



ENVIRONMENTAL CONSULTING, INC.

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[www.ees-environmental.com](http://www.ees-environmental.com)

## Technical Memorandum

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To: Mark Conan, Jonathan Polonsky, & Brent Chadwick, Plaid Pantries, Inc.  
From: Paul Ecker LHG, and Chris Rhea, LG  
Date: March 30, 2016

**Subject: Perched Groundwater Evaluation**  
Plaid Pantry Store #112  
1002 West Fourth Plain Boulevard  
Vancouver, Washington  
Ecology VCP Project SW1314  
EES Project 1179-01

This memorandum summarizes groundwater evaluation activities conducted at the Plaid Pantries, Inc. (Plaid) convenience market and retail fueling station #112, located at 1002 West Fourth Plain in Vancouver, Washington (Figure 1). The purpose of this work was to evaluate recently observed perched groundwater for potential gasoline impacts in support of overall Site characterization, as required under the Model Toxics Control Act (WAC 173-340) and in accordance with Washington Department of Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Publication 10-09-057).

### BACKGROUND

Until late 2015, site characterization data indicated that recoverable groundwater had not been encountered to maximum exploration depths exceeding 40 feet, and identified gasoline releases at the Site were not expected to have been in contact with or otherwise impacted local groundwater. EES first observed water in one of the Site's soil vapor extraction (SVE) wells during SVE monitoring activities on November 23, 2015. This observation triggered monthly evaluation of groundwater conditions at the Plaid Site using these SVE wells. Groundwater monitoring continued through February 2016 as described below.

### WELL INFRASTRUCTURE

Plaid has operated an SVE system at the subject property as an interim action to mitigate gasoline impacts associated with prior Site operations (EES, 12/27/2013). The SVE system includes application of vacuum to five well locations in a known gasoline release area near the southern Property margin, and SVE has operated continuously and without major problems since fulltime start-up on September 4,

2013. SVE performance is monitored during routine system operations and maintenance visits (EES, 09/18/2015).

The two-inch diameter SVE and related vapor monitoring wells are screened among vadose-zone soils in distinct intervals (see Figure 2 for well locations and Attachment A for construction details):

- Odd-numbered vapor extraction wells SVE-1, SVE-3, and SVE-5 are completed at a total depth of 10 feet below ground surface (bgs), screened in the “shallow” soil zone between five and 10 feet deep. Three additional shallow vapor monitoring wells (B-17, S-30, and S-31) are located adjacent to the SVE treatment area and are constructed and screened in the same manner.
- Even-numbered “deep” vapor extraction wells SVE-2 and SVE-4 are completed at a total depth of 20 feet bgs, screened in the soil zone between 15 and 20 feet deep. One additional deep vapor monitoring well (B-18) is located south of the SVE treatment area and is constructed and screened in the same manner.
- Vapor conditions within shallow fill material in various underground utility trenches is also evaluated at three locations near the SVE system, including S-27, S-28, and S-29. These vapor monitoring wells are less than three feet deep, and fitted with six-inch long screens targeting trench fill materials.

## GROUNDWATER MONITORING ACTIVITIES

Between November 2015 and February 2016, EES conducted monthly groundwater monitoring at Plaid’s five SVE wells (SVE-1 through SVE-5) and seven vapor monitoring wells (B-17, B-18, and S-27 through S-31), as illustrated on Figure 2.

The SVE system was shut off during the groundwater monitoring period to allow for evaluation of stable groundwater conditions. Groundwater monitoring data are summarized on attached Tables 1 through 3.

### WATER LEVEL MEASUREMENTS

At least once monthly during the groundwater monitoring period, EES measured static water levels in each Site well, with depths measured relative to the north edge of the well casing rim. Top of well casing elevations have not been surveyed. Depth to water measurements are summarized on Table 1.

The Site wells were developed by purging until dry on December 18. Post-development water level measurements indicate that water levels recharged in wells SVE-5, S-28, and S-30, while all other Site wells did not recharge to near prior levels.

Groundwater has consistently been observed at wells SVE-5 and S-28 throughout the monitoring period, and to a lesser extent at well S-30 near SVE-5, with the greatest water column thickness (up to nearly seven feet) measured at SVE-5. Well S-28 is a trench vapor well screened within three feet of the ground surface, and like other trench wells, would be expected to be seasonally wet. Recoverable groundwater has been consistently observed only at well SVE-5 during this monitoring period.

Where observed, water levels are highly variable across the Site and are representative of seasonal perched conditions and likely infiltration from the ground surface and other underground infrastructure.

One stormwater infiltration drywell is located at the Property approximately 30 feet west of SVE-5 and likely contributes drainage to SVE-5. However, other shallow wells located near SVE-5 (such as S-30, SVE-1, SVE-3, and B-17) appear relatively dry and unaffected by local infiltration. Localized drainage from other underground utilities cannot be ruled out, but identified Site infrastructure, if contributing to infiltration, does not appear to affect conditions at Site wells uniformly.

## **ANALYTICAL TESTING RESULTS**

Following water elevation measurements and well development activities, EES purged and sampled Site wells SVE-5 and S-28 on a monthly basis. Samples were not collected at other Site wells due to insufficient water recovery. A total of five groundwater samples were collected at well SVE-5 between November 2015 and February 2016. Due to poor recovery, only one groundwater sample was collected at S-28 (December 23, 2015).

Each groundwater sample was submitted for laboratory analysis for gasoline-range petroleum hydrocarbons by Method NWTPH-Gx, and gasoline-related volatile organic compounds including benzene, toluene, ethylbenzene, and xylenes (BTEX), by EPA Method 8260. Additional gasoline additives including 1,2-dibromoethane, 1,2-dichloroethane, methyl tert-butyl ether, and naphthalene were analyzed for in the water sample collected at SVE-5 on November 24, 2015.

- No contaminants of interest (gasoline and related constituents) were detected among any of the six groundwater samples collected at the Site during the monitoring period.
- Field-measured groundwater redox and stability parameters are presented on Table 2. Analytical results are summarized on Table 3. Laboratory analytical reports are provided in Attachment B.

## **CONCLUSIONS**

Perched groundwater was observed in various Site wells during the period between November 2015 and February 2016. EES shut down the Site's SVE system during this time and collected monthly groundwater samples from existing Site wells to evaluate potential gasoline impacts. Only one of the Site wells (SVE-5) consistently yielded adequate water for sampling. Recoverable groundwater was also available at well S-28 during the December 23, 2015 monitoring event. Among the six groundwater samples analyzed during the monitoring period, no gasoline or related constituents were identified.

Although seasonal perched groundwater within 20 feet of the ground surface have been confirmed at this Site, water conditions during the monitoring period were highly variable within the well network and recoverable perched groundwater was only reliably identified at well SVE-5. Gasoline impacts at the Site appear limited to soil and soil vapor and have not been detected within seasonal perched groundwater, where present. The local water table is anticipated at depths below 80 feet.

Investigation findings to date indicate gasoline impacts to Site groundwater have not been detected and are not anticipated. No further groundwater sampling related to Site gasoline impacts is anticipated at this time. Based on these findings, EES re-started the Site's active SVE system on March 16, 2016.

## ATTACHMENTS

Tables	Table 1: Groundwater Elevations Table 2: Groundwater Field Parameters Table 3: Groundwater Analytical Results
Figures	Figure 1: Vicinity Map Figure 2: Well Locations
Attachments	Attachment A: Well Construction Logs Attachment B: Laboratory Analytical Data

# TABLES

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**TABLE 1**  
**Groundwater Elevations**  
 Plaid Pantry No. 112  
 Vancouver, Washington

Well Identification	TOC Elevation (feet)	Total Well Depth (feet)	Screened Interval (feet bgs)	Date Measured	Depth to Water (feet below TOC)	Groundwater Elevation (feet)	Water Column Thickness (ft)
B-17	--	10.01	5-10	12/18/2015	9.99	--	0.02
				12/23/2015	9.98	--	0.03
				01/26/2016	DRY	--	DRY
				02/09/2016	9.97	--	0.04
				02/19/2016	9.98	--	0.03
B-18	--	19.09	15-20	12/18/2015	DRY	--	DRY
				12/23/2015	DRY	--	DRY
				01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY
S-27	--	2.81	2.25-2.75	12/18/2015	DRY	--	DRY
				12/23/2015	DRY	--	DRY
				01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY
S-28	--	1.75	1.25-1.75	12/18/2015	0.75	--	1.00
				12/23/2015	0.69	--	1.06
				01/26/2016	0.81	--	0.94
				02/09/2016	0.92	--	0.83
				02/19/2016	0.85	--	0.90
S-29	--	1.3	1.25-1.75	12/18/2015	1.28	--	0.02
				12/23/2015	0.99	--	0.31
				01/26/2016	1.28	--	0.02
				02/09/2016	1.26	--	0.04
				02/19/2016	1.26	--	0.04
S-30	--	9.96	5-10	12/18/2015	8.90	--	1.06
				12/23/2015	9.07	--	0.89
				01/26/2016	9.07	--	0.90
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY
S-31	--	10.14	5-10	12/18/2015	DRY	--	DRY
				12/23/2015	DRY	--	DRY
				01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY
SVE-1	--	9.70	5-10	12/11/2015	9.50	--	0.20
				12/18/2015	DRY	--	DRY
				12/23/2015	DRY	--	DRY
				01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
SVE-2	--	20.05	15-20	02/19/2016	DRY	--	DRY
				12/11/2015	19.89	--	0.16
				12/18/2015	19.99	--	0.06
				12/23/2015	19.95	--	0.10
				01/26/2016	DRY	--	DRY
SVE-3	--	9.80	5-10	02/09/2016	19.94	--	0.11
				02/19/2016	DRY	--	DRY
				12/11/2015	9.43	--	0.37
				12/18/2015	9.70	--	0.10
				12/23/2015	DRY	--	DRY
SVE-4	--	19.74	15-20	01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY
				12/11/2015	19.69	--	0.05
				12/18/2015	DRY	--	DRY
				12/23/2015	DRY	--	DRY
				01/26/2016	DRY	--	DRY
				02/09/2016	DRY	--	DRY
				02/19/2016	DRY	--	DRY

**TABLE 1**  
**Groundwater Elevations**  
 Plaid Pantry No. 112  
 Vancouver, Washington

Well Identification	TOC Elevation (feet)	Total Well Depth (feet)	Screened Interval (feet bgs)	Date Measured	Depth to Water (feet below TOC)	Groundwater Elevation (feet)	Water Column Thickness (ft)
SVE-5	--	9.61	5-10	11/24/2015	NM	--	-
				12/11/2015	2.69	--	6.92
				12/18/2015	3.49	--	6.12
				12/23/2015	3.52	--	6.09
				01/26/2016	3.75	--	5.86
				02/09/2016	3.84	--	5.77
				02/19/2016	3.50	--	6.11

**Notes:**

TOC = Top of casing

-- = Not available

NM = Not measured

**TABLE 2**  
**Groundwater Field Parameters**  
 Plaid Pantry No. 112  
 Vancouver, Washington

Location	Date	Dissolved Oxygen (mg/L) DRI <sup>a</sup>	Oxidation Reduction Potential (mV) DRI <sup>a</sup>	Ferrous Iron (Fe 2+) (mg/L) HACH <sup>b</sup>	pH (unitless) DRI <sup>a</sup>	Specific Conductance (ms/cm) DRI <sup>a</sup>
S-28	12/23/2015	7.1	114	0.0	8.8	0.35
	02/19/2016	19	254	-	8.5	0.77
SVE-5	11/24/2015*	-	-	-	-	-
	12/11/2015	8.5	229	-	7.5	0.12
	12/23/2015	6.5	160	0.0	7.1	0.16
	01/26/2016	7.6	205	0.0	6.9	0.25
	02/09/2016	9.6	241	-	6.9	0.20
	02/19/2016	7.0	250	0.0	6.4	0.26

**NOTES:**

\* Grab sample collected no field parameters measured.

<sup>a</sup> DRI = Direct-Read Instrument

<sup>b</sup> HACH = Colorimetric "Hach" Field Kit

mg/L = Milligrams per liter

mV = Millivolts

ms/cm = Millisiemens per centimeter

- = not collected



**TABLE 3**  
**Water Analytical Results - Gasoline and Related Constituents (ug/L)**

Plaid Pantry No. 112  
Vancouver, Washington

Location	Date	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene
S-28	12/23/2015	200 U	0.40 U	2.0 U	1.0 U	3.0 U	-	-	-	-
SVE-5	11/24/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	<i>0.50 U</i>	0.50 U	1.0 U	2.0 U
	12/11/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	-	-	-	-
	12/23/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	-	-	-	-
	01/26/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	-	-	-	-
	02/19/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	-	-	-	-
<b>MTCA Cleanup Levels<sup>1</sup></b>										
Method A		800/1,000 <sup>2</sup>	5.0	1,000	700	1,000	0.01	5.0	20	160

**Notes:**

<sup>1</sup> Washington Department of Ecology (WDOE), Model Toxics Control Act (MTCA) Cleanup Amendments, Groundwater Cleanup Levels (CLARC Database, August 2015)

<sup>2</sup> MTCA Method A cleanup level for gasoline is 1,000 ug/L if no benzene is detected; cleanup level is 800 ug/L if benzene is detected

Gasoline by Method NWTPH-Gx

Volatile Compounds by EPA Method 8260B (except as otherwise noted)

ug/L = Micrograms per liter

*Italics* indicate analytical reporting limit exceeds lowest screening level shown.

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

U = Undetected at method limit shown

# FIGURES

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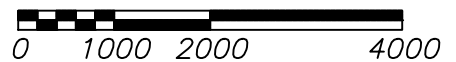




SOURCE:  
USGS, VANCOUVER QUADRANGLE  
WASHINGTON-OREGON  
7.5 MINUTE SERIES (TOPOGRAPHIC)



APPROXIMATE SCALE IN FEET



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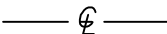























VICINITY MAP

PLAID PANTRY #112  
1002 W. FOURTH PLAIN BLVD.  
VANCOUVER, WA.

DATE:	12-18-13	PROJECT NO.	
FILE:	1179-01		1179-01
DRAWN:	JJT	FIGURE NO.	
APPROVED:	CR		1



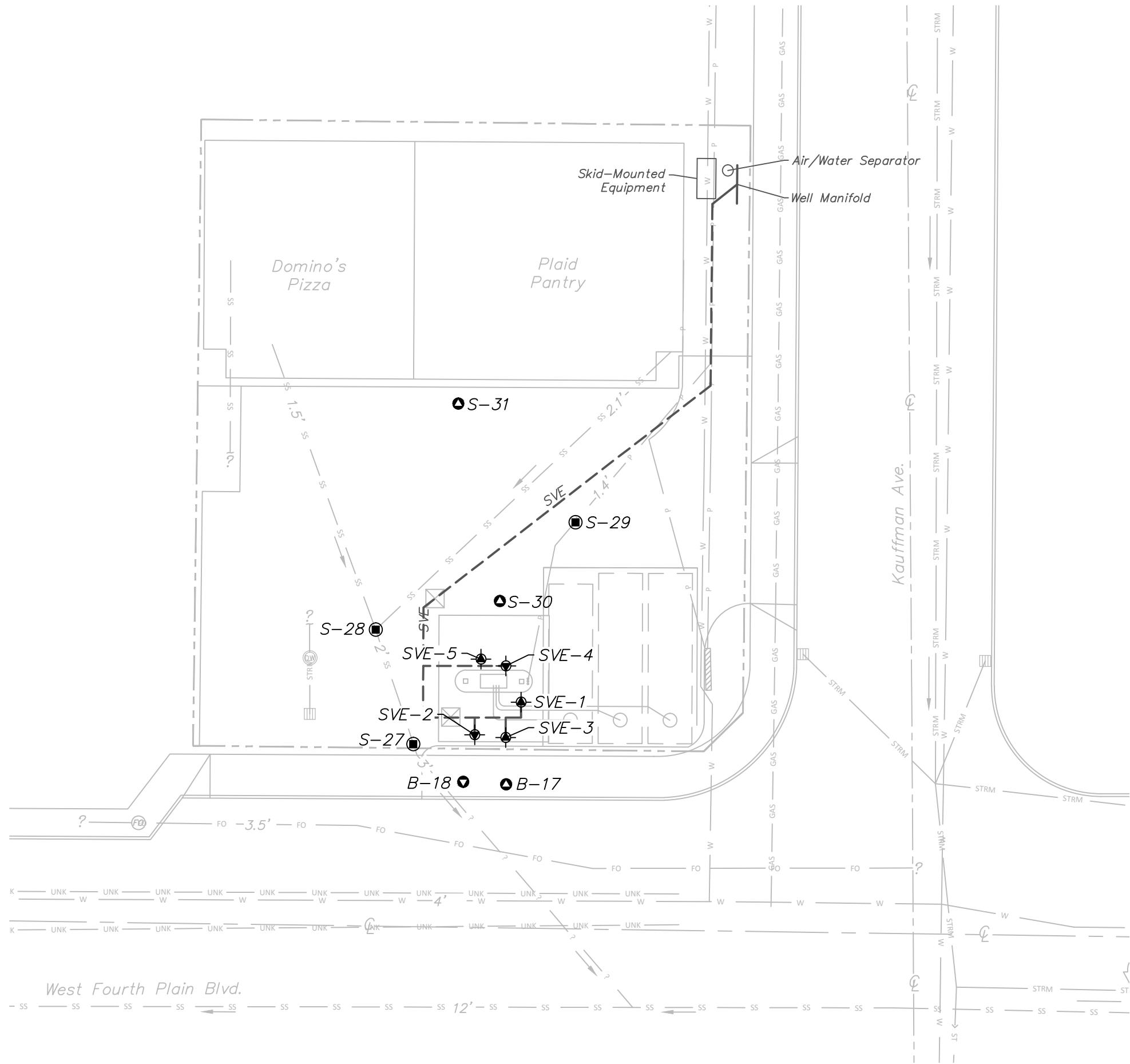
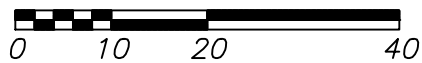
LEGEND

- |  |   |
|--|---|
|   | Property Boundary   |
|   | Roadway Centerline  |
|   | Catch Basin   |
|   | Dry Well  |
|   | Vault   |
| SVE-1   | Shallow SVE Well<br>(Screened 5-10' bgs)  |
| SVE-2   | Deep SVE Well<br>(Screened 15-20' bgs)  |
| S-28    | Utility Vapor Monitoring Well<br>(Screened at Various Shallow<br>Depths in Trench Backfill) |
| B-17    | Shallow Vapor Monitoring Well<br>(Screened 5-10' bgs)                                       |
| B-18    | Deep Vapor Monitoring Well<br>(Screened 15-20' bgs)   |
|  SVE       | SVE Piping  |
|  W       | Water Line  |
|  SS    | Sanitary Sewer & Flow Direction   |
|  STRM  | Storm Sewer & Flow Direction  |
|  P     | Power   |
|  GAS   | Natural Gas   |
|  UNK   | Unknown Utility   |
|   | Arrows Indicate Flow Direction<br>Where Known   |

Approximate Utility Depths  
Indicated Where Known (Feet)

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET



## WELL LOCATIONS

PLAID PANTRY #112  
1002 W. FOURTH PLAIN BLVD.  
VANCOUVER, WA.

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DATE:	3-30-16	PROJECT NO.
FILE:	1179-01	1179-01
DRAWN:	JJT	FIGURE NO.
APPROVED:	PE	2

DATE:	3-30-16	PROJECT NO.
FILE:	1179-01	1179-01
DRAWN:	JJT	FIGURE NO.
APPROVED:	PE	2

# ATTACHMENT A

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# SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS  MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS  (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS  MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS  (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
0			Removed for UST upgrade.						
		SP	SAND: brown, loose, dry, medium SAND, no odor, sheen or discoloration.			0.0			
5		SM	SILTY SAND: reddish brown, moist to dry, medium silty SAND, some fines, low plasticity, no odor, sheen or discoloration.			1.1		■ SVE-1/5 NWTPH-Gx, NWTPH-Dx and EPA 8260B	
10			End of boring at 10 feet bgs.			5,000+		■ SVE-1/10 NWTPH-Gx, NWTPH-Dx and EPA 8260B	
15									
20									
25									
30									
BORING METHOD: Direct Push						ELEVATION REFERENCE: NA		NOTES:	
BOREHOLE DIAMETER:						GROUND SURFACE ELEVATION: NA			
DRILL RIG: NA						CASING ELEVATION: NA			
CONTRACTOR: Major Drilling/KV						START CARD/TAG ID: NA			
LOGGED BY/REVIEWED BY: JG/LF						DRILLING DATES: 2/3/2012 - 2/3/2012			

Plaid Pantry #112  
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## LOG OF BORING SVE-1

PAGE 1 OF 1

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
0			Existing well monument box.						Flush-mount Monument with Locking Cap
			CONCRETE and PEA GRAVEL (Fill) No recovery.						Concrete Casing (Schedule 40 PVC, 2.0-inch i.d.)
			PEA GRAVEL (Fill)			717			Bentonite Chips (3/8-inch)
5									
	SM		SILTY SAND: dark gray (stained), damp to moist, silty SAND, non-plastic. Petroleum-like odor and staining.			2284		SVE-2/6 Hold	
						3127		SVE-2/8 NWTPH-Gx and EPA 8260B	
10						1360		SVE-2/10 Hold	
	SW		GRAVELLY SAND: orangish-brown, damp to moist, gravelly SAND, trace cobbles. Gravels are fine to coarse. No odor or staining.			6.8		SVE-2/12 NWTPH-Gx and EPA 8260B	
			Decreased gravel percentage from 13 to 15 feet bgs.						10 X 20 Colorado Silica Sand
15						4.6		SVE-2/16 NWTPH-Gx and EPA 8260B	Well Screen (Schedule 40 PVC, 2.0-inch i.d., with 0.010-inch slots)
20						2.7		SVE-2/20 NWTPH-Gx	End Cap
									Bentonite Chips (3/8-inch)
25						2.5		SVE-2/24 Hold	
30						1.9		SVE-2/28 Hold	
BORING METHOD: Direct Push					ELEVATION REFERENCE: NA		NOTES:		
BOREHOLE DIAMETER:					GROUND SURFACE ELEVATION: NA				
DRILL RIG: NA					CASING ELEVATION: NA				
CONTRACTOR: Pacific Soil & Water/NK					START CARD/TAG ID: NA				
LOGGED BY/REVIEWED BY: AC/LF					DRILLING DATES: 8/17/2012 - 8/17/2012				




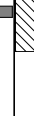

Plaid Pantry #112  
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 E-1179-01

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 Tel (503) 847-2740

## LOG OF BORING SVE-2

PAGE 1 OF 2



DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SW							
		SP	SAND: light brown, dry to damp, fine SAND, trace fines.			1.7		■ SVE-2/32 Hold	 Bentonite Chips (3/8-inch)
35			No recovery. Sample liner melted in sampler.						
40			End of boring at 39 feet bgs due to refusal.						
45									
50									
55									
60									
BORING METHOD: Direct Push					ELEVATION REFERENCE: NA		NOTES:		
BOREHOLE DIAMETER:					GROUND SURFACE ELEVATION: NA				
DRILL RIG: NA					CASING ELEVATION: NA				
CONTRACTOR: Pacific Soil & Water/NK					START CARD/TAG ID: NA				
LOGGED BY/REVIEWED BY: AC/LF					DRILLING DATES: 8/17/2012 - 8/17/2012				

Plaid Pantry #112  
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**LOG OF BORING**  
**SVE-2**

PAGE 2 OF 2

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
0			Existing well monument box.						Flush-mount Monument with Locking Cap
			CONCRETE and PEA GRAVEL (Fill)						Concrete Casing (Schedule 40 PVC, 2.0-inch i.d.)
									Bentonite Chips (3/8-inch)
5	ML		SANDY SILT: light brown to light gray, damp, sandy SILT. Petroleum-like odor and staining. Increasing petroleum-like odor and gray staining.			717		SVE-3/5 Hold	10 X 20 Colorado Silica Sand
									Well Screen (Schedule 40 PVC, 2.0-inch i.d., with 0.010-inch slots)
10			Increasing sand percentage.			1329		SVE-3/8 NWTPH-Gx and EPA 8260B	End Cap
15	SW		GRAVELLY SAND: light brownish-gray, damp SAND with trace gravel. Decreasing petroleum-like odor and staining.			577		SVE-3/12.5 NWTPH-Gx and EPA 8260B	
			No recovery from 15 to 20 feet bgs.			19		SVE-3/14 NWTPH-Gx and EPA 8260B	Bentonite Chips (3/8-inch)
20									
						1.8		SVE-3/20 NWTPH-Gx	
25			Damp to moist with decreasing gravel percentage.						
						1.3		SVE-3/25 Hold	
30									
BORING METHOD: Direct Push					ELEVATION REFERENCE: NA		NOTES:		
BOREHOLE DIAMETER:					GROUND SURFACE ELEVATION: NA				
DRILL RIG: NA					CASING ELEVATION: NA				
CONTRACTOR: Pacific Soil & Water/NK					START CARD/TAG ID: NA				
LOGGED BY/REVIEWED BY: AC/LF					DRILLING DATES: 8/16/2012 - 8/16/2012				

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 Portland, Oregon 97227  
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## LOG OF BORING SVE-3

PAGE 1 OF 2

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SW	Increased grain-size up to coarse and trace fine subrounded gravel.			17		SVE-3/31 Hold	 Bentonite Chips (3/8-inch)
35						3.7	SVE-3/37 Hold		
40				End of boring at 40 feet bgs due to refusal.					
45									
50									
55									
60									
BORING METHOD: Direct Push						ELEVATION REFERENCE: NA		NOTES:	
BOREHOLE DIAMETER:						GROUND SURFACE ELEVATION: NA			
DRILL RIG: NA						CASING ELEVATION: NA			
CONTRACTOR: Pacific Soil & Water/NK						START CARD/TAG ID: NA			
LOGGED BY/REVIEWED BY: AC/LF						DRILLING DATES: 8/16/2012 - 8/16/2012			

Plaid Pantry #112 1002 W. Fourth Plain Blvd Vancouver, WA E-1179-01	EES Environmental Consulting, Inc. 240 N Broadway, Suite 115 Portland, Oregon 97227 Tel (503) 847-2740	<b>LOG OF BORING SVE-3</b>  PAGE 2 OF 2
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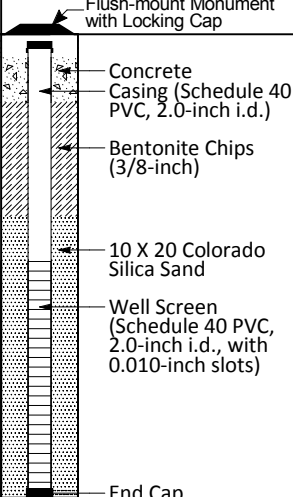
DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
0			Existing well monument box.						Flush-mount Monument with Locking Cap
		SP	SAND, PEA GRAVEL and CONCRETE (Fill)						Concrete Casing (Schedule 40 PVC, 2.0-inch i.d.)
		SM	Metal object found at 3 feet bgs. SILTY SAND: light orangish-brown, damp, silty SAND, trace gravel up to medium-grained, trace organics, non-plastic.			2.3		SVE-4/3 Hold	Bentonite Chips (3/8-inch)
5						0.5		SVE-4/6 NWTPH-Gx and EPA 8260B	
			Petroleum-like odor and staining at 9 feet bgs.			33		SVE-4/9 NWTPH-Gx	
10			Petroleum-like odor and gray staining to 11.5 feet bgs.			57		SVE-4/11 NWTPH-Gx and EPA 8260B	
		SW	GRAVELLY SAND: light brownish-gray, damp GRAVELLY SAND, trace cobbles. Gravels are fine to coarse, subrounded to rounded. No odor or staining.			2.3		SVE-4/14 NWTPH-Gx and EPA 8260B	10 X 20 Colorado Silica Sand
15						1.2		SVE-4/18 Hold	Well Screen (Schedule 40 PVC, 2.0-inch i.d., with 0.010-inch slots)
			Decreasing gravel at 18 feet bgs.						
20			End of boring at 20 feet bgs.						End Cap
25									
30									
BORING METHOD: Direct Push						ELEVATION REFERENCE: NA		NOTES:	
BOREHOLE DIAMETER:						GROUND SURFACE ELEVATION: NA			
DRILL RIG: NA						CASING ELEVATION: NA			
CONTRACTOR: Pacific Soil & Water/NK						START CARD/TAG ID: NA			
LOGGED BY/REVIEWED BY: AC/LF						DRILLING DATES: 8/17/2012 - 8/17/2012			

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## LOG OF BORING SVE-4

PAGE 1 OF 1

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
0			Existing well monument box.						
		ML	SANDY SILT: light brown, damp, sandy SILT, low plasticity. Poor recovery.			12		■ SVE-5/5 NWTPH-Gx and EPA 8260B	
5			Petroleum-like odor and gray staining at 6 feet bgs.			1379		■ SVE-5/7.5 NWTPH-Gx and EPA 8260B	
		SM	SILTY SAND: gray, damp, silty SAND, non-plastic.			323			
10			End of boring at 10 feet bgs.						
15									
20									
25									
30									
BORING METHOD: Direct Push						ELEVATION REFERENCE: NA		NOTES:	
BOREHOLE DIAMETER:						GROUND SURFACE ELEVATION: NA			
DRILL RIG: NA						CASING ELEVATION: NA			
CONTRACTOR: Pacific Soil & Water/d						START CARD/TAG ID: NA			
LOGGED BY/REVIEWED BY: AC/LF						DRILLING DATES: 8/16/2012 - 8/16/2012			

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## LOG OF BORING SVE-5

PAGE 1 OF 1



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Telephone: 503.847.2740

BORING NO. **B-17**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **B-17**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %				
	B-17(3)		29.5	No	100	Concrete: 4 inches.	Concrete: 4 inches.	Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap.	
						Brown sandy SILT (ML); moist.	Brown sandy SILT (ML); moist.		
5	B-17(6)		225	No		Brown silty SAND (SM); moist. Sand is fine.	Brown silty SAND (SM); moist. Sand is fine.	Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of #10/20 sand.	
				No	100	Moderate hydrocarbon odor. Becomes dark brown.	Moderate hydrocarbon odor. Becomes dark brown.		
10	B-17(9)		1,436	No		Becomes dark gray, with strong hydrocarbon odor.	Becomes dark gray, with strong hydrocarbon odor.		
			31.5	No		Becomes moist to wet.	Becomes moist to wet.		
	B-17(12)		0.4	No	100	Brown to gray sandy GRAVEL (GP); moist.	Brown to gray sandy GRAVEL (GP); moist.	Backfilled bottom of borehole with cement.	
15			0.3	No	100				
20							Boring complete at 20 feet.		
							Installed soil vapor monitoring well.		

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Hand Auger/Direct-Push**  
DRILLING EQUIPMENT **Geoprobe 7720DT**  
DRILLING STARTED **9/2/15** ENDED **9/3/15**

REMARKS **Boring advanced 0-10 feet bgs using hand auger, then advanced to terminal depth using direct-push tooling.**

See key sheet for symbols and abbreviations used above.

EES LOG WITH WELL & SHEEN - LOG A EWMN03.GDT - 3/30/16 15:37 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\1179-01 & -03 BORING LOGS 020116.GPJ



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BORING NO. **B-18**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **B-18**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %				
							Concrete: 4 inches.		
							Dark brown to gray silty SAND (SM); moist. Strong hydrocarbon odor.		
	B-18(3)		4,837	Slight	100				
5									
	B-18(6)		1,468	No			Becomes dark brown to gray, with strong hydrocarbon odor.		
					100				
	B-18(9)		5,664	No			Becomes dark gray, with strong hydrocarbon odor.		
10									
	B-18(12)		0.6	No			Thin (3-inch) moist to wet silt interval encountered between 11-11.5 ft bgs. Brown to gray sandy GRAVEL (GP); moist.		
					100				
15			0.4	No			No hydrocarbon odor.		
			0.2	No				Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of #10/20 sand.	
					100				
20							Boring complete at 20 feet.		
							Installed soil vapor monitoring well.		

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Hand Auger/Direct-Push**  
DRILLING EQUIPMENT **Geoprobe 7720DT**  
DRILLING STARTED **9/3/15** ENDED **9/4/15**

REMARKS **Boring advanced 0-10 feet bgs using hand auger,  
then advanced to terminal depth using direct-push tooling.**

See key sheet for symbols and abbreviations used above.

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BORING NO. **S-27**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **S-27**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION		CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %					
			0.3	No	100		Asphalt (AC): 2 inches. Brown silty SAND (SM); moist.  Encountered 4 inch diameter ABS sanitary sewer line between 2.4 and 2.8 feet bgs. Boring complete at 2.9 ft bgs.  Installed soil vapor monitoring well approximately 2 inches from sanitary sewer pipe.		Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap.  Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of pea gravel.	

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Air Knife/Hand Auger**  
DRILLING EQUIPMENT **--**  
DRILLING STARTED **9/4/15** ENDED **9/4/15**

REMARKS

See key sheet for symbols and abbreviations used above.

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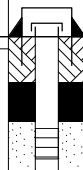
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Telephone: 503.847.2740

BORING NO. **S-28**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **S-28**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION		CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %					
			0.3	No	100		Asphalt (AC): 2 inches. Brown silty SAND (SM); moist.  Encountered 4 inch diameter ABS sanitary sewer line between 1.6 and 2.0 feet bgs. Boring complete at 2.2 ft bgs.  Installed soil vapor monitoring well approximately 2 inches from sanitary sewer pipe.		Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap. Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of pea gravel.	

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Air Knife/Hand Auger**  
DRILLING EQUIPMENT **--**  
DRILLING STARTED **9/4/15** ENDED **9/4/15**

REMARKS

See key sheet for symbols and abbreviations used above.

EES LOG WITH WELL & SHEEN - LOG A EWMN03.GDT - 3/30/16 15:37 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\1179-01 & -03 BORING LOGS 020116.GPJ



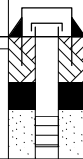
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BORING NO. **S-29**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **S-29**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION		CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %					
			0.2	No	100		Asphalt (AC): 2 inches. Brown silty SAND (SM); moist.  Encountered 1 inch electrical conduit at 1.3 feet bgs. Boring complete at 2.0 ft bgs.  Installed soil vapor monitoring well approximately 2 inches from electrical conduit.		Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap.  Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of pea gravel.	

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Air Knife/Hand Auger**  
DRILLING EQUIPMENT **--**  
DRILLING STARTED **9/4/15** ENDED **9/4/15**

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NO. **S-30**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **S30**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %				
			0.0	No	100		Asphalt: 2 inches. Brown to gray GRAVEL (GP) with sand, trace silt; moist. Brown sandy SILT (ML); moist.	Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap.	
5			0.1	No	100			Well constructed using two-inch diameter threaded schedule-40 PVC casing and screened with machine-cut 0.020-inch slots. Filter media consists of #10/20 sand.	
10			0.0	No			Boring complete at 10 feet.  Installed soil vapor monitoring well.		

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Air Knife/Hand Auger**  
DRILLING EQUIPMENT **--**  
DRILLING STARTED **9/4/15** ENDED **9/4/15**

REMARKS

See key sheet for symbols and abbreviations used above.

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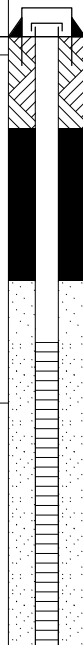
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BORING NO. **S-31**  
PROJECT **Plaid Pantry #112**  
LOCATION **Vancouver, WA**  
PROJECT NO. **1179-01/03**  
LOGGED BY **AG**

PAGE **1** OF **1**

START CARD  
COORDINATES  
SURFACE ELEVATION

WELL ID **S-31**  
DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	CONSTRUCTION DETAIL/ COMMENTS	ELEVATION FEET
DEPTH FEET	LAB SAMPLE ID	pH	PID (ppmV)	SHEEN	RECOVERY %				
			0.0	No	100		Asphalt: 3 inches. Brown sandy SILT (ML); moist.	 Well sealed at the surface with concrete, a flush-mounted traffic-rated steel monument, and locking cap.	
5		6.55	0.0	No	100		Brown silty SAND (SM); moist.		
10			0.0	No			Boring complete at 10 feet. Installed soil vapor monitoring well.		

DRILLING CONTRACTOR **Cascade Drilling**  
DRILLING METHOD **Air Knife/Hand Auger**  
DRILLING EQUIPMENT **--**  
DRILLING STARTED **9/1/15** ENDED **9/1/15**

REMARKS

See key sheet for symbols and abbreviations used above.

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# ATTACHMENT B

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# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Thursday, December 10, 2015

Paul Ecker  
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

RE: Plaid / Plain 112 /1179-02


Enclosed are the results of analyses for work order A5K0821, which was received by the laboratory on 11/24/2015 at 2:58:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

---

Apex Laboratories



---

Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

**Reported:**  
12/10/15 13:42

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-5	A5K0821-01	Water	11/24/15 13:02	11/24/15 14:58

Apex Laboratories



Philip Nerenberg, Lab Director

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EES Environmental Inc  
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Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42

## ANALYTICAL SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5K0821-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5110853</b>			
Gasoline Range Organics	ND	---	0.100	mg/L	1	12/01/15 01:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			Recovery: 90 %	Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)			94 %	Limits: 50-150 %	"	"	"	

Apex Laboratories



Philip Nerenberg, Lab Director

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Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5K0821-01)</b>			<b>Matrix: Water</b>	<b>Batch: 5110853</b>				
Benzene	ND	---	0.200	ug/L	1	12/01/15 01:43	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Isopropylbenzene	ND	---	1.00	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
n-Propylbenzene	ND	---	0.500	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	"	"	
m,p-Xylene	ND	---	1.00	"	"	"	"	
o-Xylene	ND	---	0.500	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>99 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>105 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>Limits: 80-120 %</i>	"	"	"	

Apex Laboratories



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Philip Nerenberg, Lab Director

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Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Blank (5110853-BLK1)						Prepared: 11/30/15 21:31		Analyzed: 11/30/15 23:51				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			Recovery: 89 %	Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)			92 %	50-150 %		"						
LCS (5110853-BS2)						Prepared: 11/30/15 21:31		Analyzed: 11/30/15 23:23				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.432	---	0.100	mg/L	1	0.500	---	86	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			Recovery: 89 %	Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)			101 %	50-150 %		"						
Duplicate (5110853-DUP1)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 02:11				
QC Source Sample: SVE-5 (A5K0821-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			Recovery: 91 %	Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)			94 %	50-150 %		"						
Duplicate (5110853-DUP2)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 13:42				
QC Source Sample: Other (A5K0822-02)												
NWTPH-Gx (MS)												
Gasoline Range Organics	1.27	---	0.500	mg/L	5	---	1.22	---	---	4	30%	
Surr: 4-Bromofluorobenzene (Sur)			Recovery: 90 %	Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)			92 %	50-150 %		"						

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Blank (5110853-BLK1)						Prepared: 11/30/15 21:31		Analyzed: 11/30/15 23:51				
EPA 8260B												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	"	"	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	"	"	---	---	---	---	---	---	Q-31
2-Butanone (MEK)	ND	---	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	"	"	---	---	---	---	---	---	
Chloroform	ND	---	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	"	"	---	---	---	---	---	---	Q-31
2-Chlorotoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	"	"	---	---	---	---	---	---	Q-31
1,1-Dichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.500	"	"	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.500	"	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5110853 - EPA 5030B</b>						<b>Water</b>						
<b>Blank (5110853-BLK1)</b>						Prepared: 11/30/15 21:31 Analyzed: 11/30/15 23:51						
1,1-Dichloropropene	ND	---	1.00	ug/L	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	---	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	"	"	---	---	---	---	---	---	

Surr: Dibromofluoromethane (Surr)

Recovery: 98 %

Limits: 80-120 %

Dilution: 1x

1,4-Difluorobenzene (Surr)

99 %

80-120 %

"

Toluene-d8 (Surr)

106 %

80-120 %

"

4-Bromofluorobenzene (Surr)

102 %

80-120 %

"

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker


Reported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
LCS (5110853-BS1)			Prepared: 11/30/15 21:31    Analyzed: 11/30/15 22:55									
EPA 8260B												
Acetone	42.2	---	20.0	ug/L	1	40.0	---	105	70-130%	---	---	
Benzene	18.9	---	0.200	"	"	20.0	---	94	"	---	---	
Bromobenzene	19.9	---	0.500	"	"	"	---	100	"	---	---	
Bromochloromethane	25.2	---	1.00	"	"	"	---	126	"	---	---	
Bromodichloromethane	20.6	---	1.00	"	"	"	---	103	"	---	---	
Bromoform	23.2	---	1.00	"	"	"	---	116	"	---	---	
Bromomethane	12.1	---	5.00	"	"	"	---	60	"	---	---	Q-31
2-Butanone (MEK)	40.5	---	10.0	"	"	40.0	---	101	"	---	---	
n-Butylbenzene	19.5	---	1.00	"	"	20.0	---	97	"	---	---	
sec-Butylbenzene	19.9	---	1.00	"	"	"	---	99	"	---	---	
tert-Butylbenzene	19.2	---	1.00	"	"	"	---	96	"	---	---	
Carbon tetrachloride	41.8	---	1.00	"	"	"	---	209	"	---	---	Q-41
Chlorobenzene	19.8	---	0.500	"	"	"	---	99	"	---	---	
Chloroethane	25.6	---	5.00	"	"	"	---	128	"	---	---	
Chloroform	19.3	---	1.00	"	"	"	---	96	"	---	---	
Chloromethane	14.2	---	5.00	"	"	"	---	71	"	---	---	Q-31
2-Chlorotoluene	19.7	---	1.00	"	"	"	---	98	"	---	---	
4-Chlorotoluene	19.8	---	1.00	"	"	"	---	99	"	---	---	
1,2-Dibromo-3-chloropropane	20.2	---	5.00	"	"	"	---	101	"	---	---	
Dibromochloromethane	23.1	---	1.00	"	"	"	---	116	"	---	---	
1,2-Dibromoethane (EDB)	21.8	---	0.500	"	"	"	---	109	"	---	---	
Dibromomethane	19.2	---	1.00	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	19.8	---	0.500	"	"	"	---	99	"	---	---	
1,3-Dichlorobenzene	19.7	---	0.500	"	"	"	---	98	"	---	---	
1,4-Dichlorobenzene	19.0	---	0.500	"	"	"	---	95	"	---	---	
Dichlorodifluoromethane	17.0	---	1.00	"	"	"	---	85	"	---	---	Q-31
1,1-Dichloroethane	20.3	---	0.500	"	"	"	---	101	"	---	---	
1,2-Dichloroethane (EDC)	19.1	---	0.500	"	"	"	---	96	"	---	---	
1,1-Dichloroethene	18.0	---	0.500	"	"	"	---	90	"	---	---	
cis-1,2-Dichloroethene	19.9	---	0.500	"	"	"	---	100	"	---	---	
trans-1,2-Dichloroethene	20.1	---	0.500	"	"	"	---	100	"	---	---	
1,2-Dichloropropane	20.2	---	0.500	"	"	"	---	101	"	---	---	
1,3-Dichloropropane	21.4	---	1.00	"	"	"	---	107	"	---	---	
2,2-Dichloropropane	21.9	---	1.00	"	"	"	---	109	"	---	---	

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Philip Nerenberg, Lab Director

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240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5110853 - EPA 5030B</b>						<b>Water</b>						
<b>LCS (5110853-BS1)</b>						Prepared: 11/30/15 21:31 Analyzed: 11/30/15 22:55						
1,1-Dichloropropene	19.4	---	1.00	ug/L	"	"	---	97	"	---	---	
cis-1,3-Dichloropropene	22.4	---	1.00	"	"	"	---	112	"	---	---	
trans-1,3-Dichloropropene	23.4	---	1.00	"	"	"	---	117	"	---	---	
Ethylbenzene	19.6	---	0.500	"	"	"	---	98	"	---	---	
Hexachlorobutadiene	17.3	---	5.00	"	"	"	---	86	"	---	---	
2-Hexanone	42.5	---	10.0	"	"	40.0	---	106	"	---	---	
Isopropylbenzene	20.0	---	1.00	"	"	20.0	---	100	"	---	---	
4-Isopropyltoluene	20.1	---	1.00	"	"	"	---	101	"	---	---	
4-Methyl-2-pentanone (MiBK)	42.8	---	10.0	"	"	40.0	---	107	"	---	---	
Methyl tert-butyl ether (MTBE)	19.4	---	1.00	"	"	20.0	---	97	"	---	---	
Methylene chloride	19.7	---	5.00	"	"	"	---	98	"	---	---	
Naphthalene	18.5	---	2.00	"	"	"	---	92	"	---	---	
n-Propylbenzene	19.8	---	0.500	"	"	"	---	99	"	---	---	
Styrene	19.7	---	1.00	"	"	"	---	98	"	---	---	
1,1,1,2-Tetrachloroethane	24.2	---	0.500	"	"	"	---	121	"	---	---	
1,1,2,2-Tetrachloroethane	20.7	---	0.500	"	"	"	---	104	"	---	---	
Tetrachloroethene (PCE)	19.8	---	0.500	"	"	"	---	99	"	---	---	
Toluene	19.8	---	1.00	"	"	"	---	99	"	---	---	
1,2,3-Trichlorobenzene	17.5	---	2.00	"	"	"	---	87	"	---	---	
1,2,4-Trichlorobenzene	17.9	---	2.00	"	"	"	---	89	"	---	---	
1,1,1-Trichloroethane	19.6	---	0.500	"	"	"	---	98	"	---	---	
1,1,2-Trichloroethane	20.7	---	0.500	"	"	"	---	104	"	---	---	
Trichloroethene (TCE)	19.1	---	0.500	"	"	"	---	95	"	---	---	
Trichlorofluoromethane	27.5	---	2.00	"	"	"	---	138	"	---	---	Q-41
1,2,3-Trichloropropane	21.1	---	1.00	"	"	"	---	105	"	---	---	
1,2,4-Trimethylbenzene	19.8	---	1.00	"	"	"	---	99	"	---	---	
1,3,5-Trimethylbenzene	19.9	---	1.00	"	"	"	---	100	"	---	---	
Vinyl chloride	23.4	---	0.500	"	"	"	---	117	"	---	---	
m,p-Xylene	38.8	---	1.00	"	"	40.0	---	97	"	---	---	
o-Xylene	20.0	---	0.500	"	"	20.0	---	100	"	---	---	
Surr: Dibromofluoromethane (Surr) Recovery: 99 % Limits: 80-120 % Dilution: 1x												
1,4-Difluorobenzene (Surr) 97 % 80-120 % "												
Toluene-d8 (Surr) 105 % 80-120 % "												
4-Bromofluorobenzene (Surr) 101 % 80-120 % "												

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42


## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Duplicate (5110853-DUP1)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 02:11				
QC Source Sample: SVE-5 (A5K0821-01)												
EPA 8260B												
Acetone	ND	---	20.0	ug/L	1	---	ND	---	---	---	30%	
Benzene	ND	---	0.200	"	"	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Bromoform	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Bromomethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	Q-31
2-Butanone (MEK)	ND	---	10.0	"	"	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Chloroform	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Chloromethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	Q-31
2-Chlorotoluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	1.00	"	"	---	ND	---	---	---	30%	Q-31
1,1-Dichloroethane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	1.00	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS


## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B							Water					
Duplicate (5110853-DUP1)				Prepared: 11/30/15 22:21    Analyzed: 12/01/15 02:11								
QC Source Sample: SVE-5 (A5K0821-01)												
2,2-Dichloropropane	ND	---	1.00	ug/L	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
2-Hexanone	ND	---	10.0	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Methylene chloride	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Styrene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	2.00	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.500	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	---	0.500	"	"	---	ND	---	---	---	30%	

Surr: Dibromofluoromethane (Surr)  
1,4-Difluorobenzene (Surr)  
Toluene-d8 (Surr)Recovery: 101 %  
99 %  
106 %Limits: 80-120 %  
80-120 %  
80-120 %Dilution: 1x  
"  
"

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Philip Nerenberg, Lab Director



EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Duplicate (5110853-DUP1)						Prepared: 11/30/15 22:21    Analyzed: 12/01/15 02:11						
QC Source Sample: SVE-5 (A5K0821-01)												
Surr: 4-Bromofluorobenzene (Surr)			Recovery: 101 %		Limits: 80-120 %		Dilution: 1x					
Duplicate (5110853-DUP2)						Prepared: 11/30/15 22:21    Analyzed: 12/01/15 13:42						
QC Source Sample: Other (A5K0822-02)												
EPA 8260B												
Acetone	1230	---	100	ug/L	5	---	1210	---	---	2	30%	
Benzene	28.4	---	1.00	"	"	---	28.0	---	---	1	30%	
Bromobenzene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Bromoform	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Bromomethane	ND	---	25.0	"	"	---	ND	---	---	---	30%	Q-31
2-Butanone (MEK)	168	---	50.0	"	"	---	166	---	---	2	30%	
n-Butylbenzene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	---	25.0	"	"	---	ND	---	---	---	30%	
Chloroform	25.0	---	5.00	"	"	---	25.0	---	---	0	30%	
Chloromethane	ND	---	25.0	"	"	---	ND	---	---	---	30%	Q-31
2-Chlorotoluene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	25.0	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	2.50	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42


## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Duplicate (5110853-DUP2)						Prepared: 11/30/15 22:21    Analyzed: 12/01/15 13:42						
QC Source Sample: Other (A5K0822-02)												
cis-1,2-Dichloroethene	ND	---	2.50	ug/L	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	11.4	---	2.50	"	"	---	11.2	---	---	0.9	30%	
Hexachlorobutadiene	ND	---	25.0	"	"	---	ND	---	---	---	30%	
2-Hexanone	ND	---	50.0	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	50.0	"	"	---	40.7	---	---	***	30%	
Methyl tert-butyl ether (MTBE)	5.50	---	5.00	"	"	---	5.40	---	---	2	30%	
Methylene chloride	ND	---	25.0	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	---	10.0	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	2.50	"	"	---	1.35	---	---	***	30%	
Styrene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Toluene	104	---	5.00	"	"	---	104	---	---	0.05	30%	
1,2,3-Trichlorobenzene	ND	---	10.0	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	10.0	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	2.50	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	10.0	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	5.00	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	12.4	---	5.00	"	"	---	12.4	---	---	0	30%	
1,3,5-Trimethylbenzene	ND	---	5.00	"	"	---	2.95	---	---	***	30%	
Vinyl chloride	ND	---	2.50	"	"	---	ND	---	---	---	30%	
m,p-Xylene	45.6	---	5.00	"	"	---	44.8	---	---	2	30%	

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Duplicate (5110853-DUP2)						Prepared: 11/30/15 22:21    Analyzed: 12/01/15 13:42						
QC Source Sample: Other (A5K0822-02)												
o-Xylene	24.2	---	2.50	ug/L	"	---	24.2	---	---	0.2	30%	
Surr: Dibromofluoromethane (Surr)		Recovery: 100 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		98 %		80-120 %		"						
Toluene-d8 (Surr)		105 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		102 %		80-120 %		"						
Matrix Spike (5110853-MS1)						Prepared: 11/30/15 22:21    Analyzed: 12/01/15 16:03						
QC Source Sample: Other (A5K0883-03)												
EPA 8260B												
Acetone	223	---	100	ug/L	5	200	ND	111	70-130%	---	---	
Benzene	94.9	---	1.00	"	"	100	ND	95	"	---	---	
Bromobenzene	98.8	---	2.50	"	"	"	ND	99	"	---	---	
Bromochloromethane	123	---	5.00	"	"	"	ND	123	"	---	---	
Bromodichloromethane	104	---	5.00	"	"	"	ND	104	"	---	---	
Bromoform	117	---	5.00	"	"	"	ND	117	"	---	---	
Bromomethane	56.8	---	25.0	"	"	"	ND	57	"	---	---	Q-31
2-Butanone (MEK)	212	---	50.0	"	"	200	ND	106	"	---	---	
n-Butylbenzene	94.0	---	5.00	"	"	100	ND	94	"	---	---	
sec-Butylbenzene	99.4	---	5.00	"	"	"	2.90	96	"	---	---	
tert-Butylbenzene	93.7	---	5.00	"	"	"	ND	94	"	---	---	
Carbon tetrachloride	208	---	5.00	"	"	"	ND	208	"	---	---	Q-41
Chlorobenzene	97.2	---	2.50	"	"	"	ND	97	"	---	---	
Chloroethane	140	---	25.0	"	"	"	ND	140	"	---	---	Q-41
Chloroform	96.6	---	5.00	"	"	"	ND	97	"	---	---	
Chloromethane	63.2	---	25.0	"	"	"	ND	63	"	---	---	Q-31
2-Chlorotoluene	97.5	---	5.00	"	"	"	ND	98	"	---	---	
4-Chlorotoluene	95.3	---	5.00	"	"	"	ND	95	"	---	---	
1,2-Dibromo-3-chloropropane	109	---	25.0	"	"	"	ND	109	"	---	---	
Dibromochloromethane	117	---	5.00	"	"	"	ND	117	"	---	---	
1,2-Dibromoethane (EDB)	108	---	2.50	"	"	"	ND	108	"	---	---	
Dibromomethane	98.4	---	5.00	"	"	"	ND	98	"	---	---	
1,2-Dichlorobenzene	99.6	---	2.50	"	"	"	ND	100	"	---	---	
1,3-Dichlorobenzene	96.2	---	2.50	"	"	"	ND	96	"	---	---	
1,4-Dichlorobenzene	93.3	---	2.50	"	"	"	ND	93	"	---	---	

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS


## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Matrix Spike (5110853-MS1)						Prepared: 11/30/15 22:21 Analyzed: 12/01/15 16:03						
QC Source Sample: Other (A5K0883-03)												
Dichlorodifluoromethane	81.5	---	5.00	ug/L	"	"	ND	82	"	---	---	
1,1-Dichloroethane	101	---	2.50	"	"	"	ND	101	"	---	---	
1,2-Dichloroethane (EDC)	97.0	---	2.50	"	"	"	ND	97	"	---	---	
1,1-Dichloroethene	88.5	---	2.50	"	"	"	ND	88	"	---	---	
cis-1,2-Dichloroethene	99.4	---	2.50	"	"	"	ND	99	"	---	---	
trans-1,2-Dichloroethene	99.0	---	2.50	"	"	"	ND	99	"	---	---	
1,2-Dichloropropane	101	---	2.50	"	"	"	ND	101	"	---	---	
1,3-Dichloropropane	106	---	5.00	"	"	"	ND	106	"	---	---	
2,2-Dichloropropane	71.0	---	5.00	"	"	"	ND	71	"	---	---	
1,1-Dichloropropene	95.0	---	5.00	"	"	"	ND	95	"	---	---	
cis-1,3-Dichloropropene	104	---	5.00	"	"	"	ND	104	"	---	---	
trans-1,3-Dichloropropene	109	---	5.00	"	"	"	ND	109	"	---	---	
Ethylbenzene	95.5	---	2.50	"	"	"	ND	96	"	---	---	
Hexachlorobutadiene	83.8	---	25.0	"	"	"	ND	84	"	---	---	
2-Hexanone	218	---	50.0	"	"	200	ND	109	"	---	---	
Isopropylbenzene	101	---	5.00	"	"	100	3.15	98	"	---	---	
4-Isopropyltoluene	96.4	---	5.00	"	"	"	ND	96	"	---	---	
4-Methyl-2-pentanone (MiBK)	218	---	50.0	"	"	200	ND	109	"	---	---	
Methyl tert-butyl ether (MTBE)	96.8	---	5.00	"	"	100	ND	97	"	---	---	
Methylene chloride	98.0	---	25.0	"	"	"	ND	98	"	---	---	
Naphthalene	95.2	---	10.0	"	"	"	ND	95	"	---	---	
n-Propylbenzene	100	---	2.50	"	"	"	4.15	96	"	---	---	
Styrene	94.6	---	5.00	"	"	"	ND	95	"	---	---	
1,1,1,2-Tetrachloroethane	120	---	2.50	"	"	"	ND	120	"	---	---	
1,1,2,2-Tetrachloroethane	105	---	2.50	"	"	"	ND	105	"	---	---	
Tetrachloroethene (PCE)	95.4	---	2.50	"	"	"	ND	95	"	---	---	
Toluene	97.3	---	5.00	"	"	"	ND	97	"	---	---	
1,2,3-Trichlorobenzene	86.9	---	10.0	"	"	"	ND	87	"	---	---	
1,2,4-Trichlorobenzene	88.5	---	10.0	"	"	"	ND	88	"	---	---	
1,1,1-Trichloroethane	96.8	---	2.50	"	"	"	ND	97	"	---	---	
1,1,2-Trichloroethane	104	---	2.50	"	"	"	ND	104	"	---	---	
Trichloroethene (TCE)	93.9	---	2.50	"	"	"	ND	94	"	---	---	
Trichlorofluoromethane	147	---	10.0	"	"	"	ND	147	"	---	---	
1,2,3-Trichloropropane	106	---	5.00	"	"	"	ND	106	"	---	---	

Q-41

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Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Matrix Spike (5110853-MS1)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 16:03				
QC Source Sample: Other (A5K0883-03)												
1,2,4-Trimethylbenzene	97.4	---	5.00	ug/L	"	"	ND	97	"	---	---	
1,3,5-Trimethylbenzene	96.8	---	5.00	"	"	"	ND	97	"	---	---	
Vinyl chloride	117	---	2.50	"	"	"	ND	117	"	---	---	
m,p-Xylene	189	---	5.00	"	"	200	ND	95	"	---	---	
o-Xylene	97.7	---	2.50	"	"	100	ND	98	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 100 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		98 %		80-120 %		"						
Toluene-d8 (Surr)		105 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		102 %		80-120 %		"						
Matrix Spike Dup (5110853-MSD1)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 16:31				
QC Source Sample: Other (A5K0883-03)												
EPA 8260B												
Acetone	197	---	100	ug/L	5	200	ND	99	70-130%	12	30%	
Benzene	94.5	---	1.00	"	"	100	ND	94	"	0.4	30%	
Bromobenzene	101	---	2.50	"	"	"	ND	101	"	2	30%	
Bromochloromethane	122	---	5.00	"	"	"	ND	122	"	0.6	30%	
Bromodichloromethane	101	---	5.00	"	"	"	ND	101	"	3	30%	
Bromoform	114	---	5.00	"	"	"	ND	114	"	3	30%	
Bromomethane	70.8	---	25.0	"	"	"	ND	71	"	22	30%	Q-31
2-Butanone (MEK)	186	---	50.0	"	"	200	ND	93	"	13	30%	
n-Butylbenzene	94.8	---	5.00	"	"	100	ND	95	"	0.8	30%	
sec-Butylbenzene	99.8	---	5.00	"	"	"	2.90	97	"	0.4	30%	
tert-Butylbenzene	94.2	---	5.00	"	"	"	ND	94	"	0.5	30%	
Carbon tetrachloride	203	---	5.00	"	"	"	ND	203	"	2	30%	Q-41
Chlorobenzene	99.0	---	2.50	"	"	"	ND	99	"	2	30%	
Chloroethane	143	---	25.0	"	"	"	ND	143	"	2	30%	Q-41
Chloroform	95.4	---	5.00	"	"	"	ND	95	"	1	30%	
Chloromethane	63.2	---	25.0	"	"	"	ND	63	"	0.08	30%	Q-31
2-Chlorotoluene	99.3	---	5.00	"	"	"	ND	99	"	2	30%	
4-Chlorotoluene	95.7	---	5.00	"	"	"	ND	96	"	0.4	30%	
1,2-Dibromo-3-chloropropane	104	---	25.0	"	"	"	ND	104	"	5	30%	
Dibromochloromethane	116	---	5.00	"	"	"	ND	116	"	1	30%	
1,2-Dibromoethane (EDB)	108	---	2.50	"	"	"	ND	108	"	0.1	30%	

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42


## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Matrix Spike Dup (5110853-MSD1)				Prepared: 11/30/15 22:21    Analyzed: 12/01/15 16:31								
QC Source Sample: Other (A5K0883-03)												
Dibromomethane	96.3	---	5.00	ug/L	"	"	ND	96	"	2	30%	
1,2-Dichlorobenzene	102	---	2.50	"	"	"	ND	102	"	2	30%	
1,3-Dichlorobenzene	97.2	---	2.50	"	"	"	ND	97	"	1	30%	
1,4-Dichlorobenzene	94.4	---	2.50	"	"	"	ND	94	"	1	30%	
Dichlorodifluoromethane	77.2	---	5.00	"	"	"	ND	77	"	5	30%	
1,1-Dichloroethane	101	---	2.50	"	"	"	ND	101	"	0.8	30%	
1,2-Dichloroethane (EDC)	95.3	---	2.50	"	"	"	ND	95	"	2	30%	
1,1-Dichloroethene	88.5	---	2.50	"	"	"	ND	88	"	0	30%	
cis-1,2-Dichloroethene	98.0	---	2.50	"	"	"	ND	98	"	1	30%	
trans-1,2-Dichloroethene	97.8	---	2.50	"	"	"	ND	98	"	1	30%	
1,2-Dichloropropane	101	---	2.50	"	"	"	ND	101	"	0	30%	
1,3-Dichloropropane	106	---	5.00	"	"	"	ND	106	"	0.09	30%	
2,2-Dichloropropane	67.4	---	5.00	"	"	"	ND	67	"	5	30%	Q-01
1,1-Dichloropropene	93.8	---	5.00	"	"	"	ND	94	"	1	30%	
cis-1,3-Dichloropropene	104	---	5.00	"	"	"	ND	104	"	0.8	30%	
trans-1,3-Dichloropropene	109	---	5.00	"	"	"	ND	109	"	0.4	30%	
Ethylbenzene	95.8	---	2.50	"	"	"	ND	96	"	0.3	30%	
Hexachlorobutadiene	88.8	---	25.0	"	"	"	ND	89	"	6	30%	
2-Hexanone	197	---	50.0	"	"	200	ND	99	"	10	30%	
Isopropylbenzene	101	---	5.00	"	"	100	3.15	98	"	0.1	30%	
4-Isopropyltoluene	98.0	---	5.00	"	"	"	ND	98	"	2	30%	
4-Methyl-2-pentanone (MiBK)	197	---	50.0	"	"	200	ND	99	"	10	30%	
Methyl tert-butyl ether (MTBE)	93.8	---	5.00	"	"	100	ND	94	"	3	30%	
Methylene chloride	96.4	---	25.0	"	"	"	ND	96	"	2	30%	
Naphthalene	102	---	10.0	"	"	"	ND	102	"	7	30%	
n-Propylbenzene	101	---	2.50	"	"	"	4.15	97	"	1	30%	
Styrene	94.8	---	5.00	"	"	"	ND	95	"	0.3	30%	
1,1,1,2-Tetrachloroethane	120	---	2.50	"	"	"	ND	120	"	0.7	30%	
1,1,2,2-Tetrachloroethane	101	---	2.50	"	"	"	ND	101	"	3	30%	
Tetrachloroethene (PCE)	96.8	---	2.50	"	"	"	ND	97	"	1	30%	
Toluene	98.2	---	5.00	"	"	"	ND	98	"	0.9	30%	
1,2,3-Trichlorobenzene	92.9	---	10.0	"	"	"	ND	93	"	7	30%	
1,2,4-Trichlorobenzene	93.6	---	10.0	"	"	"	ND	94	"	6	30%	
1,1,1-Trichloroethane	95.4	---	2.50	"	"	"	ND	95	"	1	30%	

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Philip Nerenberg, Lab Director

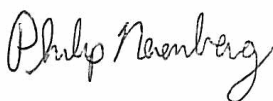
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul EckerReported:  
12/10/15 13:42

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110853 - EPA 5030B						Water						
Matrix Spike Dup (5110853-MSD1)						Prepared: 11/30/15 22:21		Analyzed: 12/01/15 16:31				
QC Source Sample: Other (A5K0883-03)												
1,1,2-Trichloroethane	104	---	2.50	ug/L	"	"	ND	104	"	0.2	30%	Q-41
Trichloroethene (TCE)	95.6	---	2.50	"	"	"	ND	96	"	2	30%	
Trichlorofluoromethane	148	---	10.0	"	"	"	ND	148	"	0.6	30%	
1,2,3-Trichloropropane	101	---	5.00	"	"	"	ND	101	"	4	30%	
1,2,4-Trimethylbenzene	98.8	---	5.00	"	"	"	ND	99	"	1	30%	
1,3,5-Trimethylbenzene	98.6	---	5.00	"	"	"	ND	99	"	2	30%	
Vinyl chloride	113	---	2.50	"	"	"	ND	113	"	3	30%	
m,p-Xylene	191	---	5.00	"	"	200	ND	95	"	0.7	30%	
o-Xylene	98.5	---	2.50	"	"	100	ND	98	"	0.8	30%	
Surr: Dibromofluoromethane (Surr)		Recovery: 98 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		97 %		80-120 %		"						
Toluene-d8 (Surr)		104 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		103 %		80-120 %		"						

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42

## SAMPLE PREPARATION INFORMATION

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

**Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: <u>5110853</u>							
A5K0821-01	Water	NWTPH-Gx (MS)	11/24/15 13:02	11/30/15 22:23	5mL/5mL	5mL/5mL	1.00

### Volatile Organic Compounds by EPA 8260B

**Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: <u>5110853</u>							
A5K0821-01	Water	EPA 8260B	11/24/15 13:02	11/30/15 22:23	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director



EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42

## Notes and Definitions

### Qualifiers:

- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-31 Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plain 112 /1179-02  
Project Manager: Paul Ecker

Reported:  
12/10/15 13:42

Lab # AS60821 coc 1 of 1

## CHAIN OF CUSTODY

**APEX LABS**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: <b>EES ENVIRONMENTAL</b>		Project Mgr: <b>PAUL ECKER</b>		Project Name: <b>PLAID 112</b>		Project # <b>1179-02</b>	
Address: <b>240 N BROADWAY STE 203 97227</b>		Phone: <b>(503) 947-7340</b>		Fax: <b>---</b>		Email: <b>PAUL@EES-ENV.COM</b>	
Sampled by: <b>DANIELE PETERS</b>							
Site Location: <b>OR</b>	Other: <b>WA</b>						
SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST	
1 <b>SVE-5</b>		11/24/15	1302 W	B		TCLEP Metals (8) RCRA Metals (8) 600 TIO 8082 PCBs 8270 SIM PAHs 8270 SVOC 8260 BTEX 8260 RBDN VOCs 8260 VOC NWTPH-GX NWTPH-DX NWTPH-HCID	
2						TOTAL DISS TCLP Se, Ag, Na, TL, V, Zn Hg, Mn, Mo, Ni, K Cr, Co, Cu, Fe, Pb Al, Si, As, Ba, Be, Cd	
3						1200-Z	
4						1200-COLS	
5							
6							
7							
8							
9							
10							
Normal Turn Around Time (TAT) = 7-10 Business Days		YES		NO		SPECIAL INSTRUCTIONS: <b>HOLD SAMPLES</b>	
TAT Requested (circle)		1 Day	2 Day	3 Day	4 Day	5 Day	Other:
SAMPLES ARE HELD FOR 30 DAYS							
RELINQUISHED BY: <b>DANIELE PETERS</b>		RECEIVED BY: <b>PAUL ECKER</b>					
Signature: <b>DANIELE PETERS</b>		Signature: <b>PAUL ECKER</b>					
Date: <b>11/24/15</b>		Date: <b>11/24/15</b>					
Printed Name: <b>DANIELE PETERS</b>		Printed Name: <b>PAUL ECKER</b>					
Time: <b>1458</b>		Time: <b>1458</b>					
Company: <b>Apex Labs</b>		Company: <b>Apex Labs</b>					

Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Thursday, December 24, 2015

Chris Rhea  
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

RE: Plaid / Plaid Pantry 112 / 1179-02

Enclosed are the results of analyses for work order A5L0534, which was received by the laboratory on 12/14/2015 at 12:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris Rhea

**Reported:**  
12/24/15 14:00

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-5	A5L0534-01	Water	12/11/15 16:16	12/14/15 12:30

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris RheaReported:  
12/24/15 14:00

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5L0534-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5120639</b>			
Gasoline Range Organics	ND	---	0.100	mg/L	1	12/21/15 16:30	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 107 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>105 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris RheaReported:  
12/24/15 14:00

## ANALYTICAL SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5L0534-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5120639</b>			
Benzene	ND	---	0.200	ug/L	1	12/21/15 16:30	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 109 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>105 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris RheaReported:  
12/24/15 14:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120639 - EPA 5030B						Water						
Blank (5120639-BLK1)						Prepared: 12/21/15 09:00		Analyzed: 12/21/15 11:11				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 103 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		104 %		50-150 %		"						
LCS (5120639-BS2)						Prepared: 12/21/15 09:00		Analyzed: 12/21/15 10:46				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.465	---	0.100	mg/L	1	0.500	---	93	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 105 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		103 %		50-150 %		"						
Duplicate (5120639-DUP1)						Prepared: 12/21/15 10:30		Analyzed: 12/21/15 19:34				
QC Source Sample: Other (A5L0491-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	7.73	---	0.500	mg/L	5	---	6.60	---	---	16	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 105 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		100 %		50-150 %		"						

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris RheaReported:  
12/24/15 14:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120639 - EPA 5030B						Water						
Blank (5120639-BLK1)			Prepared: 12/21/15 09:00    Analyzed: 12/21/15 11:11									
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		108 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				104 %	80-120 %		"					
Toluene-d8 (Surr)				97 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				101 %	80-120 %		"					
LCS (5120639-BS1)			Prepared: 12/21/15 09:00    Analyzed: 12/21/15 10:20									
EPA 8260B												
Benzene	20.5	---	0.200	ug/L	1	20.0	---	103	70-130%	---	---	
Toluene	18.9	---	1.00	"	"	"	---	95	"	---	---	
Ethylbenzene	18.9	---	0.500	"	"	"	---	95	"	---	---	
Xylenes, total	57.7	---	1.50	"	"	60.0	---	96	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		106 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				103 %	80-120 %		"					
Toluene-d8 (Surr)				93 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				93 %	80-120 %		"					
Duplicate (5120639-DUP1)			Prepared: 12/21/15 10:30    Analyzed: 12/21/15 19:34									
QC Source Sample: Other (A5L0491-01)												
EPA 8260B												
Benzene	425	---	1.00	ug/L	5	---	349	---	---	20	30%	
Toluene	5.84	---	5.00	"	"	---	4.88	---	---	18	30%	
Ethylbenzene	70.3	---	2.50	"	"	---	59.8	---	---	16	30%	
Xylenes, total	58.5	---	7.50	"	"	---	49.8	---	---	16	30%	
Surr: Dibromofluoromethane (Surr)		Recovery:		105 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				101 %	80-120 %		"					
Toluene-d8 (Surr)				96 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				100 %	80-120 %		"					
Matrix Spike (5120639-MS1)			Prepared: 12/21/15 10:30    Analyzed: 12/21/15 17:49									
QC Source Sample: Other (A5L0491-04)												
EPA 8260B												

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Philip Nerenberg, Lab Director




EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris RheaReported:  
12/24/15 14:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120639 - EPA 5030B							Water					
Matrix Spike (5120639-MS1)				Prepared: 12/21/15 10:30		Analyzed: 12/21/15 17:49						
QC Source Sample: Other (A5L0491-04)												
Benzene	609	---	1.00	ug/L	5	100	517	92	70-130%	---	---	
Toluene	102	---	5.00	"	"	"	8.25	94	"	---	---	
Ethylbenzene	132	---	2.50	"	"	"	35.8	96	"	---	---	
Xylenes, total	318	---	7.50	"	"	300	29.0	96	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 105 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		102 %		80-120 %		"						
Toluene-d8 (Surr)		94 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		94 %		80-120 %		"						



EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris Rhea**Reported:**  
12/24/15 14:00

## SAMPLE PREPARATION INFORMATION

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

**Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5120639</b>							
A5L0534-01	Water	NWTPH-Gx (MS)	12/11/15 16:16	12/21/15 10:32	5mL/5mL	5mL/5mL	1.00

## BTEX Compounds by EPA 8260B

**Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5120639</b>							
A5L0534-01	Water	EPA 8260B	12/11/15 16:16	12/21/15 10:32	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: **Plaid**  
Project Number: Plaid Pantry 112 / 1179-02  
Project Manager: Chris Rhea

Reported:  
12/24/15 14:00

## Notes and Definitions

### Qualifiers:

### Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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**Reported:**  
12/24/15 14:00

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# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Wednesday, January 13, 2016

Chris Rhea  
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

RE: PP112 / 1179-02


Enclosed are the results of analyses for work order A5L0905, which was received by the laboratory on 12/23/2015 at 4:42:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea


Reported:  
01/13/16 13:20

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-5	A5L0905-01	Water	12/23/15 12:58	12/23/15 16:42
S-28	A5L0905-02	Water	12/23/15 13:38	12/23/15 16:42

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5L0905-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5120897</b>			
Gasoline Range Organics	ND	---	0.100	mg/L	1	12/30/15 20:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			Recovery: 111 %	Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)			109 %	Limits: 50-150 %	"	"	"	
<b>S-28 (A5L0905-02RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5120933</b>			
Gasoline Range Organics	ND	---	0.200	mg/L	2	12/31/15 11:55	NWTPH-Gx (MS)	R-03
Surrogate: 4-Bromofluorobenzene (Sur)			Recovery: 100 %	Limits: 50-150 %	1	"	"	
1,4-Difluorobenzene (Sur)			105 %	Limits: 50-150 %	"	"	"	

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## ANALYTICAL SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A5L0905-01)</b>			<b>Matrix: Water</b>	<b>Batch: 5120897</b>				
Benzene	ND	---	0.200	ug/L	1	12/30/15 20:47	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 106 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>109 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>91 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<b>S-28 (A5L0905-02RE1)</b>			<b>Matrix: Water</b>	<b>Batch: 5120933</b>				
Benzene	ND	---	0.400	ug/L	2	12/31/15 11:55	EPA 8260B	R-03
Toluene	ND	---	2.00	"	"	"	"	
Ethylbenzene	ND	---	1.00	"	"	"	"	
Xylenes, total	ND	---	3.00	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 80-120 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>105 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120897 - EPA 5030B						Water						
Blank (5120897-BLK1)						Prepared: 12/30/15 10:25		Analyzed: 12/30/15 18:34				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 98 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		107 %		50-150 %		"						
LCS (5120897-BS2)						Prepared: 12/30/15 10:25		Analyzed: 12/30/15 18:07				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.524	---	0.100	mg/L	1	0.500	---	105	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		102 %		50-150 %		"						
Duplicate (5120897-DUP1)						Prepared: 12/30/15 10:25		Analyzed: 12/30/15 22:34				
QC Source Sample: Other (A5L0806-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	10.0	mg/L	100	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 109 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		111 %		50-150 %		"						
Batch 5120933 - EPA 5030B						Water						
Blank (5120933-BLK1)						Prepared: 12/31/15 08:35		Analyzed: 12/31/15 11:29				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 99 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		105 %		50-150 %		"						
LCS (5120933-BS2)						Prepared: 12/31/15 08:35		Analyzed: 12/31/15 11:02				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.525	---	0.100	mg/L	1	0.500	---	105	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		101 %		50-150 %		"						
Duplicate (5120933-DUP1)						Prepared: 12/31/15 08:35		Analyzed: 12/31/15 20:21				
QC Source Sample: Other (A5L0806-16)												
NWTPH-Gx (MS)												
Gasoline Range Organics	30.8	---	1.00	mg/L	10	---	32.8	---	---	6	30%	

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea


Reported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120933 - EPA 5030B							Water					
Duplicate (5120933-DUP1)					Prepared: 12/31/15 08:35		Analyzed: 12/31/15 20:21					
QC Source Sample: Other (A5L0806-16)												
Surr: 4-Bromofluorobenzene (Sur)			Recovery: 100 %		Limits: 50-150 %		Dilution: 1x					
1,4-Difluorobenzene (Sur)			97 %		50-150 %		"					

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120897 - EPA 5030B												
Water												
Blank (5120897-BLK1)												
Prepared: 12/30/15 10:25    Analyzed: 12/30/15 18:34												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	100 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				106 %		80-120 %	"					
Toluene-d8 (Surr)				101 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				100 %		80-120 %	"					
LCS (5120897-BS1)												
Prepared: 12/30/15 10:25    Analyzed: 12/30/15 17:41												
EPA 8260B												
Benzene	22.4	---	0.200	ug/L	1	20.0	---	112	70-130%	---	---	
Toluene	20.1	---	1.00	"	"	"	---	101	"	---	---	
Ethylbenzene	20.7	---	0.500	"	"	"	---	103	"	---	---	
Xylenes, total	66.0	---	1.50	"	"	60.0	---	110	"	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	102 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				102 %		80-120 %	"					
Toluene-d8 (Surr)				96 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				88 %		80-120 %	"					
Duplicate (5120897-DUP1)												
Prepared: 12/30/15 10:25    Analyzed: 12/30/15 22:34												
QC Source Sample: Other (A5L0806-01)												
EPA 8260B												
Benzene	ND	---	20.0	ug/L	100	---	ND	---	---	---	30%	
Toluene	ND	---	100	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	50.0	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	150	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	107 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				111 %		80-120 %	"					
Toluene-d8 (Surr)				99 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				91 %		80-120 %	"					
Matrix Spike (5120897-MS1)												
Prepared: 12/30/15 10:25    Analyzed: 12/30/15 23:27												
QC Source Sample: Other (A5L0806-14)												
EPA 8260B												

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS


## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120897 - EPA 5030B							Water					
Matrix Spike (5120897-MS1)				Prepared: 12/30/15 10:25		Analyzed: 12/30/15 23:27						
QC Source Sample: Other (A5L0806-14)												
Benzene	4630	---	20.0	ug/L	100	2000	2440	109	70-130%	---	---	
Toluene	2110	---	100	"	"	"	ND	105	"	---	---	
Ethylbenzene	2430	---	50.0	"	"	"	226	110	"	---	---	
Xylenes, total	7210	---	150	"	"	6000	173	117	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		102 %		80-120 %		"						
Toluene-d8 (Surr)		97 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		91 %		80-120 %		"						

**Matrix Spike Dup (5120897-MSD1)** Prepared: 12/30/15 10:25 Analyzed: 12/30/15 23:53**QC Source Sample: Other (A5L0806-14)****EPA 8260B**

Benzene	4410	---	20.0	ug/L	100	2000	2440	98	70-130%	5	30%	
Toluene	1940	---	100	"	"	"	ND	97	"	9	30%	
Ethylbenzene	2210	---	50.0	"	"	"	226	99	"	9	30%	
Xylenes, total	6580	---	150	"	"	6000	173	107	"	9	30%	
<i>Surr: Dibromofluoromethane (Surr)</i>			<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>1,4-Difluorobenzene (Surr)</i>			<i>103 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>87 %</i>		<i>80-120 %</i>		<i>"</i>					

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Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120933 - EPA 5030B												
Water												
Blank (5120933-BLK1)												
Prepared: 12/31/15 08:35 Analyzed: 12/31/15 11:29												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery: 98 %	Limits: 80-120 %	Dilution: 1x							
1,4-Difluorobenzene (Surr)			105 %	80-120 %	"							
Toluene-d8 (Surr)			100 %	80-120 %	"							
4-Bromofluorobenzene (Surr)			99 %	80-120 %	"							
LCS (5120933-BS1)												
Prepared: 12/31/15 08:35 Analyzed: 12/31/15 10:36												
EPA 8260B												
Benzene	23.0	---	0.200	ug/L	1	20.0	---	115	70-130%	---	---	
Toluene	21.8	---	1.00	"	"	"	---	109	"	---	---	
Ethylbenzene	22.1	---	0.500	"	"	"	---	110	"	---	---	
Xylenes, total	69.6	---	1.50	"	"	60.0	---	116	"	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery: 99 %	Limits: 80-120 %	Dilution: 1x							
1,4-Difluorobenzene (Surr)			101 %	80-120 %	"							
Toluene-d8 (Surr)			98 %	80-120 %	"							
4-Bromofluorobenzene (Surr)			97 %	80-120 %	"							
Duplicate (5120933-DUP1)												
Prepared: 12/31/15 08:35 Analyzed: 12/31/15 20:21												
QC Source Sample: Other (A5L0806-16)												
EPA 8260B												
Benzene	5270	---	2.00	ug/L	10	---	5440	---	---	3	30%	E
Toluene	29.9	---	10.0	"	"	---	30.5	---	---	2	30%	
Ethylbenzene	195	---	5.00	"	"	---	198	---	---	1	30%	
Xylenes, total	201	---	15.0	"	"	---	210	---	---	4	30%	
Surr: Dibromofluoromethane (Surr)												
			Recovery: 90 %	Limits: 80-120 %	Dilution: 1x							
1,4-Difluorobenzene (Surr)			97 %	80-120 %	"							
Toluene-d8 (Surr)			98 %	80-120 %	"							
4-Bromofluorobenzene (Surr)			97 %	80-120 %	"							
Matrix Spike (5120933-MS1)												
Prepared: 12/31/15 08:35 Analyzed: 12/31/15 20:48												
QC Source Sample: Other (A5L0806-14RE1)												
EPA 8260B												

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Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea

Reported:  
01/13/16 13:20

## QUALITY CONTROL (QC) SAMPLE RESULTS

### BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120933 - EPA 5030B						Water						
Matrix Spike (5120933-MS1)						Prepared: 12/31/15 08:35   Analyzed: 12/31/15 20:48						
QC Source Sample: Other (A5L0806-14RE1)												
Benzene	2740	---	4.00	ug/L	20	400	2140	151	70-130%	---	---	Q-03
Toluene	444	---	20.0	"	"	"	ND	111	"	---	---	
Ethylbenzene	660	---	10.0	"	"	"	187	118	"	---	---	
Xylenes, total	1630	---	30.0	"	"	1200	169	122	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		96 %	Limits:	80-120 %		Dilution: 1x				
1,4-Difluorobenzene (Surr)				99 %	80-120 %		"					
Toluene-d8 (Surr)				96 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				93 %	80-120 %		"					
Matrix Spike Dup (5120933-MSD1)						Prepared: 12/31/15 08:35   Analyzed: 12/31/15 21:15						
QC Source Sample: Other (A5L0806-14RE1)												
EPA 8260B												
Benzene	2710	---	4.00	ug/L	20	400	2140	142	70-130%	1	30%	Q-03
Toluene	439	---	20.0	"	"	"	ND	110	"	1	30%	
Ethylbenzene	644	---	10.0	"	"	"	187	114	"	2	30%	
Xylenes, total	1600	---	30.0	"	"	1200	169	119	"	2	30%	
Surr: Dibromofluoromethane (Surr)		Recovery:		97 %	Limits:	80-120 %		Dilution: 1x				
1,4-Difluorobenzene (Surr)				100 %	80-120 %		"					
Toluene-d8 (Surr)				95 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				92 %	80-120 %		"					

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea

Reported:  
01/13/16 13:20

## SAMPLE PREPARATION INFORMATION

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

#### Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5120897</b>							
A5L0905-01	Water	NWTPH-Gx (MS)	12/23/15 12:58	12/30/15 11:42	5mL/5mL	5mL/5mL	1.00
<b>Batch: 5120933</b>							
A5L0905-02RE1	Water	NWTPH-Gx (MS)	12/23/15 13:38	12/31/15 08:35	5mL/5mL	5mL/5mL	1.00

### BTEX Compounds by EPA 8260B

#### Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5120897</b>							
A5L0905-01	Water	EPA 8260B	12/23/15 12:58	12/30/15 11:42	5mL/5mL	5mL/5mL	1.00
<b>Batch: 5120933</b>							
A5L0905-02RE1	Water	EPA 8260B	12/23/15 13:38	12/31/15 08:35	5mL/5mL	5mL/5mL	1.00

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea

Reported:  
01/13/16 13:20

## Notes and Definitions

### Qualifiers:

- E Estimated Value. The result is above the calibration range of the instrument.
- Q-03 Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
- R-03 Elevated Reporting Limits due to limited sample volume.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS)
- QC Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).





# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Monday, February 8, 2016

Chris Rhea  
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

RE: PP112 / 1179-02


Enclosed are the results of analyses for work order A6A0745, which was received by the laboratory on 1/27/2016 at 1:34:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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Apex Laboratories



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Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea

Reported:  
02/08/16 17:24

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-5	A6A0745-01	Water	01/26/16 15:56	01/27/16 13:34

Apex Laboratories



Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A6A0745-01)</b>			<b>Matrix: Water</b>	<b>Batch: 6010690</b>				
Gasoline Range Organics	ND	---	0.100	mg/L	1	01/29/16 21:30	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>90 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.


EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## ANALYTICAL SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A6A0745-01)</b>			<b>Matrix: Water</b>		<b>Batch: 6010690</b>			
Benzene	ND	---	0.200	ug/L	1	01/29/16 21:30	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>97 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6010690 - EPA 5030B						Water						
Blank (6010690-BLK1)						Prepared: 01/29/16 11:26		Analyzed: 01/29/16 14:20				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 98 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		88 %		50-150 %		"						
LCS (6010690-BS2)						Prepared: 01/29/16 11:26		Analyzed: 01/29/16 13:51				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.426	---	0.100	mg/L	1	0.500	---	85	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 96 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		95 %		50-150 %		"						
Duplicate (6010690-DUP1)						Prepared: 01/29/16 09:57		Analyzed: 01/29/16 22:56				
QC Source Sample: Other (A6A0732-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	60.9	---	0.500	mg/L	5	---	63.2	---	---	4	30%	E
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 100 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		90 %		50-150 %		"						

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

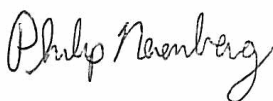
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6010690 - EPA 5030B												
Water												
Blank (6010690-BLK1)												
Prepared: 01/29/16 11:26    Analyzed: 01/29/16 14:20												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr:    Dibromofluoromethane (Surr)												
			Recovery:	98 %	Limits:	80-120 %	Dilution:		1x			
1,4-Difluorobenzene (Surr)			97 %		80-120 %				"			
Toluene-d8 (Surr)			97 %		80-120 %				"			
4-Bromofluorobenzene (Surr)			102 %		80-120 %				"			
LCS (6010690-BS1)												
Prepared: 01/29/16 11:26    Analyzed: 01/29/16 13:22												
EPA 8260B												
Benzene	18.2	---	0.200	ug/L	1	20.0	---	91	70-130%	---	---	
Toluene	18.8	---	1.00	"	"	"	---	94	"	---	---	
Ethylbenzene	19.3	---	0.500	"	"	"	---	96	"	---	---	
Xylenes, total	58.7	---	1.50	"	"	60.0	---	98	"	---	---	
Surr:    Dibromofluoromethane (Surr)												
			Recovery:	97 %	Limits:	80-120 %	Dilution:		1x			
1,4-Difluorobenzene (Surr)			96 %		80-120 %				"			
Toluene-d8 (Surr)			96 %		80-120 %				"			
4-Bromofluorobenzene (Surr)			100 %		80-120 %				"			
Duplicate (6010690-DUP1)												
Prepared: 01/29/16 09:57    Analyzed: 01/29/16 22:56												
QC Source Sample: Other (A6A0732-01)												
EPA 8260B												
Benzene	1150	---	1.00	ug/L	5	---	1160	---	---	1	30%	E
Toluene	702	---	5.00	"	"	---	705	---	---	0.4	30%	
Ethylbenzene	1720	---	2.50	"	"	---	1770	---	---	3	30%	E
Xylenes, total	5330	---	7.50	"	"	---	5590	---	---	5	30%	E
Surr:    Dibromofluoromethane (Surr)												
			Recovery:	93 %	Limits:	80-120 %	Dilution:		1x			
1,4-Difluorobenzene (Surr)			95 %		80-120 %				"			
Toluene-d8 (Surr)			97 %		80-120 %				"			
4-Bromofluorobenzene (Surr)			97 %		80-120 %				"			
Matrix Spike (6010690-MS1)												
Prepared: 01/29/16 09:57    Analyzed: 01/29/16 20:33												
QC Source Sample: Other (A6A0728-01)												
EPA 8260B												

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6010690 - EPA 5030B						Water						
Matrix Spike (6010690-MS1)				Prepared: 01/29/16 09:57		Analyzed: 01/29/16 20:33						
QC Source Sample: Other (A6A0728-01)												
Benzene	21.0	---	0.200	ug/L	1	20.0	ND	105	70-130%	---	---	
Toluene	21.4	---	1.00	"	"	"	ND	107	"	---	---	
Ethylbenzene	22.1	---	0.500	"	"	"	ND	110	"	---	---	
Xylenes, total	66.1	---	1.50	"	"	60.0	ND	110	"	---	---	
Surr: Dibromofluoromethane (Surr)			Recovery:	99 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				98 %		80-120 %	"					
Toluene-d8 (Surr)				97 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				99 %		80-120 %	"					





EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-02  
Project Manager: Chris RheaReported:  
02/08/16 17:24

## SAMPLE PREPARATION INFORMATION

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

## Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6010690							
A6A0745-01	Water	NWTPH-Gx (MS)	01/26/16 15:56	01/29/16 10:00	5mL/5mL	5mL/5mL	1.00

## BTEX Compounds by EPA 8260B

## Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6010690							
A6A0745-01	Water	EPA 8260B	01/26/16 15:56	01/29/16 10:00	5mL/5mL	5mL/5mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

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EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-02  
Project Manager: Chris Rhea

Reported:  
02/08/16 17:24

## Notes and Definitions

### Qualifiers:

E Estimated Value. The result is above the calibration range of the instrument.

### Notes and Conventions:

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.  
RPD Relative Percent Difference  
MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.  
WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.  
Batch  
QC In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.


Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).



<b>EES Environmental Inc</b>	Project: <b>PP112</b>	
240 N Broadway Ste 203	Project Number: 1179-02	<b>Reported:</b>
Portland, OR 97227	Project Manager: Chris Rhea	02/08/16 17:24

<b>APEX LABS</b>		<b>CHAIN OF CUSTODY</b>		Lab # <u>AM96745</u> COC <u>1 of 1</u>	
12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-3323 Fax: 503-718-0333					
Company: <b>EES ENVIRONMENTAL</b>		Project Mgr: CHRIS PETER		Project Name: PLATO PATNEY 112 Project # 1179-01	
Address: 240 N. BROADWAY STE 203 PORTLAND, OR 97224		Phone: (503) 247-2740 Fax: --		Email: CHRIS@EES-ENVV.COM	
Sampled by: DANIELE PETERS		ANALYSIS REQUEST			
Site Location: OR Other: WA	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS
SVE-5	11201611556	W	Q	NWTPH-HCID	NWTPH-Dx
				NWTPH-Gx	8260 VOC
				8260 RDBM VOCs	8260 BTEX
				8270 SVOC	8270 SIM PAHS
				8082 PCBs	600 TTO
				RCRA Metals (8)	TCLP Metals (8)
				Al, Sb, As, Ba, Be, Cd, Cr, Cu, Fe, Pb, Ni, K, Se, Ag, Na, Ti, V, Zn	TOTAL DISS TCLP
					1200-Z
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Normal Turn Around Time (TAT) = 7-10 Business Days		YES NO		SPECIAL INSTRUCTIONS:	
TAT Requested (circle) 1 Day      2 Day      3 Day 4 DAY      5 DAY      Other: _____					
RELINQUISHED BY: <i>Daniele Peters</i> Date: 11/21/16 Signature: [Signature] Printed Name: DANIELE PETERS		RECEIVED BY: <i>[Signature]</i> Date: 1/27/17 Signature: [Signature] Printed Name: [Name]		RECEIVED BY: <i>[Signature]</i> Date: [Date] Signature: [Signature] Printed Name: [Name]	
SAMPLES ARE HELD FOR 30 DAYS					

# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Friday, March 4, 2016

Chris Rhea  
EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

RE: PP112 / 1179-01

Enclosed are the results of analyses for work order A6B0697, which was received by the laboratory on 2/19/2016 at 4:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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Apex Laboratories



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Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-01  
Project Manager: Chris Rhea


Reported:  
03/04/16 17:28

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-5	A6B0697-01	Water	02/19/16 15:03	02/19/16 16:30

Apex Laboratories



Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*


EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-01  
Project Manager: Chris RheaReported:  
03/04/16 17:28

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A6B0697-01RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 6020669</b>			
Gasoline Range Organics	ND	---	0.100	mg/L	1	02/23/16 14:10	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			Recovery: 100 %	Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)			108 %	Limits: 50-150 %	"	"	"	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EES Environmental Inc  
240 N Broadway Ste 203  
Portland, OR 97227Project: PP112  
Project Number: 1179-01  
Project Manager: Chris RheaReported:  
03/04/16 17:28

## ANALYTICAL SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>SVE-5 (A6B0697-01RE1)</b>			<b>Matrix: Water</b>	<b>Batch: 6020669</b>				
Benzene	ND	---	0.200	ug/L	1	02/23/16 14:10	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 111 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>105 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

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240 N Broadway Ste 203  
Portland, OR 97227

Project: PP112  
Project Number: 1179-01  
Project Manager: Chris Rhea

Reported:  
03/04/16 17:28

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020653 - EPA 5030B						Water						
Blank (6020653-BLK1)						Prepared: 02/22/16 21:28		Analyzed: 02/22/16 23:30				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 98 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		107 %		50-150 %		"						
LCS (6020653-BS2)						Prepared: 02/22/16 21:28		Analyzed: 02/22/16 23:06				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.498	---	0.100	mg/L	1	0.500	---	100	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 94 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		101 %		50-150 %		"						
Duplicate (6020653-DUP1)						Prepared: 02/23/16 00:19		Analyzed: 02/23/16 00:19				
QC Source Sample: Other (A6B0617-09)												
NWTPH-Gx (MS)												
Gasoline Range Organics	1.55	---	0.100	mg/L	1	---	1.43	---	---	8	30%	F-13
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 111 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		107 %		50-150 %		"						
Batch 6020669 - EPA 5030B						Water						
Blank (6020669-BLK1)						Prepared: 02/23/16 11:31		Analyzed: 02/23/16 13:15				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		107 %		50-150 %		"						
LCS (6020669-BS2)						Prepared: 02/23/16 11:31		Analyzed: 02/23/16 12:49				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.489	---	0.100	mg/L	1	0.500	---	98	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 96 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		100 %		50-150 %		"						
Duplicate (6020669-DUP1)						Prepared: 02/23/16 14:58		Analyzed: 02/23/16 22:12				
QC Source Sample: Other (A6B0706-02)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	1.00	mg/L	10	---	ND	---	---	---	30%	

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## QUALITY CONTROL (QC) SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020669 - EPA 5030B							Water					
Duplicate (6020669-DUP1)					Prepared: 02/23/16 14:58		Analyzed: 02/23/16 22:12					
QC Source Sample: Other (A6B0706-02)												
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 105 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		109 %		50-150 %		"						

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Project Manager: Chris RheaReported:  
03/04/16 17:28

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020653 - EPA 5030B						Water						
Blank (6020653-BLK1)						Prepared: 02/22/16 21:28    Analyzed: 02/22/16 23:30						
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		108 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				104 %	80-120 %		"					
Toluene-d8 (Surr)				101 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				100 %	80-120 %		"					
LCS (6020653-BS1)						Prepared: 02/22/16 21:28    Analyzed: 02/22/16 22:43						
EPA 8260B												
Benzene	20.1	---	0.200	ug/L	1	20.0	---	101	70-130%	---	---	
Toluene	19.8	---	1.00	"	"	"	---	99	"	---	---	
Ethylbenzene	20.2	---	0.500	"	"	"	---	101	"	---	---	
Xylenes, total	57.5	---	1.50	"	"	60.0	---	96	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		98 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				99 %	80-120 %		"					
Toluene-d8 (Surr)				96 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				100 %	80-120 %		"					
Duplicate (6020653-DUP1)						Prepared: 02/23/16 00:19    Analyzed: 02/23/16 00:19						
QC Source Sample: Other (A6B0617-09)												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)		Recovery:		105 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				104 %	80-120 %		"					
Toluene-d8 (Surr)				97 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				102 %	80-120 %		"					
Matrix Spike (6020653-MS1)						Prepared: 02/23/16 03:58    Analyzed: 02/23/16 03:58						
QC Source Sample: Other (A6B0606-01)												
EPA 8260B												

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Project Number: 1179-01  
Project Manager: Chris RheaReported:  
03/04/16 17:28

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020653 - EPA 5030B						Water						
Matrix Spike (6020653-MS1)					Prepared: 02/23/16 03:58		Analyzed: 02/23/16 03:58					
QC Source Sample: Other (A6B0606-01)												
Benzene	21.7	---	0.200	ug/L	1	20.0	ND	109	70-130%	---	---	
Toluene	22.0	---	1.00	"	"	"	1.69	101	"	---	---	
Ethylbenzene	21.6	---	0.500	"	"	"	ND	108	"	---	---	
Xylenes, total	62.2	---	1.50	"	"	60.0	2.30	100	"	---	---	
Surr: Dibromofluoromethane (Surr)			Recovery: 97 %	Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)			98 %	80-120 %		"						
Toluene-d8 (Surr)			96 %	80-120 %		"						
4-Bromofluorobenzene (Surr)			100 %	80-120 %		"						



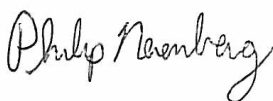
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Project Number: 1179-01  
Project Manager: Chris RheaReported:  
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## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020669 - EPA 5030B												
Water												
Blank (6020669-BLK1)												
Prepared: 02/23/16 11:31    Analyzed: 02/23/16 13:15												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	111 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				104 %		80-120 %	"					
Toluene-d8 (Surr)				98 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				98 %		80-120 %	"					
LCS (6020669-BS1)												
Prepared: 02/23/16 11:31    Analyzed: 02/23/16 12:23												
EPA 8260B												
Benzene	21.4	---	0.200	ug/L	1	20.0	---	107	70-130%	---	---	
Toluene	20.8	---	1.00	"	"	"	---	104	"	---	---	
Ethylbenzene	21.2	---	0.500	"	"	"	---	106	"	---	---	
Xylenes, total	59.5	---	1.50	"	"	60.0	---	99	"	---	---	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	99 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				99 %		80-120 %	"					
Toluene-d8 (Surr)				95 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				97 %		80-120 %	"					
Duplicate (6020669-DUP1)												
Prepared: 02/23/16 14:58    Analyzed: 02/23/16 22:12												
QC Source Sample: Other (A6B0706-02)												
EPA 8260B												
Benzene	7.27	---	2.00	ug/L	10	---	7.92	---	---	9	30%	
Toluene	ND	---	10.0	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	5.00	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	15.0	"	"	---	8.52	---	---	***	30%	
Surr: Dibromofluoromethane (Surr)												
			Recovery:	115 %	Limits:	80-120 %	Dilution: 1x					
1,4-Difluorobenzene (Surr)				105 %		80-120 %	"					
Toluene-d8 (Surr)				98 %		80-120 %	"					
4-Bromofluorobenzene (Surr)				98 %		80-120 %	"					
Matrix Spike (6020669-MS1)												
Prepared: 02/23/16 14:58    Analyzed: 02/23/16 18:41												
QC Source Sample: Other (A6B0747-01)												
EPA 8260B												

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03/04/16 17:28

## QUALITY CONTROL (QC) SAMPLE RESULTS

## BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6020669 - EPA 5030B						Water						
Matrix Spike (6020669-MS1)				Prepared: 02/23/16 14:58		Analyzed: 02/23/16 18:41						
QC Source Sample: Other (A6B0747-01)												
Benzene	827	---	5.00	ug/L	25	500	204	125	70-130%	---	---	Q-01
Toluene	1840	---	25.0	"	"	"	1170	134	"	---	---	
Ethylbenzene	720	---	12.5	"	"	"	108	122	"	---	---	
Xylenes, total	2440	---	37.5	"	"	1500	622	121	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 103 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		99 %		80-120 %		"						
Toluene-d8 (Surr)		96 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		97 %		80-120 %		"						



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## SAMPLE PREPARATION INFORMATION

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

#### Prep: EPA 5030B


Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6020669							
A6B0697-01RE1	Water	NWTPH-Gx (MS)	02/19/16 15:03	02/22/16 21:24	5mL/5mL	5mL/5mL	1.00

### BTEX Compounds by EPA 8260B

#### Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6020669							
A6B0697-01RE1	Water	EPA 8260B	02/19/16 15:03	02/22/16 21:24	5mL/5mL	5mL/5mL	1.00

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## Notes and Definitions

### Qualifiers:

- F-13 The chromatographic pattern does not resemble the fuel standard used for quantitation
- Q-01 Spike recovery and/or RPD is outside acceptance limits.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

