORING: AB-1			
				INSTALLATION DATE: 5/9/11, 5/11/11				DRILLING METHOD: Hollow Stem Auger			
				PROJECT: ARCO 5810				SAMPLING METHOD: Split Spoon			
				CLIENT: Atlantic Richfield Company				BORING DIAMETER: 8.25 inches			
				LOCATION: 2101 6 th Street				BORING DEPTH: 51.5 feet			
				CITY: Bremerton				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	NA
										SURVEY DATE:	NA
										DTW:	NA
DESCRIPTION/LOGGED BY: Mackie Manivong											
			MST	0.0	50/5"	46		SP		SAND: brown and gray; poorly-graded medium sand; dense.	
			MST	0.0	50/5"	50		SP		Same as Above.	
						52				Groundwater was not encountered within 51.5 feet bgs. Boring terminated.	
						54					
						56					
						58					
						60					
						62					
						64					
						66					
						68					
						70					
						72					
						74					
						76					
						78					
						80					
						82					
						84					
						86					
					88						

WELL/BORING LOCATION MAP					Antea Group					WELL/BORING: AB-2	
					INSTALLATION DATE: 5/9/11, 5/10/11			DRILLING METHOD: Hollow Stem Auger			
					PROJECT: ARCO 5810			SAMPLING METHOD: Split Spoon			
					CLIENT: Atlantic Richfield Company			BORING DIAMETER: 8.25 inches			
					LOCATION: 2101 6 th Street			BORING DEPTH: 51.5 feet			
					CITY: Bremerton			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	NA
	▽	▼								SURVEY DATE:	NA
										DTW:	NA
DESCRIPTION/LOGGED BY: Mackle Manivong											
Concrete Bentonite						2				Grass = original surface	
						4				Grass = original surface Fill with chinks of asphalt.	
			DRY	1.7	-	6		SM		<u>SILTY SAND</u> with Gravel: brown; mostly fine sand; ~15% silt; fine to coarse gravel; trace organic debris, roots.	
						8					
			MST	0.0	20 50/6"	10		SM		Same as Above: brown to gray; medium dense to dense; some iron staining.	
						12					
						14		SM		Same as Above.	
			MST	0.0	50/6"	16		SP		<u>SAND</u> : brown; poorly-graded medium sand; trace silt and gravel; dense.	
						18					
			MST	6.0	50/6"	20		SP		Same as Above.	
						22					
						24					
			MST	265	50/6"	26		SP		Same as Above: odor.	
						28					
			MST	435	50/6"	30		SP		Same as Above: brown; some iron staining; gray silt lens; odor.	
						32					
						34					
			MST	155	50/6"	36		SP		Same as Above: no gray silt lens and odor.	
						38					
			MST	30	50/6"	40		SP		Same as Above: no odor.	
						42					
						44					

8/29/2

WELL/BORING LOCATION MAP			Antea Group				WELL/BORING: AB-2			
			INSTALLATION DATE: 5/9/11, 5/10/11		DRILLING METHOD: Hollow Stem Auger					
			PROJECT: ARCO 5810		SAMPLING METHOD: Split Spoon					
			CLIENT: Atlantic Richfield Company		BORING DIAMETER: 8.25 inches					
			LOCATION: 2101 6 th Street		BORING DEPTH: 51.5 feet					
			CITY: Bremerton		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: NA SURVEY DATE: NA DTW: NA DESCRIPTION/LOGGED BY: Mackie Manivong
Bentonite			MST	6.0	50/6"	46		SP		SAND: brown; poorly-graded medium sand; dense; no odor. Same as Above. Groundwater was not encountered within 51.5 feet bgs. Boring terminated.
			MST	0.0	50/6"	50		SP		
						52				
						54				
						56				
						58				
						60				
						62				
						64				
						66				
						68				
						70				
						72				
						74				
						76				
						78				
						80				
						82				
						84				
						86				
						88				

WELL/BORING LOCATION MAP			Antea Group						WELL/BORING: AB-3		
			INSTALLATION DATE: 5/9/11, 5/10/11			DRILLING METHOD: Hollow Stem Auger					
			PROJECT: ARCO 5810			SAMPLING METHOD: Split Spoon					
			CLIENT: Atlantic Richfield Company			BORING DIAMETER: 8.25 inches					
			LOCATION: 2101 6 th Street			BORING DEPTH: 51.5 feet					
			CITY: Bremerton			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	NA
										SURVEY DATE:	NA
										DTW:	NA
										DESCRIPTION/LOGGED BY: Mackie Manivong	
Concrete Bentonite						2					Grass = original surface
						4					
			DRY	0.0	-	6		SM			SILTY SAND with Gravel: brown; mostly fine sand; ~15% silt; trace gravel; organic debris and roots throughout.
						8					
			DRY	0.0	23 50/6"	10		SM			Same as Above: no organic debris; some iron staining; very dense.
						12					
			DRY	5.0	50/6"	14		SM			Same as Above.
						16					
			MST	287	50/6"	18					
						20		SP			SAND: gray; poorly-graded medium sand; some iron staining; trace organic debris; very dense; odor.
						22					
			MST	1,550	50/6"	24		SP			Same as Above.
						26					
			MST	441	50/6"	28					
						30		SP			Same as Above: no organic debris.
						32					
			MST	158	50/6"	34					
					36		SP			Same as Above: brown and gray.	
					38						
		MST	5.0	50/6"	40		SP			Same as Above: no odor.	
					42						
					44						

WELL/BORING LOCATION MAP			Antea Group					WELL/BORING: AB-3			
			INSTALLATION DATE: 5/9/11, 5/10/11		DRILLING METHOD: Hollow Stem Auger						
			PROJECT: ARCO 5810		SAMPLING METHOD: Split Spoon						
			CLIENT: Atlantic Richfield Company		BORING DIAMETER: 8.25 inches						
			LOCATION: 2101 6 th Street		BORING DEPTH: 51.5 feet						
			CITY: Bremerton		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	NA
										SURVEY DATE:	NA
										DTW:	NA
										DESCRIPTION/LOGGED BY: Mackle Manivong	
Bentonite			MST	7.0	50/6"	46		SP		SAND: gray; poorly-graded medium sand; trace silt; very dense.	
			MST	5.0	50/6"	50		SP		Same as Above.	
						52				Groundwater was not encountered within 51.5 feet bgs. Boring terminated.	
						54					
						56					
						58					
						60					
						62					
						64					
						66					
						68					
						70					
						72					
						74					
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						80					
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						84					
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						88					

Appendix C

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: 580-26123-1
Client Project/Site: ARCO 5810

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

Attn: Markham Hurd



Authorized for release by:
05/23/2011 02:22:19 PM

Melissa Armstrong
Project Manager I
melissa.armstrong@testamericainc.com

LINKS

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www.testamericainc.com

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all 2003 NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, 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.

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Case Narrative

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Job ID: 580-26123-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-26123-1

Comments

No additional comments.

Receipt

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain-of-Custody (COC). Two tared and stir bar vials received as trip blank which was not noted on the COC. Logged-in and labeled, but no analyses assigned.

All other samples were received in good condition within temperature requirements.

GC/MS VOA

No analytical or quality issues were noted.

GC Semi VOA

No analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

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.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

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11

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-3-15.0

Lab Sample ID: 580-26123-5

Date Collected: 05/10/11 10:10

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.014		mg/Kg	*	05/13/11 09:17	05/13/11 20:21	1
Methyl tert-butyl ether	ND		0.00082		mg/Kg	*	05/13/11 09:59	05/13/11 12:49	1
Toluene	ND		0.035		mg/Kg	*	05/13/11 09:17	05/13/11 20:21	1
1,2-Dichloroethane	ND		0.00082		mg/Kg	*	05/13/11 09:59	05/13/11 12:49	1
Ethylbenzene	ND		0.035		mg/Kg	*	05/13/11 09:17	05/13/11 20:21	1
1,2-Dibromoethane	ND		0.00082		mg/Kg	*	05/13/11 09:59	05/13/11 12:49	1
Xylenes, Total	ND		0.035		mg/Kg	*	05/13/11 09:17	05/13/11 20:21	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	103		80 - 120	05/13/11 09:59	05/13/11 12:49	1
Fluorobenzene (Surr)	101		80 - 120	05/13/11 09:17	05/13/11 20:21	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:59	05/13/11 12:49	1
Ethylbenzene-d10	109		70 - 120	05/13/11 09:59	05/13/11 12:49	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:17	05/13/11 20:21	1
4-Bromofluorobenzene (Surr)	113		70 - 120	05/13/11 09:59	05/13/11 12:49	1
Ethylbenzene-d10	99		70 - 120	05/13/11 09:17	05/13/11 20:21	1
Trifluorotoluene (Surr)	121		65 - 140	05/13/11 09:59	05/13/11 12:49	1
4-Bromofluorobenzene (Surr)	100		70 - 120	05/13/11 09:17	05/13/11 20:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	8.0		3.5		mg/Kg	*	05/13/11 09:17	05/13/11 20:21	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:17	05/13/11 20:21	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		27		mg/Kg	✱	05/15/11 16:52	05/17/11 02:22	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	✱	05/15/11 16:52	05/17/11 02:22	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				05/15/11 16:52	05/17/11 02:22	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	12		0.20		mg/Kg	*	05/18/11 12:04	05/18/11 15:39	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	89		0.10		%			05/18/11 13:42	1
Percent Moisture	11		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-3-40.0

Lab Sample ID: 580-26123-10

Date Collected: 05/10/11 11:00

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 91.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.015		mg/Kg	*	05/13/11 09:17	05/13/11 22:59	1
Methyl tert-butyl ether	ND		0.00099		mg/Kg	*	05/13/11 09:59	05/13/11 14:03	1
Toluene	0.043		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 22:59	1
1,2-Dichloroethane	ND		0.00099		mg/Kg	*	05/13/11 09:59	05/13/11 14:03	1
Ethylbenzene	0.11		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 22:59	1
1,2-Dibromoethane	ND		0.00099		mg/Kg	*	05/13/11 09:59	05/13/11 14:03	1
Xylenes, Total	0.68		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 22:59	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	92		80 - 120	05/13/11 09:59	05/13/11 14:03	1
Fluorobenzene (Surr)	101		80 - 120	05/13/11 09:17	05/13/11 22:59	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:59	05/13/11 14:03	1
Ethylbenzene-d10	105		70 - 120	05/13/11 09:59	05/13/11 14:03	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:17	05/13/11 22:59	1
4-Bromofluorobenzene (Surr)	106		70 - 120	05/13/11 09:59	05/13/11 14:03	1
Ethylbenzene-d10	98		70 - 120	05/13/11 09:17	05/13/11 22:59	1
Trifluorotoluene (Surr)	123		65 - 140	05/13/11 09:59	05/13/11 14:03	1
4-Bromofluorobenzene (Surr)	99		70 - 120	05/13/11 09:17	05/13/11 22:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	16		3.8		mg/Kg	✱	05/13/11 09:17	05/13/11 22:59	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		50 - 150				05/13/11 09:17	05/13/11 22:59	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		27		mg/Kg	✱	05/15/11 16:52	05/17/11 04:12	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	✱	05/15/11 16:52	05/17/11 04:12	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	104		50 - 150				05/15/11 16:52	05/17/11 04:12	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.9		0.18		mg/Kg	*	05/18/11 12:04	05/18/11 16:13	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91		0.10		%			05/18/11 13:42	1
Percent Moisture	9.0		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

05/23/2011

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-3-50.0

Lab Sample ID: 580-26123-12

Date Collected: 05/10/11 11:20

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 91.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.015		mg/Kg	*	05/13/11 09:17	05/13/11 23:21	1
Methyl tert-butyl ether	ND		0.00096		mg/Kg	*	05/13/11 09:59	05/13/11 14:27	1
Toluene	ND		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 23:21	1
1,2-Dichloroethane	ND		0.00096		mg/Kg	*	05/13/11 09:59	05/13/11 14:27	1
Ethylbenzene	ND		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 23:21	1
1,2-Dibromoethane	ND		0.00096		mg/Kg	*	05/13/11 09:59	05/13/11 14:27	1
Xylenes, Total	0.076		0.038		mg/Kg	*	05/13/11 09:17	05/13/11 23:21	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	93		80 - 120				05/13/11 09:59	05/13/11 14:27	1
Fluorobenzene (Surr)	102		80 - 120				05/13/11 09:17	05/13/11 23:21	1
Toluene-d8 (Surr)	103		80 - 120				05/13/11 09:59	05/13/11 14:27	1
Ethylbenzene-d10	102		70 - 120				05/13/11 09:59	05/13/11 14:27	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:17	05/13/11 23:21	1
4-Bromofluorobenzene (Surr)	107		70 - 120				05/13/11 09:59	05/13/11 14:27	1
Ethylbenzene-d10	98		70 - 120				05/13/11 09:17	05/13/11 23:21	1
Trifluorotoluene (Surr)	121		65 - 140				05/13/11 09:59	05/13/11 14:27	1
4-Bromofluorobenzene (Surr)	99		70 - 120				05/13/11 09:17	05/13/11 23:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.8		mg/Kg	*	05/13/11 09:17	05/13/11 23:21	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:17	05/13/11 23:21	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		26		mg/Kg	*	05/15/11 16:52	05/17/11 04:34	1
Motor Oil (>C24-C36)	ND		53		mg/Kg	*	05/15/11 16:52	05/17/11 04:34	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150				05/15/11 16:52	05/17/11 04:34	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.2		0.18		mg/Kg	*	05/18/11 12:04	05/18/11 16:16	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92		0.10		%			05/18/11 13:42	1
Percent Moisture	8.1		0.10		%			05/18/11 13:42	1

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-2-20.0

Lab Sample ID: 580-26123-15

Date Collected: 05/10/11 13:10

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 93.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg	✱	05/13/11 09:17	05/13/11 23:44	1
Methyl tert-butyl ether	ND		0.0011		mg/Kg	✱	05/13/11 09:59	05/13/11 14:52	1
Toluene	ND		0.040		mg/Kg	✱	05/13/11 09:17	05/13/11 23:44	1
1,2-Dichloroethane	ND		0.0011		mg/Kg	✱	05/13/11 09:59	05/13/11 14:52	1
Ethylbenzene	ND		0.040		mg/Kg	✱	05/13/11 09:17	05/13/11 23:44	1
1,2-Dibromoethane	ND		0.0011		mg/Kg	✱	05/13/11 09:59	05/13/11 14:52	1
Xylenes, Total	ND		0.040		mg/Kg	✱	05/13/11 09:17	05/13/11 23:44	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	91		80 - 120				05/13/11 09:59	05/13/11 14:52	1
Fluorobenzene (Surr)	102		80 - 120				05/13/11 09:17	05/13/11 23:44	1
Toluene-d8 (Surr)	95		80 - 120				05/13/11 09:59	05/13/11 14:52	1
Ethylbenzene-d10	93		70 - 120				05/13/11 09:59	05/13/11 14:52	1
Toluene-d8 (Surr)	100		80 - 120				05/13/11 09:17	05/13/11 23:44	1
4-Bromofluorobenzene (Surr)	102		70 - 120				05/13/11 09:59	05/13/11 14:52	1
Ethylbenzene-d10	99		70 - 120				05/13/11 09:17	05/13/11 23:44	1
Trifluorotoluene (Surr)	127		65 - 140				05/13/11 09:59	05/13/11 14:52	1
4-Bromofluorobenzene (Surr)	100		70 - 120				05/13/11 09:17	05/13/11 23:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	8.3		4.0		mg/Kg	✱	05/13/11 09:17	05/13/11 23:44	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:17	05/13/11 23:44	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		26		mg/Kg	✱	05/15/11 16:52	05/17/11 04:56	1
Motor Oil (>C24-C36)	ND		52		mg/Kg	✱	05/15/11 16:52	05/17/11 04:56	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	108		50 - 150				05/15/11 16:52	05/17/11 04:56	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead :	6.4		0.19		mg/Kg	✱	05/18/11 12:04	05/18/11 16:19	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93		0.10		%			05/18/11 13:42	1
Percent Moisture	6.9		0.10		%			05/18/11 13:42	1

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-2-40.0

Lab Sample ID: 580-26123-19

Date Collected: 05/10/11 13:50

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 93.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.015		mg/Kg	*	05/13/11 09:22	05/14/11 00:29	1
Methyl tert-butyl ether	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:41	1
Toluene	ND		0.037		mg/Kg	*	05/13/11 09:22	05/14/11 00:29	1
1,2-Dichloroethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:41	1
Ethylbenzene	ND		0.037		mg/Kg	*	05/13/11 09:22	05/14/11 00:29	1
1,2-Dibromoethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:41	1
Xylenes, Total	ND		0.037		mg/Kg	*	05/13/11 09:22	05/14/11 00:29	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	93		80 - 120	05/13/11 09:59	05/13/11 15:41	1
Fluorobenzene (Surr)	101		80 - 120	05/13/11 09:22	05/14/11 00:29	1
Toluene-d8 (Surr)	98		80 - 120	05/13/11 09:59	05/13/11 15:41	1
Ethylbenzene-d10	101		70 - 120	05/13/11 09:59	05/13/11 15:41	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:22	05/14/11 00:29	1
4-Bromofluorobenzene (Surr)	108		70 - 120	05/13/11 09:59	05/13/11 15:41	1
Ethylbenzene-d10	98		70 - 120	05/13/11 09:22	05/14/11 00:29	1
Trifluorotoluene (Surr)	120		65 - 140	05/13/11 09:59	05/13/11 15:41	1
4-Bromofluorobenzene (Surr)	99		70 - 120	05/13/11 09:22	05/14/11 00:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	16		3.7		mg/Kg	*	05/13/11 09:22	05/14/11 00:29	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		50 - 150	05/13/11 09:22	05/14/11 00:29	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		26		mg/Kg	*	05/15/11 16:52	05/17/11 05:41	1
Motor Oil (>C24-C36)	ND		53		mg/Kg	*	05/15/11 16:52	05/17/11 05:41	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150	05/15/11 16:52	05/17/11 05:41	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.8		0.17		mg/Kg	*	05/18/11 12:04	05/18/11 16:26	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93		0.10		%			05/18/11 13:42	1
Percent Moisture	6.8		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-2-50.0

Lab Sample ID: 580-26123-21

Date Collected: 05/10/11 14:10

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 93.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.026		mg/Kg	*	05/13/11 09:22	05/14/11 00:52	1
Methyl tert-butyl ether	ND		0.00087		mg/Kg	*	05/13/11 09:59	05/13/11 16:05	1
Toluene	ND		0.066		mg/Kg	*	05/13/11 09:22	05/14/11 00:52	1
1,2-Dichloroethane	ND		0.00087		mg/Kg	*	05/13/11 09:59	05/13/11 16:05	1
Ethylbenzene	ND		0.066		mg/Kg	*	05/13/11 09:22	05/14/11 00:52	1
1,2-Dibromoethane	ND		0.00087		mg/Kg	*	05/13/11 09:59	05/13/11 16:05	1
Xylenes, Total	0.079		0.066		mg/Kg	*	05/13/11 09:22	05/14/11 00:52	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	95		80 - 120				05/13/11 09:59	05/13/11 16:05	1
Fluorobenzene (Surr)	101		80 - 120				05/13/11 09:22	05/14/11 00:52	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:59	05/13/11 16:05	1
Ethylbenzene-d10	99		70 - 120				05/13/11 09:59	05/13/11 16:05	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:22	05/14/11 00:52	1
4-Bromofluorobenzene (Surr)	105		70 - 120				05/13/11 09:59	05/13/11 16:05	1
Ethylbenzene-d10	99		70 - 120				05/13/11 09:22	05/14/11 00:52	1
Trifluorotoluene (Surr)	114		65 - 140				05/13/11 09:59	05/13/11 16:05	1
Trifluorotoluene (Surr)	87		65 - 140				05/13/11 09:22	05/14/11 00:52	1
4-Bromofluorobenzene (Surr)	100		70 - 120				05/13/11 09:22	05/14/11 00:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	68		6.6		mg/Kg	*	05/13/11 09:22	05/14/11 00:52	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		50 - 150				05/13/11 09:22	05/14/11 00:52	1
Trifluorotoluene (Surr)	97		50 - 150				05/13/11 09:22	05/14/11 00:52	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		26		mg/Kg	*	05/15/11 16:52	05/17/11 06:04	1
Motor Oil (>C24-C36)	ND		52		mg/Kg	*	05/15/11 16:52	05/17/11 06:04	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				05/15/11 16:52	05/17/11 06:04	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.0		0.16		mg/Kg	*	05/18/11 12:04	05/18/11 16:29	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93		0.10		%			05/18/11 13:42	1
Percent Moisture	6.6		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-1-20.0

Lab Sample ID: 580-26123-24

Date Collected: 05/11/11 09:00

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.015		mg/Kg	*	05/13/11 09:22	05/14/11 01:14	1
Methyl tert-butyl ether	ND		0.00094		mg/Kg	*	05/13/11 09:59	05/13/11 16:29	1
Toluene	ND		0.036		mg/Kg	*	05/13/11 09:22	05/14/11 01:14	1
1,2-Dichloroethane	ND		0.00094		mg/Kg	*	05/13/11 09:59	05/13/11 16:29	1
Ethylbenzene	ND		0.036		mg/Kg	*	05/13/11 09:22	05/14/11 01:14	1
1,2-Dibromoethane	ND		0.00094		mg/Kg	*	05/13/11 09:59	05/13/11 16:29	1
Xylenes, Total	ND		0.036		mg/Kg	*	05/13/11 09:22	05/14/11 01:14	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	89		80 - 120				05/13/11 09:59	05/13/11 16:29	1
Fluorobenzene (Surr)	101		80 - 120				05/13/11 09:22	05/14/11 01:14	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:59	05/13/11 16:29	1
Ethylbenzene-d10	106		70 - 120				05/13/11 09:59	05/13/11 16:29	1
Toluene-d8 (Surr)	100		80 - 120				05/13/11 09:22	05/14/11 01:14	1
4-Bromofluorobenzene (Surr)	111		70 - 120				05/13/11 09:59	05/13/11 16:29	1
Ethylbenzene-d10	98		70 - 120				05/13/11 09:22	05/14/11 01:14	1
Trifluorotoluene (Surr)	93		65 - 140				05/13/11 09:59	05/13/11 16:29	1
4-Bromofluorobenzene (Surr)	100		70 - 120				05/13/11 09:22	05/14/11 01:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.6		mg/Kg	*	05/13/11 09:22	05/14/11 01:14	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:22	05/14/11 01:14	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		27		mg/Kg	*	05/15/11 16:52	05/17/11 06:26	1
Motor Oil (>C24-C36)	ND		53		mg/Kg	*	05/15/11 16:52	05/17/11 06:26	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				05/15/11 16:52	05/17/11 06:26	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.2		0.18		mg/Kg	*	05/18/11 12:04	05/18/11 16:32	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	90		0.10		%			05/18/11 13:42	1
Percent Moisture	10		0.10		%			05/18/11 13:42	1

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-1-50.0

Lab Sample ID: 580-26123-30

Date Collected: 05/11/11 10:00

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 90.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg	*	05/13/11 09:22	05/14/11 01:36	1
Methyl tert-butyl ether	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 16:54	1
Toluene	ND		0.039		mg/Kg	*	05/13/11 09:22	05/14/11 01:36	1
1,2-Dichloroethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 16:54	1
Ethylbenzene	ND		0.039		mg/Kg	*	05/13/11 09:22	05/14/11 01:36	1
1,2-Dibromoethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 16:54	1
Xylenes, Total	ND		0.039		mg/Kg	*	05/13/11 09:22	05/14/11 01:36	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	92		80 - 120				05/13/11 09:59	05/13/11 16:54	1
Fluorobenzene (Surr)	101		80 - 120				05/13/11 09:22	05/14/11 01:36	1
Toluene-d8 (Surr)	97		80 - 120				05/13/11 09:59	05/13/11 16:54	1
Ethylbenzene-d10	97		70 - 120				05/13/11 09:59	05/13/11 16:54	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:22	05/14/11 01:36	1
4-Bromofluorobenzene (Surr)	107		70 - 120				05/13/11 09:59	05/13/11 16:54	1
Ethylbenzene-d10	98		70 - 120				05/13/11 09:22	05/14/11 01:36	1
Trifluorotoluene (Surr)	121		65 - 140				05/13/11 09:59	05/13/11 16:54	1
Trifluorotoluene (Surr)	93		65 - 140				05/13/11 09:22	05/14/11 01:36	1
4-Bromofluorobenzene (Surr)	100		70 - 120				05/13/11 09:22	05/14/11 01:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9		mg/Kg	*	05/13/11 09:22	05/14/11 01:36	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:22	05/14/11 01:36	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		26		mg/Kg	*	05/15/11 16:52	05/17/11 06:48	1
Motor Oil (>C24-C36)	ND		53		mg/Kg	*	05/15/11 16:52	05/17/11 06:48	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				05/15/11 16:52	05/17/11 06:48	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.7		0.18		mg/Kg	*	05/18/11 12:04	05/18/11 16:35	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91		0.10		%			05/18/11 13:42	1
Percent Moisture	9.2		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-85931/1-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: MB 580-85931/1-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Toluene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Ethylbenzene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
m-Xylene & p-Xylene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
o-Xylene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Xylenes, Total	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1

Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	100		80 - 120	05/13/11 09:17	05/13/11 18:29	1
Toluene-d8 (Surr)	100		80 - 120	05/13/11 09:17	05/13/11 18:29	1
Ethylbenzene-d10	98		70 - 120	05/13/11 09:17	05/13/11 18:29	1
Trifluorotoluene (Surr)	105		65 - 140	05/13/11 09:17	05/13/11 18:29	1
4-Bromofluorobenzene (Surr)	100		70 - 120	05/13/11 09:17	05/13/11 18:29	1

Lab Sample ID: LCS 580-85931/4-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCS 580-85931/4-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	0.800	0.760		mg/Kg		95	75 - 125
Toluene	0.800	0.756		mg/Kg		94	70 - 125
Ethylbenzene	0.800	0.752		mg/Kg		94	75 - 125
m-Xylene & p-Xylene	1.60	1.54		mg/Kg		96	80 - 125
o-Xylene	0.800	0.764		mg/Kg		96	75 - 125

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Ethylbenzene-d10	99		70 - 120
Trifluorotoluene (Surr)	98		65 - 140
4-Bromofluorobenzene (Surr)	99		70 - 120

Lab Sample ID: LCSD 580-85931/5-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCSD 580-85931/5-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
Benzene	0.800	0.824		mg/Kg		103	75 - 125	8	30
Toluene	0.800	0.824		mg/Kg		103	70 - 125	9	30
Ethylbenzene	0.800	0.816		mg/Kg		102	75 - 125	8	30
m-Xylene & p-Xylene	1.60	1.64		mg/Kg		103	80 - 125	7	30
o-Xylene	0.800	0.828		mg/Kg		104	75 - 125	8	30

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	99		70 - 120
Trifluorotoluene (Surr)	101		65 - 140

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

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

Lab Sample ID: LCSD 580-85931/5-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCSD 580-85931/5-A

Prep Type: Total/NA

Prep Batch: 85931

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 120

Lab Sample ID: MB 580-85933/1-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: MB 580-85933/1-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1
1,2-Dichloroethane	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1
1,2-Dibromoethane	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1

Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	100		80 - 120	05/13/11 09:59	05/13/11 11:08	1
Toluene-d8 (Surr)	97		80 - 120	05/13/11 09:59	05/13/11 11:08	1
Ethylbenzene-d10	96		70 - 120	05/13/11 09:59	05/13/11 11:08	1
Trifluorotoluene (Surr)	136		65 - 140	05/13/11 09:59	05/13/11 11:08	1
4-Bromofluorobenzene (Surr)	102		70 - 120	05/13/11 09:59	05/13/11 11:08	1

Lab Sample ID: LCS 580-85933/2-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: LCS 580-85933/2-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	0.0200	0.0201		mg/Kg		100	65 - 125
1,2-Dichloroethane	0.0198	0.0193		mg/Kg		97	70 - 135
1,2-Dibromoethane	0.0200	0.0205		mg/Kg		103	70 - 125

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Fluorobenzene (Surr)	103		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	101		70 - 120
Trifluorotoluene (Surr)	121		65 - 140
4-Bromofluorobenzene (Surr)	101		70 - 120

Lab Sample ID: LCSD 580-85933/3-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: LCSD 580-85933/3-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	0.0200	0.0191		mg/Kg		96	65 - 125	5	30
1,2-Dichloroethane	0.0198	0.0191		mg/Kg		96	70 - 135	1	30
1,2-Dibromoethane	0.0200	0.0184		mg/Kg		92	70 - 125	11	30

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Fluorobenzene (Surr)	100		80 - 120
Toluene-d8 (Surr)	96		80 - 120
Ethylbenzene-d10	94		70 - 120
Trifluorotoluene (Surr)	114		65 - 140

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

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

Lab Sample ID: LCSD 580-85933/3-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: LCSD 580-85933/3-A

Prep Type: Total/NA

Prep Batch: 85933

	LCSD	LCSD	
Surrogate	% Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 120

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

Lab Sample ID: MB 580-85931/1-A

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: MB 580-85931/1-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline			ND		4.0		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Surrogate	MB	MB	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			104		50 - 150				05/13/11 09:17	05/13/11 18:29	1
Trifluorotoluene (Surr)			114		50 - 150				05/13/11 09:17	05/13/11 18:29	1

Lab Sample ID: LCS 580-85931/2-A

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: LCS 580-85931/2-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	% Rec	% Rec.	Limits
Gasoline	Added			37.4		mg/Kg		93		68 - 120
Surrogate	LCS	LCS	% Recovery	Qualifier	Limits					
4-Bromofluorobenzene (Surr)			105		50 - 150					
Trifluorotoluene (Surr)			108		50 - 150					

Lab Sample ID: LCSD 580-85931/3-A

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: LCSD 580-85931/3-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	% Rec	% Rec.	Limits	RPD	Limit
Gasoline	Added			38.5		mg/Kg		96		68 - 120	3	25
Surrogate	LCSD	LCSD	% Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)			105		50 - 150							
Trifluorotoluene (Surr)			112		50 - 150							

Lab Sample ID: 580-26123-5 MS

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Sample	Sample	Spike	MS	MS	Result	Qualifier	Unit	D	% Rec	% Rec.	Limits
Gasoline	Result	Qualifier	Added			45.8		mg/Kg	*	93		50 - 150
Surrogate	MS	MS	% Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)			110		50 - 150							

TestAmerica Seattle

05/23/2011

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

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

Lab Sample ID: 580-26123-5 MSD

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
Gasoline	8.0		40.6	46.7		mg/Kg	*	95	50 - 150	2	35
Surrogate	MSD % Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	111		50 - 150								

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

Lab Sample ID: MB 580-86018/1-B

Matrix: Solid

Analysis Batch: 86061

Client Sample ID: MB 580-86018/1-B

Prep Type: Total/NA

Prep Batch: 86018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		05/15/11 16:52	05/16/11 23:26	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		05/15/11 16:52	05/16/11 23:26	1
Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	103		50 - 150	05/15/11 16:52	05/16/11 23:26	1			

Lab Sample ID: LCS 580-86018/2-B

Matrix: Solid

Analysis Batch: 86061

Client Sample ID: LCS 580-86018/2-B

Prep Type: Total/NA

Prep Batch: 86018

			Spike	LCS	LCS				% Rec.		
Analyte			Added	Result	Qualifier	Unit	D	% Rec	Limits		
#2 Diesel (C10-C24)			500	521		mg/Kg		104	64 - 127		
Motor Oil (>C24-C36)			500	507		mg/Kg		101	70 - 125		
			LCS	LCS							
Surrogate	% Recovery	Qualifier	Limits								
o-Terphenyl	93		50 - 150								

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 580-86253/15-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: MB 580-86253/15-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.20		mg/Kg		05/18/11 12:04	05/18/11 15:33	10

Lab Sample ID: LCS 580-86253/16-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: LCS 580-86253/16-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
Lead	50.0	54.5		mg/Kg		109	80 - 120		

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

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

Lab Sample ID: LCSD 580-86253/17-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: LCSD 580-86253/17-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Lead	50.0	52.4		mg/Kg		105	80 - 120	4	20

Lab Sample ID: 580-26123-5 MS

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Lead	12		51.2	68.6		mg/Kg	✱	111	80 - 120		

Lab Sample ID: 580-26123-5 MSD

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Lead	12		50.5	70.8		mg/Kg	✱	117	80 - 120	3	20

Lab Sample ID: 580-26123-5 DU

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Lead	12		12.2		mg/Kg	✱			5	20

Method: Moisture - Percent Moisture

Lab Sample ID: 580-26123-5 DU

Matrix: Solid

Analysis Batch: 86261

Client Sample ID: AB-3-15.0

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Percent Solids	89		89		%				0.7	20
Percent Moisture	11		11		%				6	20

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-3-15.0

Lab Sample ID: 580-26123-5

Date Collected: 05/10/11 10:10

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 12:49	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/13/11 20:21	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/13/11 20:21	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 02:22	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 15:39	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-3-40.0

Lab Sample ID: 580-26123-10

Date Collected: 05/10/11 11:00

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 14:03	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/13/11 22:59	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/13/11 22:59	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 04:12	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:13	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-3-50.0

Lab Sample ID: 580-26123-12

Date Collected: 05/10/11 11:20

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 14:27	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/13/11 23:21	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/13/11 23:21	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 04:34	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:16	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-2-20.0

Date Collected: 05/10/11 13:10

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-15

Matrix: Solid

Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 14:52	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/13/11 23:44	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/13/11 23:44	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 04:56	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:19	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-2-40.0

Date Collected: 05/10/11 13:50

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-19

Matrix: Solid

Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 15:41	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/14/11 00:29	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/14/11 00:29	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 05:41	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:26	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-2-50.0

Date Collected: 05/10/11 14:10

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-21

Matrix: Solid

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 16:05	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/14/11 00:52	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/14/11 00:52	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 06:04	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:29	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Client Sample ID: AB-1-20.0

Date Collected: 05/11/11 09:00

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-24

Matrix: Solid

Percent Solids: 89.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 16:29	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/14/11 01:14	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/14/11 01:14	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 06:26	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:32	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-1-50.0

Date Collected: 05/11/11 10:00

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-30

Matrix: Solid

Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 16:54	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/14/11 01:36	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:22	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/14/11 01:36	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 06:48	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:35	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	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: ARCO 5810

TestAmerica Job ID: 580-26123-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle		USDA		P330-11-00222
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP	0	L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025	0	L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-26123-5	AB-3-15.0	Solid	05/10/11 10:10	05/11/11 11:25
580-26123-10	AB-3-40.0	Solid	05/10/11 11:00	05/11/11 11:25
580-26123-12	AB-3-50.0	Solid	05/10/11 11:20	05/11/11 11:25
580-26123-15	AB-2-20.0	Solid	05/10/11 13:10	05/11/11 11:25
580-26123-19	AB-2-40.0	Solid	05/10/11 13:50	05/11/11 11:25
580-26123-21	AB-2-50.0	Solid	05/10/11 14:10	05/11/11 11:25
580-26123-24	AB-1-20.0	Solid	05/11/11 09:00	05/11/11 11:25
580-26123-30	AB-1-50.0	Solid	05/11/11 10:00	05/11/11 11:25



Laboratory Management Program LaMP Chain of Custody Record

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Page 1 of 3

BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standart TAT? Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number: Except for 3 samples. Please read comments.

Lab Name: Test America	BP/ARC Facility Address: 2101 6th Street	Consultant/Contractor: Antea Group
Lab Address: 5755 8th Street E., Tacoma, WA	City, State, ZIP Code: Bremerton, WA	Consultant/Contractor Project No: 05810DA111
Lab PM: Melissa Armstrong	Lead Regulatory Agency: Washington State Department of Ecology	Address: 4006 148th Ave NE, Redmond, WA 98052
Lab Phone: (253) 922-2310	California Global ID No.: NA	Consultant/Contractor PM: Markham Hurd
Lab Shipping Acctn:	Enfos Proposal No: <u>With call with numbers</u>	Phone: (206) 679-8074
Lab Bottle Order No:	Accounting Mode: Provision <u>X</u> OOC-BU OOC-RM	Email EDD To: <u>markham.hurd@anteagroup.com</u>
Other Info:	Stage: 30 Activity: 80	Invoice To: BP/ARC <u>X</u> Contractor

BP/ARC EBM: Paul Supple	Matrix	No. Containers / Preservative	Requested Analyses	Report Type & QC Level
EBM Phone: (925) 275-3801				Standard <u>X</u> w/Access
EBM Email: <u>Paul.Supple@bp.com</u>				Full Data Package

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ SO ₃	Methanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 8020	Pb-D by EPA 8020	EDB by EPA 8011	EDC by EPA 8260B	Comments
1	AB-1-5.0	5-9-11	10:30	X			3	3					1	X	X	X	X	X	X	X	X	X	HOLD
2	AB-2-5.0		12:50	X			3	3					1										HOLD
3	AB-3-5.0		14:20	X			3	3					1										HOLD
4	AB-3-10.0	5-10-11	10:00	X			4	3					1										HOLD
5	AB-3-15.0		10:10	X			4	3					1										HOLD
6	AB-3-20.0		10:20	X			4	3					1										HOLD
7	AB-3-25.0		10:30	X			4	3					1										HOLD
8	AB-3-30.0		10:40	X			4	3					1										HOLD
9	AB-3-35.0		10:50	X			4	3					1										HOLD
10	AB-3-40.0		11:00	X			4	3					1										HOLD

Sampler's Name: <u>Mackie Manivong, Colin Crawford</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group	<u>[Signature]</u>	5-11-11	11:28	<u>[Signature]</u> <u>[Signature]</u>	5/11/11	11:25
Shipment Method: <u>Drop off</u>	Ship Date:					
Shipment Tracking No:						
Special Instructions: <u>EPH & VPH Pending 7-day TAT samples results.</u>						

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

*STIR BARS & JARS WERE PUT IN TWO COOLERS W/ DRY ICE.
*METHANOL IN COOLER W/ REGULAR ICE.



Laboratory Management Program LaMP Chain of Custody Record

26123

Page 2 of 3

BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standart TAT Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number:

Lab Name: Test America				BP/ARC Facility Address: 2101 6th Street				Consultant/Contractor: Antea Group																
Lab Address: 5755 8th Street E., Tacoma, WA				City, State, ZIP Code: Bremerton, WA				Consultant/Contractor Project No: 05810DA111																
Lab PM: Melissa Armstrong				Lead Regulatory Agency: Washington State Department of Ecology				Address: 4006 148th Ave NE, Redmond, WA 98052																
Lab Phone: (253) 922-2310				California Global ID No.: NA				Consultant/Contractor PM: Markham Hurd																
Lab Shipping Acct:				Enfos Proposal No: <u>WR234036 / 005-YS0003</u>				Phone: (206) 679-8074																
Lab Bottle Order No:				Accounting Mode: Provision <u>X</u> OOC-BU OOC-RM				Email EDD To: <u>markham.hurd@anteagroup.com</u>																
Other Info:				Stage: 30 Activity: 80				Invoice To: BP/ARC <u>X</u> Contractor																
BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative		Requested Analyses						Report Type & QC Level										
EBM Phone: (925) 275-3801														Standard <u>X</u> w/Access										
EBM Email: <u>Paul.Supple@bp.com</u>														Full Data Package										
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Methanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 8020	Pb-D by EPA 8020	EDB by EPA 8011	EDC by EPA 8260B	Comments	
11	AB-3-45.0	5-10-11	11:10	X			4	3							X	X	X	X	X			X	X	HOLD
12	AB-3-50.0	5-10-11	11:20																					Ntd.
13	AB-2-10.0		12:50																					HOLD
14	AB-2-15.0		13:00																					HOLD
15	AB-2-20.0		13:10																					Ntd.
16	AB-2-25.0		13:20																					HOLD
17	AB-2-30.0		13:30																					7-day TAT
18	AB-2-35.0		13:40																					HOLD
19	AB-2-40.0		13:50																					Ntd.
20	AB-2-45.0		14:00	X			4	4							X	X	X	X	X			X	X	HOLD
Sampler's Name: <u>C. A. in Contractor</u>				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time									
Sampler's Company: Antea Group								5-11-11	11:25	<u>Cathy Cramble</u>				5/11/11	11:25									
Shipment Method: <u>Drop</u> Ship Date: <u>5-11-11</u>																								
Shipment Tracking No:																								
Special Instructions:																								
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No																								

BP/ARC LaMP COC Rev. 5 01/01/2009



Laboratory Management Program LaMP Chain of Custody Record

26123

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BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standart TAT

Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number:

Lab Name: Test America				BP/ARC Facility Address: 2101 6th Street				Consultant/Contractor: Antea Group																
Lab Address: 5755 8th Street E., Tacoma, WA				City, State, ZIP Code: Bremerton, WA				Consultant/Contractor Project No: 05810DA111																
Lab PM: Melissa Armstrong				Lead Regulatory Agency: Washington State Department of Ecology				Address: 4006 148th Ave NE, Redmond, WA 98052																
Lab Phone: (253) 922-2310				California Global ID No.: NA				Consultant/Contractor PM: Markham Hurd																
Lab Shipping Acct:				Enfos Proposal No: <u>WR234030/005-YS0003</u>				Phone: (206) 679-8074																
Lab Bottle Order No:				Accounting Mode: Provision <u>X</u> OOC-BU OOC-RM				Email EDD To: <u>markham.hurd@anteagroup.com</u>																
Other Info:				Stage: 30 Activity: 80				Invoice To: BP/ARC <u>X</u> Contractor																
BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative		Requested Analyses						Report Type & QC Level										
EBM Phone: (925) 275-3801														Standard <u>X</u> w/ Access										
EBM Email: <u>Paul.Supple@bp.com</u>														Full Data Package										
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Methanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 6020	Pb-D by EPA 6020	EDB by EPA 8011	EDC by EPA 8260B	Comments	
21	AB-2-50	5-10-11	14:10	X			4	3						X	X	X	X	X	X	X	X	X	X	N/d.
22	AB-1-10.0	5-11-11	8:40																					HOLD
23	AB-1-15.0		8:50																					HOLD
24	AB-1-20.0		9:05																					N/d.
25	AB-1-25.0		9:10																					HOLD
26	AB-1-30.6		9:20																					HOLD
27	AB-1-35		9:36																					HOLD
28	AB-1-40		9:40																					HOLD
29	AB-1-45.0		9:50																					HOLD
30	AB-1-50.0		10:06																					N/d.
Sampler's Name: <u>Colin Crawford</u>				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time									
Sampler's Company: Antea Group				<u>[Signature]</u>				5-11-11	11:25	<u>Cathy Canale</u>				5/11/11	11:25									
Shipment Method: <u>Drop</u> Ship Date: <u>5-11-11</u>																								
Shipment Tracking No:																								
Special Instructions:																								
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No																								

BP/ARC LaMP COC Rev. 6 01/01/2009

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-26123-1

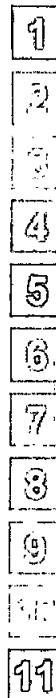
Login Number: 26123

List Source: TestAmerica Seattle

List Number: 1

Creator: Gamble, Cathy

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Dry ice for Stir Bars
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 sample IDs on the containers and the COC.	True	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
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: 580-26123-2
Client Project/Site: ARCO 5810

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

Attn: Markham Hurd

Melissa Armstrong

Authorized for release by:
06/06/2011 04:26:11 PM

Melissa Armstrong
Project Manager I
melissa.armstrong@testamericainc.com

LINKS

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Expert**

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www.testamericainc.com

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all 2003 NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, 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.

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Case Narrative

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Job ID: 580-26123-2

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-26123-2

Comments

No additional comments.

Receipt

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain-of-Custody (COC). Two tared and stir bar vials received as trip blank which was not noted on the COC. Logged-in and labeled, but no analyses assigned.

All other samples were received in good condition within temperature requirements.

GC/MS VOA - Method 8260B

Surrogate recovery for sample AB-3-30.0 (580-26123-8), was outside the upper control limit. This sample did not contain any target analytes above the reporting limit; therefore, re-extraction and/or re-analysis was not performed.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 580-85954 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Due to an autosampler error, the laboratory control sample duplicate (LCSD) for preparation batch 580-86657 did not run in analytical batch 580-86623, the laboratory control sample (LCS) did and all targets passed. The LCS/D were re-analyzed in AB 580-86723, however, the associated sample 580-26123-A-7-E, was not re-analyzed as it was out of hold.

No other analytical or quality issues were noted.

GC Semi VOA - Method NWTPH-Dx

For sample AB-3-25.0 (580-26123-7), the results in the #2 Diesel (C10-C24) range are due to what most closely resembles a jet fuel range product. The affected analyte range is qualified "Y" and has been reported.

The matrix spike (MS) recoveries for batch 580-86018 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
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.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Client Sample ID: AB-3-25.0

Lab Sample ID: 580-26123-7

Date Collected: 05/10/11 10:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 85.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.7		0.31		mg/Kg	*	05/16/11 14:03	05/16/11 18:20	10
1,2-Dichloroethane	ND		0.76		mg/Kg	*	05/16/11 14:03	05/16/11 18:20	10
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	96		80 - 120				05/16/11 14:03	05/16/11 18:20	10
Toluene-d8 (Surr)	93		80 - 120				05/16/11 14:03	05/16/11 18:20	10
Ethylbenzene-d10	103		70 - 120				05/16/11 14:03	05/16/11 18:20	10
4-Bromofluorobenzene (Surr)	102		70 - 120				05/16/11 14:03	05/16/11 18:20	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	77		1.9		mg/Kg	*	05/13/11 09:17	05/13/11 21:29	50
Ethylbenzene	110		1.9		mg/Kg	*	05/13/11 09:17	05/13/11 21:29	50
Xylenes, Total	550		1.9		mg/Kg	*	05/13/11 09:17	05/13/11 21:29	50
Methyl tert-butyl ether	ND		1.9		mg/Kg	*	05/13/11 09:17	05/13/11 21:29	50
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	104		80 - 120				05/13/11 09:17	05/13/11 21:29	50
Toluene-d8 (Surr)	100		80 - 120				05/13/11 09:17	05/13/11 21:29	50
Ethylbenzene-d10	99		70 - 120				05/13/11 09:17	05/13/11 21:29	50
4-Bromofluorobenzene (Surr)	100		70 - 120				05/13/11 09:17	05/13/11 21:29	50

Method: 8260B - Volatile Organic Compounds (GC/MS) - RADL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.39		mg/Kg	*	05/24/11 19:50	05/24/11 23:19	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	8000		190		mg/Kg	*	05/13/11 09:17	05/13/11 21:29	50
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		50 - 150				05/13/11 09:17	05/13/11 21:29	50

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)	1300	Y	28		mg/Kg	*	05/15/11 16:52	05/17/11 02:44	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	*	05/15/11 16:52	05/17/11 02:44	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				05/15/11 16:52	05/17/11 02:44	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	12		0.20		mg/Kg	*	05/18/11 12:04	05/18/11 16:07	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85		0.10		%			05/18/11 13:42	1
Percent Moisture	15		0.10		%			05/18/11 13:42	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Client Sample ID: AB-3-30.0

Lab Sample ID: 580-26123-8

Date Collected: 05/10/11 10:40

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 83.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018		mg/Kg	*	05/13/11 09:17	05/13/11 22:36	1
Methyl tert-butyl ether	ND		0.0012		mg/Kg	*	05/13/11 09:59	05/13/11 13:38	1
Toluene	0.21		0.046		mg/Kg	*	05/13/11 09:17	05/13/11 22:36	1
1,2-Dichloroethane	ND		0.0012		mg/Kg	*	05/13/11 09:59	05/13/11 13:38	1
Ethylbenzene	0.15		0.046		mg/Kg	*	05/13/11 09:17	05/13/11 22:36	1
1,2-Dibromoethane	ND		0.0012		mg/Kg	*	05/13/11 09:59	05/13/11 13:38	1
Xylenes, Total	0.83		0.046		mg/Kg	*	05/13/11 09:17	05/13/11 22:36	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	93		80 - 120	05/13/11 09:59	05/13/11 13:38	1
Fluorobenzene (Surr)	101		80 - 120	05/13/11 09:17	05/13/11 22:36	1
Toluene-d8 (Surr)	102		80 - 120	05/13/11 09:59	05/13/11 13:38	1
Ethylbenzene-d10	101		70 - 120	05/13/11 09:59	05/13/11 13:38	1
Toluene-d8 (Surr)	100		80 - 120	05/13/11 09:17	05/13/11 22:36	1
4-Bromofluorobenzene (Surr)	105		70 - 120	05/13/11 09:59	05/13/11 13:38	1
Ethylbenzene-d10	99		70 - 120	05/13/11 09:17	05/13/11 22:36	1
Trifluorotoluene (Surr)	142	X	65 - 140	05/13/11 09:59	05/13/11 13:38	1
4-Bromofluorobenzene (Surr)	99		70 - 120	05/13/11 09:17	05/13/11 22:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	7.5		4.6		mg/Kg	*	05/13/11 09:17	05/13/11 22:36	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150				05/13/11 09:17	05/13/11 22:36	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		29		mg/Kg	✱	05/15/11 16:52	05/17/11 03:50	1
Motor Oil (>C24-C36)	ND		57		mg/Kg	✱	05/15/11 16:52	05/17/11 03:50	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	105		50 - 150				05/15/11 16:52	05/17/11 03:50	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.9		0.21		mg/Kg	*	05/18/11 12:04	05/18/11 16:10	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	83		0.10		%			05/18/11 13:42	1
Percent Moisture	17		0.10		%			05/18/11 13:42	1

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Client Sample ID: AB-2-30.0

Lab Sample ID: 580-26123-17

Date Collected: 05/10/11 13:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.015		mg/Kg	*	05/13/11 09:17	05/14/11 00:06	1
Methyl tert-butyl ether	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:16	1
Toluene	ND		0.036		mg/Kg	*	05/13/11 09:17	05/14/11 00:06	1
1,2-Dichloroethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:16	1
Ethylbenzene	ND		0.036		mg/Kg	*	05/13/11 09:17	05/14/11 00:06	1
1,2-Dibromoethane	ND		0.0011		mg/Kg	*	05/13/11 09:59	05/13/11 15:16	1
Xylenes, Total	0.069		0.036		mg/Kg	*	05/13/11 09:17	05/14/11 00:06	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	91		80 - 120	05/13/11 09:59	05/13/11 15:16	1
Fluorobenzene (Surr)	102		80 - 120	05/13/11 09:17	05/14/11 00:06	1
Toluene-d8 (Surr)	99		80 - 120	05/13/11 09:59	05/13/11 15:16	1
Ethylbenzene-d10	108		70 - 120	05/13/11 09:59	05/13/11 15:16	1
Toluene-d8 (Surr)	100		80 - 120	05/13/11 09:17	05/14/11 00:06	1
4-Bromofluorobenzene (Surr)	112		70 - 120	05/13/11 09:59	05/13/11 15:16	1
Ethylbenzene-d10	99		70 - 120	05/13/11 09:17	05/14/11 00:06	1
Trifluorotoluene (Surr)	128		65 - 140	05/13/11 09:59	05/13/11 15:16	1
4-Bromofluorobenzene (Surr)	100		70 - 120	05/13/11 09:17	05/14/11 00:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	18		3.6		mg/Kg	✱	05/13/11 09:17	05/14/11 00:06	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		50 - 150				05/13/11 09:17	05/14/11 00:06	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		27		mg/Kg	*	05/15/11 16:52	05/17/11 05:18	1
Motor Oil (>C24-C36)	ND		54		mg/Kg	*	05/15/11 16:52	05/17/11 05:18	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				05/15/11 16:52	05/17/11 05:18	1

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.3		0.18		mg/Kg	*	05/18/11 12:04	05/18/11 16:23	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	90		0.10		%			05/18/11 13:42	1
Percent Moisture	10		0.10		%			05/18/11 13:42	1

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-85931/1-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: MB 580-85931/1-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Toluene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Ethylbenzene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
m-Xylene & p-Xylene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
o-Xylene	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Xylenes, Total	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Methyl tert-butyl ether	ND		0.040		mg/Kg		05/13/11 09:17	05/13/11 18:29	1

Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	100		80 - 120	05/13/11 09:17	05/13/11 18:29	1
Toluene-d8 (Surr)	100		80 - 120	05/13/11 09:17	05/13/11 18:29	1
Ethylbenzene-d10	98		70 - 120	05/13/11 09:17	05/13/11 18:29	1
Trifluorotoluene (Surr)	105		65 - 140	05/13/11 09:17	05/13/11 18:29	1
4-Bromofluorobenzene (Surr)	100		70 - 120	05/13/11 09:17	05/13/11 18:29	1

Lab Sample ID: LCS 580-85931/4-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCS 580-85931/4-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	0.800	0.760		mg/Kg		95	75 - 125
Toluene	0.800	0.756		mg/Kg		94	70 - 125
Ethylbenzene	0.800	0.752		mg/Kg		94	75 - 125
m-Xylene & p-Xylene	1.60	1.54		mg/Kg		96	80 - 125
o-Xylene	0.800	0.764		mg/Kg		96	75 - 125
Methyl tert-butyl ether	0.800	0.704		mg/Kg		88	65 - 125

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Ethylbenzene-d10	99		70 - 120
Trifluorotoluene (Surr)	98		65 - 140
4-Bromofluorobenzene (Surr)	99		70 - 120

Lab Sample ID: LCSD 580-85931/5-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCSD 580-85931/5-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
Benzene	0.800	0.824		mg/Kg		103	75 - 125	8	30
Toluene	0.800	0.824		mg/Kg		103	70 - 125	9	30
Ethylbenzene	0.800	0.816		mg/Kg		102	75 - 125	8	30
m-Xylene & p-Xylene	1.60	1.64		mg/Kg		103	80 - 125	7	30
o-Xylene	0.800	0.828		mg/Kg		104	75 - 125	8	30
Methyl tert-butyl ether	0.800	0.792		mg/Kg		99	65 - 125	12	30

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: LCSD 580-85931/5-A

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: LCSD 580-85931/5-A

Prep Type: Total/NA

Prep Batch: 85931

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	99		70 - 120
Trifluorotoluene (Surr)	101		65 - 140
4-Bromofluorobenzene (Surr)	100		70 - 120

Lab Sample ID: 580-26123-8 MS

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: AB-3-30.0

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	Limits
Benzene	ND		0.918	1.23	F	mg/Kg	*	133	75 - 125
Toluene	0.21		0.918	1.37	F	mg/Kg	*	127	70 - 125
Ethylbenzene	0.15		0.918	1.34	F	mg/Kg	*	129	75 - 125
m-Xylene & p-Xylene	0.57		1.84	2.90	F	mg/Kg	*	127	80 - 125
o-Xylene	0.26		0.918	1.45	F	mg/Kg	*	130	75 - 125
Methyl tert-butyl ether	ND		0.918	1.17		mg/Kg	*	128	59 - 137

Surrogate	MS % Recovery	MS Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Ethylbenzene-d10	99		70 - 120
4-Bromofluorobenzene (Surr)	101		70 - 120

Lab Sample ID: 580-26123-8 MSD

Matrix: Solid

Analysis Batch: 85954

Client Sample ID: AB-3-30.0

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	Limits	RPD	Limit
Benzene	ND		0.918	1.53	F	mg/Kg	*	166	75 - 125	22	30
Toluene	0.21		0.918	1.65	F	mg/Kg	*	157	70 - 125	18	30
Ethylbenzene	0.15		0.918	1.61	F	mg/Kg	*	159	75 - 125	18	30
m-Xylene & p-Xylene	0.57		1.84	3.40	F	mg/Kg	*	154	80 - 125	16	30
o-Xylene	0.26		0.918	1.73	F	mg/Kg	*	160	75 - 125	17	30
Methyl tert-butyl ether	ND		0.918	1.45	F	mg/Kg	*	158	59 - 137	21	30

Surrogate	MSD % Recovery	MSD Qualifier	Limits
Fluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	97		70 - 120
4-Bromofluorobenzene (Surr)	100		70 - 120

Lab Sample ID: MB 580-85933/1-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: MB 580-85933/1-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1
Methyl tert-butyl ether	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1
1,2-Dibromoethane	ND		0.0010		mg/Kg		05/13/11 09:59	05/13/11 11:08	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: MB 580-85933/1-A
Matrix: Solid
Analysis Batch: 85932

Client Sample ID: MB 580-85933/1-A
Prep Type: Total/NA
Prep Batch: 85933

Surrogate	MB MB % Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	100		80 - 120	05/13/11 09:59	05/13/11 11:08	1
Toluene-d8 (Surr)	97		80 - 120	05/13/11 09:59	05/13/11 11:08	1
Ethylbenzene-d10	96		70 - 120	05/13/11 09:59	05/13/11 11:08	1
Trifluorotoluene (Surr)	136		65 - 140	05/13/11 09:59	05/13/11 11:08	1
4-Bromofluorobenzene (Surr)	102		70 - 120	05/13/11 09:59	05/13/11 11:08	1

Lab Sample ID: LCS 580-85933/2-A
Matrix: Solid
Analysis Batch: 85932

Client Sample ID: LCS 580-85933/2-A
Prep Type: Total/NA
Prep Batch: 85933

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	% Rec	% Rec. Limits
1,2-Dichloroethane	0.0198	0.0193	mg/Kg		97	70 - 135
Methyl tert-butyl ether	0.0200	0.0201	mg/Kg		100	65 - 125
1,2-Dibromoethane	0.0200	0.0205	mg/Kg		103	70 - 125

Surrogate	LCS LCS % Recovery	Qualifier	Limits
Fluorobenzene (Surr)	103		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	101		70 - 120
Trifluorotoluene (Surr)	121		65 - 140
4-Bromofluorobenzene (Surr)	101		70 - 120

Lab Sample ID: LCSD 580-85933/3-A
Matrix: Solid
Analysis Batch: 85932

Client Sample ID: LCSD 580-85933/3-A
Prep Type: Total/NA
Prep Batch: 85933

Analyte	Spike Added	LCSD LCSD Result Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
1,2-Dichloroethane	0.0198	0.0191	mg/Kg		96	70 - 135	1	30
Methyl tert-butyl ether	0.0200	0.0191	mg/Kg		96	65 - 125	5	30
1,2-Dibromoethane	0.0200	0.0184	mg/Kg		92	70 - 125	11	30

Surrogate	LCSD LCSD % Recovery	Qualifier	Limits
Fluorobenzene (Surr)	100		80 - 120
Toluene-d8 (Surr)	96		80 - 120
Ethylbenzene-d10	94		70 - 120
Trifluorotoluene (Surr)	114		65 - 140
4-Bromofluorobenzene (Surr)	100		70 - 120

Lab Sample ID: MB 580-86085/1-A
Matrix: Solid
Analysis Batch: 86170

Client Sample ID: MB 580-86085/1-A
Prep Type: Total/NA
Prep Batch: 86085

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	0.016		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
Toluene	ND	0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
Ethylbenzene	ND	0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
m-Xylene & p-Xylene	ND	0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
o-Xylene	ND	0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
Xylenes, Total	ND	0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: MB 580-86085/1-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: MB 580-86085/1-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
Methyl tert-butyl ether	ND		0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
1,2-Dibromoethane	ND		0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1

Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	103		80 - 120	05/16/11 14:03	05/16/11 14:41	1
Toluene-d8 (Surr)	102		80 - 120	05/16/11 14:03	05/16/11 14:41	1
Ethylbenzene-d10	95		70 - 120	05/16/11 14:03	05/16/11 14:41	1
Trifluorotoluene (Surr)	102		65 - 140	05/16/11 14:03	05/16/11 14:41	1
4-Bromofluorobenzene (Surr)	104		70 - 120	05/16/11 14:03	05/16/11 14:41	1

Lab Sample ID: LCS 580-86085/2-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: LCS 580-86085/2-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	0.796	0.736		mg/Kg		92	75 - 125
Toluene	0.800	0.704		mg/Kg		88	70 - 125
Ethylbenzene	0.794	0.724		mg/Kg		91	75 - 125
m-Xylene & p-Xylene	1.60	1.50		mg/Kg		94	80 - 125
o-Xylene	0.800	0.748		mg/Kg		94	75 - 125
1,2-Dichloroethane	0.793	0.796		mg/Kg		100	70 - 135
Methyl tert-butyl ether	0.800	0.704		mg/Kg		88	65 - 125
1,2-Dibromoethane	0.800	0.728		mg/Kg		91	70 - 125

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	98		70 - 120
Trifluorotoluene (Surr)	95		65 - 140
4-Bromofluorobenzene (Surr)	104		70 - 120

Lab Sample ID: LCSD 580-86085/3-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: LCSD 580-86085/3-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
Benzene	0.796	0.772		mg/Kg		97	75 - 125	5	30
Toluene	0.800	0.700		mg/Kg		87	70 - 125	1	30
Ethylbenzene	0.794	0.748		mg/Kg		94	75 - 125	3	30
m-Xylene & p-Xylene	1.60	1.52		mg/Kg		95	80 - 125	2	30
o-Xylene	0.800	0.772		mg/Kg		96	75 - 125	3	30
1,2-Dichloroethane	0.793	0.756		mg/Kg		95	70 - 135	5	30
Methyl tert-butyl ether	0.800	0.660		mg/Kg		82	65 - 125	6	30
1,2-Dibromoethane	0.800	0.692		mg/Kg		87	70 - 125	5	30

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Fluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	97		80 - 120

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: LCSD 580-86085/3-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: LCSD 580-86085/3-A

Prep Type: Total/NA

Prep Batch: 86085

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
Ethylbenzene-d10	98		70 - 120
Trifluorotoluene (Surr)	98		65 - 140
4-Bromofluorobenzene (Surr)	106		70 - 120

Lab Sample ID: MB 580-86657/1-A

Matrix: Solid

Analysis Batch: 86623

Client Sample ID: MB 580-86657/1-A

Prep Type: Total/NA

Prep Batch: 86657

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.040		mg/Kg		05/24/11 19:50	05/24/11 22:55	1
Surrogate	MB % Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	99		80 - 120				05/24/11 19:50	05/24/11 22:55	1
Toluene-d8 (Surr)	97		80 - 120				05/24/11 19:50	05/24/11 22:55	1
Ethylbenzene-d10	98		70 - 120				05/24/11 19:50	05/24/11 22:55	1
Trifluorotoluene (Surr)	105		65 - 140				05/24/11 19:50	05/24/11 22:55	1
4-Bromofluorobenzene (Surr)	97		70 - 120				05/24/11 19:50	05/24/11 22:55	1

Lab Sample ID: MB 580-86657/1-A

Matrix: Solid

Analysis Batch: 86723

Client Sample ID: MB 580-86657/1-A

Prep Type: Total/NA

Prep Batch: 86657

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.040		mg/Kg		05/24/11 19:50	05/25/11 15:21	1
Surrogate	MB % Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	99		80 - 120				05/24/11 19:50	05/25/11 15:21	1
Toluene-d8 (Surr)	96		80 - 120				05/24/11 19:50	05/25/11 15:21	1
Ethylbenzene-d10	95		70 - 120				05/24/11 19:50	05/25/11 15:21	1
Trifluorotoluene (Surr)	106		65 - 140				05/24/11 19:50	05/25/11 15:21	1
4-Bromofluorobenzene (Surr)	98		70 - 120				05/24/11 19:50	05/25/11 15:21	1

Lab Sample ID: LCS 580-86657/2-A

Matrix: Solid

Analysis Batch: 86623

Client Sample ID: LCS 580-86657/2-A

Prep Type: Total/NA

Prep Batch: 86657

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
1,2-Dibromoethane	0.800	0.784		mg/Kg		98	70 - 125
Surrogate	LCS % Recovery	LCS Qualifier	Limits				
Fluorobenzene (Surr)	97		80 - 120				
Toluene-d8 (Surr)	98		80 - 120				
Ethylbenzene-d10	97		70 - 120				
Trifluorotoluene (Surr)	105		65 - 140				
4-Bromofluorobenzene (Surr)	101		70 - 120				

TestAmerica Seattle

06/06/2011

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: LCS 580-86657/2-A

Matrix: Solid

Analysis Batch: 86723

Client Sample ID: LCS 580-86657/2-A

Prep Type: Total/NA

Prep Batch: 86657

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
1,2-Dibromoethane	0.800	0.780		mg/Kg		98	70 - 125
Surrogate	LCS % Recovery	LCS Qualifier	Limits				
Fluorobenzene (Surr)	101		80 - 120				
Toluene-d8 (Surr)	99		80 - 120				
Ethylbenzene-d10	100		70 - 120				
Trifluorotoluene (Surr)	102		65 - 140				
4-Bromofluorobenzene (Surr)	97		70 - 120				

Lab Sample ID: LCSD 580-86657/3-A

Matrix: Solid

Analysis Batch: 86723

Client Sample ID: LCSD 580-86657/3-A

Prep Type: Total/NA

Prep Batch: 86657

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane	0.800	0.776		mg/Kg		97	70 - 125	1	30
Surrogate	LCSD % Recovery	LCSD Qualifier	Limits						
Fluorobenzene (Surr)	100		80 - 120						
Toluene-d8 (Surr)	100		80 - 120						
Ethylbenzene-d10	97		70 - 120						
Trifluorotoluene (Surr)	106		65 - 140						
4-Bromofluorobenzene (Surr)	99		70 - 120						

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

Lab Sample ID: MB 580-85931/1-A

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: MB 580-85931/1-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0		mg/Kg		05/13/11 09:17	05/13/11 18:29	1
Surrogate	MB % Recovery	MB Qualifier	Limits						
4-Bromofluorobenzene (Surr)	104		50 - 150						
Trifluorotoluene (Surr)	114		50 - 150						

Lab Sample ID: LCS 580-85931/2-A

Matrix: Solid

Analysis Batch: 85952

Client Sample ID: LCS 580-85931/2-A

Prep Type: Total/NA

Prep Batch: 85931

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Gasoline	40.0	37.4		mg/Kg		93	68 - 120
Surrogate	LCS % Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	105		50 - 150				
Trifluorotoluene (Surr)	108		50 - 150				

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: LCSD 580-85931/3-A
Matrix: Solid
Analysis Batch: 85952

Client Sample ID: LCSD 580-85931/3-A
Prep Type: Total/NA
Prep Batch: 85931

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Gasoline	40.0	38.5		mg/Kg		96	68 - 120	3	25
Surrogate	% Recovery	LCSD Qualifier	LCSD Limits						
4-Bromofluorobenzene (Surr)	105		50 - 150						
Trifluorotoluene (Surr)	112		50 - 150						

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

Lab Sample ID: MB 580-86018/1-B
Matrix: Solid
Analysis Batch: 86061

Client Sample ID: MB 580-86018/1-B
Prep Type: Total/NA
Prep Batch: 86018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25		mg/Kg		05/15/11 16:52	05/16/11 23:26	1
Motor Oil (>C24-C36)	ND		50		mg/Kg		05/15/11 16:52	05/16/11 23:26	1
Surrogate	% Recovery	MB Qualifier	MB Limits						
o-Terphenyl	103		50 - 150						

Lab Sample ID: LCS 580-86018/2-B
Matrix: Solid
Analysis Batch: 86061

Client Sample ID: LCS 580-86018/2-B
Prep Type: Total/NA
Prep Batch: 86018

Analyte	Spike Added	LCS	LCS	Unit	D	% Rec	% Rec.		
		Result	Qualifier				Limits		
#2 Diesel (C10-C24)	500	521		mg/Kg		104	64 - 127		
Motor Oil (>C24-C36)	500	507		mg/Kg		101	70 - 125		

Lab Sample ID: 580-26123-8 MS
Matrix: Solid
Analysis Batch: 86061

Client Sample ID: AB-3-30.0
Prep Type: Total/NA
Prep Batch: 86018

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
#2 Diesel (C10-C24)	ND		566	385	F	mg/Kg	✱	68	70 - 125
Motor Oil (>C24-C36)	ND		566	363	F	mg/Kg	✱	62	64 - 127
Surrogate	% Recovery	MS Qualifier	MS Limits						
o-Terphenyl	62		50 - 150						

Lab Sample ID: 580-26123-7 DU
Matrix: Solid
Analysis Batch: 86061

Client Sample ID: AB-3-25.0
Prep Type: Total/NA
Prep Batch: 86018

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	1300	Y	1450		mg/Kg	✱	11	35
Motor Oil (>C24-C36)	ND		ND		mg/Kg	✱	6	35

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

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

Lab Sample ID: 580-26123-7 DU

Matrix: Solid

Analysis Batch: 86061

Client Sample ID: AB-3-25.0

Prep Type: Total/NA

Prep Batch: 86018

	DU	DU	
Surrogate	% Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	106		50 - 150

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 580-86253/15-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: MB 580-86253/15-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	MB	MB							
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.20		mg/Kg		05/18/11 12:04	05/18/11 15:33	10

Lab Sample ID: LCS 580-86253/16-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: LCS 580-86253/16-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Spike	LCS	LCS						
	Added	Result	Qualifier	Unit	D	% Rec	% Rec.	Limits	
Lead	50.0	54.5		mg/Kg		109		80 - 120	

Lab Sample ID: LCSD 580-86253/17-A

Matrix: Solid

Analysis Batch: 86294

Client Sample ID: LCSD 580-86253/17-A

Prep Type: Total/NA

Prep Batch: 86253

Analyte	Spike	LCSD	LCSD							
	Added	Result	Qualifier	Unit	D	% Rec	% Rec.	Limits	RPD	Limit
Lead	50.0	52.4		mg/Kg		105		80 - 120	4	20

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Client Sample ID: AB-3-25.0

Date Collected: 05/10/11 10:30

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-7

Matrix: Solid

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B	DL	50	85954	05/13/11 21:29	JMB	TAL SEA
Total/NA	Prep	5035			86085	05/16/11 14:03	TR	TAL SEA
Total/NA	Analysis	8260B		10	86170	05/16/11 18:20	TR	TAL SEA
Total/NA	Prep	5035	RADL		86657	05/24/11 19:50	TR	TAL SEA
Total/NA	Analysis	8260B	RADL	10	86623	05/24/11 23:19	TR	TAL SEA
Total/NA	Prep	5035	DL		85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx	DL	50	85952	05/13/11 21:29	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 02:44	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:07	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-3-30.0

Date Collected: 05/10/11 10:40

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-8

Matrix: Solid

Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 13:38	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/13/11 22:36	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/13/11 22:36	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 03:50	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA
Total/NA	Analysis	6020		10	86294	05/18/11 16:10	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	TAL SEA

Client Sample ID: AB-2-30.0

Date Collected: 05/10/11 13:30

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-17

Matrix: Solid

Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 15:16	SK	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	8260B		1	85954	05/14/11 00:06	JMB	TAL SEA
Total/NA	Prep	5035			85931	05/13/11 09:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	85952	05/14/11 00:06	JMB	TAL SEA
Total/NA	Prep	3550B			86018	05/15/11 16:52	MT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	86061	05/17/11 05:18	ES	TAL SEA
Total/NA	Prep	3050B			86253	05/18/11 12:04	PAB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Client Sample ID: AB-2-30.0

Lab Sample ID: 580-26123-17

Date Collected: 05/10/11 13:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	6020		10	86294	05/18/11 16:23	FCW	TAL SEA
Total/NA	Analysis	Moisture		1	86261	05/18/11 13:42	PAB	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: ARCO 5810

TestAmerica Job ID: 580-26123-2

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP	0	L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025	0	L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	USDA	0	P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-26123-7	AB-3-25.0	Solid	05/10/11 10:30	05/11/11 11:25
580-26123-8	AB-3-30.0	Solid	05/10/11 10:40	05/11/11 11:25
580-26123-17	AB-2-30.0	Solid	05/10/11 13:30	05/11/11 11:25



Laboratory Management Program LaMP Chain of Custody Record

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BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standard TAT

Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number: Except for 3 samples. Please read comments.

Lab Name: <u>Test America</u>				BP/ARC Facility Address: <u>2101 6th Street</u>				Consultant/Contractor: <u>Antea Group</u>																
Lab Address: <u>5755 8th Street E., Tacoma, WA</u>				City, State, ZIP Code: <u>Bremerton, WA</u>				Consultant/Contractor Project No: <u>05810DA111</u>																
Lab PM: <u>Melissa Armstrong</u>				Lead Regulatory Agency: <u>Washington State Department of Ecology</u>				Address: <u>4006 148th Ave NE, Redmond, WA 98052</u>																
Lab Phone: <u>(253) 922-2310</u>				California Global ID No.: <u>NA</u>				Consultant/Contractor PM: <u>Markham Hurd</u>																
Lab Shipping Acct: <u></u>				Enfos Proposal No: <u>With call with numbers</u>				Phone: <u>(206) 679-8074</u>																
Lab Bottle Order No: <u></u>				Accounting Mode: Provision <u>X</u> OOC-BU <u></u> OOC-RM <u></u>				Email EDD To: <u>markham.hurd@anteagroup.com</u>																
Other Info: <u></u>				Stage: <u>30</u> Activity: <u>80</u>				Invoice To: BP/ARC <u>X</u> Contractor <u></u>																
BP/ARC EBM: <u>Paul Supple</u>				Matrix		No. Containers / Preservative		Requested Analyses				Report Type & QC Level												
EBM Phone: <u>(925) 275-3801</u>												Standard <u>X</u> w/Access												
EBM Email: <u>Paul.Supple@bp.com</u>												Full Data Package <u></u>												
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Methanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 8020	Pb-D by EPA 8020	EDB by EPA 8011	EDC by EPA 8260B	Comments	
1	AB-1-5.0	5-9-11	10:30	X			3	3					1	X	X	X	X	X	X	X	X	X	X	HOLD
2	AB-2-5.0	↓	12:50	X			3	3					1											HOLD
3	AB-3-5.0	↓	14:20	X			3	3					1											HOLD
4	AB-3-10.0	5-10-11	10:00	X			4	3					1											HOLD
5	AB-3-15.0	↓	10:10	X			4	3					1											HOLD
6	AB-3-20.0	↓	10:20	X			4	3					1											HOLD
7	AB-3-25.0	↓	10:30	X			4	3					1											HOLD
8	AB-3-30.0	↓	10:40	X			4	3					1											HOLD
9	AB-3-35.0	↓	10:50	X			4	3					1											HOLD
10	AB-3-40.0	↓	11:00	X			4	3					1											HOLD
Sampler's Name: <u>Mackie Manivong, Colin Crawford</u>				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time									
Sampler's Company: <u>Antea Group</u>				<u>Crawford</u>				5-11-11	11:25	<u>Cathy Camba</u>				5/11/11	11:25									
Shipment Method: <u>Drop off</u> Ship Date:																								
Shipment Tracking No:																								
Special Instructions: <u>EPH & VPH Pending 7-day TAT samples results.</u>																								
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																								

*STIR BARS & JARS WERE PUT IN TWO COOLERS W/ DRY ICE.
*METHANOL IN COOLER W/ REGULAR ICE.



Laboratory Management Program LaMP Chain of Custody Record

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Page 2 of 3

BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standart TAT Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number:

Lab Name: Test America				BP/ARC Facility Address: 2101 6th Street				Consultant/Contractor: Antea Group																
Lab Address: 5755 8th Street E., Tacoma, WA				City, State, ZIP Code: Bremerton, WA				Consultant/Contractor Project No: 05810DA111																
Lab PM: Melissa Armstrong				Lead Regulatory Agency: Washington State Department of Ecology				Address: 4006 148th Ave NE, Redmond, WA 98052																
Lab Phone: (253) 922-2310				California Global ID No.: NA				Consultant/Contractor PM: Markham Hurd																
Lab Shipping Acct:				Enfos Proposal No: <u>WR234036 / 005-Y5000.3</u>				Phone: (206) 679-8074																
Lab Bottle Order No:				Accounting Mode: Provision <u>X</u> OOC-BU OOC-RM				Email EDD To: <u>markham.hurd@anteagroup.com</u>																
Other Info:				Stage: 30 Activity: 80				Invoice To: BP/ARC <u>X</u> Contractor																
BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative		Requested Analyses						Report Type & QC Level										
EBM Phone: (925) 275-3801														Standard <u>X</u> w/ Access										
EBM Email: <u>Paul.Supple@bp.com</u>														Full Data Package										
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Nethanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-GX	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 8020	Pb-D by EPA 8020	EDB by EPA 8011	EDC by EPA 8280B	Comments	
11	AB-3-45.0	5-10-11	11:10	X			4	3							X	X	X	X	X	X	X	X	X	HOLD
12	AB-3-50.0	5-10-11	11:20																					Ntd.
13	AB-2-10.0		12:50																					HOLD
14	AB-2-15.0		13:00																					HOLD
15	AB-2-20.0		13:10																					Ntd.
16	AB-2-25.0		13:20																					HOLD
17	AB-2-30.0		13:30																					7-day TAT
18	AB-2-35.0		13:40																					HOLD
19	AB-2-40.0		13:50																					Ntd.
20	AB-2-45.0		14:00				4	4																HOLD
Sampler's Name: <u>Chad Cantor</u>				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time									
Sampler's Company: Antea Group								5-11-11	11:25	<u>Cathy Gamble</u>				5/11	11:25									
Shipment Method: <u>Drop</u> Ship Date: <u>5-11-11</u>																								
Shipment Tracking No:																								
Special Instructions:																								
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No																								

BP/ARC LaMP COC Rev. 6 01/01/2009

Laboratory Management Program LaMP Chain of Custody Record

26123

Page 3 of 3

BP/ARC Project Name: ARCO 5810

Req Due Date (mm/dd/yy): Standard TAT: Rush TAT: Yes No

BP/ARC Facility No: ARCO Facility No. 5810

Lab Work Order Number:

Lab Name: Test America	BP/ARC Facility Address: 2101 6th Street	Consultant/Contractor: Antea Group
Lab Address: 5755 8th Street E., Tacoma, WA	City, State, ZIP Code: Bremerton, WA	Consultant/Contractor Project No: 05810DA111
Lab PM: Melissa Armstrong	Lead Regulatory Agency: Washington State Department of Ecology	Address: 4006 148th Ave NE, Redmond, WA 98052
Lab Phone: (253) 922-2310	California Global ID No.: NA	Consultant/Contractor PM: Markham Hurd
Lab Shipping Acct:	Enfos Proposal No: <u>WR234030/005-YS0003</u>	Phone: (206) 679-8074
Lab Bottle Order No:	Accounting Mode: Provision <u>X</u> OOC-BU OOC-RM	Email EDD To: <u>markham.hurd@anteagroup.com</u>
Other Info:	Stage: 30 Activity: 80	Invoice To: BP/ARC <u>X</u> Contractor

BP/ARC EBM: Paul Supple	Matrix	No. Containers / Preservative	Requested Analyses	Report Type & QC Level
EBM Phone: (925) 275-3801				Standard <u>X</u> w/ Access
EBM Email: <u>Paul.Supple@bp.com</u>				Full Data Package

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Methanol	BTEX by EPA 8021B	MTBE by EPA 8021B	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 6020	Pb-D by EPA 6020	EDB by EPA 8011	EDC by EPA 8260B	Comments
21	AB-2-50	5-10-11	14:10	X			4	3						X	X	X	X	X	X	X	X	X	Ntd.
22	AB-1-10.0	5-11-11	8:40																				HOLD
23	AB-1-15.0		8:50																				HOLD
24	AB-1-20.0		9:06																				Ntd.
25	AB-1-25.0		9:10																				HOLD
26	AB-1-30.6		9:20																				HOLD
27	AB-1-35		9:36																				HOLD
28	AB-1-40		9:40																				HOLD
29	AB-1-45.0		9:50																				HOLD
30	AB-1-50.0		10:00																				Ntd.

Sampler's Name: <u>Celia Crawford</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group	<u>[Signature]</u>	5-11-11	11:25	<u>Cathy Gumble</u>	5/11/11	11:25
Shipment Method: <u>Drop</u>	Ship Date: <u>5-11-11</u>					
Shipment Tracking No:						

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No

Temp Blank: Yes / No

Cooler Temp on Receipt: °F/C

Trip Blank: Yes / No

MS/MSD Sample Submitted: Yes / No

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-26123-2

Login Number: 26123

List Source: TestAmerica Seattle

List Number: 1

Creator: Gamble, Cathy

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Dry ice for Stir Bars
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 sample IDs on the containers and the COC.	True	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
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: 580-26123-3
Client Project/Site: ARCO 5810
Revision: 1

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

Attn: Markham Hurd

Melissa Armstrong

Authorized for release by:
06/07/2011 05:18:15 PM

Melissa Armstrong
Project Manager I
melissa.armstrong@testamericainc.com

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www.testamericainc.com

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all 2003 NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, 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.

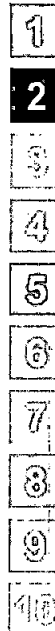


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Case Narrative

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Job ID: 580-26123-3

Laboratory: TestAmerica Seattle

Narrative

Receipt

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain-of-Custody (COC). Two tared and stir bar vials received as trip blank which was not noted on the COC. Logged-in and labeled, but no analyses assigned.

All other samples were received in good condition within temperature requirements.

GC/MS VOA - Method(s) 8260B:

Surrogate recovery of Trifluorotoluene for the following sample was outside of upper acceptance limits: AB-3-30.0 (580-26123-8). As the additional n-Hexane analyte was requested with insufficient time remaining to perform the analysis within hold, the data were flagged "X" and reported.

No other analytical or quality issues were noted.

GC VOA - Method(s) NWTPH/PH:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 86551 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

GC/MS Semi VOA - Method(s) 8270C:

Surrogate recovery for the following sample(s) was outside control limits: ab-3-25.0 (580-26123-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. Data have been "X" flagged and reported.

Responses for the internal standard (ISTD) Perylene-d12 and Chrysene-d12 for the following sample(s) were outside of acceptance limits: AB-2-50.0 (580-26123-21). Because these failing ISTDs are not associated with any of the target analytes; re-analysis of the sample was not performed. Data have been qualified and reported.

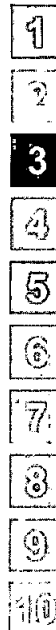
The CCV associated with analytical batch 86630 failed %D criteria for CCC compound pentachlorophenol. All associated samples which have been reported are analyzed for naphthalene compounds only. These compounds all passed CCC and SPCC criteria, thus the CCV failure does not affect these samples.

No other analytical or quality issues were noted.

GC Semi VOA - Method(s) NWTPH/EPH:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 86579 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.



Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC VOA

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits

GC Semi VOA

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
F	RPD of the MS and MSD exceeds the control limits

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.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-3-25.0

Lab Sample ID: 580-26123-7

Date Collected: 05/10/11 10:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 85.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	110		0.76		mg/Kg	✱	05/16/11 14:03	05/16/11 18:20	10
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	96		80 - 120				05/16/11 14:03	05/16/11 18:20	10
Toluene-d8 (Surr)	93		80 - 120				05/16/11 14:03	05/16/11 18:20	10
Ethylbenzene-d10	103		70 - 120				05/16/11 14:03	05/16/11 18:20	10
4-Bromofluorobenzene (Surr)	102		70 - 120				05/16/11 14:03	05/16/11 18:20	10

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol	86		36 - 145				05/24/11 09:06	05/24/11 17:57	1
Phenol-d5	59		38 - 149				05/24/11 09:06	05/24/11 17:57	1
Nitrobenzene-d5	179	X	38 - 141				05/24/11 09:06	05/24/11 17:57	1
2-Fluorobiphenyl	110		42 - 140				05/24/11 09:06	05/24/11 17:57	1
2,4,6-Tribromophenol	129		28 - 143				05/24/11 09:06	05/24/11 17:57	1
Terphenyl-d14	102		42 - 151				05/24/11 09:06	05/24/11 17:57	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - RADL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	38		2.3		mg/Kg	✱	05/24/11 09:06	05/24/11 19:56	100
2-Methylnaphthalene	32		2.3		mg/Kg	✱	05/24/11 09:06	05/24/11 19:56	100
1-Methylnaphthalene	18		3.5		mg/Kg	✱	05/24/11 09:06	05/24/11 19:56	100

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	550		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C10-C12 Aromatics	790		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C12-C13 Aromatics	ND		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C8-C10 Aliphatics	660		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C8-C10 Aromatics	1200		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C5-C6 Aliphatics	280		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
C6-C8 Aliphatics	1100		190		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
Total VPH	4800		1400		mg/Kg	✱	05/23/11 14:19	05/23/11 21:37	100
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BFB - PID	103		60 - 140				05/23/11 14:19	05/23/11 21:37	100
4-Bromofluorobenzene	123		60 - 140				05/23/11 14:19	05/23/11 21:37	100

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C16 Aliphatics	94		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
C12-C16 Aromatics	100		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
C16-C21 Aliphatics	ND		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
C16-C21 Aromatics	8.0		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
C21-C34 Aliphatics	ND		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
C21-C34 Aromatics	ND		5.8		mg/Kg	✱	05/24/11 08:28	06/02/11 12:36	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		60 - 140				05/24/11 08:28	06/02/11 12:36	1
1-Chlorooctadecane	77		60 - 140				05/24/11 08:28	06/02/11 12:36	1

TestAmerica Seattle

06/07/2011

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-3-25.0

Lab Sample ID: 580-26123-7

Date Collected: 05/10/11 10:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 85.3

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RADL									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	460		120		mg/Kg	✱	05/24/11 08:28	06/02/11 15:01	20
C10-C12 Aromatics	170		120		mg/Kg	✱	05/24/11 08:28	06/02/11 15:01	20
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		60 - 140				05/24/11 08:28	06/02/11 15:01	20
1-Chlorooctadecane	66		60 - 140				05/24/11 08:28	06/02/11 15:01	20

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-3-30.0

Lab Sample ID: 580-26123-8

Date Collected: 05/10/11 10:40

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 83.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	0.0093		0.0058		mg/Kg	*	05/13/11 09:59	05/13/11 13:38	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	93		80 - 120				05/13/11 09:59	05/13/11 13:38	1
Toluene-d8 (Surr)	102		80 - 120				05/13/11 09:59	05/13/11 13:38	1
Ethylbenzene-d10	101		70 - 120				05/13/11 09:59	05/13/11 13:38	1
4-Bromofluorobenzene (Surr)	105		70 - 120				05/13/11 09:59	05/13/11 13:38	1
Trifluorotoluene (Surr)	142	X	65 - 140				05/13/11 09:59	05/13/11 13:38	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.023		mg/Kg	*	05/24/11 09:06	05/24/11 18:17	1
2-Methylnaphthalene	ND		0.023		mg/Kg	*	05/24/11 09:06	05/24/11 18:17	1
1-Methylnaphthalene	ND		0.034		mg/Kg	*	05/24/11 09:06	05/24/11 18:17	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol	90		36 - 145				05/24/11 09:06	05/24/11 18:17	1
Phenol-d5	80		38 - 149				05/24/11 09:06	05/24/11 18:17	1
Nitrobenzene-d5	87		38 - 141				05/24/11 09:06	05/24/11 18:17	1
2-Fluorobiphenyl	88		42 - 140				05/24/11 09:06	05/24/11 18:17	1
2,4,6-Tribromophenol	99		28 - 143				05/24/11 09:06	05/24/11 18:17	1
Terphenyl-d14	86		42 - 151				05/24/11 09:06	05/24/11 18:17	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C10-C12 Aromatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C12-C13 Aromatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C8-C10 Aliphatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C8-C10 Aromatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C5-C6 Aliphatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
C6-C8 Aliphatics	ND		2.3		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
Total VPH	ND		16		mg/Kg	*	05/23/11 14:19	05/23/11 18:59	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BFB - PID	104		60 - 140				05/23/11 14:19	05/23/11 18:59	1
4-Bromofluorobenzene	105		60 - 140				05/23/11 14:19	05/23/11 18:59	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C10-C12 Aromatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C12-C16 Aliphatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C12-C16 Aromatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C16-C21 Aliphatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C16-C21 Aromatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C21-C34 Aliphatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
C21-C34 Aromatics	ND		5.9		mg/Kg	*	05/24/11 08:28	06/02/11 15:24	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		60 - 140				05/24/11 08:28	06/02/11 15:24	1
1-Chlorooctadecane	61		60 - 140				05/24/11 08:28	06/02/11 15:24	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-2-30.0

Lab Sample ID: 580-26123-17

Date Collected: 05/10/11 13:30

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 89.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	ND		0.0054		mg/Kg	*	05/13/11 09:59	05/13/11 15:16	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	91		80 - 120				05/13/11 09:59	05/13/11 15:16	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:59	05/13/11 15:16	1
Ethylbenzene-d10	108		70 - 120				05/13/11 09:59	05/13/11 15:16	1
4-Bromofluorobenzene (Surr)	112		70 - 120				05/13/11 09:59	05/13/11 15:16	1
Trifluorotoluene (Surr)	128		65 - 140				05/13/11 09:59	05/13/11 15:16	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.022		mg/Kg	*	05/24/11 09:06	05/24/11 18:37	1
2-Methylnaphthalene	ND		0.022		mg/Kg	*	05/24/11 09:06	05/24/11 18:37	1
1-Methylnaphthalene	ND		0.032		mg/Kg	*	05/24/11 09:06	05/24/11 18:37	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol	82		36 - 145				05/24/11 09:06	05/24/11 18:37	1
Phenol-d5	95		38 - 149				05/24/11 09:06	05/24/11 18:37	1
Nitrobenzene-d5	84		38 - 141				05/24/11 09:06	05/24/11 18:37	1
2-Fluorobiphenyl	91		42 - 140				05/24/11 09:06	05/24/11 18:37	1
2,4,6-Tribromophenol	107		28 - 143				05/24/11 09:06	05/24/11 18:37	1
Terphenyl-d14	88		42 - 151				05/24/11 09:06	05/24/11 18:37	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	5.5		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C10-C12 Aromatics	4.7		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C12-C13 Aromatics	2.9		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C8-C10 Aliphatics	7.8		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C8-C10 Aromatics	3.9		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C5-C6 Aliphatics	ND		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
C6-C8 Aliphatics	6.2		1.8		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
Total VPH	31		13		mg/Kg	*	05/23/11 14:19	05/23/11 16:48	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BFB - PID	104		60 - 140				05/23/11 14:19	05/23/11 16:48	1
4-Bromofluorobenzene	135		60 - 140				05/23/11 14:19	05/23/11 16:48	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C10-C12 Aromatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C12-C16 Aliphatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C12-C16 Aromatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C16-C21 Aliphatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C16-C21 Aromatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C21-C34 Aliphatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
C21-C34 Aromatics	ND		5.5		mg/Kg	*	05/24/11 08:28	06/02/11 13:24	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		60 - 140				05/24/11 08:28	06/02/11 13:24	1
1-Chlorooctadecane	68		60 - 140				05/24/11 08:28	06/02/11 13:24	1

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-2-50.0

Lab Sample ID: 580-26123-21

Date Collected: 05/10/11 14:10

Matrix: Solid

Date Received: 05/11/11 11:25

Percent Solids: 93.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	ND		0.0043		mg/Kg	✱	05/13/11 09:59	05/13/11 16:05	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	95		80 - 120				05/13/11 09:59	05/13/11 16:05	1
Toluene-d8 (Surr)	99		80 - 120				05/13/11 09:59	05/13/11 16:05	1
Ethylbenzene-d10	99		70 - 120				05/13/11 09:59	05/13/11 16:05	1
4-Bromofluorobenzene (Surr)	105		70 - 120				05/13/11 09:59	05/13/11 16:05	1
Trifluorotoluene (Surr)	114		65 - 140				05/13/11 09:59	05/13/11 16:05	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.021		mg/Kg	✱	05/24/11 09:06	05/24/11 18:57	1
2-Methylnaphthalene	ND		0.021		mg/Kg	✱	05/24/11 09:06	05/24/11 18:57	1
1-Methylnaphthalene	ND		0.031		mg/Kg	✱	05/24/11 09:06	05/24/11 18:57	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol	85		36 - 145				05/24/11 09:06	05/24/11 18:57	1
Phenol-d5	100		38 - 149				05/24/11 09:06	05/24/11 18:57	1
Nitrobenzene-d5	81		38 - 141				05/24/11 09:06	05/24/11 18:57	1
2-Fluorobiphenyl	89		42 - 140				05/24/11 09:06	05/24/11 18:57	1
2,4,6-Tribromophenol	92		28 - 143				05/24/11 09:06	05/24/11 18:57	1
Terphenyl-d14	85		42 - 151				05/24/11 09:06	05/24/11 18:57	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	3.8		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C10-C12 Aromatics	5.5		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C12-C13 Aromatics	4.0		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C8-C10 Aliphatics	3.6		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C8-C10 Aromatics	ND		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C5-C6 Aliphatics	ND		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
C6-C8 Aliphatics	ND		3.3		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
Total VPH	23		23		mg/Kg	✱	05/23/11 17:01	05/23/11 19:52	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BFB - PID	106		60 - 140				05/23/11 17:01	05/23/11 19:52	1
4-Bromofluorobenzene	115		60 - 140				05/23/11 17:01	05/23/11 19:52	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C10-C12 Aromatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C12-C16 Aliphatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C12-C16 Aromatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C16-C21 Aliphatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C16-C21 Aromatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C21-C34 Aliphatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
C21-C34 Aromatics	ND		5.3		mg/Kg	✱	05/24/11 08:28	06/02/11 13:49	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		60 - 140				05/24/11 08:28	06/02/11 13:49	1
1-Chlorooctadecane	75		60 - 140				05/24/11 08:28	06/02/11 13:49	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-85933/1-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: MB 580-85933/1-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	ND		0.0050		mg/Kg		05/13/11 09:59	05/13/11 11:08	1
Surrogate	% Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	100		80 - 120				05/13/11 09:59	05/13/11 11:08	1
Toluene-d8 (Surr)	97		80 - 120				05/13/11 09:59	05/13/11 11:08	1
Ethylbenzene-d10	96		70 - 120				05/13/11 09:59	05/13/11 11:08	1
4-Bromofluorobenzene (Surr)	102		70 - 120				05/13/11 09:59	05/13/11 11:08	1
Trifluorotoluene (Surr)	136		65 - 140				05/13/11 09:59	05/13/11 11:08	1

Lab Sample ID: LCS 580-85933/2-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: LCS 580-85933/2-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Hexane	0.0200	0.0206		mg/Kg		103	66 - 183
Surrogate	% Recovery	LCS Qualifier	Limits				
Fluorobenzene (Surr)	103		80 - 120				
Toluene-d8 (Surr)	99		80 - 120				
Ethylbenzene-d10	101		70 - 120				
4-Bromofluorobenzene (Surr)	101		70 - 120				
Trifluorotoluene (Surr)	121		65 - 140				

Lab Sample ID: LCSD 580-85933/3-A

Matrix: Solid

Analysis Batch: 85932

Client Sample ID: LCSD 580-85933/3-A

Prep Type: Total/NA

Prep Batch: 85933

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Hexane	0.0200	0.0181		mg/Kg		90	66 - 183	13	30
Surrogate	% Recovery	LCSD Qualifier	Limits						
Fluorobenzene (Surr)	100		80 - 120						
Toluene-d8 (Surr)	96		80 - 120						
Ethylbenzene-d10	94		70 - 120						
4-Bromofluorobenzene (Surr)	100		70 - 120						
Trifluorotoluene (Surr)	114		65 - 140						

Lab Sample ID: MB 580-86085/1-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: MB 580-86085/1-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	ND		0.040		mg/Kg		05/16/11 14:03	05/16/11 14:41	1
Surrogate	% Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobenzene (Surr)	103		80 - 120				05/16/11 14:03	05/16/11 14:41	1
Toluene-d8 (Surr)	102		80 - 120				05/16/11 14:03	05/16/11 14:41	1
Ethylbenzene-d10	95		70 - 120				05/16/11 14:03	05/16/11 14:41	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

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

Lab Sample ID: MB 580-86085/1-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: MB 580-86085/1-A

Prep Type: Total/NA

Prep Batch: 86085

Surrogate	MB MB % Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 120	05/16/11 14:03	05/16/11 14:41	1
Trifluorotoluene (Surr)	102		65 - 140	05/16/11 14:03	05/16/11 14:41	1

Lab Sample ID: LCS 580-86085/2-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: LCS 580-86085/2-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	% Rec	% Rec. Limits
Hexane	0.801	0.880	mg/Kg		110	66 - 183

Surrogate	LCS LCS % Recovery	Qualifier	Limits
Fluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Ethylbenzene-d10	98		70 - 120
4-Bromofluorobenzene (Surr)	104		70 - 120
Trifluorotoluene (Surr)	95		65 - 140

Lab Sample ID: LCSD 580-86085/3-A

Matrix: Solid

Analysis Batch: 86170

Client Sample ID: LCSD 580-86085/3-A

Prep Type: Total/NA

Prep Batch: 86085

Analyte	Spike Added	LCSD LCSD Result Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
Hexane	0.801	0.924	mg/Kg		115	66 - 183	5	30

Surrogate	LCSD LCSD % Recovery	Qualifier	Limits
Fluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	97		80 - 120
Ethylbenzene-d10	98		70 - 120
4-Bromofluorobenzene (Surr)	106		70 - 120
Trifluorotoluene (Surr)	98		65 - 140

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-86584/1-A

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: MB 580-86584/1-A

Prep Type: Total/NA

Prep Batch: 86584

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	0.020		mg/Kg		05/24/11 09:06	05/24/11 16:19	1
2-Methylnaphthalene	ND	0.020		mg/Kg		05/24/11 09:06	05/24/11 16:19	1
2-Chloronaphthalene	ND	0.020		mg/Kg		05/24/11 09:06	05/24/11 16:19	1
1-Methylnaphthalene	ND	0.030		mg/Kg		05/24/11 09:06	05/24/11 16:19	1

Surrogate	MB MB % Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol	92		36 - 145	05/24/11 09:06	05/24/11 16:19	1
Phenol-d5	96		38 - 149	05/24/11 09:06	05/24/11 16:19	1
Nitrobenzene-d5	90		38 - 141	05/24/11 09:06	05/24/11 16:19	1
2-Fluorobiphenyl	93		42 - 140	05/24/11 09:06	05/24/11 16:19	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-86584/1-A

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: MB 580-86584/1-A

Prep Type: Total/NA

Prep Batch: 86584

Surrogate	MB MB % Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	97		28 - 143	05/24/11 09:06	05/24/11 16:19	1
Terphenyl-d14	91		42 - 151	05/24/11 09:06	05/24/11 16:19	1

Lab Sample ID: LCS 580-86584/2-A

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: LCS 580-86584/2-A

Prep Type: Total/NA

Prep Batch: 86584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Naphthalene	1.00	0.978		mg/Kg		98	64 - 129
2-Methylnaphthalene	1.00	1.01		mg/Kg		101	65 - 125
2-Chloronaphthalene	1.00	1.03		mg/Kg		103	69 - 129
1-Methylnaphthalene	1.00	1.03		mg/Kg		103	48 - 148

Surrogate	LCS % Recovery	LCS Qualifier	Limits
2-Fluorophenol	76		36 - 145
Phenol-d5	68		38 - 149
Nitrobenzene-d5	89		38 - 141
2-Fluorobiphenyl	91		42 - 140
2,4,6-Tribromophenol	116		28 - 143
Terphenyl-d14	84		42 - 151

Lab Sample ID: 580-26123-21 MS

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86584

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Naphthalene	ND		1.05	1.06		mg/Kg	*	101	64 - 129
2-Methylnaphthalene	ND		1.05	1.08		mg/Kg	*	102	65 - 125
2-Chloronaphthalene	ND		1.05	1.06		mg/Kg	*	101	69 - 129
1-Methylnaphthalene	ND		1.05	1.09		mg/Kg	*	103	48 - 148

Surrogate	MS % Recovery	MS Qualifier	Limits
2-Fluorophenol	79		36 - 145
Phenol-d5	73		38 - 149
Nitrobenzene-d5	84		38 - 141
2-Fluorobiphenyl	89		42 - 140
2,4,6-Tribromophenol	111		28 - 143
Terphenyl-d14	87		42 - 151

Lab Sample ID: 580-26123-21 MSD

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86584

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Naphthalene	ND		1.01	1.03		mg/Kg	*	101	64 - 129	3	26
2-Methylnaphthalene	ND		1.01	1.05		mg/Kg	*	104	65 - 125	2	27
2-Chloronaphthalene	ND		1.01	1.04		mg/Kg	*	102	69 - 129	2	25
1-Methylnaphthalene	ND		1.01	1.07		mg/Kg	*	105	48 - 148	2	30

TestAmerica Seattle

06/07/2011

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-26123-21 MSD

Matrix: Solid

Analysis Batch: 86630

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86584

Surrogate	MSD % Recovery	MSD Qualifier	Limits
2-Fluorophenol	80		36 - 145
Phenol-d5	75		38 - 149
Nitrobenzene-d5	85		38 - 141
2-Fluorobiphenyl	88		42 - 140
2,4,6-Tribromophenol	108		28 - 143
Terphenyl-d14	84		42 - 151

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: LCS 580-86536/2-A

Matrix: Solid

Analysis Batch: 86551

Client Sample ID: LCS 580-86536/2-A

Prep Type: Total/NA

Prep Batch: 86536

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
C10-C12 Aliphatics	4.00	4.71		mg/Kg		118	70 - 130
C10-C12 Aromatics	4.00	3.76		mg/Kg		94	70 - 130
C12-C13 Aromatics	8.00	6.53		mg/Kg		82	70 - 130
C8-C10 Aliphatics	8.00	10.1		mg/Kg		127	70 - 130
C8-C10 Aromatics	16.0	16.0		mg/Kg		100	70 - 130
C5-C6 Aliphatics	8.00	9.31		mg/Kg		116	70 - 130
C6-C8 Aliphatics	4.00	4.60		mg/Kg		115	70 - 130
Total VPH	64.0	66.8		mg/Kg		104	70 - 130

Surrogate	LCS % Recovery	LCS Qualifier	Limits
BFB - PID	99		60 - 140
4-Bromofluorobenzene	105		60 - 140

Lab Sample ID: 580-26123-17 MS

Matrix: Solid

Analysis Batch: 86551

Client Sample ID: AB-2-30.0

Prep Type: Total/NA

Prep Batch: 86536

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
C10-C12 Aliphatics	5.5		3.63	10.1		mg/Kg	*	126	70 - 130
C10-C12 Aromatics	4.7		3.63	7.67		mg/Kg	*	82	70 - 130
C12-C13 Aromatics	2.9		7.25	8.76		mg/Kg	*	81	70 - 130
C8-C10 Aliphatics	7.8		7.25	17.4	F	mg/Kg	*	133	70 - 130
C8-C10 Aromatics	3.9		14.5	17.4		mg/Kg	*	93	70 - 130
C5-C6 Aliphatics	ND		7.25	8.63		mg/Kg	*	112	70 - 130
C6-C8 Aliphatics	6.2		3.63	10.2		mg/Kg	*	111	70 - 130
Total VPH	31		58.0	90.7		mg/Kg	*	102	70 - 130

Surrogate	MS % Recovery	MS Qualifier	Limits
BFB - PID	99		60 - 140
4-Bromofluorobenzene	137		60 - 140

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-26123-17 MSD

Matrix: Solid

Analysis Batch: 86551

Client Sample ID: AB-2-30.0

Prep Type: Total/NA

Prep Batch: 86536

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit
C10-C12 Aliphatics	5.5		3.63	9.94		mg/Kg	*	123	70 - 130	1	25
C10-C12 Aromatics	4.7		3.63	7.44		mg/Kg	*	75	70 - 130	3	25
C12-C13 Aromatics	2.9		7.25	8.20		mg/Kg	*	73	70 - 130	7	25
C8-C10 Aliphatics	7.8		7.25	17.6	F	mg/Kg	*	136	70 - 130	1	25
C8-C10 Aromatics	3.9		14.5	17.2		mg/Kg	*	91	70 - 130	1	25
C5-C6 Aliphatics	ND		7.25	8.78		mg/Kg	*	115	70 - 130	2	25
C6-C8 Aliphatics	6.2		3.63	10.3		mg/Kg	*	113	70 - 130	0	25
Total VPH	31		58.0	89.8		mg/Kg	*	100	70 - 130	1	25

Surrogate	MSD % Recovery	MSD Qualifier	Limits
BFB - PID	97		60 - 140
4-Bromofluorobenzene	136		60 - 140

Lab Sample ID: MB 580-86551/5

Matrix: Solid

Analysis Batch: 86551

Client Sample ID: MB 580-86551/5

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C10-C12 Aromatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C12-C13 Aromatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C8-C10 Aliphatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C8-C10 Aromatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C5-C6 Aliphatics	ND		0.050		mg/Kg			05/23/11 15:29	1
C6-C8 Aliphatics	ND		0.050		mg/Kg			05/23/11 15:29	1
Total VPH	ND		0.35		mg/Kg			05/23/11 15:29	1

Surrogate	MB % Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	105		60 - 140		05/23/11 15:29	1
4-Bromofluorobenzene	107		60 - 140		05/23/11 15:29	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-86579/1-B

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: MB 580-86579/1-B

Prep Type: Total/NA

Prep Batch: 86579

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C10-C12 Aromatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C12-C16 Aromatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C16-C21 Aliphatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C16-C21 Aromatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C21-C34 Aliphatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1
C21-C34 Aromatics	ND		5.0		mg/Kg		05/24/11 08:28	06/02/11 11:48	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 580-86579/1-B

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: MB 580-86579/1-B

Prep Type: Total/NA

Prep Batch: 86579

Surrogate	MB MB % Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		60 - 140	05/24/11 08:28	06/02/11 11:48	1
1-Chlorooctadecane	76		60 - 140	05/24/11 08:28	06/02/11 11:48	1

Lab Sample ID: LCS 580-86579/2-B

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: LCS 580-86579/2-B

Prep Type: Total/NA

Prep Batch: 86579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
C10-C12 Aliphatics	3.33	ND		mg/Kg		71	70 - 130
C10-C12 Aromatics	3.33	ND		mg/Kg		80	70 - 130
C12-C16 Aliphatics	6.67	5.19		mg/Kg		78	70 - 130
C12-C16 Aromatics	10.0	8.49		mg/Kg		85	70 - 130
C16-C21 Aliphatics	10.0	8.49		mg/Kg		85	70 - 130
C16-C21 Aromatics	20.0	15.2		mg/Kg		76	70 - 130
C21-C34 Aliphatics	20.0	16.0		mg/Kg		80	70 - 130
C21-C34 Aromatics	26.7	24.5		mg/Kg		92	70 - 130

Surrogate	LCS LCS % Recovery	Qualifier	Limits
o-Terphenyl	82		60 - 140
1-Chlorooctadecane	80		60 - 140

Lab Sample ID: 580-26123-21 MS

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86579

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
C10-C12 Aliphatics	ND		3.54	ND	F	mg/Kg	*	64	70 - 130
C10-C12 Aromatics	ND		3.54	ND	F	mg/Kg	*	11	70 - 130
C12-C16 Aliphatics	ND		7.09	ND		mg/Kg	*	73	70 - 130
C12-C16 Aromatics	ND		10.6	6.38	F	mg/Kg	*	60	70 - 130
C16-C21 Aliphatics	ND		10.6	8.71		mg/Kg	*	82	70 - 130
C16-C21 Aromatics	ND		21.3	15.5		mg/Kg	*	73	70 - 130
C21-C34 Aliphatics	ND		21.3	16.6		mg/Kg	*	78	70 - 130
C21-C34 Aromatics	ND		28.3	25.6		mg/Kg	*	91	70 - 130

Surrogate	MS MS % Recovery	Qualifier	Limits
o-Terphenyl	78		60 - 140
1-Chlorooctadecane	80		60 - 140

Lab Sample ID: 580-26123-21 MSD

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86579

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD Limit
C10-C12 Aliphatics	ND		3.53	ND	F	mg/Kg	*	57	70 - 130	11 25
C10-C12 Aromatics	ND		3.53	ND	F	mg/Kg	*	0	70 - 130	NC 25
C12-C16 Aliphatics	ND		7.06	ND	F	mg/Kg	*	66	70 - 130	11 25
C12-C16 Aromatics	ND		10.6	ND	F	mg/Kg	*	42	70 - 130	35 25
C16-C21 Aliphatics	ND		10.6	7.70		mg/Kg	*	73	70 - 130	12 25

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-26123-21 MSD

Matrix: Solid

Analysis Batch: 87080

Client Sample ID: AB-2-50.0

Prep Type: Total/NA

Prep Batch: 86579

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
C16-C21 Aromatics	ND		21.2	13.8	F	mg/Kg	*	65	70 - 130	12	25
C21-C34 Aliphatics	ND		21.2	15.0		mg/Kg	*	71	70 - 130	11	25
C21-C34 Aromatics	ND		28.2	22.6		mg/Kg	*	80	70 - 130	12	25

Surrogate	MSD % Recovery	MSD Qualifier	Limits
o-Terphenyl	69		60 - 140
1-Chlorooctadecane	71		60 - 140



Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-3-25.0

Date Collected: 05/10/11 10:30

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-7

Matrix: Solid

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			86085	05/16/11 14:03	TR	TAL SEA
Total/NA	Analysis	8260B		10	86170	05/16/11 18:20	TR	TAL SEA
Total/NA	Prep	3550B	RADL		86584	05/24/11 09:06	KKW	TAL SEA
Total/NA	Analysis	8270C	RADL	100	86630	05/24/11 19:56	AP	TAL SEA
Total/NA	Prep	3550B			86584	05/24/11 09:06	KKW	TAL SEA
Total/NA	Analysis	8270C		1	86630	05/24/11 17:57	AP	TAL SEA
Total/NA	Prep	5035			86536	05/23/11 14:19	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VP		100	86551	05/23/11 21:37	MAT	TAL SEA
Total/NA	Prep	3550B	RADL		86579	05/24/11 08:28	KKW	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RADL	20	87080	06/02/11 15:01	EK	TAL SEA
Total/NA	Prep	3550B			86579	05/24/11 08:28	KKW	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	87080	06/02/11 12:36	EK	TAL SEA

Client Sample ID: AB-3-30.0

Date Collected: 05/10/11 10:40

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-8

Matrix: Solid

Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 13:38	SK	TAL SEA
Total/NA	Prep	3550B			86584	05/24/11 09:06	KKW	TAL SEA
Total/NA	Analysis	8270C		1	86630	05/24/11 18:17	AP	TAL SEA
Total/NA	Prep	5035			86536	05/23/11 14:19	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VP		1	86551	05/23/11 18:59	MAT	TAL SEA
Total/NA	Prep	3550B			86579	05/24/11 08:28	KKW	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	87080	06/02/11 15:24	EK	TAL SEA

Client Sample ID: AB-2-30.0

Date Collected: 05/10/11 13:30

Date Received: 05/11/11 11:25

Lab Sample ID: 580-26123-17

Matrix: Solid

Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 15:16	SK	TAL SEA
Total/NA	Prep	3550B			86584	05/24/11 09:06	KKW	TAL SEA
Total/NA	Analysis	8270C		1	86630	05/24/11 18:37	AP	TAL SEA
Total/NA	Prep	5035			86536	05/23/11 14:19	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VP		1	86551	05/23/11 16:48	MAT	TAL SEA
Total/NA	Prep	3550B			86579	05/24/11 08:28	KKW	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	87080	06/02/11 13:24	EK	TAL SEA

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Client Sample ID: AB-2-50.0

Lab Sample ID: 580-26123-21

Date Collected: 05/10/11 14:10

Matrix: Solid

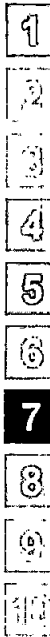
Date Received: 05/11/11 11:25

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85933	05/13/11 09:59	SK	TAL SEA
Total/NA	Analysis	8260B		1	85932	05/13/11 16:05	SK	TAL SEA
Total/NA	Prep	3550B			86584	05/24/11 09:06	KKW	TAL SEA
Total/NA	Analysis	8270C		1	86630	05/24/11 18:57	AP	TAL SEA
Total/NA	Prep	5035			86536	05/23/11 17:01	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	86551	05/23/11 19:52	MAT	TAL SEA
Total/NA	Prep	3550B			86579	05/24/11 08:28	KKW	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	87080	06/02/11 13:49	EK	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: ARCO 5810

TestAmerica Job ID: 580-26123-3

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP	0	L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025	0	L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	USDA	0	P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5810

TestAmerica Job ID: 580-26123-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-26123-7	AB-3-25.0	Solid	05/10/11 10:30	05/11/11 11:25
580-26123-8	AB-3-30.0	Solid	05/10/11 10:40	05/11/11 11:25
580-26123-17	AB-2-30.0	Solid	05/10/11 13:30	05/11/11 11:25
580-26123-21	AB-2-50.0	Solid	05/10/11 14:10	05/11/11 11:25

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-26123-3

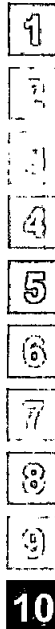
Login Number: 26123

List Source: TestAmerica Seattle

List Number: 1

Creator: Gamble, Cathy

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Dry ice for Stir Bars
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 sample IDs on the containers and the COC.	True	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix D

Soil and Decontamination Water Disposal Documents



Release of Liability/Certificate of Disposal

BP/Atlantic Richfield Co.; is released from liability for all petroleum contaminated waste originating from:

**ARCO Facility #5810
2101 West 6th Street
Bremerton WA.**

and transported to:

**CEMEX USA-Everett Soil Remediation
6300 Glenwood Ave.
Everett WA 98203**

On 7/11/2011

A total of ten (10) fifty-five (55) gallon drums of petroleum contaminated waste were transported to the above facility. The material was disposed of in the following manner:

Thermal Remediation / Landfill for Reclamation

Disposal of the contaminated soil was performed in accordance with all applicable federal, state, and local laws and regulations.

Date: December 7th, 2011

Signed:

A handwritten signature in cursive script that reads "Larry W. Baker".

Larry W. Baker
Soil Remediation Operations Manager
CEMEX
Northwest Region
U.S. Operations

Appendix E

MTCA Method B Calculations Summary

MTCA METHOD B CALCULATIONS SUMMARY

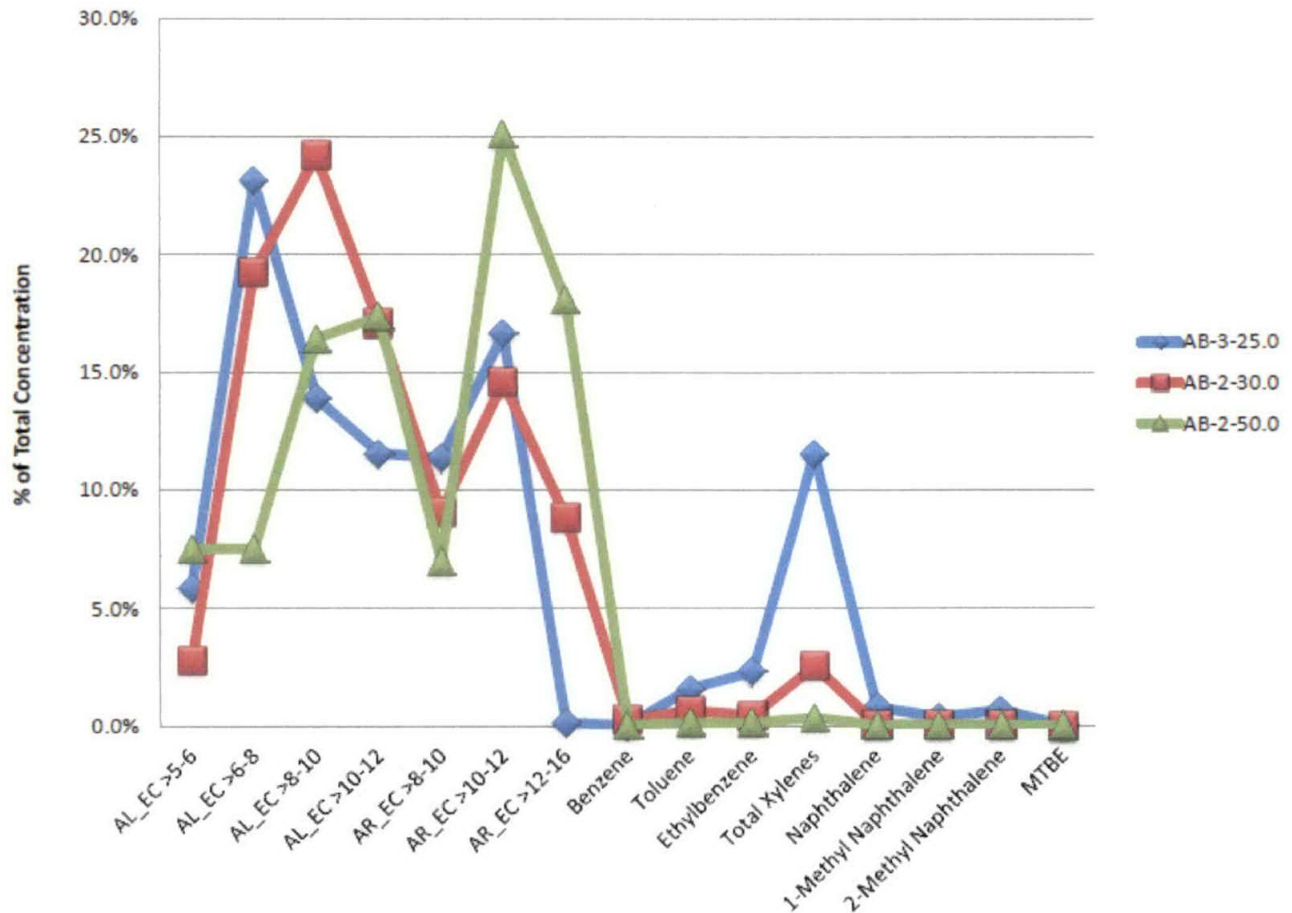
Table 1 – MTCATPH Spreadsheet Results (Method B Cleanup Levels).

Exposure Pathway	Cleanup Level	Units	Criteria
Soil ingestion + dermal contact (residential land use)	2,896	mg/kg	HI = 1
Soil ingestion + dermal contact (industrial land use)	53,216	mg/kg	HI = 1
Soil-to-Ground Water (leaching)	24	mg/kg	HI = 1
Ground Water (human ingestion)	300	ug/L	HI = 1
Vapor Intrusion (soil to indoor air)	0.9	mg/kg	HI = 1
Vapor Intrusion (indoor air)	188	ug/m3	HI = 1

Table 2 – ARCO Facility 5810 Soil Petroleum Data

	AB-3-25.0	AB-2-30.0	AB-2-50.0	Median	AB-3-25.0	AB-2-30.0	AB-2-50.0
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	%	%	%
AL_EC >5-6	280	0.9	1.65	1.7	5.9%	2.8%	7.5%
AL_EC >6-8	1,100	6.2	1.65	6.2	23.1%	19.3%	7.5%
AL_EC >8-10	660	7.8	3.6	7.8	13.9%	24.2%	16.4%
AL_EC >10-12	550	5.5	3.8	5.5	11.6%	17.1%	17.4%
AR_EC >8-10	540	2.92	1.538	2.9	11.4%	9.1%	7.0%
AR_EC >10-12	790	4.7	5.5	5.5	16.6%	14.6%	25.1%
AR_EC >12-16	7	2.862	3.9635	4.0	0.1%	8.9%	18.1%
Benzene	1.7	0.008	0.013	0.09	0.0%	0.3%	0.1%
Toluene	77	0.21	0.033	0.21	1.6%	0.7%	0.2%
Ethylbenzene	110	0.15	0.033	0.15	2.3%	0.5%	0.2%
Total Xylenes	550	0.83	0.079	0.83	11.6%	2.6%	0.4%
Naphthalene	38	0.011	0.0105	0.011	0.8%	0.03%	0.0%
1-Methyl Naphthalene	18	0.016	0.0155	0.016	0.4%	0.05%	0.1%
2-Methyl Naphthalene	32	0.011	0.0105	0.011	0.7%	0.03%	0.05%
MTBE	1.0	0.0006	0.000435	0.0006	0.02%	0.002%	0.002%
Total	4,755	32	22	35	100%	100%	100%

Figure 1 – Petroleum Composition Ratios



* Note: Mr. Charles San Juan of the Washington State Department of Ecology assisted with all Method B calculations.