# **Delineation of Subsurface Petroleum Hydrocarbon Contamination**

# Horse Heaven Hills Travel Plaza 101 Merlot Drive Prosser, Washington 99350

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And

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### **TABLE OF CONTENTS**

Sectio	Page No.							
EXECUTIVE SUMMARY								
1.0	INTRODUCTION	1						
	1.1 Site Description	1						
	1.2 Site History	1						
2.0	FIELD ACTIVITIES AND METHODOLOGY	1						
	2.1 March 10, 2014 Field Activities							
	2.2 March 11, 2014 Field Activities	3						
	2.3 March 12, 2014 Field Activities	3						
	2.4 March 13, 2014 Field Activities	3						
	2.5 March 14, 2014 Field Activities							
	2.6 March 17, 2014 Field Activities	4						
	2.7 March 18, 2014 Field Activities	4						
	2.8 March 27, 2014 Field Activities							
	2.9 March 28, 2014 Field Activities	5						
	2.10 March 29, 2014 Field Activities	5						
	2.11 April 8 – 14, 2014 Field Activities	5						
	2.12 Sample Laboratory Analysis Summary	5						
3.0	LABORATORY ANALYTICAL RESULTS	6						
	3.1 Soil Stockpile Samples	6						
	3.2 Soil Samples Obtained Beneath Former Diesel F	·						
	3.3 Soil Sidewall Samples	7						
	3.4 Tank Pit Soil Samples	7						
	3.5 Water Samples	8						
4.0	SITE GEOLOGY AND HYDROGEOLOGY	9						
5.0	FIELD OBSERVATIONS	10						
6.0	BENEFICIAL WATER USE DETERMINATION	10						
7.0	LAND USAGE 1							
8.0	RISK-BASED ASSESSMENT 13							
9.0	CONCLUSIONS 12							
10.0	RECOMMENDATIONS	14						
11 0	STATEMENT OF ENVIRONMENTAL PROFESSIONALS							

### **TABLE OF CONTENTS (cont.)**

Section	n No.		Page No.							
12.0	REPORT LIMIT	ATIONS	1							
13.0	REFERENCES		17							
		<u>FIGURES</u>								
<u>Figure</u>	No.	Figure Title								
1 SITE LOCATION MAP 2 SAMPLE LOCATION MAP 3 MTCA METHOD A CLEANUP LEVEL SAMPLE LOCATION MAP										
	<u>TABLES</u>									
Table No.		<u>Table Title</u>								
1 2		SOIL SAMPLE LABORATORY ANALYTICAL DATA FOR TPH AND SELECT VOCS SOIL SAMPLE LABORATORY ANALYTICAL DATA FOR PAHS								
	3 4	WATER SAMPLE LABORATORY ANALYTICAL DATA FOR TPH AND SELECT VOCS WATER SAMPLE LABORATORY ANALYTICAL DATA FOR PAHS								
		APPENDICES								
<u>Appen</u>	dix No.	Appendix Title								
	A B C D F	WORK PLAN - Delineation of Subsurface Petroleum Hydrocarbo PHOTOGRAPHS UST PACIFIC RECYCLING RECEIPTS NEW UST SYSTEM SCHEMATICS LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION CITY OF PROSSER ZONING CLASSIFICATION MAP DETERMINATION OF NON-SIGNIFICANCE DOCUMENTATION	on Contamination							

### 1.0 INTRODUCTION

In January 2014, Blue Mountain Environmental and Consulting (BMEC) Company, Inc., from Waitsburg, Washington was contacted by Mr. Brian Rogers, the previous property owner, regarding performing a subsurface investigation to delineate petroleum hydrocarbon (PHC) contamination in soils related to seven diesel fuel dispensers at the Horse Heaven Hills Truck Stop in Prosser, Benton County, Washington. The subject property is locally known as the Horse Heaven Hills Truck Plaza located at 101 Merlot Drive in Prosser, Washington 99350 (Site). This report details the findings of a subsurface investigation performed in attempt to further delineate the PHC contamination in the site soils during field activities performed in March and April 2014 at the Site. A copy of the Work Plan prepared, prior to this subsurface investigation is included as **Appendix A**.

### 1.1 Site Description

A Site Location Map is included as **Figure 1.** The 3.92-acre property is approximately 720 feet above sea level and located in Township 9 North, Range 24 East, Section 35 of Benton County, Washington of the Willamette Meridian. The Site surface is relatively flat, sloping slightly to the south-southeast. The Site has one 5,640-square foot commercial building constructed in 1995, currently under renovation by the new property owner, Powell Christensen, Inc., a petroleum distributor headquartered in Grandview, Washington. A Shell gasoline station also owned and operated by Powell Christensen, Inc. and used for refueling standard passenger vehicles is located on the west side of the commercial building. The remainder of the property is covered with asphalt and/or concrete without any mature vegetation present, besides limited landscaping along the north and west perimeter of the site. No standing water exists on the property, which is located approximately one mile north of the Yakima River.

### 1.2 Site History

A limited site investigation was performed at the Site by BMEC personnel on September 18, 2013 and the results of that site investigation indicated that PHC contaminated soil existed beneath several of the truck stop (east side of commercial building) diesel fuel dispensers at concentrations exceeding Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Cleanup Levels. The depth of the PHC contamination beneath the diesel fuel dispensers was observed to be a minimum of one foot below surface grade (bsg) during the September 2013 site investigation. Depths exceeding one foot bsg were inaccessible at that time due to the presence of the diesel fuel pump islands and fuel dispensers.

### 2.0 FIELD ACTIVITIES AND METHODOLOGY

From mid-February through early March 2014, the old canopy above the truck plaza diesel fuel dispensers was removed by Cubby Enterprises, Inc. (Cubby). The removal of the canopy was essential to guaranty the safety of the workers during the cleanup project. Photographs of the canopy removal activities are included in **Appendix B**. Underground utility locates were conducted in early March 2014, prior to initiation of any subsurface activities.

Subsequent to canopy removal, BMEC personnel supervised the following onsite activities: diesel fuel dispenser and pump island removal, asphalt and concrete removal, soil excavation and field screening for petroleum-contaminated soil (PCS), soil sampling for laboratory analysis, observation well sampling, and surface water (i.e., pooled groundwater) sampling. The BMEC supervised cleanup activities occurred from March 10 through April 14, 2014 and are described in detail in the following text. Photographs of the BMEC supervised activities are included in **Appendix B**.

A pair of clean Nitrile gloves was donned prior to collection of each soil and water sample. All stockpile soil samples (SP) were obtained from approximately 0.25 feet beneath the surface of the stockpiled soil and placed in a clean 4-ounce glass jar with little to no head space. All soil sidewall samples (SW), tank pit samples (TP), and soil samples obtained from the base of the diesel fuel dispensers (SS), were obtained from approximately 8 feet bsg and placed in a clean 4-ounce glass jar with little to no head space, as well as a 5 to 10 microgram aliquot of each soil sample being obtained via the 5035A field sampling methodology involving field preservation with methanol and three 40-milliliter (ml) Environmental Protection Agency (EPA) vials.

Water samples 3-12-MW1 and 3-12-MW4 were obtained from observation wells via lowering a submersible pump with connective tubing into each well to pump the groundwater to the surface. Prior to use in successive wells, the pump was decontaminated by pumping a soapy water solution followed by a potable water rinse, through the pump. All tubing was discarded and replaced with clean tubing, prior to use in successive wells. Approximately three well volumes were purged from each observation well and containerized in one 55-gallon drum that was properly labeled and sealed. Less than 55 gallons total of water were removed from both wells during the purging process. All well pump decontamination water was containerized in the same 55-gallon drum.

Water sample 3-12-E1 was obtained by entering the excavation and lowering the sample container beneath the water surface and filling each container. Containers for both water samples obtained from the observation wells (3-12-MW1 and 3-12-MW4) consisted of two 1-liter amber glass jars without preservative, two 1-liter amber glass jars with hydrochloric acid (HCl) preservative, and two 40-ml vials preserved with HCl. All 40-ml vials were filled with water assuring no headspace. Containers for water sample 3-12-E1 consisted of two 1-liter amber glass jars without preservative and two 1-liter amber jars with HCl preservative.

Immediately subsequent to collection, all soil and water samples were properly sealed, labeled, and placed on ice in a cooler. All samples were accompanied with proper chain-of-custody and shipped overnight to OnSite Environmental Inc (OnSite) Laboratories in Redmond, Washington for analyses described below in Section 2.12.

### 2.1 March 10, 2014 Field Activities

BMEC personnel and subcontractor Cubby arrived at the Site to begin removal of the asphalt and concrete in the vicinity of the diesel fuel dispenser islands. Approximately 35 gallons of diesel fuel was pumped out of the fuel lines, prior to initiation of any excavation and placed in a secured 55-gallon drum. A track hoe was used to remove the asphalt and concrete overlying the subsurface soils. All excavated material (concrete and asphalt) was then loaded into the bucket of a front-end loader and temporarily stockpiled east of the former diesel fuel dispensers. A plastic liner was placed beneath the stockpiled concrete and asphalt.

### 2.2 March 11, 2014 Field Activities

BMEC personnel supervised while Cubby began removal of the diesel fuel dispenser islands, subsurface soils, and appurtenances associated with the diesel fuel dispenser islands including underground piping (fuel lines). A track hoe was used to remove the asphalt and concrete overlying the subsurface soils. All excavated material (concrete, asphalt, and piping) was then loaded into the bucket of a front-end loader and temporarily stockpiled east of the former diesel fuel dispenser islands at the previously described staging area (see photographs – **Appendix B**). All excavated material (clean soil, PCS, piping, and wiring) was placed on top of plastic sheeting and all soil was covered with plastic sheeting, as well. Clean soil and PCS was segregated via field screening methodology which consisted of visual assessment (staining) and olfactory odor assessment. Soil stockpile samples 03-11-SP-1 through 03-11-SP-6 were collected for laboratory analysis. Removal of the seven concrete pillars providing the foundation for the former canopy was initiated.

### 2.3 March 12, 2014 Field Activities

BMEC personnel supervised while Cubby continued removal of the concrete footings of the former canopy. Continued excavation of clean soil and PCS occurred, as well. The clean soil and PCS were staged in segregated stockpiles, as previously described. Soil stockpile samples 03-12-SP-7 through 03-12-SP-12 were collected for laboratory analysis. Water samples 3-12-MW1 and 3-12-MW4 were collected from observation wells which are located on **Figure 2**. A third water sample (3-12-E1) was obtained from standing water that had accumulated in the excavation pit and is presumed to be a result of groundwater entering the excavation. The location from where 3-12-E1 was collected is illustrated on **Figure 2**.

### 2.4 March 13, 2014 Field Activities

BMEC personnel supervised while Cubby completed removal of the concrete footings of the former canopy. Excavation of clean soil and PCS continued. The concrete, clean soil, and PCS were staged in segregated stockpiles, as previously described. Soil samples 03-13-SS1 through 03-13-SS14 were collected for laboratory analysis from the bottom of the diesel fuel pump dispenser excavation pit. The locations of the fourteen soil samples are illustrated on **Figure 2**. Groundwater was observed at an approximate depth of 8 to 8.5 feet bsg during field activities.

### 2.5 March 14, 2014 Field Activities

BMEC personnel supervised while Cubby continued excavation of clean soil and PCS. Underground piping and wiring associated with the UST system was excavated and stockpiled, when encountered. The clean soil, PCS, piping + wiring were staged in segregated stockpiles, as previously described. Miscellaneous activities included the following: lining two onsite storm drains with absorbent pads, erecting a chain-link fence around the perimeter of the excavation pit, investigating obvious diesel contamination seeping into the diesel fuel dispenser excavation pit from the adjoining USTs to the north, and discussing the situation with Mr. Brandon Christensen, which resulted in removing approximately 2200 gallons (total) of diesel from the two USTs by General Transport, a fuel transporter owned and operated by Powell Christensen, Inc. The decision was also made to remove the two tanks to obtain better access to the contaminated soils below and around the two tanks.

### 2.6 March 17, 2014 Field Activities

Ecology employees Krystal Rodriguez (Tanks Program) and Valerie Bound (Toxics Cleanup Program – Central Region Coordinator) visited the Site. During her Site visit, Ms. Bound agreed that soil excavation to the east, south, and west was sufficient and that microbial in-situ remediation would be an acceptable approach for addressing the diesel fuel-related PHCs remaining in the subsurface.

BMEC personnel supervised while Cubby continued excavation of the concrete apron above both USTs. Excavation and stockpiling of clean soil and PCS in the vicinity of the USTs continued. Standing water was noted rising to an approximate depth of 6.5 feet bsg, subsequent to removal of the south tank from the subsurface. Ultimately, both USTs were removed from ground and set aside and secured. Both USTs appeared in good condition upon inspection subsequent to removal from the subsurface.

After further discussions with Mr. Christensen, the decision was made not to reuse the old tanks, but to replace them with two larger tanks and also to install a third tank for diesel exhaust fluid (DEF) product, and all cost for these updates would be covered by Powell Christensen, Inc.

BMEC personal continued with the subsequent decommissioning and scrapping of the two old tanks for Powell Christensen, Inc.

### 2.7 March 18, 2014 Field Activities

BMEC personnel supervised while Cubby continued soil excavation and stockpiling (clean soil and PCS). Both decommissioned USTs were removed from site and hauled to Pacific Recycling, in Pasco, Washington. Copies of the UST recycling documentation for both tanks is included in **Appendix C**. Field screening identified additional PCS in an area southwest of the tank excavation which was ultimately removed and stockpiled in the staging area as described previously. Additional plastic was placed atop the added volume of clean soil and PCS.

### 2.8 March 27, 2014 Field Activities

Microbe application was initiated in the diesel fuel dispenser excavation pit and UST excavation pit by Wiser, Inc. (Wiser) of Vancouver, Washington. The microbes consisted of BAS-IND 500 Bio Aabsorb from AaBACO Industries. Approximately 20 gallons of the microbes were diluted to 200 gallons with water from the pit and applied on each layer of backfill, as well as being injected into the sidewalls, subsequent to hand augering at select locations. Backfilling was initiated with crushed run layers of 6 inches and each lift was compacted with a steamroller (see photographs – **Appendix B**). BMEC personnel oversaw the field activities.

### 2.9 March 28, 2014 Field Activities

Wiser continued microbe application in the diesel fuel dispenser excavation pit and UST excavation pit. Each 6-inch lift was compacted with a steamroller. BMEC personnel oversaw the field activities.

### 2.10 March 29, 2014 Field Activities

Wiser continued microbe application in the diesel fuel dispenser excavation pit and UST excavation pit. Each 6-inch lift was compacted with a steamroller. BMEC personnel oversaw the field activities.

### 2.11 April 8 – 14, 2014 Field Activities

PNE Corporation (PNE) from Longview, Washington installed three USTs. Two of the tanks were 20,000-gallon Glasteel diesel tanks and the third tank was a 6000-gallon DEF tank. The locations of the three tanks as installed, as well as tank schematics, are included in **Appendix D**.

During the UST installation process, the only task for BMEC personal was to make sure that the excavated material was properly segregated at the designated staging area as clean soil and PCS.

### 2.12 Sample Laboratory Analysis Summary

Fourteen soil samples were obtained from the beneath the seven former diesel fuel dispensers (SS-1 through SS-14). Thirteen soil sidewall samples were obtained from the diesel fuel dispenser excavation sidewalls (SW-1 through SW-13). Six soil samples were obtained from beneath the two former tanks (TP-1 through TP-6). Two water samples were obtained from observation wells (mis-labeled as MW1 and MW4). All 33 soil samples and two water samples were relinquished to OnSite for a combination of the following laboratory analyses:

- Total petroleum hydrocarbons (TPH) diesel range (TPH-D) and TPH heavy oil range (TPH-O) per Northwest Method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) per EPA Method 8021B; and
- Polynuclear aromatic hydrocarbons (PAHs) per EPA Method 8270 SIM.

Additionally, ten soil samples were obtained from the PCS stockpiled at the staging area (3-11-SP1 through 03-12-SP-10) and relinquished to OnSite for TPH-D and TPH-O analysis per Northwest Method NWTPH-

Dx. One standing water sample was obtained from the base of the excavation pit (3-12-E1) and relinquished to OnSite for TPH-D and TPH-O analysis per Northwest Method NWTPH-Dx, as well as PAH analysis per EPA Method 8270 SIM. **Figure 1** illustrates the locations of each of the soil and water sample locations.

### 3.0 LABORATORY ANALYTICAL RESULTS

During the subsurface investigation related to the diesel fuel dispensers performed at the Site in March and April 2014, a total of 43 soil samples, including 10 soil stockpile samples, were obtained for laboratory analyses. Additionally, three water samples were obtained for laboratory analyses. The 46 samples were relinquished to OnSite for a combination of the laboratory analyses listed above in Section 2.12.

The laboratory analytical results of the 43 soil samples are presented in the following text and summarized in **Tables 1** and **2.** The laboratory analytical results of the three water samples are also presented in the following text and summarized in **Tables 3** and **4**. Complete copies of all laboratory analytical reports and chain of custody documentation for all sampling activities are presented in **Appendix E**.

### 3.1 Soil Stockpile Samples

Ten soil samples (3-11-SP1 through 03-12-SP-10) were collected for laboratory analyses on March 11 and 12, 2014. The locations of the 10 soil samples are illustrated on **Figure 2**. Each of the 10 samples was analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx.

TPH-D was detected in the 10 samples at concentrations ranging from 2700 parts per million (ppm) in sample 3-11-SP1 to 17,000 ppm in sample 03-12-SP-8 (**Table 1**). TPH-O was not detected in any of the ten samples.

These samples were obtained from the PCS stockpiled in the staging area, subsequent to excavation from the vicinity of the diesel fuel dispensers and UST system. It is estimated that approximately 30,000 feet<sup>3</sup> of PCS is contained within the soil staging area awaiting future disposal.

### 3.2 Soil Samples Obtained Beneath Former Diesel Fuel Dispensers

Fourteen soil samples (03-13-SS1 through 03-13-SS14) were collected for laboratory analyses on March 13, 2014 from beneath the former diesel fuel dispensers in the truck plaza. The locations of the 14 soil samples are illustrated on **Figure 2**. Each of the 14 samples was analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx, BTEX per EPA Method 8021B, and PAHs per EPA Method 8270 SIM.

TPH-D was detected in all 14 samples at concentrations ranging from 690 ppm in sample 03-13-SS13 to 9800 ppm in sample 03-13-SP14 (**Table 1**). Eleven of the samples yielded TPH-D concentrations that exceeded the MTCA Method A cleanup levels of 2000 ppm. TPH-O was not detected in any of the 14 samples.

Benzene was detected in two of the 14 samples at concentrations of 0.049 ppm in sample 03-13-SS7 and 0.098 ppm in sample 03-13-SS8. Both benzene detections exceed the MTCA Method A Cleanup Levels of

0.03 ppm (**Table 1**). Toluene was not detected in any of the 14 samples. Ethylbenzene was detected in 11 of the 14 samples at concentrations ranging from 0.077 ppm in sample 03-13-SS12 to 4.7 ppm in sample 03-13-SS8. None of the 11 ethylbenzene concentrations exceed the MTCA Method A Cleanup Levels. Total xylenes were detected in 12 of the 14 samples at concentrations ranging from 0.11 ppm in sample 03-13-SS2 to 14 ppm in sample 03-13-SS8. The detection of 14 ppm in sample 03-13-SS8 is the only concentration that exceeds the MTCA Method A Cleanup Levels of 9 ppm.

PAHs were detected in 13 of the 14 samples at concentrations ranging up to 2.7 ppm 2-methyl-naphthalene in sample 03-13-SS6 (**Table 2**). The cumulative concentration of all three naphthalenes (naphthalene + 1-methylnaphthalene + 2-methlynaphthalene) in sample 03-13-SS6 exceeds the MTCA Method A Cleanup Levels of 5 ppm. None of the seven Ecology-classified carcinogenic PAHs were detected in any of the 14 samples (**Table 2**).

### 3.3 Soil Sidewall Samples

Thirteen soil sidewall samples (03-19-SW-1 through 03-19-SW-13) were collected for laboratory analyses on March 19, 2014 from the sidewalls of the diesel fuel dispenser excavation pit. The locations of the 13 soil samples are illustrated on **Figure 2**. Each of the 13 samples was analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx, BTEX per EPA Method 8021B, and PAHs per EPA Method 8270 SIM.

TPH-D was detected in 11 of the 13 samples at concentrations ranging from 81 ppm in sample 03-19-SW-13 to 4300 ppm in sample 03-13-SW-2 (**Table 1**). Three of the samples yielded TPH-D concentrations that exceeded the MTCA Method A Cleanup Levels of 2000 ppm. TPH-O was not detected in any of the 13 samples.

Benzene, toluene, and ethylbenzene were not detected in any of the 13 samples (**Table 1**). Total xylenes were detected in two of the 13 samples at concentrations of 0.071 ppm in sample 03-19-SW-8 and 0.088 ppm in sample 03-19-SW-5. Neither of the xylenes detections exceed the MTCA Method A Cleanup Levels.

PAHs were detected in 10 of the 13 samples at concentrations ranging up to 0.87 ppm fluorene in sample 03-19-SW-2 (**Table 2**). None of the seven Ecology-classified carcinogenic PAHs were detected in any of the 13 samples (**Table 2**). Furthermore, none of the detected PAH concentrations exceed the MTCA Method A Cleanup Levels.

### 3.4 Tank Pit Soil Samples

Six soil tank pit samples (03-19-TP-1 through 03-19-TP-6) were collected for laboratory analyses on March 19, 2014 from the base of the former UST excavation pit. The locations of the six soil samples are illustrated on **Figure 2**. Each of the six samples was analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx, BTEX per EPA Method 8021B, and PAHs per EPA Method 8270 SIM.

TPH-D was detected in all six samples at concentrations ranging from 1200 ppm in sample 03-19-TP-4 to 6200 ppm in sample 03-19-TP-5 (**Table 1**). Four of the samples yielded TPH-D concentrations that exceed the MTCA Method A Cleanup Levels of 2000 ppm. TPH-O was detected in two of the six samples at

concentrations of 720 ppm in sample 03-19-TP-6 and 890 ppm in sample 03-19-TP-5. Neither of the TPH-O detections exceed the MTCA Method A Cleanup Levels.

Benzene and toluene were not detected in any of the six samples (**Table 1**). Ethylbenzene was detected in one of the six samples (03-19-TP-5) at a concentration of 0.11 ppm which does not exceed the MTCA Method A Cleanup Levels. Total xylenes were detected in two of the six samples at concentrations of 0.33 ppm in sample 03-19-TP-6 and 1.02 ppm in sample 03-19-TP-5. Neither of the xylenes detections exceeds the MTCA Method A Cleanup Levels.

PAHs were detected in all six samples at concentrations ranging up to 2.5 ppm 2-methylnaphthalene in sample 03-19-TP-5 (**Table 2**). Chrysene at a concentration of 0.061 ppm in sample 03-19-TP-5 was the only Ecology-classified carcinogenic PAH detected in the six samples; however, this concentration does not exceed the MTCA Method A Cleanup Levels. The cumulative concentration of all three naphthalenes (naphthalene + 1-methylnaphthalene + 2-methlynaphthalene) in sample 03-19-TP-5 exceeds the MTCA Method A Cleanup Levels of 5 ppm.

### 3.5 Water Samples

Water samples 3-12-MW1 and 3-12-MW-4 were collected from observation wells on March 12, 2014. The sample locations are illustrated on **Figure 2**. Both of the water samples were analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx, BTEX per EPA Method 8021B, and PAHs per EPA Method 8270 SIM. PHCs (TPH-D, TPH-O, BTEX, and PAHs) were not detected in either sample (**Tables 3** and **4**).

Neither of these observation wells are true monitoring wells, but instead were designed to assess standing water intrusion and/or petroleum vapor accumulation in the former tank pit. Both observation wells were completed to an approximate depth of 10 feet bsg without adherence to proper Ecology monitoring well installation methodology (i.e., screened intervals, sandpack, and bentonite plugs). Collection of these two water samples are representative of stagnant, standing water in the former tank pit that had accumulated over time rather than a true representation of the local groundwater conditions. Both water samples were mis-labeled as "MW" samples, rather than "OW" samples.

Water sample 3-12-E1 was collected from the base of the excavation pit on March 12, 2014 at the location illustrated on **Figure 2**. Sample 3-12-E1 was analyzed for TPH-D and TPH-O per Northwest Method NWTPH-Dx and PAHs per EPA Method 8270 SIM. TPH-D was detected at a concentration of 3300 parts per billion (ppb) which exceeds the MTCA Method A Cleanup Level of 500 ppb. TPH-O was not detected in the water sample.

PAHs were detected in sample 3-12-E1 at concentrations that exceed the MTCA Method A Cleanup Levels (**Table 4**). The cumulative concentration of all three naphthalenes (naphthalene + 1-methyl-naphthalene + 2-methlynaphthalene) in sample 3-12-E1 exceeded the MTCA Method A Cleanup Level of 160 ppb. Additionally, the cumulative concentration of the seven Ecology-classified carcinogenic PAHs exceeds the MTCA Method A Cleanup Level of 0.1 ppb (**Table 4**).

### 4.0 SITE GEOLOGY AND HYDROGEOLOGY

According to the U.S. Department of Agriculture Soil Survey of Yakima County, Washington, the Site is underlain by the Ashue Silt Loam which is considered very deep and moderately well-drained with moderately coarse textures. A typical cross-section of the Ashue Silt Loam includes a 9-inch thick surface layer of light brown to brown loam, underlain by an approximate 15-inch thick layer of light gray, gravelly sandy loam, and further underlain by light yellowish brown and pale brown very gravelly sand up to 60 inches thick.

According to Ecology Well Log ID# 139757, the subsurface lithology in the vicinity of the Site is as follows:

- Brown SAND from 0 to 10 feet bsg;
- 2-inch GRAVEL from 10 to 16 feet bsg;
- Black BASALT from 16 to 60 feet bsg;
- Porous (Vesicular) BASALT from 60 to 82 feet bsg;
- Black BASALT from 82 to 120 feet bsg; and
- SANDSTONE from 120 to 145 feet bsg.

Static water level for the water well was recorded at 12 feet bsg. The well yield was recorded at 75 gallons per minute for the 6-inch diameter water well.

During the onsite field activities conducted March 13 and 14, 2014, the following subsurface lithology was encountered:

- Asphalt/concrete from 0 to 0.5 feet bgs, rounded pea gravel from 0.5 to 1.0 feet bsg;
- SILT with some rounded gravel from 1.0 to 2.5 feet bsg; and
- Silty, rounded GRAVEL (river rock) from 2.5 to 8.0 feet bsg.

Groundwater was encountered during the March 13 and 14, 2014 field activities at an approximate depth of 8 to 8.5 feet bsg. The inferred groundwater flow direction at the Site is to the south/southeast toward the Yakima River.

Geologically, the Site is located in the Yakima Fold Belt east of the Cascade Range in a much dryer climate that receives between 6 to 18 inches of precipitation annually. The Yakima Fold Belt is dominated by eastwest trending anticlinal ridges and synclinal valley(s). The Site is located southeast of the Rattlesnake Mountains and immediately north of the Horse Heaven Hills. The near surface soils are formed primarily from deposition of Quaternary sediments that overlie Miocene Columbia River Basalt Group flood basalts. Fine-grained slackwater sediments characterized by rhythmically graded bedding were deposited throughout the Pleistocene atop the Miocene basalts in the area of the Columbia Gorge extending north to the Yakima Valley including the region surrounding the Site. Volcanic ash deposits and wind-blown loess deposits are also noted throughout the region.

### 5.0 FIELD OBSERVATIONS

During the March 12, 2014 field activities, soil discolored dark gray and displaying a strong diesel odor was noted near the base of the diesel fuel dispenser excavation pit at an approximate depth of 7.5 to 8 feet bsg (see photograph - **Appendix B**). The diesel fuel-contaminated soil was noted in the vicinity of soil sample 03-19-TP-5 (**Figure 2**). At this stage of the project, discussion was initiated with the current owner, Christensen-Powell Inc., regarding the necessity to remove the former USTs to further delineate the diesel fuel contaminated soils.

During the March 13 and 14, 2014 field activities, the dimensions of the excavation pit created by removal of the diesel fuel dispenser pump islands and canopy foundations were approximately 130 feet by 28 feet by 8 feet deep. The soil on the south side of the trench and southeast corner of the trench was stained dark brown to gray and had a strong diesel fuel odor from 2 to 8 feet bsg. Aside from the vicinity of soil sample 03-19-TP-5, no staining was noted in the soil on the north or west sides of the trench. Dark gray to black soil staining was noted throughout the base of the trench at an approximate depth of 8 feet bsg. Pooled groundwater was noted at the base of the excavation at an approximate depth of 8 to 8.5 feet bsg. The groundwater had an oily sheen on the surface.

The soil staining on the south sidewall of the trench was very evident at an approximate depth of 2 feet bsg and extended to the base of the excavation at 8 feet bsg. This solid line of discoloration and petroleum odor from 2 to 8+ feet bsg strongly suggests that the groundwater surface has fluctuated to as high as 2 feet bsg in the past and created a diesel fuel "smear zone" that was evident during the site assessment from approximately 2 to 8 feet bsg.

During a site visit on April 23, 204, Peter Trabusiner (BMEC Engineer) noted the groundwater surface had risen to an elevation approximately three feet bsg. This substantial rise in the groundwater surface may be attributed to seasonal irrigation water usage in the vicinity of Prosser infiltrating into the subsurface.

### 6.0 BENEFICIAL WATER USE DETERMINATION

No water wells (domestic, industrial, or irrigation) exist onsite. The Site domestic water supply is provided by a municipal water source from the city of Prosser. According to Mr. Andrew Robinson (Public Works Utility Worker IV), the city of Prosser municipal water supply is created by six water wells located on the south side of the Yakima River and the depths of the six water wells vary from several hundred feet up to 1500 feet bsg. Per Mr. Robinson, the groundwater from all six municipal water wells is piped to a treatment plant at the base of the Horse Heaven Hills and this treated water supply is then redistributed throughout most of the city, including the Site at 101 Merlot Drive.

According to the Washington State Department of Ecology website <a href="https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/SearchResultsWithPaging.aspx">https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/SearchResultsWithPaging.aspx</a> a total of 33 water wells have been installed in Section 35, Township 9 North, Range 24 East of the Willamette Meridian. The specific location of these 33 water wells in relation to the Site will need to be assessed in the future via a beneficial water use determination (BWUD) survey, if it is confirmed via the ensuing

hydrogeological assessment that PHCs are present in the groundwater at concentrations that exceed the Ecology MTCA Method A Cleanup Levels.

### 7.0 LAND USAGE

The 3.92-acre property is zoned CG (commercial, general). Adjacent properties to the west, south, and east are also zoned CG. Federal interstate (I-82) is adjacent to the north. A copy of the City of Prosser Zoning Classification map is included in **Appendix F**. The Site is located a short distance off exit 80 of Interstate 80/US Highway 12, and is surrounded by Interstate 80/US Highway 12 to the north, CG-zoned property to the west, Merlot Drive and commercial businesses (McDonalds and Kentucky Fried Chicken/Taco Bell) to the south, and a hotel (Best Western) to the east.

The CG zoning classification does allow for residential or urban residential living, but only in the scenario in which the residential or urban residential quarters are part of the primary business construction plans. No schools, day care facilities, or senior citizen living homes are allowed in the CG zoning designation.

According to Mr. Steve Zetz (City Planner), a Determination of Non-significance (DNS) was given to the Site on April 9, 2014. The DNS signifies that the City Planner has determined that no significant impact to wildlife or the surrounding environment requiring mitigation will result due to the installation of the new diesel fuel UST system and renovation of the interior of the existing convenience store dwelling. A copy of the DNS documentation is included as **Appendix G**. By definition, information regarding the impact of the former diesel fuel dispensers and UST system on the environment is not used in assessing the DNS designation.

### 8.0 RISK-BASED ASSESSMENT

The MTCA Method A Cleanup Levels are established to protect human receptors from potentially harmful sources (i.e., diesel and carcinogenic PAHs). TPH-D exceeded the MTCA Method A Cleanup Levels in all ten soil samples obtained from the soil stockpiles (3-11-SP1 through 03-12-SP-10). However, all stockpiled soil remains onsite as of May 2, 2014 and will be properly hauled to and disposed as PCS at a licensed waste disposal facility. Thus, once disposed properly, the stockpiled soil and all associated sample results will no longer be a human health risk concern.

Eleven of the 14 soil samples obtained from the bottom of the diesel fuel dispenser excavation pit (03-13-SS1 through 03-13-SS14) yielded PHC concentrations (TPH-D, benzene, and/or PAHs) that exceeded MTCA Method A Cleanup Levels. All eleven of these soil samples were obtained from an approximate depth of 8 feet bsg. Thus, since groundwater was observed to be at an approximate depth of 8 to 8.5 feet bsg during the day of collection of these samples on March 13, 2014, the MTCA Method A Cleanup Level exceedances in soil attributed to these 11 samples should technically be considered a potential groundwater issue moving forward.

**Figure 3** illustrates the location of all samples (soil and water) that yielded PHC concentrations in excess of MTCA Method A Cleanup Levels.

Three of the 13 soil samples obtained from the sidewalls of the diesel fuel dispenser excavation pit (03-19-SW-1 through 03-19-SW-14) yielded PHC concentrations (TPH-D) that exceeded MTCA Method A Cleanup Levels. All three of these soil samples were obtained from an approximate depth of 8 feet bsg. Thus, since groundwater was observed to be at an approximate depth of 8 to 8.5 feet bsg during the day of collection of these samples on March 19, 2014, the MTCA Method A Cleanup Level exceedances in soil attributed to these three samples should technically be considered a potential groundwater issue moving forward.

Four of the six soil samples obtained from the bottom of the UST excavation pit (03-19-TP-1 through 03-19-TP-6) yielded PHC concentrations (TPH-D) that exceeded MTCA Method A Cleanup Levels. All four of these soil samples were obtained from an approximate depth of 8 feet bsg. Thus, since groundwater was observed to be at an approximate depth of 8 to 8.5 feet bsg during the day of collection of these samples on March 19, 2014, the MTCA Method A Cleanup Level exceedances in soil attributed to these four samples should technically be considered a potential groundwater issue moving forward.

Since the predominant depth of PHC contamination exceeding MTCA Method A Cleanup Levels is at 8 feet bsg and this area of the Site will be capped with concrete and/or asphalt, potential receptor contact via the contaminated soil is unlikely. Furthermore, any residual PHC contamination associated with the diesel fuel dispenser contamination will likely be addressed by the insitu bioremediation that was implemented in the source area on March 17, 2014.

### 9.0 CONCLUSIONS

A total of 43 soil samples and three water samples were obtained for laboratory analysis from the Site during the March and April 2014 subsurface investigation activities. The single groundwater sample (3-12-E1) was impacted with TPH-D and PAHs at concentrations exceeding the MTCA Method A Cleanup Levels.

Ten of the soil samples were obtained from stockpiled soil that remains onsite secured with plastic liner and protective covering. This approximately 30,000 ft<sup>3</sup> of stockpiled soil will be hauled to and disposed at a licensed waste disposal facility in the near future. A summary of MTCA Method A Cleanup Level exceedances in soil is as follows:

- Eleven of the 14 soil samples obtained from the base of the former diesel fuel dispenser excavation pit contained TPH-D concentrations exceeding MTCA Method A Cleanup Levels.
- Two of the 14 soil samples obtained from the base of the former diesel fuel dispenser excavation pit contained benzene concentrations exceeding MTCA Method A Cleanup Levels.
- One of the 14 soil samples obtained from the base of the former diesel fuel dispenser excavation pit contained total xylenes at a concentration exceeding MTCA Method A Cleanup Levels.
- One of the 14 soil samples obtained from the base of the former diesel fuel dispenser excavation pit contained PAHs at a concentration exceeding MTCA Method A Cleanup Levels.
- Three of the 13 soil samples obtained from the sidewalls of the former diesel fuel dispenser excavation pit contained TPH-D concentrations exceeding MTCA Method A Cleanup Levels.

- Four of the six soil samples obtained from the bottom of the former UST excavation pit contained TPH-D concentrations exceeding MTCA Method A Cleanup Levels.
- One of the six soil samples obtained from the bottom of the former UST excavation pit contained PAHs at a concentrations exceeding MTCA Method A Cleanup Levels.

Groundwater was observed to be at an approximate depth of 8 to 8.5 feet bsg on March 13 and 14, 2014 and as shallow as 3 feet bsg on April 23, 2014. Thus, the MTCA Method A Cleanup Levels exceedances in soil should technically be considered a potential groundwater issue moving forward. Potential receptor contact via the TPH-D-, benzene-, xylene-, and PAH-contaminated soil is unlikely due to the following reasons:

- The predominant depth of PHC contamination in soil appears to be at 8 feet bsg and this area of the Site will be capped with concrete and/or asphalt.
- Any residual PHC contamination associated with the diesel fuel dispenser contamination will likely be addressed by the insitu microbial bioremediation that was implemented in the source area on March 17, 2014.
- The Site is zoned CG and future residential or urban residential land usage, although allowed in limited format, is unlikely.

Field observations noted during the subsurface investigation activities were as follows:

- Dark brown to gray soil staining of the subsurface soil was noted from 2 to 8 feet bsg on the south sidewall of the former diesel fuel dispenser excavation pit. Olfactory evidence of moderate to strong petroleum odors was associated the soil staining.
- An oily sheen was observed on the surface of the groundwater pooled in the diesel fuel dispenser excavation pit.
- Well-rounded GRAVEL or RIVER ROCK was encountered near the base of the 8 foot deep excavation. BASALT bedrock was encountered at approximately 13 feet bsg in the excavation(s).
- Groundwater flow direction beneath the Site is undetermined. However, the inferred groundwater flow direction is to the south-southeast toward the Yakima River.
- The Site obtains its domestic water source from the municipal water supply, not a private, onsite water well.

### 10.0 RECOMMENDATIONS

Per Ecology's recommendation, PHCs in the subsurface soils have been thoroughly delineated in the vicinity of the former diesel fuel dispensers at the truck plaza. The stockpiled soil needs to be disposed at a licensed waste disposal facility, as planned.

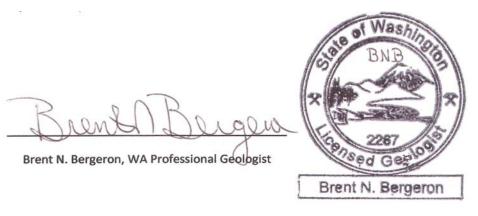
Delineation of the extent and magnitude of PHCs in the shallow groundwater needs to be assessed at the Site. Thus, a network of monitoring wells should be installed at the Site to assess the potential for PHCs (TPH-D, TPH-O, BTEX, and PAHs) in the shallow aquifer, as well as to confirm the seasonal depths to groundwater and groundwater flow direction. This network of monitoring wells should consist of a minimum of seven wells: A minimum of one monitoring well should be located up-gradient of the diesel fuel source area (former diesel fuel dispenser excavation pit), one well should be located in the diesel fuel source area, and a minimum of five wells should be installed down-gradient of the diesel fuel source area. Each of the monitoring wells should be screened roughly from 5 to 15 feet bsg, in an attempt to monitor the dissolved-phase PHC contamination in the shallow groundwater that exists near the soil/bedrock interface. A report shall be completed documenting the findings of the groundwater assessment, including the completion of a BWUD survey.

### 11.0 STATEMENT OF ENVIRONMENTAL PROFESSIONALS

### **Statement of Quality Assurance**

We have performed this subsurface investigation in accordance with generally accepted environmental practices and procedures, as of the date of this report. We have employed the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area. The conclusions contained within this subsurface investigation are based upon site conditions we readily observed or which were reasonably ascertainable and present at the time of the Site assessment.

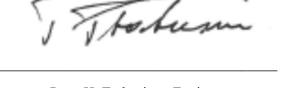
The conclusions and recommendations stated in this report are based upon personal observations made by employees of BMEC and upon information provided by others. We have no reason to suspect or believe that the information provided by others is inaccurate.



### Statement of Quality Control

The objective of this subsurface investigation was to ascertain the potential presence or absence of petroleum hydrocarbons that could impact subsurface soils attributed to diesel fuel dispensers on the subject property. The procedure was to perform reasonable steps in accordance with the existing regulations, currently available technology, and generally accepted engineering practices in order to accomplish the stated objective.

Blue Mountain Environmental Consulting, Inc.



Peter H. Trabusiner, Engineer

### 12.0 REPORT LIMITATIONS

The subsurface investigation report has been performed for the exclusive use of Mr. Brian Rogers, or agents specified by him, for the transaction at issue concerning the subject property in Prosser, Washington. The objective of this subsurface investigation was to ascertain the potential presence or absence of petroleum hydrocarbons (i.e., diesel fuel) that could impact subsurface soils (and potentially the shallow groundwater) on the subject property in the vicinity of seven diesel fuel dispensers. Any other petroleum hydrocarbon sources that have impacted, or may potentially impact the Site, were not part of the assessment process.

The purpose of this environmental subsurface investigation was to evaluate potential or actual PHC (i.e., diesel fuel) impact to subsurface soils (and potentially the shallow groundwater). Assessment of the two former 15,000-gallon diesel fuel USTs was not part of the initial subsurface assessment objective. In performing an environmental subsurface investigation, a balance must be struck between reasonable inquiry into environmental issues and an exhaustive analysis of every conceivable issue of possible concern. This environmental subsurface investigation contains BMEC's opinions regarding environmental issues of concern and/or additional issues that may need to be addressed. In rendering our professional opinion, BMEC warrants that the services provided within the scope of this assessment were performed, within the limits described, in accordance with generally accepted environmental consulting principles and practices. No other warranty, expressed or implied, is made. The following paragraphs describe the assumptions and standard parameters under which such opinion is rendered.

Any opinions and/or recommendations presented in this report apply to site conditions existing at the time of performance of services. BMEC is unable to report on or accurately predict events that may affect the site after performance of services, whether occurring naturally or caused by human forces. BMEC assumes no responsibility for conditions BMEC did not investigate, or conditions not generally recognized as environmentally unacceptable at the time services were performed.

Except where there is expressed concern of our client, or where specific environmental contaminants have previously been reported by others, naturally occurring toxic substances, potential environmental contaminants located inside buildings, or contaminant concentrations not of current environmental concern, may not be addressed in this document.

No assessment is thorough enough to exclude the presence of hazardous materials at a given site. Therefore, if specific hazardous materials have not been identified during this assessment, the lack of such identifications should not be construed as a guarantee of the absence of hazardous materials, but merely as the result of services performed within the scope, limitations, and cost of work done.

BMEC is not responsible for the effects of changes in applicable environmental standards, practices, or regulations after the performance of services.

Services provided for this assessment were performed in accordance with BMEC's agreement and understanding with our client, which may not be fully disclosed in this report. Opinions and/or recommendations are intended for the client, purpose, site, location, time frame, and project parameters indicated.

This report was prepared solely for the use of our client, and should be reviewed in its entirety; BMEC is not responsible for subsequent separation, detachment, or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

Cc: Ms. Krystal Rodriguez, Washington Department of Ecology - Tanks Program
Ms. Valerie Bound, Washington Department of Ecology - Toxics Cleanup Program

### 13.0 REFERENCES

Robinson, Andrew, Public Works Utility Worker IV – City of Prosser, Washington, personal communication, April 30, 2014.

Washington State Department of Ecology, *Model Toxics Control Act Statue and Regulation*, Revised November 2007.

Washington State Department of Ecology - water well website https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/SearchResultsWithPaging.aspx

Zetz, Steve, City Planner – City of Prosser, Washington, personal communication, April 30, 2014.

Image Provided by ESRI

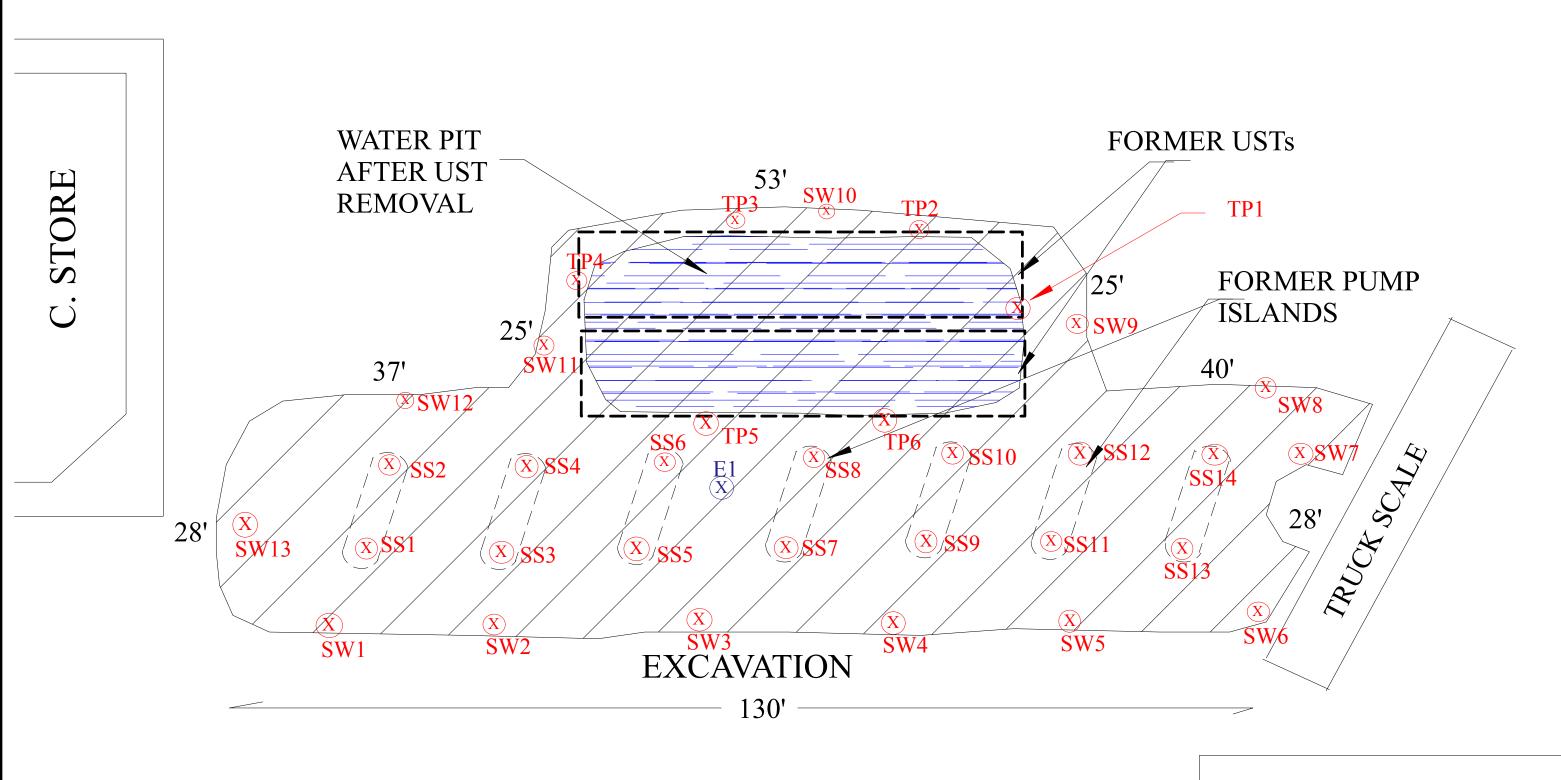




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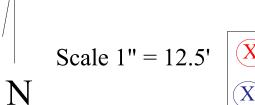
PO Box 545/125 Main St Waitsburg, Wa 99361 bmec@gotvc.net Horse Heaven Hills Truck Stop 101 Merlot Drive Prosser, WA 99350

FIGURE 1: SITE LOCATION MAP



# FIGURE 2: SAMPLE LOCATION MAP

Horse Heaven Hills Truck Stop 101 Merlot Drive Prosser, WA 99350



### LEGEND

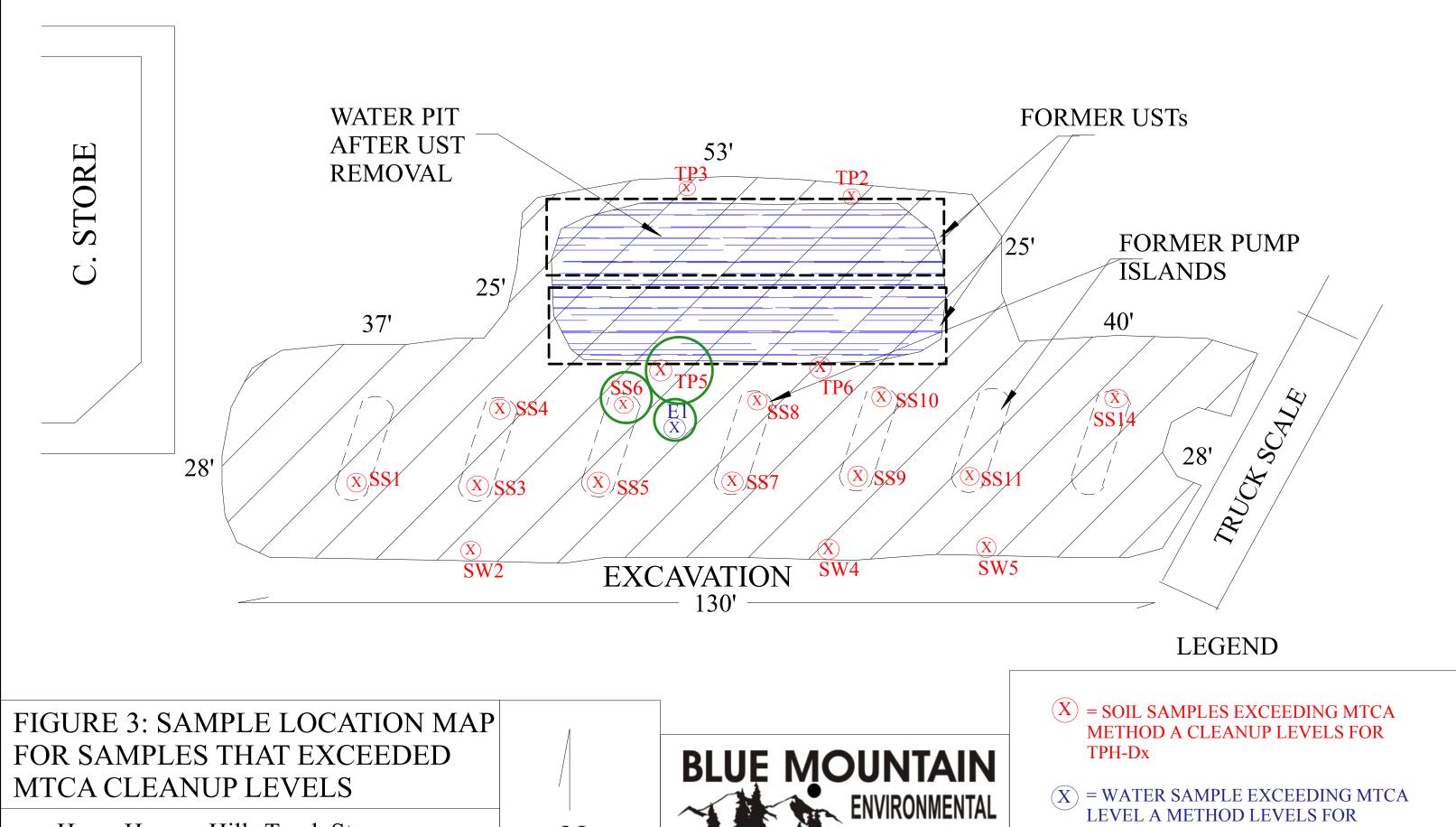


 $(\widehat{X})$ = WATER SAMPLE

# BLUE MOUNTAIN ENVIRONMENTAL CONSULTING

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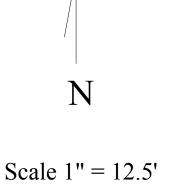
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Horse Heaven Hills Truck Stop 101 Merlot Drive Prosser, WA 99350



# **CONSULTING** 509-520-6519

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- TPH-Dx
- = SAMPLES EXCEEDING MTCA METHOD A CLEANUP LEVELS FOR PAHS

# TABLE 1 Soil Sample Laboratory Analytical Data For TPH and Select VOCs Horse Heaven Hills Truck Plaza - 101 Merlot Drive Prosser, Washington 99350

Date Collection			Total Pe Hydroc		VOCs by EPA Method 8021B (mg/Kg)						
Sample I.D.	Collected	Depth (Feet bsg)	TPH-D by Method NWTPH-Dx (mg/Kg)	TPH-O by Method NWTPH-Dx (mg/Kg)	Benzene	Toluene	Ethyl- benzene	Total Xylenes			
Stockpile Sam											
3-11-SP1	3/11/14	0.25'	2700	< 180	NA	NA	NA	NA			
3-11-SP2	3/11/14	0.25'	10,000	< 700	NA	NA	NA	NA			
3-11-SP3	3/11/14	0.25'	6100	< 410	NA	NA	NA	NA			
03-11-SP-4	3/11/14	0.25'	9800	< 530	NA	NA	NA	NA			
03-11-SP-5	3/11/14	0.25'	4300	< 210	NA	NA	NA	NA			
03-11-SP-6	3/11/14	0.25'	3600	< 160	NA	NA	NA	NA			
03-12-SP-7	3/12/14	0.25'	3600	< 210	NA	NA	NA	NA			
03-12-SP-8	3/12/14	0.25'	17,000	< 820	NA	NA	NA	NA			
03-12-SP-9	3/12/14	0.25'	5100	< 310	NA	NA	NA	NA			
03-12-SP-10	3/12/14	0.25'	10,000	< 480	NA	NA	NA	NA			
Soil Samples (	Obtained Ben	eath Former I	Diesel Fuel Dis	pensers)							
03-13-SS1	3/13/14	8'	2500	< 200	< 0.026	< 0.13	0.27	1.13			
03-13-SS2	3/13/14	8'	1100	< 140	< 0.022	< 0.11	< 0.11	0.11			
03-13-SS3	3/13/14	8'	2000	< 200	< 0.020	< 0.081	0.36	0.73			
03-13-SS4	3/13/14	8'	2100	< 160	< 0.027	< 0.14	0.17	0.83			
03-13-SS5	3/13/14	8'	7800	< 400	< 0.025	< 0.13	1.7	2.6			
03-13-SS6	3/13/14	8'	5900	< 350	< 0.025	< 0.12	2.2	6.54			
03-13-SS7	3/13/14	8'	7900	< 480	0.049	< 0.11	2.8	7.7			
03-13-SS8	3/13/14	8'	4500	< 280	0.098	< 0.14	4.7	14			
03-13-SS9	3/13/14	8'	3800	< 210	< 0.022	< 0.11	0.75	0.66			
03-13-SS10	3/13/14	8'	4600	< 350	< 0.026	< 0.13	0.62	0.95			
03-13-SS11	3/13/14	8'	3800	< 290	< 0.020	< 0.070	0.30	0.53			
03-13-SS12	3/13/14	8'	1300	< 140	< 0.020	< 0.065	0.077	0.315			
03-13-SS12	3/13/14	8'	690	< 83	< 0.020	< 0.068	< 0.068	< 0.136			
03-13-SS14	3/13/14	8'	9800	< 530	< 0.023	< 0.11	< 0.11	< 0.22			
Sidewall Samp		Ü	7000	V 330	V 0.023	V 0.11	V 0.11	\ 0.22			
03-19-SW-1	3/19/14	8'	670	< 65	< 0.020	< 0.065	< 0.065	< 0.130			
03-19-SW-2	3/19/14	8'	4300	< 360	< 0.020	< 0.070	< 0.070	< 0.140			
03-19-SW-3	3/19/14	8'	1400	< 130	< 0.020	< 0.062	< 0.062	< 0.124			
03-19-SW-4	3/19/14	8'	2100	< 180	< 0.020	< 0.072	< 0.072	< 0.144			
03-19-SW-5	3/19/14	8'	2200	< 170	< 0.020	< 0.069	< 0.069	0.088			
03-19-SW-6	3/19/14	8'	1800	< 220	< 0.020	< 0.054	< 0.054	< 0.108			
03-19-SW-7	3/19/14	8'	880	< 130	< 0.020	< 0.060	< 0.060	< 0.120			
03-17-5W-7	3/19/14	8'	1300	< 130	< 0.020	< 0.054	< 0.054	0.071			
03-19-SW-9	3/19/14	8'	1300	< 160	< 0.020	< 0.066	< 0.066	< 0.132			
03-19-3W-9 03-19-SW-10	3/19/14	8'	1600	< 220	< 0.020	< 0.058	< 0.058	< 0.132			
03-19-SW-10	3/19/14	8'	< 31	< 62	< 0.020	< 0.082	< 0.082	< 0.116			
03-19-SW-11 03-19-SW-12	3/19/14	8,	< 28	< 55	< 0.020	< 0.082	< 0.082	< 0.184			
03-19-SW-12 03-19-SW-13	3/19/14	8,	< 28 81	< 55	< 0.020	< 0.067	< 0.067	< 0.134			
Tank Pit Samp		đ	01	< 58	< 0.020	< 0.068	< 0.068	< 0.136			
03-19-TP-1	3/19/14	8'	1900	< 200	< 0.020	< 0.064	< 0.064	< 0.128			
03-19-TP-2	3/19/14	8'	2100	< 240	< 0.020	< 0.055	< 0.055	< 0.110			
03-19-TP-3	3/19/14	8'	4600	< 290	< 0.020	< 0.059	< 0.059	< 0.118			
03-19-TP-3 03-19-TP-4	3/19/14	8'	1200	< 1800	< 0.020	< 0.059	< 0.092	< 0.118			
03-19-TP-4 03-19-TP-5	3/19/14	8'	6200	890	< 0.020	< 0.092	0.11	1.02			
03-19-TP-5 03-19-TP-6	3/19/14	8'	4000	720	< 0.020	< 0.061	< 0.064	0.33			
U3-19-1P-6		_		anup Levels for				0.33			
	estricted Land U	ses	2000	2000	0.03	7	6	9			
Notes:	lustrial Propertie	es	2000	2000	0.03	7	6	9			

Notes:
mg/Kg = milligrams per Kilogram or parts per million (ppm)
NA = not analyzed

MTCA = Model Toxics Cleanup Act

TPH = total petroleum hydrocarbons

VOCs = volatile organic compounds

bsg = below surface grade

2100 Bold print with yellow highlighting indicates the soil concentration exceeds the MTCA Method A Cleanup Levels.

### TABLE 2

# Soil Sample Laboratory Analytical Data For PAHs Horse Heaven Hills Truck Plaza - 101 Merlot Drive Prosser, Washington 99350

Part		1							PIUS	ser, wa	asming	ton 99	350								
Columbia			Polynuclear Aromatic Hydrocarbons by EPA Method 8270D SIM (mg/Kg)																		
0.1-15-51	Sample I.D.	Date Collected	Collection Depth (Feet bs	Naphthalene <sup>1</sup>	2-Methylnaphthalene	1-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene			Benzo[b]fluoranthene 2		Benzo[a]pyrene <sup>2</sup>		Dibenz[a,h]anthracene 2	Benzo[g,h,i]perylene
1	Soil Samples	(Obtained	Benea	th Forme	r Fuel Dis	pensers)															
19	03-13-SS1	3/13/14	8'	0.058	0.0099	0.035	0.011	0.038	0.074	0.023	0.024	0.014	0.059	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	< 0.0078
0.1-1.5-25	03-13-SS2	3/13/14	8'	0.037	<0.0076	0.021	0.0078	0.025	0.061	0.035	0.0093	0.012	0.039	<0.0076	< 0.0076	<0.0076	<0.0076	<0.0076	<0.0076	<0.0076	< 0.0076
0.31   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.0   0.2   0.15   0.10   0.2   0.15   0.10   0.2   0.15   0.10   0.2   0.15   0.10   0.15   0.2   0.15   0.10   0.15   0	03-13-SS3	3/13/14	8'	0.26	0.37	0.40	0.065	0.18	0.056	0.48	0.11	< 0.044	0.19	< 0.044	< 0.044	< 0.044	< 0.044	< 0.044	< 0.044	< 0.044	< 0.044
0.13-3.58   0.13-14   0.1   0.	03-13-SS4	3/13/14	8'	0.073	0.066	0.099	< 0.039	< 0.039	0.084	0.14	< 0.039	< 0.039	0.088	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039
03-13-SS7   03-144   8   0   03-08   03-13   03-14   0	03-13-SS5	3/13/14	8'	0.94	0.95	2.0	0.073	0.27	1.5	1.0	0.22	0.18	0.5	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037
03-13-SS0   03-13-14   03-13   03-14	03-13-SS6	3/13/14	8'	1.4	2.7	2.0	0.058	0.21	1.1	0.78	0.16	0.081	0.39	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037
03-13-SS0   3/3/14   8°   0.63   0.61   0.61   0.04   0.04   0.04   0.04   0.14   0.31   0.04   0.04   0.04   0.05   0.05   0.03   0.0	03-13-SS7	3/13/14	8'	0.98	1.3	1.1	0.1	0.41	0.22	1.2	0.22	0.049	0.36	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038
03-13-8510   01/31/14   01   01/31   01   01   01   01   01   01   01	03-13-SS8	3/13/14	8'	0.65	1.6	0.72	0.050	< 0.041	0.38	0.39	0.068	< 0.041	0.10	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041
03-13-8511	03-13-SS9	3/13/14	8'	0.63	0.31	0.61	0.045	0.064	0.14	0.31	0.096	< 0.036	0.15	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036
03-13-SS173	03-13-SS10	3/13/14	8'	0.26	0.060	0.22	<0.038	0.049	0.25	0.18	0.061	0.042	0.19	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038
03-13-SS13   3/13/14   8°   0.0038   0.038	03-13-SS11	3/13/14	8'	0.25	0.27	0.23	0.062	0.067	0.12	0.19	0.066	< 0.041	0.15	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041
03-13-SS13   3/13/14   8°   0.0038   0.038	03-13-SS12	3/13/14	8'	0.055	0.090	0.064	< 0.039	< 0.039	< 0.039	0.055	< 0.039	< 0.039	0.084	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039
0.313-151  1   0.1111   0.1111   0.1111   0.1111   0.1111   0.0074   0.0			8'		<0.038								0.067								
State   Stat	03-13-5514	3/13/14	8'	<0.0074	<0.0074		<0.0074	< 0.0074	<0.0074	< 0.0074	<0.0074	< 0.0074	<0.0074			< 0.0074	<0.0074		<0.0074	<0.0074	
03-19-SW-2   3/19/14   8′   0.019   0.0074   0.015   0.0074   0.024   0.017   0.0075   0.0075   0.0074   0.007				10.0071	10.0071	10.0071	10.0071	40.0071	10.0071	10.0071	10.0071	40.0071	10.0071	10.0071	10.0071	40.0071	40.0071	10.0071	40.0071	10.0071	10.0071
03-19-SW-3   3/19/14   8   0.061   0.038   0.066   0.038   0.079   0.26   0.13   0.095   0.038   0.071   0.071   0.04		•	8'	0.019	< 0.0074	0.015	< 0.0074	0.024	0.017	0.0075	< 0.0074	< 0.0074	0.030	< 0.0074	< 0.0074	< 0.0074	< 0.0074	< 0.0074	< 0.0074	< 0.0074	< 0.0074
19-14-  19-1	03-19-SW-2	3/19/14	8'	0.18	0.041	0.056	0.047	0.21	0.87	0.47	0.22	<0.040	0.44	<0.040	<0.040	<0.040	< 0.040	<0.040	<0.040	<0.040	< 0.040
1	03-19-SW-3	3/19/14	8'	0.061	<0.038	0.066	<0.038	0.079	0.26	0.13	0.095	<0.038	0.17	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038
03-19-SW-5	03-19-SW-4	3/19/14	8'	0.11	< 0.041	0.15	< 0.041	0.13	0.43	0.30	0.086	< 0.041	0.17	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041
03-19-SW-6   3/19/14   8°   0.039   0.																					
03-19-SW-7			8'						0.047												
03-19-SW-8   3/19/14   8'   0.026   0.0078   0.0																					
03-19-SW-0																					
3.19-SW-1																					
3-19-SW-1 3/19/14 8' 0.0082 0.																					
3.19-SW-1 3/19/14 8' 0.0073 0.																					
3.19-SW-13 3/19/14 8' 0.0073 0																					
Tank Pit Samples  03-19-TP-1 3/19/14 8' 0.057 0.063 0.096 0.038 0.																					
03-19-TP-1 3/19/14 8' 0.057 0.063 0.096 0.038 0.			8.	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	< 0.0073	<0.0073	<0.0073	<0.0073	< 0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073
03-19-TP-2 3/19/14 8' 0.054 <0.038 0.055 <0.038 <0.038 0.055 <0.038 0.064 0.04 <0.038 0.055 <0.038 0.064 0.047 <0.038 0.058 0.038 0.058 0.038 0.038 <0.038 <0.038 0.038			Ω'	0.057	0.063	0.096	<0.039	<0.039	0.12	0.045	<0.039	<0.039	0.090	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039
03-19-TP-3 3/19/14 8' 0.16 0.18 0.14 <0.039 0.068 0.20 0.13 0.076 <0.039 0.17 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <																					
03-19-TP-4 3/19/14 8' 0.15 0.46 0.34 <0.043 0.056 0.12 0.12 0.04 <0.043 0.04 <0.043 0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.043 <0.																					
03-19-TP-5 3/19/14 8' 0.82 2.5 1.8 0.061 0.19 0.80 0.62 0.18 0.15 0.47 <0.038 0.061 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0.038 <0																					
03-19-TP-6 3/19/14 8' 0.38 1.3 0.95 <0.039 0.14 0.46 0.43 0.13 0.077 0.35 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.039 <0.03																					
Ecology MTCA Method A Soil Cleanup Levels (mg/Kg)   Unrestricted Land Uses   5   5   5   5   5   DNE																					
Unrestricted Land Uses         5         5         5         DNE	U3-19-TP-6	3/19/14	8'	0.38	1.3	0.95	<0.039							<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039
				,	Ü			DNE	DNE	DNE	DNE	DNE	DNE								
		al Properties	i	5	5	5	DNE	DNE	DNE	DNE	DNE	DNE	DNE	2	2	2	2	2	2	2	DNE

2 = Cleanup Level is cumulative value of a percentage of all seven carcinogenic PAHs per MTCA Table 708-2

mg/Kg = milligrams per Kilogram or parts per million (ppm)

bsg = below surface grade

DNE = MTCA Cleanup Levels Do Not Exist for this constiuent

PAH = polynuclear aromatic hydrocarbon

5 Bold print with yellow highlighting indicates the soil concentration exceeds the MTCA Cleanup Levels

<sup>1 =</sup> Cleanup Level is total value for naphthalene + 1-methyl naphthalene + 2-methly naphthalene

# TABLE 3 Water Sample Laboratory Analytical Data For TPH and Select VOCs Horse Heaven Hills Truck Plaza - 101 Merlot Drive Prosser, Washington 99350

		Total Petroleum H	ydrocarbons (µg/L)	VOCs by EPA Method 8021B (ug/L)						
Sample I.D.	Date Collected	TPH-D by Method NWTPH-Dx	TPH-O by Method NWTPH-Dx	Benzene	Toluene	Ethylbenzene	Total Xylenes			
3-12-MW1	3/12/14	< 260	< 410	< 1	< 1	< 1	< 2			
3-12-MW2	3/12/14	< 260	< 410	< 1	< 1	< 1	< 2			
3-12-E1	3/12/14	3300	< 210	NA	NA	NA	NA			
	Ecology MTCA Method A Groundwater Cleanup Levels (µg/L)									
		500	500	5	1000	700	1000			

(μg/L) = mcrograms per Liter or parts per billion (ppb)
NA = not analyzed

MTCA = Model Toxics Cleanup Act

TPH = total petroleum hydrocarbons

VOCs = volatile organic compounds

3300 Bold print with yellow highlighting indicates the groundwater concentration exceeds the MTCA Method A Cleanup Levels.

### TABLE 4

### Water Sample Laboratory Analytical Data For PAHs Horse Heaven Hills Truck Plaza - 101 Merlot Drive Prosser, Washington 99350

										3									
			Polynuclear Aromatic Hydrocarbons by EPA Method 8270D SIM (μg/L)																
Sample I.D.	Date Collected	Naphthalene 1	2-Methylnaphthalene	1-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]anthracene 2	Chrysene <sup>2</sup>	Benzo[b] fluoranthene 2	Benzolj,k]fluoranthene <sup>2</sup>	Benzo[a]pyrene <sup>2</sup>	Indeno[1,2,3-c,d]pyrene 2	Dibenz[a,h]anthracene <sup>2</sup>	Benzo[g,h,i]perylene
3-12-MW1	3/12/14	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.0094	< 0.0094	< 0.0094	< 0.0094	< 0.0094	< 0.0094	< 0.0094	< 0.0094
3-12-MW2	3/12/14	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.0094	<0.0094	<0.0094	< 0.0094	<0.0094	<0.0094	<0.0094	< 0.0094
3-12-E1	3/12/14	510	1200	830	56	180	580	660	140	< 52	320.00	2.9	14	0.91	< 0.26	0.32	< 0.26	< 0.26	0.64
	Ecology MTCA Method A Groundwater Cleanup Levels (µg/L)																		
		160	160	160	DNE	DNE	DNE	DNE	DNE	DNE	DNE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	DNE

Notes:

PAH = polynuclear aromatic hydrocarbon

Bold print with yellow highlighting indicates the groundwater concentration exceeds the MTCA Cleanup Levels

<sup>1 =</sup> Cleanup Level is total value for naphthalene + 1-methyl naphthalene + 2-methly naphthalene

<sup>2 =</sup> Cleanup Level is cumulative value of all seven carcinogenic PAHs

 $<sup>\</sup>mu$ g/L = micrograms per Liter or parts per billion (ppb)

DNE = MTCA Cleanup Levels Do Not Exist for this constiuent

### APPENDIX A

# WORK PLAN Delineation of Subsurface Petroleum Hydrocarbon Contamination

### **WORK PLAN**

# Delineation of Subsurface Petroleum Hydrocarbon Contamination

### Horse Heaven Hills Travel Plaza 101 Merlot Drive Prosser, Washington 99350

Prepared for:
Horse Heaven Hills Travel Plaza
Brian Rogers
465 S.E. 5<sup>th</sup> St.
North Bend, WA 98045
And
Washington Department of Ecology (DOE)

*Prepared By:* Brett Bergeron R.G.

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December 17, 2013

### **TABLE OF CONTENTS**

<u>Section i</u>	<u>vo.</u>	Page NO.						
1.0 PROJ	ECT DESCRIPTION	5						
1.1 Pu	rpose and Objectives	5						
1.2 Lo	cation	6						
1.3 Or	ganization	6						
1.4 Sc	nedule	6						
1.5 Re	ports	6						
2.0 SITE	BACKGROUND	7						
2.1 De	2.1 Description of Provided Information7							
2.2 Ph	ysical Setting	7						
2.3 Ge	ology and Hydrogeology	7						
3.0 SITE	INVESTIGATION APPROACH	8						
3.1 Sit	e Investigation	8						
3.1.	1 Soil Sampling	8						
3.1.	2 Monitoring Well Installation	9						
3.1.	Monitoring Well Development and Groundwater Sampling	9						
3.1.	4 Sample Collection	9						
3.2	Laboratory Analytical Methods	10						
3.3	Data Quality Objectives and Sample Analysis	10						
3.4	Quality Assurance							
3.5	Investigation-Derived Waste Disposal							
4.0 QUA	LIFICATIONS	10						
5.0 Signo	nture	11						

### **FIGURES**

<u>Figure No</u> .	<u>Figure Title</u>
1	SITE LOCATION MAP
2	SITE MAP
3	PROPOSED MONITORING WELL AND CONFIRMATROY SOIL SAMPLE LOCATION MAP

### 1.0 PROJECT DESCRIPTION

### 1.1 Purpose and Objectives

This work plan, prepared by Blue Mountain Environmental Consulting Company, Inc. ("BMEC"), presents an approach for conducting additional delineation of the petroleum hydrocarbon (PHC) contamination in the subsurface soils for the Horse Heaven Hills Travel Plaza property located at 101 Merlot Drive, Prosser, Washington (hereafter referred to as the "Site"). If vertical extent of PHC contamination in soils is deep enough, delineation of PHCs in the groundwater below the Site and potentially within the vicinity of the Site may also be warranted.

The main objective of this Work Plan is to develop a sampling and analysis program that will further characterize the nature and extent of subsurface contamination per the Washington Department of Ecology (DOE) guidelines based on the Model Toxics Cleanup Act (MTCA) Cleanup Levels.

Specific objectives for the investigation include:

- Additional delineation of the horizontal and vertical extent of remaining petroleum contaminated soil (PCS) identified beneath the diesel dispensers at concentrations exceeding the MTCA Cleanup Levels during the September 18, 2013 soil investigation.
- Remediation of all PCS identified beneath the diesel dispensers at concentrations exceeding the MTCA Cleanup Levels during the September 18, 2013 soil investigation. PCS remediation shall occur via excavation and proper disposal at a licensed landfill facility. Excavation and confirmation soil sampling shall occur in the vicinity of the diesel dispensers until laboratory analytical results indicate that the PHCs in soil have been remediated to levels below the MTCA Cleanup Levels.
- Backfill and proper compaction of the excavation with clean soil.
- If applicable, delineation of the extent and magnitude of PHCs in groundwater beneath the diesel dispensers at concentrations exceeding the MTCA Cleanup Levels.
- Removal of all existing diesel fuel pumps and associated piping and installation of updated diesel dispensers and associated piping with proper containment design per the 1998 Federal UST regulations.
- Completion of a report documenting the field activities performed during the subsurface soil and groundwater investigation(s) including the results of field activities performed and potential recommendations for future work at the Site.

### 1.2 Location

Legal Description: Parcel number 1-3594-301-1661-001, in the northwest quarter of the southeast quarter of Section 35, Township 9 North, Range 24 East, Willamette Meridian, Benton County. The address for the Site is 101 Merlot Drive in Prosser, Washington 99350.

### 1.3 Organization

### Project Manager

Brent Bergeron, PG (503) 913-7870

Blue Mountain Environmental Consulting Company, Inc. 4090 Barrett Drive Hood River, OR 97031

### Site Supervisors

Yancy Meyer (509) 520-4416

Blue Mountain Environmental Consulting Company, Inc. PO Box 545/125 Main St. Waitsburg, WA 99361

### 1.4 Schedule

The Site investigation will begin as soon as the work plan has been approved by the Client and DOE, and the appropriate subcontractor(s) have been secured. The field investigation (soil sampling and potentially groundwater sampling) is expected to take approximately three to six days for completion of site work and sampling. The field work may require more than one mobilization to the Site. A report on the field investigation and data results would be completed within an estimated timeframe of four to five weeks following completion of all field activities.

### 1.5 Reports

The project report will include details of all field work performed, a summary of analytical data and related risk-based assessments, laboratory data report, Site and sampling location maps, photographs, beneficial water use survey results (if necessary), and conclusions and recommendations. All risk-based assessments will be in comparison to Washington MTCA Cleanup Levels.

### 2.0 SITE BACKGROUND

### 2.1 Description of Provided Information

The Site is defined by a retail petroleum refueling station for standard passenger vehicles, as well as large truck-and-tractor rigs. The Site was developed as a retail fuel facility in 1995. A site investigation was performed at the Site by BMEC personnel on September 18, 2013 and the results of that site investigation indicated that PCS exists beneath several of the diesel fuel dispensers at concentrations exceeding MTCA Cleanup Levels. The approximate depth of the PCS beneath the diesel fuel dispensers was observed to be at a minimum of one foot bsg.

### 2.2 Physical Setting

The Site is located within the city limits of Prosser, Washington, and is surrounded primarily by commercial properties. The property consists of one parcel of land with improvements and is accessible from Merlot Drive. The Site address is 101 Merlot Drive, Prosser, Washington 99350. The nearest roadway is Interstate I-82 which is approximately 500 feet north of the Site (Figure 1). The nearest surface water body is the Yakima River approximately one mile southeast of the Site. The approximate Site elevation is 720 feet above mean sea level.

### 2.3 Geology and Hydrogeology

According to the U.S. Department of Agriculture Soil Survey of Yakima County, Washington, the Site is underlain by the Ashue Silt Loam which is considered very deep and moderately well-drained with moderately coarse textures. A typical cross-section of the Ashue Silt Loam includes a 9-inch thick surface layer of light brown to brown loam, underlain by an approximate 15-inch thick layer of light gray, gravelly sandy loam, and further underlain by light yellowish brown and pale brown very gravelly sand up to 60 inches thick.

Geologically, the Site is located in the Yakima Fold Belt east of the Cascade Range in a much dryer climate that receives between 6 to 18 inches of rainfall annually. The Yakima Fold Belt is dominated by east-west trending anticlinal ridges and synclinal valley(s). The near surface soils are formed primarily from deposition of Quaternary sediments that overlie Miocene Columbia River Basalt Group flood basalts. Fine-grained slackwater sediments characterized by rhythmically graded bedding were deposited throughout the Pleistocene atop the Miocene basalts in the area of the Columbia Gorge extending north to the Yakima Valley including in the region surrounding the Site. Volcanic ash deposits and wind-blown loess deposits are also noted throughout the region.

Hydrogeologically, depth to shallow groundwater in the vicinity of the Site varies from 5 to 20 feet bsg. Based on location of the Yakima River in relation to the Site, the groundwater flow direction is presumed to be to the southeast. If necessary due to extensive depth of PCS, depth to

groundwater and groundwater flow direction can be confirmed for the Site via monitoring well installation and assessment.

### 3.0 SITE INVESTIGATION APPROACH

### 3.1 Site Investigation

The proposed site investigation consists of the collection and laboratory analysis of soil and groundwater samples. The proposed soil samples will be obtained from the base and sidewalls of the excavation created by the removal of all diesel fuel pump dispensers, as well as from the borings advanced for monitoring well installation. Up to 28 soil samples shall be obtained for laboratory analysis; fourteen confirmatory soil samples from the bottom of the excavation; ten confirmatory soil samples from the sidewalls of the excavation; and four soil samples from the advancement of the monitoring well borings (one per boring). The locations of the proposed soil samples are illustrated on **Figure 3**.

The proposed groundwater samples shall be obtained from four monitoring wells installed in the vicinity of the diesel fuel pump island (one per monitoring well). One of the monitoring wells shall be installed up-gradient of the diesel fuel pump island and three of the monitoring wells shall be installed down-gradient of the diesel fuel pump island. The locations of the proposed monitoring wells are illustrated on **Figure 3.** The proposed monitoring well locations are based on an assumed groundwater gradient to the southeast towards the Yakima River.

Utility locating services, including private locating services (if necessary) shall be utilized prior to the commencement of any intrusive groundwork.

### 3.1.1 Soil Sampling

The 24 confirmatory soil samples proposed for collection and laboratory analysis in the excavation beneath the diesel fuel pump islands shall be obtained from depths of 3 to 6 inches below the freshly exposed surface subsequent to excavation. The proposed confirmatory soil samples shall be obtained after field screening assessment suggests that PCS has been removed in that immediate area via excavation. Field screening methodology shall consist of a combination of visual, olfactory, and photo-ionization detector (PID) assessment.

The field geologist will visually assess all soil brought to the surface per monitoring well boring, and record the soil on the borehole logs. The sampling technician and/or field geologist will field-screen each section of soil with a PID and the various PID readings will be recorded on the borehole logs. Soil samples will be obtained for laboratory analyses based on a combination of the PID readings, olfactory and visible evidence, and depth of sample. If no PID, olfactory, or visible staining evidence is noted, a soil sample will be collected from the base of the borehole by default. All soil samples will also be field-

screened by sheen testing (adding water to a sample retained in a sampling spoon and checked for the presence of a visible oily sheen).

### 3.1.2 Monitoring Well Installation

A total of four 2-inch diameter, flush-mounted monitoring wells will be installed in the vicinity of the diesel fuel pump island in an attempt to assess the status of the shallow groundwater beneath the source of diesel fuel PCS. Each monitoring well shall be constructed of schedule 40 PVC with 10 feet of 0.010-slotted screen. In theory, all four monitoring wells should be installed no deeper than 20 feet bsg. Each well shall be completed with a sandpack installed 2-3 feet above the top of the screened interval; a 2- to 3-foot bentonite plug on top of the sandpack; a bentonite/grout mixture to within approximately one foot of the ground surface; and completed with a lock and cap.

### 3.1.3 Monitoring Well Development and Groundwater Sampling

A minimum of 16 hours shall pass after the installation of each monitoring well, prior to the initialization of monitoring well development. Depth-to-water static level measurements shall be obtained from a notch in the top of casing PVC per monitoring well via a water level meter that has been decontaminated, prior to introduction into each successive monitoring well. Each monitoring well shall be developed by using a peristaltic pump or bladder pump to remove approximately 10 standing well volumes from the well casing while measuring groundwater parameters (i.e., pH, temperature, and conductivity) to assess when stabilization of the aquifer in the vicinity of each specific monitoring well has occurred. When the groundwater parameters have all stabilized [temperature (± 3°F); pH (± 0.1 unit); conductivity (3%)] for three successive readings and subsequent to the removal of approximately 10 standing water well volumes, the monitoring well will be considered to be fully developed. The groundwater parameters shall be recorded on groundwater sampling data sheets and included in the ensuing report.

Immediately subsequent to monitoring well development, groundwater sampling in each well will be conducted using low-flow purging or bailer and rope sampling techniques. During sampling, new tubing or bailers will be lowered down the well casing. Groundwater sample containers will be prepared according to protocol established by the analytical laboratory.

### 3.1.4 Sample Collection

A fresh pair of latex or Nitrile gloves shall be donned, prior to collection of each successive soil and groundwater sample. Soil samples shall be collected in 4-ounce glass jars and properly sealed. Groundwater samples shall be collected in 1-Liter amber glass containers

preserved with hydrochloric acid or unpreserved depending on which analysis the sample will be subjected to (TPH-Dx or polynuclear aromatic hydrocarbons [PAHs]). The samples will be stored in a cool environment (4 degrees Celsius) until released, with a chain-of-custody, to OnSite Laboratory (OnSite) in Redmond, Washington. All sampling tools will be decontaminated between the collection of successive samples, or disposed of properly.

## 3.2 Laboratory Analytical Methods

The soil samples will be relinquished to the laboratory for analyses by Northwest Method NWTPH-Dx All groundwater and confirmatory soil samples with TPH-Dx results exceeding MTCA Cleanup Levels (i.e., > 2000 milligrams per Kilogram [mg/Kg]), shall also be analyzed via EPA Method 8270 SIM for PAHs.

## 3.3 Data Quality Objectives and Sample Analysis

Data quality objectives for the proposed investigation are to generate data of known and documented quality that can be used to determine whether chemicals of potential concern are present above detection levels and at levels that pose an unacceptable risk to receptors. Data will be compared to MTCA Cleanup Levels to determine whether these levels are exceeded and to support decision-making regarding the need for further investigation.

## 3.4 Quality Assurance

Samples will be obtained according to standard field methods and will be prepared in accordance with protocol established by the analytical laboratory for containers, preservation, storage and transport to the laboratory. A chain-of-custody will be prepared for all samples obtained for laboratory analysis. Appropriate decontamination procedures will be followed to prevent cross contamination of the drilling and sampling equipment between drill holes, as well as the soil and groundwater samples between sample depths and between drilling borehole locations. Any investigation derived waste, soil and groundwater, will be containerized and left on-Site by the drilling subcontractor. During drilling, a continuous geologic log will be prepared describing the subsurface materials encountered, depth to groundwater, presence of saturated zones, and any other pertinent geologic or environmental observations.

# 3.5 Investigation-Derived Waste Disposal

All soil and water (i.e., groundwater and decontamination water) investigation-derived waste (IDW) shall be containerized in separate 55-gallon drums. Each drum shall be properly labeled, sealed, and temporarily staged onsite at a location approved by the client, prior to future disposal at a licensed waste facility. All gloves, plastic, paper towels, bailers and rope shall be containerized in a plastic trash bag and disposed onsite and standard refuse.

## 4.0 QUALIFICATIONS

We have prepared this Work Plan in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. BMEC, Inc. is not responsible for the independent conclusions, opinions or

Blue Mountain and Environmental Consulting Company, Inc.

recommendations made by others based on the records review, site observations, field exploration, or laboratory test data presented in this report.

Environmental assessments and evaluations are inherently limited in that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. For these types of evaluations, it is often necessary to use information prepared by others and BMEC, Inc. cannot be responsible for the accuracy of such information. Additionally, the passage of time may result in a change in the environmental characteristics at this and any other site and surrounding properties. This Work Plan does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. This Work Plan is not a regulatory compliance audit and is not intended to satisfy the requirements of any local, state, or federal real estate transfer laws.

This Work Plan is intended for the sole use of **Horse Heaven Hills and the Washington DOE**. This Work Plan may not be used or relied upon by any other party without the written consent of BMEC, Inc. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

BMEC, Inc. does not warrant the correctness, completeness, current standing, merchantability, or fitness of any information related to records review provided in this Work Plan. Such information is not the product of an independent review conducted by BMEC, Inc., but is only available environmental information obtained by or provided to BMEC, Inc.

5.0 Signature

Blue Mountain Environmental Consulting, Inc.

Brent N. Bergeron, PG

FIGURE 1: SITE LOCATION MAP Image Provided by ESRI



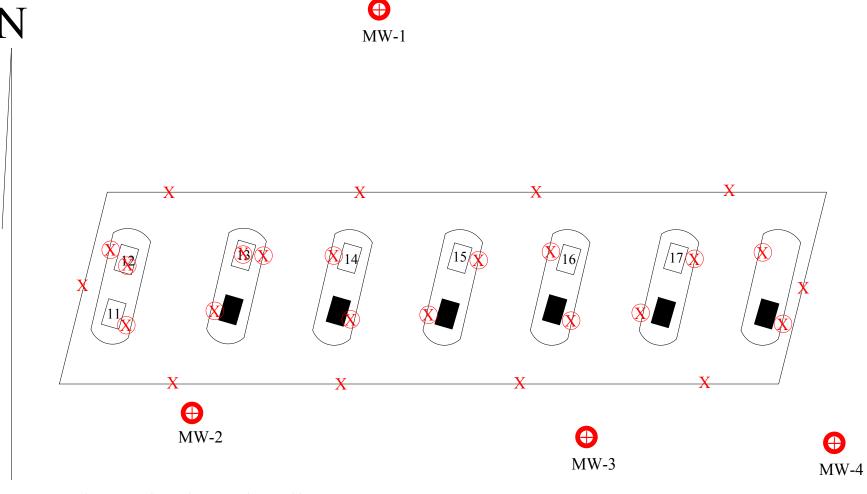
SITE LOCATION MAP
Horse Heaven Hills Travel Plaza
101 Merlot Drive
Prosser, WA 99350





feet 200 meters

**7**0



Blue Mountain Environmental Consulting Co., Inc. Horse Heaven Hills Travel Plaza, 101 Merlot Dr., Prosser, WA

# PROPOSED SAMPLE LOCATIONS

→ = Monitoring Well

X = Soil Sidewall Sample

X = Soil Bottom Sample

# APPENDIX B

**PHOTOGRAPHS** 

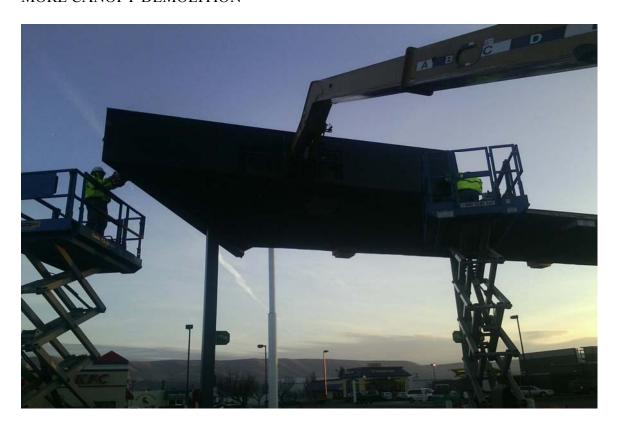


INITIAL CANOPY DEMOLITION





MORE CANOPY DEMOLITION





MORE CANOPY DEMOLITION



CANOPY IS GONE



EXCAVATING AROUND CANOPY PILLAR FOUNDATIONS



IMPACTED SOIL



EXCAVATING AROUND THE CANOPY PILLAR FOUNDATIONS



IMPACTED (GREY) SOIL IN FOREGROUND



STORAGE OF IMPACTED SOIL, CONCRETE AND ASPHALT



REMOVAL OF CANOPY PILLAR FOUNDATIONS



REMOVAL OF CANOPY PILLAR FOUNDATIONS



EXCAVATION AFTER FOUNDATION REMOVAL



EXCAVATION AFTER FOUNDATION REMOVAL



VIEW AT CONTAMINATION SEEPING FROM THE TANK PIT



**EXCAVATION OF USTs** 



## CIMG1235.JPG



REMOVAL OF USTs





TANK PIT AFTER UST REMOVAL





SITE AFTER REMOVAL OF ISLANDS AND USTs







MICROBE APPLICATION



BACKFILLING EXCAVATION





COMPACTING BACKFILL



SITE AFTER BACKFILL OF PUMP ISLAND EXCAVATION



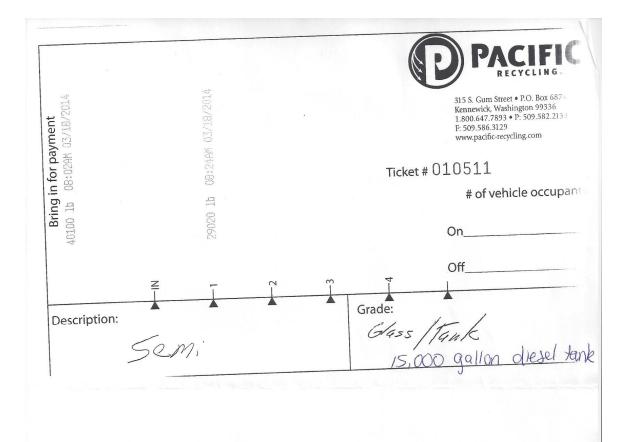
STOCKPILE STORAGE

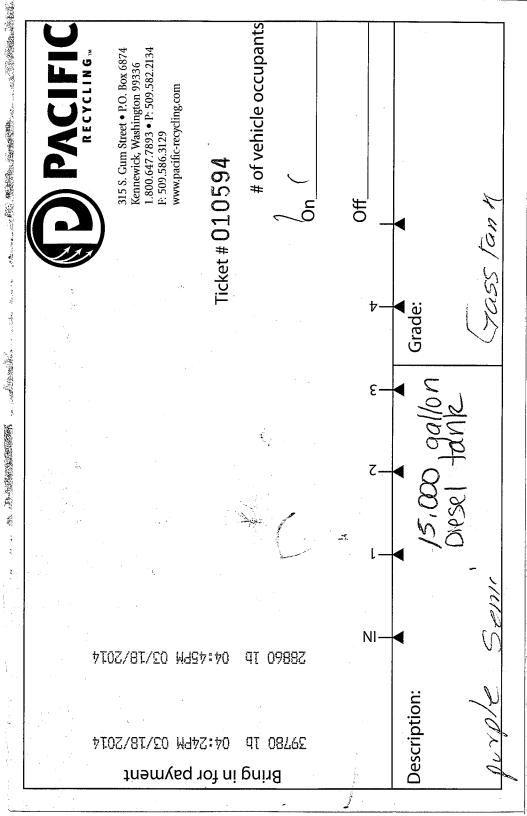


SECURE SITE

# APPENDIX C

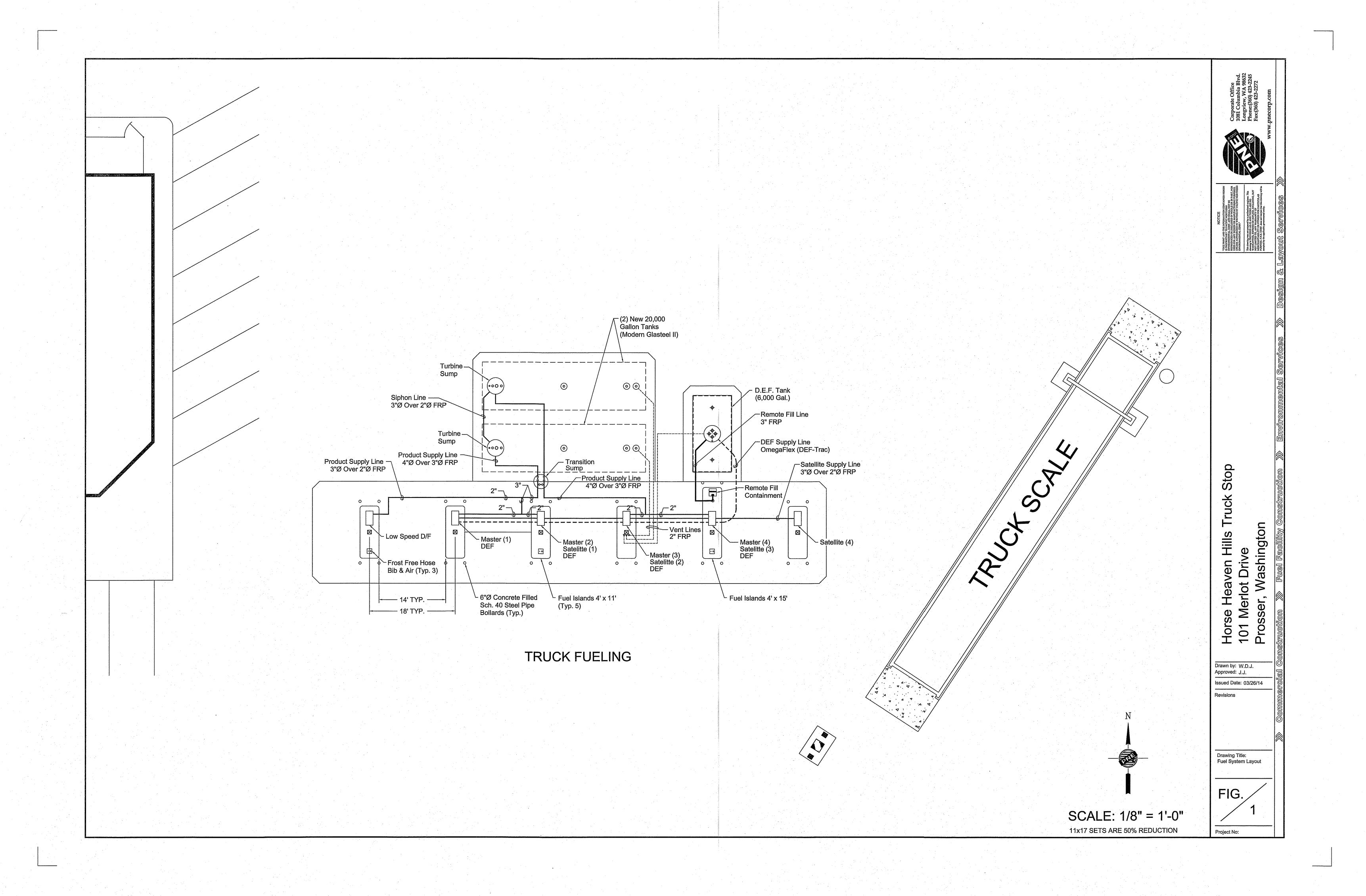
# UST PACIFIC RECYCLING RECEIPTS

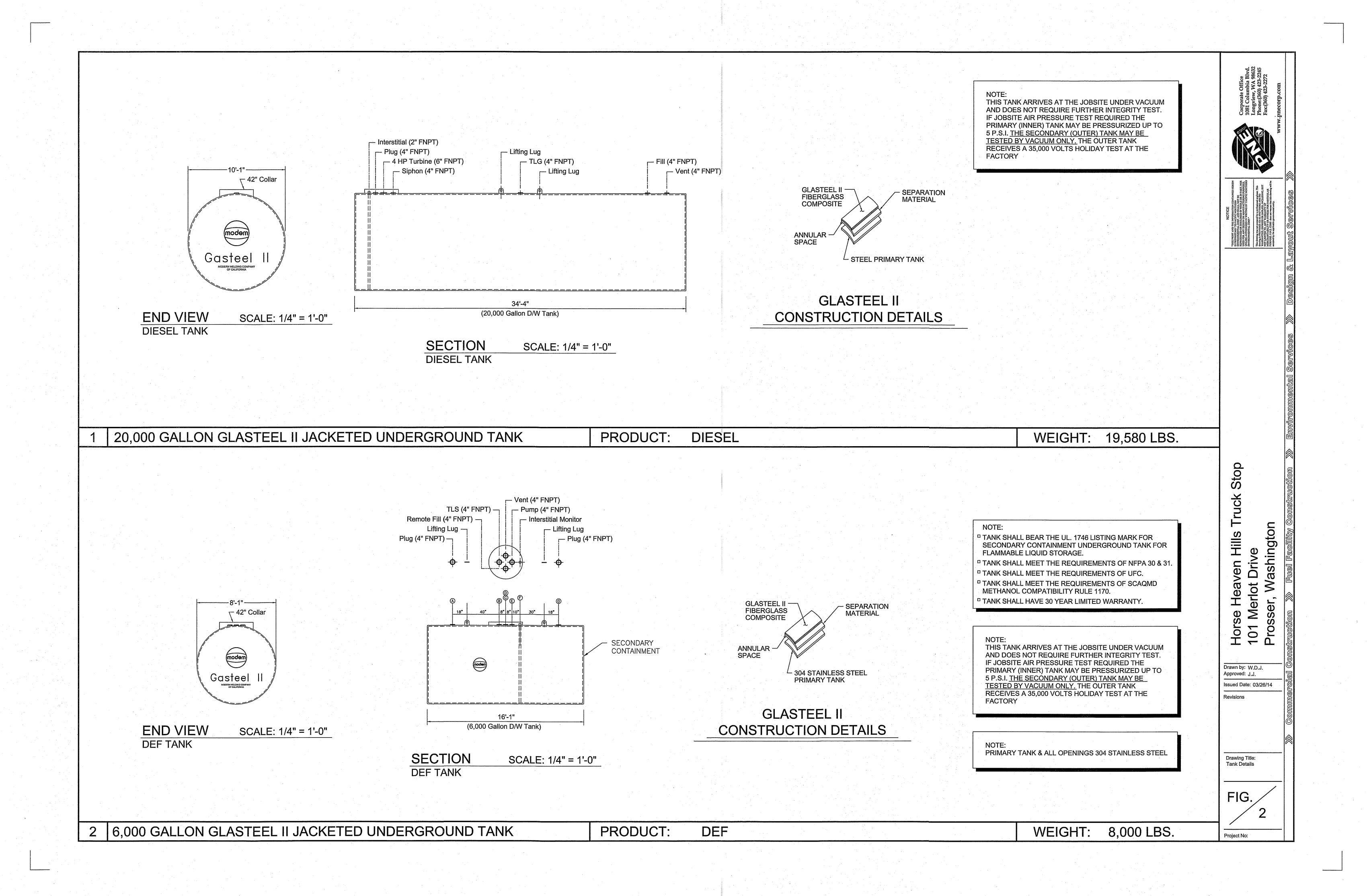




# APPENDIX D

NEW UST SYSTEM SCHEMATICS





## APPENDIX E

## LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 17, 2014

Peter Trabusiner Blue Mountain Environmental, Inc. 1500 Adair Drive Richland, WA 99352

Re: Analytical Data for Project E2014/0102

Laboratory Reference No. 1403-100

### Dear Peter:

Enclosed are the analytical results and associated quality control data for samples submitted on March 14, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Project: E2014/0102

#### **Case Narrative**

Samples were collected on March 11 and 12, 2014 and received by the laboratory on March 14, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Project: E2014/0102

### **NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	3-12-MW1					
Laboratory ID:	03-100-01					
Diesel Range Organics	ND	0.26	NWTPH-Dx	3-14-14	3-17-14	
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	3-14-14	3-17-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	81	50-150				
Client ID:	3-12-MW4					
Laboratory ID:	03-100-02					
Diesel Range Organics	ND	0.26	NWTPH-Dx	3-14-14	3-17-14	
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	3-14-14	3-17-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	77	50-150				
Client ID:	3-12-E1					
Laboratory ID:	03-100-03					
Diesel Fuel #2	3300	29	NWTPH-Dx	3-14-14	3-17-14	
Lube Oil Range Organics	ND	210	NWTPH-Dx	3-14-14	3-17-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl		50-150				S

Project: E2014/0102

### NWTPH-Dx QUALITY CONTROL

Matrix: Water Units: mg/L (ppm)

Ab.d.	D!/	DOL	Madhad	Date	Date	F1	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags	
METHOD BLANK							
Laboratory ID:	MB0314W1						
Diesel Range Organics	ND	0.25	NWTPH-Dx	3-14-14	3-17-14		
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	3-14-14	3-17-14		
Surrogate:	Percent Recovery	Control Limits					
o-Terphenyl	80	50-150					

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	03-10	00-01								
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						81 80	50-150			

Project: E2014/0102

### **NWTPH-Dx**

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	3-11-SP1					
Laboratory ID:	03-100-04					
Diesel Fuel #2	2700	29	NWTPH-Dx	3-14-14	3-14-14	
Lube Oil Range Organics	ND	180	NWTPH-Dx	3-14-14	3-14-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	83	50-150				
Client ID:	3-11-SP2					
Laboratory ID:	03-100-05					
Diesel Fuel #2	10000	140	NWTPH-Dx	3-14-14	3-17-14	
Lube Oil Range Organics	ND	700	NWTPH-Dx	3-14-14	3-17-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	88	50-150				
Client ID:	3-11-SP3					
Laboratory ID:	03-100-06					
Diesel Fuel #2	6100	140	NWTPH-Dx	3-14-14	3-17-14	
Lube Oil Range Organics	ND	410	NWTPH-Dx	3-14-14	3-17-14	U1
Surrogate:	Percent Recovery	Control Limits			•	
o-Terphenyl	97	50-150				

Project: E2014/0102

### NWTPH-Dx QUALITY CONTROL

Matrix: Soil

Units: mg/Kg (ppm)

A 1 . 4 .	D	501		Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0314S1					
Diesel Range Organics	ND	25	NWTPH-Dx	3-14-14	3-14-14	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	100	50-150				

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	03-08	38-11								
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	X1
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	X1
Surrogate:										
o-Terphenyl						99 98	50-150			

Project: E2014/0102

### PAHs EPA 8270D/SIM

Matrix: Water Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	3-12-MW1					
Laboratory ID:	03-100-01					
Naphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
2-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
1-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthylene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Fluorene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Phenanthrene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Anthracene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Fluoranthene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Pyrene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]anthracene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Chrysene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[b]fluoranthene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo(j,k)fluoranthene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]pyrene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
ndeno(1,2,3-c,d)pyrene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Dibenz[a,h]anthracene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[g,h,i]perylene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits	_	_	_	
2-Fluorobiphenyl	73	40 - 107				
Pyrene-d10	80	41 - 106				
T 1 1144	00	44 404				

Terphenyl-d14 44 - 124 83

Project: E2014/0102

# PAHs EPA 8270D/SIM

Matrix: Water Units: ug/L

· ·				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	3-12-MW4					
Laboratory ID:	03-100-02					
Naphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
2-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
1-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthylene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Fluorene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Phenanthrene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Anthracene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Fluoranthene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Pyrene	ND	0.094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]anthracene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Chrysene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[b]fluoranthene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo(j,k)fluoranthene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]pyrene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Dibenz[a,h]anthracene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[g,h,i]perylene	ND	0.0094	EPA 8270D/SIM	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	69	40 - 107				
Pyrene-d10	80	41 - 106				

Terphenyl-d14 44 - 124 86

Project: E2014/0102

# PAHs EPA 8270D/SIM

Matrix: Water Units: ug/L

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	3-12-E1					
Laboratory ID:	03-100-03					
Naphthalene	510	52	EPA 8270D/SIM	3-14-14	3-14-14	
2-Methylnaphthalene	1200	52	EPA 8270D/SIM	3-14-14	3-14-14	
1-Methylnaphthalene	830	52	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthylene	56	52	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthene	180	52	EPA 8270D/SIM	3-14-14	3-14-14	
Fluorene	580	52	EPA 8270D/SIM	3-14-14	3-14-14	
Phenanthrene	660	52	EPA 8270D/SIM	3-14-14	3-14-14	
Anthracene	140	52	EPA 8270D/SIM	3-14-14	3-14-14	
Fluoranthene	ND	52	EPA 8270D/SIM	3-14-14	3-14-14	
Pyrene	320	52	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]anthracene	2.9	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Chrysene	14	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[b]fluoranthene	0.91	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo(j,k)fluoranthene	ND	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]pyrene	0.32	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Indeno(1,2,3-c,d)pyrene	ND	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Dibenz[a,h]anthracene	ND	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[g,h,i]perylene	0.64	0.26	EPA 8270D/SIM	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	,	40 - 107				S
Pyrene-d10		41 - 106				S
Terphenyl-d14	,	44 - 124				S

Project: E2014/0102

# PAHS EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

Matrix: Water Units: ug/L

Terphenyl-d14

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0314W1					
Naphthalene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
2-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
1-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthylene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Acenaphthene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Fluorene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Phenanthrene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Anthracene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Fluoranthene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Pyrene	ND	0.10	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]anthracene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Chrysene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[b]fluoranthene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo(j,k)fluoranthene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[a]pyrene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Indeno(1,2,3-c,d)pyrene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Dibenz[a,h]anthracene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Benzo[g,h,i]perylene	ND	0.010	EPA 8270D/SIM	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	88	40 - 107				
Pyrene-d10	78	41 - 106				

87

44 - 124

Project: E2014/0102

# PAHS EPA 8270D/SIM SB/SBD QUALITY CONTROL

Matrix: Water Units: ug/L

						Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level		Reco	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB03	14W1									
	SB	SBD	SB	SBD		SB	SBD				
Naphthalene	0.304	0.394	0.500	0.500		61	79	31 - 110	26	46	
Acenaphthylene	0.209	0.217	0.500	0.500		42	43	40 - 118	4	43	
Acenaphthene	0.351	0.386	0.500	0.500		70	77	38 - 112	9	40	
Fluorene	0.371	0.411	0.500	0.500		74	82	45 - 114	10	41	
Phenanthrene	0.381	0.416	0.500	0.500		76	83	47 - 112	9	36	
Anthracene	0.400	0.418	0.500	0.500		80	84	46 - 135	4	37	
Fluoranthene	0.424	0.443	0.500	0.500		85	89	51 - 127	4	35	
Pyrene	0.440	0.437	0.500	0.500		88	87	50 - 125	1	37	
Benzo[a]anthracene	0.464	0.476	0.500	0.500		93	95	46 - 123	3	34	
Chrysene	0.402	0.414	0.500	0.500		80	83	49 - 120	3	34	
Benzo[b]fluoranthene	0.503	0.493	0.500	0.500	•	101	99	46 - 126	2	37	
Benzo(j,k)fluoranthene	0.377	0.411	0.500	0.500		75	82	43 - 125	9	39	
Benzo[a]pyrene	0.322	0.334	0.500	0.500		64	67	44 - 129	4	37	
Indeno(1,2,3-c,d)pyrene	0.395	0.413	0.500	0.500		79	83	40 - 124	4	42	
Dibenz[a,h]anthracene	0.393	0.413	0.500	0.500		79	83	35 - 122	5	44	
Benzo[g,h,i]perylene	0.385	0.400	0.500	0.500		77	80	37 - 122	4	45	
Surrogate:											
2-Fluorobiphenyl						74	86	40 - 107			
Pyrene-d10						79	83	41 - 106			
Terphenyl-d14						86	89	44 - 124			

Project: E2014/0102

# BTEX EPA 8021B

Matrix: Water
Units: ug/L (ppb)

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
3-12-MW1					
03-100-01					
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
Percent Recovery	Control Limits				
93	71-112				
3-12-MW4					
03-100-02					
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
ND	1.0	EPA 8021B	3-14-14	3-14-14	
Percent Recovery	Control Limits				
85	71-112				
	3-12-MW1 03-100-01 ND ND ND ND ND ND Percent Recovery 93 3-12-MW4 03-100-02 ND	3-12-MW1	3-12-MW1         03-100-01         ND       1.0       EPA 8021B         ND       1.0       EPA 8021B         ND       1.0       EPA 8021B         ND       1.0       EPA 8021B         Percent Recovery 93       Control Limits 71-112         3-12-MW4         03-100-02       ND       1.0       EPA 8021B         Percent Recovery       Control Limits	Result         PQL         Method         Prepared           3-12-MW1         03-100-01         03-100-01         03-100-01           ND         1.0         EPA 8021B         3-14-14           Percent Recovery Page 1         Control Limits Page 2         71-112         3-14-14           ND         1.0         EPA 8021B         3-14-14	Result         PQL         Method         Prepared         Analyzed           3-12-MW1           03-100-01         EPA 8021B         3-14-14         3-14-14           ND         1.0         EPA 8021B         3-14-14         3-14-14           ND         1.0         EPA 8021B         3-14-14         3-14-14           ND         1.0         EPA 8021B         3-14-14         3-14-14           Percent Recovery Gontrol Limits           93         71-112         3-14-14         3-14-14           ND         1.0         EPA 8021B         3-14-14         3-14-14

Project: E2014/0102

# BTEX EPA 8021B QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0314W1					
Benzene	ND	1.0	EPA 8021B	3-14-14	3-14-14	
Toluene	ND	1.0	EPA 8021B	3-14-14	3-14-14	
Ethyl Benzene	ND	1.0	EPA 8021B	3-14-14	3-14-14	
m,p-Xylene	ND	1.0	EPA 8021B	3-14-14	3-14-14	
o-Xylene	ND	1.0	EPA 8021B	3-14-14	3-14-14	
Surrogate:	Percent Recovery	Control Limits				

Surrogate: Percent Recovery Control Limits Fluorobenzene 89 71-112

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	03-10	00-01								
	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						93 92	71-112			

# **MATRIX SPIKES**

Laboratory ID:	03-1	00-01									
-	MS	MSD	MS	MSD		MS	MSD				
Benzene	51.0	50.1	50.0	50.0	ND	102	100	78-120	2	12	
Toluene	51.2	50.5	50.0	50.0	ND	102	101	80-121	1	12	
Ethyl Benzene	51.2	50.1	50.0	50.0	ND	102	100	81-120	2	13	
m,p-Xylene	51.7	50.4	50.0	50.0	ND	103	101	81-119	3	13	
o-Xylene	51.3	49.9	50.0	50.0	ND	103	100	79-117	3	13	
0											

Surrogate:
Fluorobenzene 93 95 71-112

Project: E2014/0102

# % MOISTURE

Date Analyzed: 3-14-14

Client ID	Lab ID	% Moisture
3-11-SP1	03-100-04	13
3-11-SP2	03-100-05	13
3-11-SP3	03-100-06	11



#### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical \_\_\_\_\_
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL PQL - Practical Quantitation Limit RPD - Relative Percent Difference



# **Chain of Custody**

	age	0000	
	2	2	

|--|



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 1, 2014

Peter Trabusiner Blue Mountain Environmental, Inc. 1500 Adair Drive Richland, WA 99352

Re: Analytical Data for Project E2014/0102; Horse Heaven Hills

Laboratory Reference No. 1403-166

# Dear Peter:

Enclosed are the analytical results and associated quality control data for samples submitted on March 24, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Date of Report: April 1, 2014

Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166

Project: E2014/0102; Horse Heaven Hills

#### **Case Narrative**

Samples were collected on March 11, 12, 13, 19, and 20, 2014 and received by the laboratory on March 24, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

# BTEX by EPA 8021B Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

#### PAHs EPA 8270D/SIM Analysis

Interferences present in the matrixes of many of the samples necessitated dilution. The PQLs for these samples are therefore raised.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

0 0 11 7				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-1					
Laboratory ID:	03-166-01					
Diesel Fuel #2	670	28	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	65	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	102	50-150				
Client ID:	03-19-SW-2					
Laboratory ID:	03-166-02					
Diesel Fuel #2	4300	30	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	4300 ND	360	NWTPH-Dx	3-25-14 3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	INVVIFII-DX	3-23-14	3-20-14	01
o-Terphenyl	61	50-150				
0-Terprierryi	01	30-130				
Client ID:	03-19-SW-3					
Laboratory ID:	03-166-03					
Diesel Fuel #2	1400	28	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	130	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	83	50-150				
Client ID:	03-19-SW-4					
Laboratory ID:	03-166-04					
Diesel Fuel #2	2100	31	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	180	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	69	50-150				
Olian ( IDa	00 40 014 5					
Client ID:	03-19-SW-5					
Laboratory ID:	03-166-05		ANA/TOLL D	0.05.44	0.00.44	
Diesel Fuel #2	2200	31	NWTPH-Dx	3-25-14	3-26-14	114
Lube Oil Range Organics	ND	170	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	76	50-150				
Client ID:	03-19-SW-6					
Laboratory ID:	03-166-06					
Diesel Fuel #2	1800	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	220	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	92	50-150				
	- <b>-</b>					

Date of Report: April 1, 2014 Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166 Project: E2014/0102; Horse Heaven Hills

NWTPH-Dx

Matrix: Soil

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	03-19-SW-7	. 42	Motriou	rioparca	Allalyzou	i lugo
Laboratory ID:	03-166-07					
Diesel Fuel #2	880	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	130	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	INVITIT DX	0 20 14	0 20 14	<u> </u>
o-Terphenyl	111	50-150				
Client ID:	03-19-SW-8					
Laboratory ID:	03-166-08					
Diesel Fuel #2	1300	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	130	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	112	50-150				
Client ID:	03-19-SW-9					
Laboratory ID:	03-166-09					
Diesel Fuel #2	1300	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	160	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	105	50-150				
Client ID:	03-19-SW-10					
Laboratory ID:	03-166-10					
Diesel Fuel #2	1600	28	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	220	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	TWO THE DA	0 20 11	0 20 11	<u> </u>
o-Terphenyl	102	50-150				
o respinenty.	.02	00 700				
Client ID:	03-19-SW-11					
Laboratory ID:	03-166-11	0.4	NIA/TOUR	0.05.44	0.00.11	
Diesel Range Organics	ND	31	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	62	NWTPH-Dx	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	66	50-150				
Client ID:	03-19-SW-12					
Laboratory ID:	03-166-12					
Diesel Range Organics	ND	28	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	55	NWTPH-Dx	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	75	50-150				

Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

5 5 41. 7				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-13					
Laboratory ID:	03-166-13					
Diesel Fuel #2	81	27	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	58	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	67	50-150				
Client ID:	03-19-TP-01					
Laboratory ID:	03-19-17-01					
Diesel Fuel #2	1900	29	NWTPH-Dx	3-25-14	3-26-14	
	1900 ND	200	NWTPH-Dx	3-25-14 3-25-14	3-26-14 3-26-14	U1
Lube Oil Range Organics	Percent Recovery	Control Limits	INVV I PIT-DX	3-23-14	3-20-14	UI
Surrogate:	95	50-150				
o-Terphenyl	90	30-130				
Client ID:	03-19-TP-02					
Laboratory ID:	03-166-15					
Diesel Fuel #2	2100	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	240	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	119	50-150				
•						
Client ID:	03-19-TP-03					
Laboratory ID:	03-166-16					
Diesel Fuel #2	4600	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	290	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	71	50-150				
Client ID.	02 40 TD 04					
Client ID:	03-19-TP-04					
Laboratory ID:	03-166-17	00	NIA/TOUR	0.05.44	0.00.44	
Diesel Fuel #2	1200 ND	33	NWTPH-Dx	3-25-14	3-26-14	1.14
Lube Oil Range Organics	ND	180	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	81	50-150				
Client ID:	03-19-TP-05					
Laboratory ID:	03-166-18					
Diesel Fuel #2	6200	140	NWTPH-Dx	3-25-14	3-27-14	
Lube Oil	890	290	NWTPH-Dx	3-25-14	3-27-14	N1
Surrogate:	Percent Recovery	Control Limits				<u> </u>
o-Terphenyl	72	50-150				
, ,						

Date of Report: April 1, 2014 Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166 Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	03-19-TP-06	•		•	•	
Laboratory ID:	03-166-19					
Diesel Fuel #2	4000	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil	720	58	NWTPH-Dx	3-25-14	3-26-14	N1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	72	50-150				
Client ID:	03-13-SS1					
Laboratory ID:	03-166-20					
Diesel Fuel #2	2500	29	NWTPH-Dx	3-25-14	3-26-14	
Lube Oil Range Organics	ND	200	NWTPH-Dx	3-25-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	103	50-150				
Client ID:	03-13-SS2					
Laboratory ID:	03-166-21					
Diesel Fuel #2	1100	29	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	140	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	TWW TITES	0 20 11	0 20 11	<u> </u>
o-Terphenyl	82	50-150				
011 4 10	00.40.000					
Client ID:	03-13-SS3					
Laboratory ID:	03-166-22	20	NIM/TOLL Dec	0.00.44	0.00.44	
Diesel Fuel #2	2000	33	NWTPH-Dx	3-26-14	3-26-14	114
Lube Oil Range Organics	ND	200	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	85	50-150				
Client ID:	03-13-SS4					
Laboratory ID:	03-166-23					
Diesel Fuel #2	2100	29	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	160	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	78	50-150				
Client ID:	03-13-SS5					
Laboratory ID:	03-166-24					
Diesel Fuel #2	7800	140	NWTPH-Dx	3-26-14	3-27-14	
Lube Oil Range Organics	ND	400	NWTPH-Dx	3-26-14	3-27-14	U1
Surrogate:	Percent Recovery	Control Limits		0 20 11	0 27 11	<u> </u>
o-Terphenyl	105	50-150				
		• •				

Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	03-13-SS6			•	•	
Laboratory ID:	03-166-25					
Diesel Fuel #2	5900	140	NWTPH-Dx	3-26-14	3-27-14	
Lube Oil Range Organics	ND	350	NWTPH-Dx	3-26-14	3-27-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	98	50-150				
Client ID:	03-13-SS7					
Laboratory ID:	03-166-26					
Diesel Fuel #2	7900	140	NWTPH-Dx	3-26-14	3-27-14	
Lube Oil Range Organics	ND	480	NWTPH-Dx	3-26-14	3-27-14	U1
Surrogate: o-Terphenyl	Percent Recovery 92	Control Limits 50-150				
Client ID:	03-13-SS8					
Laboratory ID:	03-166-27					
Diesel Fuel #2	4500	31	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND .	280	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	86	50-150				
Client ID:	03-13-SS9					
Laboratory ID:	03-166-28					
Diesel Fuel #2	3800	27	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	210	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	83	50-150				
Client ID:	03-13-SS10					
Laboratory ID:	03-166-29					
Diesel Fuel #2	4600	28	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	350	NWTPH-Dx	3-26-14 3-26-14	3-26-14 3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	. TVV II II DA	0 20 17	0 20 17	- 51
o-Terphenyl	88	50-150				
Client ID:	02.42.0044					
Client ID:	03-13-SS11					
Laboratory ID:	03-166-30	<u> </u>	NA/TE:: =	0.05 : :	0.05 : :	
Diesel Fuel #2	3800	31	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND ND	290	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	87	50-150				

Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

0 0 11 7				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS12					
Laboratory ID:	03-166-31					
Diesel Fuel #2	1300	29	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	140	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	122	50-150				
Client ID:	03-13-SS13					
Laboratory ID:	03-166-32					
Diesel Fuel #2	690	29	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	83	NWTPH-Dx	3-26-14	3-26-14	U1
Surrogate:	Percent Recovery	Control Limits	INVVIFII-DX	3-20-14	3-20-14	01
o-Terphenyl	99	50-150				
о-тегрпенуі	33	30-130				
Client ID:	03-13-SS14					
Laboratory ID:	03-166-40					
Diesel Fuel #2	140	28	NWTPH-Dx	3-26-14	3-26-14	
Lube Oil Range Organics	ND	56	NWTPH-Dx	3-26-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	92	50-150				
011 ID						
Client ID:	03-11-SP-4					
Laboratory ID:	03-166-41	100	NATRUE	0.04.44	0.05.44	
Diesel Fuel #2	9800	160	NWTPH-Dx	3-24-14	3-25-14	1.14
Lube Oil Range Organics	ND	530	NWTPH-Dx	3-24-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	83	50-150				
Client ID:	03-11-SP-5					
Laboratory ID:	03-11-61-3					
Diesel Fuel #2	4300	30	NWTPH-Dx	3-24-14	3-24-14	
Lube Oil Range Organics	ND	210	NWTPH-Dx	3-24-14	3-24-14	U1
Surrogate:	Percent Recovery	Control Limits		<u> </u>	<u> </u>	<u> </u>
o-Terphenyl	80	50-150				
- r - J	- <del>-</del>					
Client ID:	03-11-SP-6					
Laboratory ID:	03-166-43					
Diesel Fuel #2	3600	31	NWTPH-Dx	3-24-14	3-24-14	
Lube Oil Range Organics	ND	160	NWTPH-Dx	3-24-14	3-24-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	87	50-150				

Project: E2014/0102; Horse Heaven Hills

# **NWTPH-Dx**

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-12-SP-7					
Laboratory ID:	03-166-44					
Diesel Fuel #2	3600	32	NWTPH-Dx	3-24-14	3-24-14	
Lube Oil Range Organics	ND	210	NWTPH-Dx	3-24-14	3-24-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	76	50-150				
Client ID:	03-12-SP-8					
Laboratory ID:	03-12-3 <b></b> 6 03-166-45					
		470	NW/TDLL Dec	0.04.44	0.05.44	
Diesel Fuel #2	17000	170	NWTPH-Dx	3-24-14	3-25-14	114
Lube Oil Range Organics	ND	820	NWTPH-Dx	3-24-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	89	50-150				
Client ID:	03-12-SP-9					
Laboratory ID:	03-166-46					
Diesel Fuel #2	5100	31	NWTPH-Dx	3-24-14	3-24-14	
Lube Oil Range Organics	ND	310	NWTPH-Dx	3-24-14	3-24-14	U1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	86	50-150				
. ,						
Client ID:	03-12-SP-10					
Laboratory ID:	03-166-47					
Diesel Fuel #2	10000	160	NWTPH-Dx	3-24-14	3-25-14	
Lube Oil Range Organics	ND	480	NWTPH-Dx	3-24-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				<del></del>
o-Terphenyl	89	50-150				

Project: E2014/0102; Horse Heaven Hills

# NWTPH-Dx METHOD BLANK QUALITY CONTROL

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0324S1					
Diesel Range Organics	ND	25	NWTPH-Dx	3-24-14	3-24-14	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-24-14	3-24-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	76	50-150				
Laboratory ID:	MB0325S1					
Diesel Range Organics	ND	25	NWTPH-Dx	3-25-14	3-26-14	_
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	86	50-150				
Laboratory ID:	MB0326S1					
Diesel Range Organics	ND	25	NWTPH-Dx	3-26-14	3-26-14	_
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-26-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits			•	
o-Terphenyl	95	50-150				

Date of Report: April 1, 2014 Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166 Project: E2014/0102; Horse Heaven Hills

NWTPH-Dx DUPLICATE QUALITY CONTROL

Matrix: Soil

Omo. mg/ng (ppr	,				Source	Per	cent	Recovery		RPD	
Analyte	Re	sult	Spike	Level	Result	Reco	very	Limits	RPD	Limit	Flags
Laboratory ID:	03-10	66-19									
	ORIG	DUP									
Diesel Fuel #2	3490	2640	NA	NA		N	Α	NA	28	NA	
Lube Oil	626	530	NA	NA		N	Α	NA	17	NA	N1
Surrogate:											
o-Terphenyl						72	106	50-150			
Laboratory ID:	03-10	66-20									
	ORIG	DUP									
Diesel Fuel #2	2140	1690	NA	NA		N	Α	NA	23	NA	
Lube Oil Range	ND	ND	NA	NA		N	Α	NA	NA	NA	U1
Surrogate:											
o-Terphenyl						103	91	50-150			
Laboratory ID:	03-10	66-21									
	ORIG	DUP									
Diesel Fuel #2	942	924	NA	NA		N	Α	NA	2	NA	
Lube Oil Range	ND	ND	NA	NA		N	Α	NA	NA	NA	U1
Surrogate:											
o-Terphenyl						82	88	50-150			
Laboratory ID:	03-10	66-29									
	ORIG	DUP									
Diesel Fuel #2	4030	3860	NA	NA		N	Α	NA	4	NA	
Lube Oil Range	ND	ND	NA	NA		N	Α	NA	NA	NA	U1
Surrogate:											
o-Terphenyl						88	88	50-150			
Laboratory ID:		66-47									
	ORIG	DUP									
Diesel Fuel #2	7580	7490	NA	NA		N	Α	NA	1	NA	
Lube Oil Range	ND	ND	NA	NA		N	Α	NA	NA	NA	U1
Surrogate:											
o-Terphenyl						89	84	50-150			

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-1					
Laboratory ID:	03-166-01					
Naphthalene	0.019	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	0.015	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	0.024	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.017	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.0075	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.030	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.0074	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	92	43 - 116				
Pyrene-d10	98	33 - 124				

Terphenyl-d14 94 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-2					
Laboratory ID:	03-166-02					
Naphthalene	0.18	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
2-Methylnaphthalene	0.041	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
1-Methylnaphthalene	0.056	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthylene	0.047	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthene	0.21	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Fluorene	0.87	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Phenanthrene	0.47	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Anthracene	0.22	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Fluoranthene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Pyrene	0.44	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]anthracene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Chrysene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[b]fluoranthene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]pyrene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.040	EPA 8270D/SIM	3-27-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	63	43 - 116				
Pyrene-d10	119	33 - 124				

Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-3					
Laboratory ID:	03-166-03					
Naphthalene	0.061	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
2-Methylnaphthalene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
1-Methylnaphthalene	0.066	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthene	0.079	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Fluorene	0.26	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Phenanthrene	0.13	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Anthracene	0.095	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Pyrene	0.17	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	93	43 - 116				
Pyrene-d10	97	33 - 124				

Terphenyl-d14 94 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-4					
Laboratory ID:	03-166-04					
Naphthalene	0.11	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
2-Methylnaphthalene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
1-Methylnaphthalene	0.15	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthylene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthene	0.13	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Fluorene	0.43	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Phenanthrene	0.30	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Anthracene	0.086	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Fluoranthene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Pyrene	0.17	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]anthracene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Chrysene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[b]fluoranthene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]pyrene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	93	43 - 116				
Pyrene-d10	100	33 - 124				

Terphenyl-d14 98 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-5					
Laboratory ID:	03-166-05					
Naphthalene	0.072	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
2-Methylnaphthalene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
1-Methylnaphthalene	0.052	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthylene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthene	0.065	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Fluorene	0.14	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Phenanthrene	0.054	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Anthracene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Fluoranthene	0.044	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Pyrene	0.13	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]anthracene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Chrysene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[b]fluoranthene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]pyrene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.041	EPA 8270D/SIM	3-27-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	85	43 - 116				
Pyrene-d10	94	33 - 124				

Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

Client ID:         03-19-SW-6           Laboratory ID:         03-166-06           Naphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           2-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           4-Cenaphthylene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14					Date	Date	
Laboratory ID:         03-166-06           Naphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           2-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthylnee         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene <t< th=""><th>Analyte</th><th>Result</th><th>PQL</th><th>Method</th><th>Prepared</th><th>Analyzed</th><th>Flags</th></t<>	Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Naphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           2-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthylene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-2	Client ID:	03-19-SW-6					
2-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthylene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM	Laboratory ID:	03-166-06					
1-Methylnaphthalene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthylene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM <td< td=""><td>Naphthalene</td><td>ND</td><td>0.039</td><td>EPA 8270D/SIM</td><td>3-27-14</td><td>3-28-14</td><td></td></td<>	Naphthalene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthylene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14	2-Methylnaphthalene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Acenaphthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Persologial anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzologifluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzolapyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzolapyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM	1-Methylnaphthalene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Fluorene         0.047         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Acenaphthylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Phenanthrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Acenaphthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Anthracene         0.049         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Fluorene	0.047	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Phenanthrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Pyrene         0.12         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Anthracene	0.049	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Chrysene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo(j,k)fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Pyrene	0.12	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[b]fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo(j,k)fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Benzo[a]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo(j,k)fluoranthene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Chrysene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Benzo[a]pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Benzo[b]fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Indeno(1,2,3-c,d)pyrene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14           Dibenz[a,h]anthracene         ND         0.039         EPA 8270D/SIM         3-27-14         3-28-14	Benzo(j,k)fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Dibenz[a,h]anthracene <b>ND</b> 0.039 EPA 8270D/SIM 3-27-14 3-28-14	Benzo[a]pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
• • •	Indeno(1,2,3-c,d)pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Benzola h. ilpervlene ND 0.039 FPA 8270D/SIM 3-27-14 3-28-14	Dibenz[a,h]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
20:120[g;::;:]po://onio	Benzo[g,h,i]perylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-28-14	
Surrogate: Percent Recovery Control Limits	Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl 89 43 - 116	2-Fluorobiphenyl	89	43 - 116				
Pyrene-d10 94 33 - 124	Pyrene-d10	94	33 - 124				

Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-7					
Laboratory ID:	03-166-07					
Naphthalene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
2-Methylnaphthalene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
1-Methylnaphthalene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthylene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Fluorene	0.017	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Phenanthrene	0.0089	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Anthracene	0.016	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Fluoranthene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Pyrene	0.039	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]anthracene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Chrysene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[b]fluoranthene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo(j,k)fluoranthene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]pyrene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Dibenz[a,h]anthracene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[g,h,i]perylene	ND	0.0076	EPA 8270D/SIM	3-27-14	4-1-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	77	43 - 116				
Pyrene-d10	92	33 - 124				

Terphenyl-d14 85 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-8					
Laboratory ID:	03-166-08					
Naphthalene	0.026	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
2-Methylnaphthalene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
1-Methylnaphthalene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthylene	0.0086	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthene	0.021	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Fluorene	0.019	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Phenanthrene	0.016	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Anthracene	0.018	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Fluoranthene	0.029	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Pyrene	0.093	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]anthracene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Chrysene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[b]fluoranthene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo(j,k)fluoranthene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]pyrene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Dibenz[a,h]anthracene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[g,h,i]perylene	ND	0.0078	EPA 8270D/SIM	3-27-14	4-1-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	85	43 - 116				
Pyrene-d10	104	33 - 124				

Terphenyl-d14 88 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-9					
Laboratory ID:	03-166-09					
Naphthalene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
2-Methylnaphthalene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
1-Methylnaphthalene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthylene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Fluorene	0.012	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Phenanthrene	0.0080	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Anthracene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Fluoranthene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Pyrene	0.031	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]anthracene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Chrysene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[b]fluoranthene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo(j,k)fluoranthene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]pyrene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Dibenz[a,h]anthracene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[g,h,i]perylene	ND	0.0077	EPA 8270D/SIM	3-27-14	4-1-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	73	43 - 116				
Pyrene-d10	87	33 - 124				
Tamahana da da d	70	20 425				

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-10					
Laboratory ID:	03-166-10					
Naphthalene	0.0084	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
2-Methylnaphthalene	0.012	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
1-Methylnaphthalene	0.027	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthylene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Acenaphthene	0.0094	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Fluorene	0.032	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Phenanthrene	0.018	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Anthracene	0.010	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Fluoranthene	0.016	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Pyrene	0.052	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]anthracene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Chrysene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[b]fluoranthene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo(j,k)fluoranthene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[a]pyrene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Dibenz[a,h]anthracene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Benzo[g,h,i]perylene	ND	0.0074	EPA 8270D/SIM	3-27-14	4-1-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	78	43 - 116				
Pyrene-d10	95	33 - 124				

Terphenyl-d14 86 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-11					
Laboratory ID:	03-166-11					
Naphthalene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.0082	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	80	43 - 116				
Pyrene-d10	94	33 - 124				
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Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
03-19-SW-12					
03-166-12					
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Percent Recovery	Control Limits				
89	43 - 116				
93	33 - 124				
91	38 - 125				
	03-19-SW-12 03-166-12  ND	03-19-SW-12           ND         0.0073           Percent Recovery         Control Limits           89         43 - 116           93         33 - 124	03-19-SW-12           ND         0.0073         EPA 8270D/SIM           ND         0.0073         EPA 8270D/SIM	Result         PQL         Method         Prepared           03-19-SW-12         03-166-12         03-166-12           ND         0.0073         EPA 8270D/SIM         3-27-14           ND         0.	Result         PQL         Method         Prepared         Analyzed           03-19-SW-12 03-166-12         3-31-166-12         3-31-14         3-31-14           ND         0.0073         EPA 8270D/SIM         3-27-14         3-31-14           ND <t< td=""></t<>

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-13					
Laboratory ID:	03-166-13					
Naphthalene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.0073	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	80	43 - 116				
Pyrene-d10	93	33 - 124				
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Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-01					
Laboratory ID:	03-166-14					
Naphthalene	0.057	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
2-Methylnaphthalene	0.063	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
1-Methylnaphthalene	0.096	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Acenaphthylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Acenaphthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Fluorene	0.12	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Phenanthrene	0.045	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Pyrene	0.090	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-29-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	87	43 - 116				
Pyrene-d10	94	33 - 124				
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Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-02					
Laboratory ID:	03-166-15					
Naphthalene	0.054	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	0.055	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.084	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.047	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.12	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	96	43 - 116				
Pyrene-d10	98	33 - 124				

Terphenyl-d14 94 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-03					
Laboratory ID:	03-166-16					
Naphthalene	0.16	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	0.18	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	0.14	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	0.068	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.20	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.13	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	0.076	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.17	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	92	43 - 116				
Pyrene-d10	98	33 - 124				

Pyrene-d10 Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-04					
Laboratory ID:	03-166-17					
Naphthalene	0.15	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	0.46	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	0.34	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	0.056	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.12	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.12	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	0.044	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.10	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.043	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	89	43 - 116				
Pyrene-d10	94	33 - 124				

Terphenyl-d14 93 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-05					
Laboratory ID:	03-166-18					
Naphthalene	0.82	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	2.5	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	1.8	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	0.061	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	0.19	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.80	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.62	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	0.18	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	0.15	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.47	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	0.061	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	112	43 - 116				
Pyrene-d10	104	33 - 124				

Terphenyl-d14 97 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-06					
Laboratory ID:	03-166-19					
Naphthalene	0.38	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
2-Methylnaphthalene	1.3	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
1-Methylnaphthalene	0.95	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Acenaphthene	0.14	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Fluorene	0.46	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Phenanthrene	0.43	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Anthracene	0.13	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Fluoranthene	0.077	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Pyrene	0.35	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Chrysene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[b]fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo(j,k)fluoranthene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[a]pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Indeno(1,2,3-c,d)pyrene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Dibenz[a,h]anthracene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Benzo[g,h,i]perylene	ND	0.039	EPA 8270D/SIM	3-27-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	95	43 - 116				
Pyrene-d10	101	33 - 124				

Pyrene-d10 101 33 - 124 Terphenyl-d14 38 - 125 104

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS1					
Laboratory ID:	03-166-20					
Naphthalene	0.058	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
2-Methylnaphthalene	0.0099	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
1-Methylnaphthalene	0.035	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthylene	0.011	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthene	0.038	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Fluorene	0.074	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Phenanthrene	0.023	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Anthracene	0.024	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Fluoranthene	0.014	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Pyrene	0.059	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]anthracene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Chrysene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[b]fluoranthene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo(j,k)fluoranthene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]pyrene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Dibenz[a,h]anthracene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[g,h,i]perylene	ND	0.0078	EPA 8270D/SIM	3-26-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	86	43 - 116				
Pyrene-d10	67	33 - 124				

Terphenyl-d14 73 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

- <del>-</del>				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS2					
Laboratory ID:	03-166-21					
Naphthalene	0.037	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
2-Methylnaphthalene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
1-Methylnaphthalene	0.021	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthylene	0.0078	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthene	0.025	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Fluorene	0.061	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Phenanthrene	0.035	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Anthracene	0.0093	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Fluoranthene	0.012	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Pyrene	0.039	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]anthracene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Chrysene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[b]fluoranthene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo(j,k)fluoranthene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]pyrene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Dibenz[a,h]anthracene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[g,h,i]perylene	ND	0.0076	EPA 8270D/SIM	3-26-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	80	43 - 116				
Pyrene-d10	72	33 - 124				
Town born d ald 4	70	20 425				

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS3					
Laboratory ID:	03-166-22					
Naphthalene	0.26	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.37	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.40	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	0.065	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	0.18	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.056	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.48	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.11	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.19	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.044	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	95	43 - 116				
D	00	00 404				

Pyrene-d10 82 33 - 124 Terphenyl-d14 77 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS4					
Laboratory ID:	03-166-23					
Naphthalene	0.073	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.066	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.099	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.084	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.14	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.088	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	89	43 - 116				
Pyrene-d10	78	33 - 124				

Terphenyl-d14 79 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS5					
Laboratory ID:	03-166-24					
Naphthalene	0.94	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
2-Methylnaphthalene	0.95	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
1-Methylnaphthalene	2.0	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Acenaphthylene	0.073	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Acenaphthene	0.27	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Fluorene	1.5	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Phenanthrene	1.0	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Anthracene	0.22	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Fluoranthene	0.18	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Pyrene	0.50	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[a]anthracene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Chrysene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[b]fluoranthene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[a]pyrene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	69	43 - 116				
Pyrene-d10	119	33 - 124				

Terphenyl-d14 93 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS6					
Laboratory ID:	03-166-25					
Naphthalene	1.4	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
2-Methylnaphthalene	2.7	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
1-Methylnaphthalene	2.0	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Acenaphthylene	0.058	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Acenaphthene	0.21	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Fluorene	1.1	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Phenanthrene	0.78	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Anthracene	0.16	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Fluoranthene	0.081	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Pyrene	0.39	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[a]anthracene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Chrysene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[b]fluoranthene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo(j,k)fluoranthene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[a]pyrene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Indeno(1,2,3-c,d)pyrene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Dibenz[a,h]anthracene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Benzo[g,h,i]perylene	ND	0.037	EPA 8270D/SIM	3-26-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	67	43 - 116				
Pyrene-d10	117	33 - 124				

Pyrene-d10 117 Terphenyl-d14 92 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS7					
Laboratory ID:	03-166-26					
Naphthalene	0.98	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	1.3	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	1.1	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	0.10	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	0.41	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.22	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	1.2	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.22	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	0.049	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.36	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	103	43 - 116				
Pyrene-d10	75	33 - 124				

Terphenyl-d14 88 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

5 5				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS8					
Laboratory ID:	03-166-27					
Naphthalene	0.65	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	1.6	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.72	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	0.050	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.38	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.39	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.068	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.10	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	93	43 - 116				
Pyrene-d10	83	33 - 124				

Terphenyl-d14 78 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS9					
Laboratory ID:	03-166-28					
Naphthalene	0.63	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.31	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.61	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	0.045	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	0.064	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.14	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.31	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.096	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.15	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.036	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	93	43 - 116				
Pyrene-d10	82	33 - 124				

Pyrene-d10 33 - 124 Terphenyl-d14 84 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS10					
Laboratory ID:	03-166-29					
Naphthalene	0.26	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.060	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.22	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	0.049	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.25	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.18	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.061	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	0.042	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.19	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	89	43 - 116				
Pyrene-d10	79	33 - 124				

Pyrene-d10 Terphenyl-d14 80 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

0 0				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS11					
Laboratory ID:	03-166-30					
Naphthalene	0.25	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.27	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.23	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	0.062	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	0.067	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	0.12	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.19	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	0.066	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.15	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.041	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	100	43 - 116				
Pyrene-d10	83	33 - 124				

Terphenyl-d14 84 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS12					
Laboratory ID:	03-166-31					
Naphthalene	0.055	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	0.090	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	0.064	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	0.055	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.084	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.039	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	78	43 - 116				
Pyrene-d10	77	33 - 124				

Pyrene-d10 77 33 - 124 Terphenyl-d14 72 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS13					
Laboratory ID:	03-166-32					
Naphthalene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
2-Methylnaphthalene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
1-Methylnaphthalene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthylene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Acenaphthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluorene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Phenanthrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Pyrene	0.067	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Chrysene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[b]fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[a]pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.038	EPA 8270D/SIM	3-26-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	71	43 - 116				
Pyrene-d10	79	33 - 124				

Terphenyl-d14 74 38 - 125

Project: E2014/0102; Horse Heaven Hills

### PAHs EPA 8270D/SIM

Matrix: Soil Units: mg/Kg

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
03-13-SS14					
03-166-40					
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
ND	0.0074	EPA 8270D/SIM	3-26-14	3-27-14	
Percent Recovery	Control Limits				
83	43 - 116				
73	33 - 124				
77	38 - 125				
	03-13-SS14 03-166-40  ND	03-13-SS14           03-166-40         0.0074           ND         0.0074	03-13-SS14           ND         0.0074         EPA 8270D/SIM           ND         0.0074         EPA 8270D/SIM	Result         PQL         Method         Prepared           03-13-SS14         03-166-40         03-166-40         3-26-14           ND         0.0074         EPA 8270D/SIM         3-26-14 <t< td=""><td>Result         PQL         Method         Prepared         Analyzed           03-13-SS14 03-166-40         03-166-40         3-26-14         3-27-14           ND         0.0074         EPA 8270D/SIM         3-26-14         3-27-14           ND         0</td></t<>	Result         PQL         Method         Prepared         Analyzed           03-13-SS14 03-166-40         03-166-40         3-26-14         3-27-14           ND         0.0074         EPA 8270D/SIM         3-26-14         3-27-14           ND         0

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
	MBaaaaa					
Laboratory ID:	MB0326S1					
Naphthalene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Fluorene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Anthracene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Pyrene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Chrysene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	3-26-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	88	43 - 116				
Pyrene-d10	87	33 - 124				
Torphonyl d14	97	29 125				

Terphenyl-d14 87 38 - 125

Project: E2014/0102; Horse Heaven Hills

# PAHs EPA 8270D/SIM METHOD BLANK QUALITY CONTROL

Matrix: Soil Units: mg/Kg

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0327S1					
Naphthalene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Fluorene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Anthracene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Pyrene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Chrysene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Indeno(1,2,3-c,d)pyrene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	3-27-14	3-27-14	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorobiphenyl	105	43 - 116				
Pyrene-d10	98	33 - 124				
T	400	00 405				

Terphenyl-d14 38 - 125 100

Project: E2014/0102; Horse Heaven Hills

# PAHS EPA 8270D/SIM SB/SBD QUALITY CONTROL

Matrix: Soil Units: mg/Kg

						Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	F	Reco	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB03	326S1									
	SB	SBD	SB	SBD	5	SB	SBD				
Naphthalene	0.0651	0.0661	0.0833	0.0833	7	78	79	45 - 109	2	29	
Acenaphthylene	0.0693	0.0683	0.0833	0.0833	8	33	82	54 - 118	1	18	
Acenaphthene	0.0698	0.0695	0.0833	0.0833	8	34	83	60 - 108	0	14	
Fluorene	0.0737	0.0735	0.0833	0.0833	8	38	88	61 - 113	0	13	
Phenanthrene	0.0786	0.0787	0.0833	0.0833	ç	94	94	63 - 106	0	13	
Anthracene	0.0827	0.0859	0.0833	0.0833	ç	99	103	55 - 130	4	13	
Fluoranthene	0.0734	0.0743	0.0833	0.0833	8	38	89	66 - 118	1	13	
Pyrene	0.0741	0.0751	0.0833	0.0833	8	39	90	69 - 112	1	12	
Benzo[a]anthracene	0.0754	0.0775	0.0833	0.0833	ç	91	93	58 - 115	3	13	
Chrysene	0.0764	0.0790	0.0833	0.0833	ç	92	95	64 - 114	3	11	
Benzo[b]fluoranthene	0.0748	0.0750	0.0833	0.0833	ç	90	90	52 - 125	0	19	
Benzo(j,k)fluoranthene	0.0733	0.0768	0.0833	0.0833	8	38	92	50 - 126	5	22	
Benzo[a]pyrene	0.0694	0.0770	0.0833	0.0833	8	33	92	43 - 123	10	16	
Indeno(1,2,3-c,d)pyrene	0.0722	0.0746	0.0833	0.0833	8	37	90	55 - 118	3	16	
Dibenz[a,h]anthracene	0.0720	0.0744	0.0833	0.0833	8	36	89	57 - 120	3	15	
Benzo[g,h,i]perylene	0.0721	0.0746	0.0833	0.0833	8	37	90	58 - 113	3	18	
Surrogate:											
2-Fluorobiphenyl					8	34	77	43 - 116			
Pyrene-d10					8	38	87	33 - 124			
Terphenyl-d14					8	36	88	38 - 125			

Project: E2014/0102; Horse Heaven Hills

# PAHS EPA 8270D/SIM SB/SBD QUALITY CONTROL

Matrix: Soil Units: mg/Kg

					Pe	rcent	Recovery		RPD	
Analyte	Re	sult	Spike	Level	Rec	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB03	27S1								
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	0.0734	0.0786	0.0833	0.0833	88	94	45 - 109	7	29	
Acenaphthylene	0.0868	0.0890	0.0833	0.0833	104	107	54 - 118	3	18	
Acenaphthene	0.0799	0.0845	0.0833	0.0833	96	101	60 - 108	6	14	
Fluorene	0.0874	0.0909	0.0833	0.0833	105	109	61 - 113	4	13	
Phenanthrene	0.0806	0.0857	0.0833	0.0833	97	103	63 - 106	6	13	
Anthracene	0.102	0.103	0.0833	0.0833	122	124	55 - 130	1	13	
Fluoranthene	0.0858	0.0871	0.0833	0.0833	103	105	66 - 118	2	13	
Pyrene	0.0818	0.0861	0.0833	0.0833	98	103	69 - 112	5	12	
Benzo[a]anthracene	0.0932	0.0907	0.0833	0.0833	112	109	58 - 115	3	13	
Chrysene	0.0820	0.0855	0.0833	0.0833	98	103	64 - 114	4	11	
Benzo[b]fluoranthene	0.0891	0.0953	0.0833	0.0833	107	114	52 - 125	7	19	
Benzo(j,k)fluoranthene	0.0878	0.0847	0.0833	0.0833	105	102	50 - 126	4	22	
Benzo[a]pyrene	0.0833	0.0840	0.0833	0.0833	100	101	43 - 123	1	16	
Indeno(1,2,3-c,d)pyrene	0.0931	0.0931	0.0833	0.0833	112	112	55 - 118	0	16	
Dibenz[a,h]anthracene	0.0907	0.0904	0.0833	0.0833	109	109	57 - 120	0	15	
Benzo[g,h,i]perylene	0.0930	0.0928	0.0833	0.0833	112	111	58 - 113	0	18	
Surrogate:										
2-Fluorobiphenyl					96	108	43 - 116			
Pyrene-d10					99	99	33 - 124			
Terphenyl-d14					99	98	38 - 125			

Project: E2014/0102; Horse Heaven Hills

## BTEX EPA 8021B

Matrix: Soil

Units: mg/kg (ppm)

Analyse	5 5 (1)				Date	Date	
Laboratory ID:   03-166-01	Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Benzene	Client ID:	03-19-SW-1					
Toluene ND 0.065 EPA 8021B 3-28-14 3-28-14 12thy Benzene ND 0.065 EPA 8021B 3-28-14 3-28-14 3-28-14 o-Xylene ND 0.065 EPA 8021B 3-28-14 3-28-14 o-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14 o-Xylene ND 0.062 EPA 8021B 3-28-14 3-28-14 o-Xylene ND 0.072 EPA 8021B 3-28-14 3-28-14 S-28-14 Ethyl Benzene ND 0.072 EPA 8021B 3-28-14 3-28-14 S-28-14 Ethyl Benzene ND 0.072 EPA 8021B 3-28-14 3-28-14 S-28-14 Ethyl Benzene ND 0.0	Laboratory ID:	03-166-01					
Ethyl Benzene	Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	Toluene	ND	0.065	EPA 8021B	3-28-14	3-28-14	
o-Xylene         ND         0.065         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery 105         Control Limits 71-121         71-121         3-28-14         3-28-14           Client ID:         03-19-SW-2 Laboratory ID:         03-166-02         Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.070         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.070         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.070         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits 7-121         3-28-14         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits 7-121         3-28-14         3-28-14         3-28-14           Client ID:         03-19-SW-3         13         3-28-14         3-28-14         3-28-14           Laboratory ID:         03-166-03         Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14	Ethyl Benzene	ND	0.065	EPA 8021B	3-28-14	3-28-14	
Surrogate:   Percent Recovery   Control Limits   Fluorobenzene   105   71-121	m,p-Xylene	ND	0.065	EPA 8021B	3-28-14	3-28-14	
Client ID:   03-19-SW-2	o-Xylene	ND	0.065	EPA 8021B	3-28-14	3-28-14	
Client ID: 03-19-SW-2 Laboratory ID: 03-166-02  Benzene ND 0.020 EPA 8021B 3-28-14 3-28-14  Toluene ND 0.070 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.070 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.070 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.070 EPA 8021B 3-28-14 3-28-14  o-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14  o-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14  Surrogate: Percent Recovery Control Limits  Fluorobenzene 113 71-121  Client ID: 03-19-SW-3 Laboratory ID: 03-166-03  Benzene ND 0.062 EPA 8021B 3-28-14 3-28-14  Toluene ND 0.062 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.062 EPA 8021B 3-28-14 3-28-14  m,p-Xylene ND 0.062 EPA 8021B 3-28-14 3-28-14  Surrogate: Percent Recovery Control Limits  Fluorobenzene ND 0.062 EPA 8021B 3-28-14 3-28-14  Surrogate: Percent Recovery Control Limits  Fluorobenzene ND 0.062 EPA 8021B 3-28-14 3-28-14  Client ID: 03-19-SW-4 Laboratory ID: 03-166-04  Benzene ND 0.072 EPA 8021B 3-28-14 3-28-14  Toluene ND 0.072 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.072 EPA 8021B 3-28-14 3-28-14  Toluene ND 0.072 EPA 8021B 3-28-14 3-28-14  Ethyl Benzene ND 0.072 EPA 8021B 3-28-14 3-28-14	Surrogate:	Percent Recovery	Control Limits				
Benzene	Fluorobenzene	105	71-121				
Benzene	Client ID:	03-19-SW-2					
Toluene ND 0.070 EPA 8021B 3-28-14 3-28-14 Ethyl Benzene ND 0.070 EPA 8021B 3-28-14 3-28-14 Mn,p-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14 Mn,p-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14 O-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14 O-Xylene ND 0.070 EPA 8021B 3-28-14 3-28-14 Mn,p-Xylene ND 0.072 EPA 8021B 3-28-14 Mn,p-Xylene ND 0.062 EPA 8021B 3-28-14 Mn,p-Xylene ND 0.072 EPA 8021B 3-28-14 Mn,p-Xylene ND 0.	Laboratory ID:	03-166-02					
Ethyl Benzene ND 0.070 EPA 8021B 3-28-14 3-28-14		ND	0.020	EPA 8021B	3-28-14	3-28-14	
ND	Toluene	ND	0.070	EPA 8021B	3-28-14	3-28-14	
ND         0.070         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         113         71-121           Client ID:           Laboratory ID:         03-19-SW-3           Laboratory ID:         03-166-03           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           mp-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits         71-121           Client ID:         03-19-SW-4           Laboratory ID:         03-166-04         Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene	Ethyl Benzene	ND	0.070	EPA 8021B	3-28-14	3-28-14	
o-Xylene         ND         0.070         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         113         71-121           Client ID:           Laboratory ID:         03-19-SW-3           Laboratory ID:         03-166-03           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           mp-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits         Fluorobenzene         103         71-121           Client ID:         03-19-SW-4         Surrogate         <	m,p-Xylene	ND	0.070	EPA 8021B	3-28-14	3-28-14	
Surrogate:         Percent Recovery 113         Control Limits 71-121           Client ID:         03-19-SW-3           Laboratory ID:         03-166-03           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           mp-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         103         71-121           Client ID:         03-19-SW-4         3-28-14         3-28-14           Laboratory ID:         03-166-04         3-28-14         3-28-14         3-28-14           Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-		ND	0.070	EPA 8021B	3-28-14	3-28-14	
Client ID:         03-19-SW-3           Laboratory ID:         03-166-03           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         103         71-121           Client ID:         03-19-SW-4         100 <td< td=""><td></td><td>Percent Recovery</td><td>Control Limits</td><td></td><td></td><td></td><td></td></td<>		Percent Recovery	Control Limits				
Laboratory ID:         03-166-03           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.062         EPA 8021B         3-28-14         3-28-14           m.p-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         103         71-121           Client ID:         03-19-SW-4         3-28-14         3-28-14         3-28-14           Laboratory ID:         03-166-04         3-28-14         3-28-14         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8	Fluorobenzene	113	71-121				
ND   0.020   EPA 8021B   3-28-14   3-28-14   Toluene   ND   0.062   EPA 8021B   3-28-14   3-28-14   Ethyl Benzene   ND   0.062   EPA 8021B   3-28-14   3-28-14   Ethyl Benzene   ND   0.062   EPA 8021B   3-28-14   3-28-14   3-28-14   O-Xylene   ND   0.062   EPA 8021B   3-28-14   3-28-14   O-Xylene   ND   0.062   EPA 8021B   3-28-14   3-28-14   O-Xylene   ND   0.062   EPA 8021B   3-28-14   O-Xylene   O-Xy	Client ID:	03-19-SW-3					
Toluene ND 0.062 EPA 8021B 3-28-14 3-28-14 Ethyl Benzene ND 0.062 EPA 8021B 3-28-14 3-28-14 m.p-Xylene ND 0.062 EPA 8021B 3-28-14 3-28-14 o-Xylene ND 0.062 EPA 8021B 3-28-14 3-28-14 Surrogate:  Percent Recovery Control Limits Fluorobenzene 103 71-121  Client ID: 03-19-SW-4 Laboratory ID: 03-166-04  Benzene ND 0.020 EPA 8021B 3-28-14 3-28-14 Toluene ND 0.072 EPA 8021B 3-28-14 3-28-14 Selection of the selection o	Laboratory ID:	03-166-03					
Ethyl Benzene ND 0.062 EPA 8021B 3-28-14 3-28-14 0-Xylene ND 0.020 EPA 8021B 3-28-14 3-28-14 0-Xylene ND 0.072 EPA 8021B 3-28-14 3-28-14 0-Xylene O.33 0.072 EPA 8021B 3-28-14 3-28-14 0-Xylene O.11 0.072 EPA 8021B 3-28-14 3-28-14	Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           o-Xylene         ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery 103         Control Limits 71-121           Client ID:         03-19-SW-4         3-28-14         3-28-14           Laboratory ID:         03-166-04         3-28-14         3-28-14         3-28-14           Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	Toluene	ND	0.062	EPA 8021B	3-28-14	3-28-14	
ND         0.062         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery 103         Control Limits 71-121           Client ID:         03-19-SW-4           Laboratory ID:         03-166-04           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	Ethyl Benzene	ND	0.062	EPA 8021B	3-28-14	3-28-14	
Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         103         71-121           Client ID:         03-19-SW-4           Laboratory ID:         03-166-04           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	m,p-Xylene	ND	0.062	EPA 8021B	3-28-14	3-28-14	
Surrogate:         Percent Recovery         Control Limits           Fluorobenzene         103         71-121           Client ID:         03-19-SW-4           Laboratory ID:         03-166-04           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	o-Xylene	ND	0.062	EPA 8021B	3-28-14	3-28-14	
Fluorobenzene       103     71-121       Client ID:     03-19-SW-4       Laboratory ID:     03-166-04       Benzene     ND     0.020     EPA 8021B     3-28-14     3-28-14       Toluene     ND     0.072     EPA 8021B     3-28-14     3-28-14       Ethyl Benzene     ND     0.072     EPA 8021B     3-28-14     3-28-14       m,p-Xylene     0.33     0.072     EPA 8021B     3-28-14     3-28-14       o-Xylene     0.11     0.072     EPA 8021B     3-28-14     3-28-14       Surrogate:     Percent Recovery     Control Limits		Percent Recovery	Control Limits				
Laboratory ID:         03-166-04           Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	•	-					
Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	Client ID:	03-19-SW-4					
Benzene         ND         0.020         EPA 8021B         3-28-14         3-28-14           Toluene         ND         0.072         EPA 8021B         3-28-14         3-28-14           Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	Laboratory ID:	03-166-04					
Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits		ND	0.020	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene         ND         0.072         EPA 8021B         3-28-14         3-28-14           m,p-Xylene         0.33         0.072         EPA 8021B         3-28-14         3-28-14           o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	Toluene	ND	0.072	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene       0.33       0.072       EPA 8021B       3-28-14       3-28-14         o-Xylene       0.11       0.072       EPA 8021B       3-28-14       3-28-14         Surrogate:       Percent Recovery       Control Limits	Ethyl Benzene	ND	0.072		3-28-14	3-28-14	
o-Xylene         0.11         0.072         EPA 8021B         3-28-14         3-28-14           Surrogate:         Percent Recovery         Control Limits	•						
Surrogate: Percent Recovery Control Limits	•						
·							
	•	106	71-121				

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Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-5					
Laboratory ID:	03-166-05					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.069	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.069	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.35	EPA 8021B	3-28-14	3-28-14	U1
o-Xylene	0.088	0.069	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	71-121				
Client ID:	03-19-SW-6					
Laboratory ID:	03-166-06					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	71-121				
Client ID:	03-19-SW-7					
Laboratory ID:	03-166-07					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.060	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.060	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.060	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.060	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	71-121				
Client ID:	03-19-SW-8					
Laboratory ID:	03-166-08					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	0.071	0.054	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.054	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				_
Fluorobenzene	105	71-121				

Date of Report: April 1, 2014 Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166 Project: E2014/0102; Horse Heaven Hills

## BTEX EPA 8021B

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-9					
Laboratory ID:	03-166-09					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.066	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.066	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.066	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.066	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	71-121				
Client ID:	03-19-SW-10					
Laboratory ID:	03-166-10					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.058	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.058	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.058	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.058	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	71-121				
Client ID:	03-19-SW-11					
Laboratory ID:	03-166-11					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.082	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.082	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.082	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.082	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	107	71-121				
Client ID:	03-19-SW-12					
Laboratory ID:	03-166-12					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.067	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.067	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.067	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.067	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	71-121				

Fluorobenzene 102 71-121

Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-SW-13					
Laboratory ID:	03-166-13					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.068	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.068	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.068	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.068	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	71-121				
Client ID:	03-19-TP-01					
Laboratory ID:	03-166-14					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	-
Toluene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	71-121				
Client ID:	03-19-TP-02					
Laboratory ID:	03-166-15					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.055	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.055	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.055	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.055	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	71-121				
Client ID:	03-19-TP-03					
Laboratory ID:	03-166-16					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.059	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	0.10	0.059	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	0.80	0.059	EPA 8021B	3-28-14	3-28-14	
o-Xylene	0.25	0.059	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	71-121				

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

3 3 (11 )				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-19-TP-04					
Laboratory ID:	03-166-17					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.092	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.092	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.092	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.092	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	71-121				
Client ID:	03-19-TP-05					
Laboratory ID:	03-166-18					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.061	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	0.11	0.061	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	0.60	0.061	EPA 8021B	3-28-14	3-28-14	
o-Xylene	0.42	0.061	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	71-121				
Client ID:	03-19-TP-06					
Laboratory ID:	03-166-19					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.064	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	0.20	0.064	EPA 8021B	3-28-14	3-28-14	
o-Xylene	0.13	0.064	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	95	71-121				

Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS1					
Laboratory ID:	03-166-20					
Benzene	ND	0.026	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.13	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	0.27	0.13	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	0.79	0.13	EPA 8021B	3-25-14	3-25-14	
o-Xylene	0.24	0.13	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	71-121				
Client ID:	03-13-SS2					
Laboratory ID:	03-166-21					
Benzene	ND	0.022	EPA 8021B	3-25-14	3-25-14	_
Toluene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	0.11	0.11	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	105	71-121				
Client ID:	03-13-SS3					
Laboratory ID:	03-166-22					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-26-14	
Toluene	ND	0.081	EPA 8021B	3-25-14	3-26-14	
Ethyl Benzene	0.36	0.081	EPA 8021B	3-25-14	3-26-14	
m,p-Xylene	0.73	0.081	EPA 8021B	3-25-14	3-26-14	
o-Xylene	ND	0.081	EPA 8021B	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	108	71-121				
Client ID:	03-13-SS4					
Laboratory ID:	03-166-23					
Benzene	ND	0.027	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.14	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	0.17	0.14	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	0.83	0.14	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.70	EPA 8021B	3-25-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	71-121				

Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	03-13-SS5	FQL	WetHou	Frepareu	Allalyzeu	riays
Laboratory ID:	03-166-24					
Benzene	ND	0.025	EPA 8021B	3-25-14	3-25-14	
Toluene	ND ND	0.025	EPA 8021B	3-25-14 3-25-14	3-25-14	
Ethyl Benzene	1.7	0.13	EPA 8021B	3-25-14 3-25-14	3-25-14	
•	2.6	0.13	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	ND	0.13	EPA 8021B	3-25-14 3-25-14	3-25-14	U1
o-Xylene			EFA 0021D	3-23-14	3-23-14	01
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	76	71-121				
Client ID:	03-13-SS6					
Laboratory ID:	03-166-25					
Benzene	ND	0.025	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.12	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	2.2	0.12	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	6.1	0.12	EPA 8021B	3-25-14	3-25-14	
o-Xylene	0.44	0.12	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	71-121				
Client ID:	03-13-SS7					
Laboratory ID:	03-166-26					
Benzene	0.049	0.022	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	2.8	0.11	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	7.7	0.11	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	1.1	EPA 8021B	3-25-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	91	71-121				
Client ID:	03-13-SS8					
Laboratory ID:	03-166-27					
Benzene	0.098	0.027	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.14	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	4.7	0.14	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	14	0.68	EPA 8021B	3-25-14	3-26-14	
o-Xylene	ND	1.4	EPA 8021B	3-25-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
Elucrobonzono	70	71 101				

78 71-121 Fluorobenzene

Project: E2014/0102; Horse Heaven Hills

## **BTEX EPA 8021B**

Matrix: Soil

Units: mg/kg (ppm)

3 3 (T )				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS9					
Laboratory ID:	03-166-28					
Benzene	ND	0.022	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	0.75	0.11	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	0.66	0.11	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	1.1	EPA 8021B	3-25-14	3-25-14	U1
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	79	71-121				
Client ID:	03-13-SS10					
Laboratory ID:	03-166-29					
Benzene	ND	0.026	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.13	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	0.62	0.13	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	0.95	0.13	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.13	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	71-121				
Client ID:	03-13-SS11					
Laboratory ID:	03-166-30					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-26-14	
Toluene	ND	0.070	EPA 8021B	3-25-14	3-26-14	
Ethyl Benzene	0.30	0.070	EPA 8021B	3-25-14	3-26-14	
m,p-Xylene	0.53	0.070	EPA 8021B	3-25-14	3-26-14	
o-Xylene	ND	0.070	EPA 8021B	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	83	71-121				
Client ID:	03-13-SS12					
Laboratory ID:	03-166-31					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-26-14	
Toluene	ND	0.065	EPA 8021B	3-25-14	3-26-14	
Ethyl Benzene	0.077	0.065	EPA 8021B	3-25-14	3-26-14	
m,p-Xylene	0.22	0.065	EPA 8021B	3-25-14	3-26-14	
o-Xylene	0.095	0.065	EPA 8021B	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	85	71-121				

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## BTEX EPA 8021B

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	03-13-SS13					
Laboratory ID:	03-166-32					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-26-14	
Toluene	ND	0.068	EPA 8021B	3-25-14	3-26-14	
Ethyl Benzene	ND	0.068	EPA 8021B	3-25-14	3-26-14	
m,p-Xylene	ND	0.068	EPA 8021B	3-25-14	3-26-14	
o-Xylene	ND	0.068	EPA 8021B	3-25-14	3-26-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	86	71-121				
Client ID:	03-13-SS14					
Laboratory ID:	03-166-40					
Benzene	ND	0.023	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.11	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits		·		
Fluorobenzene	78	71-121				

Project: E2014/0102; Horse Heaven Hills

# BTEX EPA 8021B METHOD BLANK QUALITY CONTROL

Matrix: Soil

ome. mg/ng (ppm)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB0325S1					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	87	71-121				
Laboratory ID:	MB0325S2					
Benzene	ND	0.020	EPA 8021B	3-25-14	3-25-14	
Toluene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
Ethyl Benzene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
m,p-Xylene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
o-Xylene	ND	0.050	EPA 8021B	3-25-14	3-25-14	
Gasoline	ND	5.0	NWTPH-Gx	3-25-14	3-25-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	87	71-121				
Laboratory ID:	MB0328S2					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-28-14	
Toluene	ND	0.050	EPA 8021B	3-28-14	3-28-14	
Ethyl Benzene	ND	0.050	EPA 8021B	3-28-14	3-28-14	
m,p-Xylene	ND	0.050	EPA 8021B	3-28-14	3-28-14	
o-Xylene	ND	0.050	EPA 8021B	3-28-14	3-28-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	87	71-121				
Laboratory ID:	MB0328S3					
Benzene	ND	0.020	EPA 8021B	3-28-14	3-31-14	
Toluene	ND	0.050	EPA 8021B	3-28-14	3-31-14	
Ethyl Benzene	ND	0.050	EPA 8021B	3-28-14	3-31-14	
m,p-Xylene	ND	0.050	EPA 8021B	3-28-14	3-31-14	
o-Xylene	ND	0.050	EPA 8021B	3-28-14	3-31-14	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	71-121				

Project: E2014/0102; Horse Heaven Hills

# BTEX EPA 8021B DUPLICATE QUALITY CONTROL

Matrix: Soil

	,				Source	Perc	ent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Reco	very	Limits	RPD	Limit	Flags
Laboratory ID:	03-16										
	ORIG	DUP									
Benzene	ND	ND	NA	NA		N		NA	NA	30	
Toluene	ND	ND	NA	NA		N		NA	NA	30	
Ethyl Benzene	0.0663	0.0661	NA	NA		N		NA	0	30	
m,p-Xylene	0.189	0.186	NA	NA		N		NA	2	30	
o-Xylene	0.0812	0.0899	NA	NA		N/	<u> </u>	NA	10	30	
Surrogate:											
Fluorobenzene						85	87	71-121			
Laboratory ID:	03-16	66-32									
	ORIG	DUP									
Benzene	ND	ND	NA	NA		N/	A	NA	NA	30	
Toluene	ND	ND	NA	NA		N	Α	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		N	Α	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		N		NA	NA	30	
o-Xylene	ND	ND	NA	NA		N		NA	NA	30	
Surrogate:											
Fluorobenzene						86	89	71-121			
Laboratory ID:	03-16	66-11									
	ORIG	DUP									
Benzene	ND	ND	NA	NA		N.	Α	NA	NA	30	
Toluene	ND	ND	NA	NA		N/		NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		N/		NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		N.		NA	NA	30	
o-Xylene	ND	ND	NA	NA		N/		NA	NA	30	
Surrogate:	ND	IND	14/ (	14/ \		1 1/		1471	14/ (	- 00	
Fluorobenzene						107	101	71-121			
T Idol obelizelle						101	101	71-121			
Laboratory ID:	03-16	86-17									
	ORIG	DUP									
Benzene	ND	ND	NA	NA		N.	A	NA	NA	30	
Toluene	ND	ND	NA	NA		N.		NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		N/		NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		N/		NA	NA	30	
o-Xylene	ND	ND	NA	NA		N/		NA	NA	30	
Surrogate:	ND	110	1 1/7	11/7		1 1/		INA	14/7	- 50	
Fluorobenzene						97	92	71-121			
riuoroperizerie						97	92	11-121			

Project: E2014/0102; Horse Heaven Hills

# BTEX EPA 8021B SB/SBD QUALITY CONTROL

Matrix: Soil

					Source	Per	cent	Recovery		RPD	
Analyte	Result Spike Level Result Recove		overy	Limits	RPD	Limit	Flags				
Laboratory ID:	SB03	325S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.920	0.908	1.00	1.00		92	91	73-121	1	10	
Toluene	0.905	0.916	1.00	1.00		91	92	75-124	1	10	
Ethyl Benzene	0.909	0.888	1.00	1.00		91	89	75-125	2	9	
m,p-Xylene	0.937	0.904	1.00	1.00		94	90	75-126	4	9	
o-Xylene	0.890	0.872	1.00	1.00		89	87	74-123	2	8	
Surrogate:											
Fluorobenzene						89	89	71-121			
Laboratory ID:	SB03	28S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.988	1.04	1.00	1.00		99	104	73-121	5	10	
Toluene	0.985	1.02	1.00	1.00		99	102	75-124	3	10	
Ethyl Benzene	0.982	1.04	1.00	1.00		98	104	75-125	6	9	
m,p-Xylene	1.00	1.01	1.00	1.00		100	101	75-126	1	9	
o-Xylene	0.970	1.01	1.00	1.00		97	101	74-123	4	8	
Surrogate:											
Fluorobenzene						91	95	71-121			

Date of Report: April 1, 2014 Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166 Project: E2014/0102; Horse Heaven Hills

% MOISTURE

Date Analyzed: 3-24&25-14

Client ID	Lab ID	% Moisture
03-19-SW-1	03-166-01	9
03-19-SW-2	03-166-02	18
03-19-SW-3	03-166-03	12
03-19-SW-4	03-166-04	18
03-19-SW-5	03-166-05	19
03-19-SW-6	03-166-06	14
03-19-SW-7	03-166-07	12
03-19-SW-8	03-166-08	15
03-19-SW-9	03-166-09	14
03-19-SW-10	03-166-10	9
03-19-SW-11	03-166-11	19
03-19-SW-12	03-166-12	9
03-19-SW-13	03-166-13	9
03-19-TP-01	03-166-14	13
03-19-TP-02	03-166-15	13
03-19-TP-03	03-166-16	15
03-19-TP-04	03-166-17	23
03-19-TP-05	03-166-18	12
03-19-TP-06	03-166-19	14
03-13-SS1	03-166-20	14
03-13-SS2	03-166-21	13
03-13-SS3	03-166-22	25
03-13-SS4	03-166-23	15
03-13-SS5	03-166-24	10
03-13-SS6	03-166-25	10
03-13-SS7	03-166-26	13
03-13-SS8	03-166-27	18

Date of Report: April 1, 2014

Samples Submitted: March 24, 2014 Laboratory Reference: 1403-166

Project: E2014/0102; Horse Heaven Hills

# % MOISTURE

Date Analyzed: 3-24&25-14

Client ID	Lab ID	% Moisture
03-13-SS9	03-166-28	8
03-13-SS10	03-166-29	12
03-13-SS11	03-166-30	19
03-13-SS12	03-166-31	14
03-13-SS13	03-166-32	13
03-13-SS14	03-166-40	10
03-11-SP-4	03-166-41	23
03-11-SP-5	03-166-42	18
03-11-SP-6	03-166-43	19
03-12-SP-7	03-166-44	22
03-12-SP-8	03-166-45	25
03-12-SP-9	03-166-46	20
03-12-SP-10	03-166-47	24



#### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical \_\_\_\_\_
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL PQL - Practical Quantitation Limit RPD - Relative Percent Difference

Data Package: Standard	Reviewed/Date	Received	Relinquished	Received	Relinquished	Received	Relinquished	Signatur	10 63-19-5W-10	9 03-19-5W-9	8 63-19-5W-8	7 63-19-5W-7	6 03-19-5W-6	5 03-19-5W-5	4 63-19-5W-4	3 03-19-5W-3	d 03-19-5W-2	1 03-19-5W-1	Lab ID Sample Identification	Sampled by: 1. DEYER	Project Manager: A TO SPICE A HILLS	E2614/6102	Project Number:	Phone: (425) 883-3881 • www.onsite-env.com	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052	Onsite Environmental Inc.
	Reviewed/Date					2000	BMEC	Company	V 0820 V V	0812	880	6753	0746	6739	0728	1240	0713	3-17-14 0705 SOIL 3	Date Time Sampled Matrix	(other)	(TPH analysis 5 Days)		Same Day 1 Day	(Check One)	Turnaround Request (in working days)	Chain of
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Data Package: Standard	Reviewed/Date	Received	Relinquished	Received	Relinquished	Received	Relinquished	Signature	19 03-19-TP-06	18 03-19-TP-05	17 63-19-TP-04	16 03-19-17-03	15 03-19-TP-02	14 03-19-77-01	13 63-19-5W-13	12 03-19-5W-12	11 03-19-5W-11	Lab ID Sample Identification	Sampled by:	P. TRABUSINER	Holose HEAVEN HILLS	E2014/0102	Project Number:	Company: Phone: (425) 883-3881 • www.onsite-env.com	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052
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177.4 6725  179.6 3:15:14 8644  2000 Date  320.14  320.14  320.14	20-17-4  20-17-4  30-17-4  6712  17-5-17-6  31-14-2844  Signature  Company  Date  31-20-17  32-17-4  32-17-4  32-17-4	26-17-2 6859 26-17-4 6716 26-17-4 6716 26-17-4 6716 3574-2844 Signature Company Date 3120-14 3120-14	20. 17:1 3.20.4 6851 3 20. 17:4 6851 6859 20. 17:4 6816 20. 17:4 6816 33.20.4 6851 30.17:4 6816 30.17:4 5844 31.20.14 31.20.14 31.20.14	13.53:13 V 1439 V 20.172, 13.20, 0859 20.172, 4 6916 20.172, 4 6916 20.172, 4 6916 30.172, 13.20, 14.30 30.172, 14.30 30.172, 13.20, 14	Sample Identification	Sample Inne Sampled Sa	Sample   S	
3:20:77:4 6716 3:70:77:6 3:514 6717 3:17:52:13 3:514 5844 Signature Company Date  Signature Signature Company Date  3:70:14  3:70:14  3:70:17:4  3:70:17:6  3:70:14  3:70:14	20-17-4 6916 20-17-4 6916 20-17-4 6916 3:18-14 5844 3:18-14 5844 3:20-14 3:20-14 3:20-14	20-17-3 0000 20-17-4 0012 20-17-4 0012 20	3.70.77; 3.70,4 6851 3 3.70.77; 4 6851 3 3.70.77; 4 6851 3.70.77; 4 6851 3.70.77; 4 6851 3.70.77; 4 6851 3.70.77; 4 6851 3.70.77; 5 6851 3.70.	3.13.55:13 \ 14.39 \ \ 3.70.17:1 \ 3.70.17:2 \ 3.70.17:2 \ 3.70.17:2 \ 3.70.17:2 \ 3.70.17:3 \ 3.70.17:3 \ 3.70.17:3 \ 3.70.17:4 \ 3.70.17:5 \ 3.70.17	Sample Identification	Sample Identification  Sample Identification  Sample In Date	Same Day   1 Day   2 Days   3 Days	
3.70.17.4 67.6 3.70.17.6 344.264. 3.17.5 34.13 684.264. Signature Company Date Time 3.20.11 j.d.co	20-17-4 6716 20-17-4 6716 20-17-4 6716 3-17-4 6716 3-17-4 5844 3-17-5 3-17-4 5844 3-17-5 3-17-4 5844 3-17-5 3-17-4 5844 3-17-4 5844 3-17-5 3-17-4 5844	20-17-3 00000 20-17-4 00125 20-17-4 00132 20-17-6 3-18-18-18-18-18-18-18-18-18-18-18-18-18-	3.70.17.1 3.20.11 6851 3 3.70.17.1 4 6916 3.70.17.4 6916 3.70.1 6916	3.13.53.13 V 1439 V 3.20.77.1 3.20.14 5852 3 3.20.77.1 3.20.14 5852 3 3.20.77.4 6825 3.20.77.4 6	Standard (7 Days)  Pressure Hills  Sample Identification  Sample Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled Sampled  Sampled Sampled Sampled Sampled  Sampled Samp	Sample Identification	Sample Identification   Sampled	
3.70.17.6 4 6725 3.70.17.6 317.14.5834 3.17. 3w 13 3814.5834 Signature Company Date Time	20-17-4 6716 20-17-4 6716 20-17-4 6716 315-14-5844 Signature Company Date Time	20-17-3 0000 20-17-4 0016 20-17-4 0016 3-10-17-6 3-10-18-18-18-18-18-18-18-18-18-18-18-18-18-	3.70.17.1 3.20.11.0851 3 3.70.17.2 17.2 0859 3.70.17.4 0816 3.70.17.4 0825 3.70.17.6 3.11.5013 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014 3.70.17.6 3.11.5014	3.13.53.13 \ 1439 \ \ 3.20.17.13 \ 3.20.17.53 \ 3.20.17.12 \ 3.20.17.53 \ 3.70.17.12 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.13 \ 3.70.17.14 \ 3.70.17 \	Sample Identification  Sample Identification  Sample Identification  Sample Sampled Sa	Sample Identification	Sample   S	2010
177:4 8725 177:4 8725 179:6 3:17:14 8844 130:13 8:17:14 8844	20-17-4 6916 20-17-4 6916 20-17-4 6916 20-17-5 6916 20-17-5 6917 20-17	20-1P-3 9716 20-1P-4 9716 20-1P-4 9716 70-1P-6 37714 5874 171 3W 13 35714 5874 Company Date Time	20-17:1 320.14 6851 3  20-17:3 6859  20-17:4 6816  20-17:4 6816  20-17:4 6825  70-17:5 6844  Signature Company Date Time	13.53:13 V 1439 V 1231 20:17:1 3:20:14:39 V 1439 V 125:17:14 20:17	Signature	Same Day	Sample   Company   Compa	1400
07.4 OF OF	70-TP-5 -70-TP-6 -70-	70-1P:5 20-1P:5 20-1P:6 20-1P:6 30-1P:6 170-1P:6	20. TP. 1 3.20.14 0851 20. TP. 3 0869 20. TP. 4 0875 20. TP. 6 354 885 10. TP. 6 354 885 10. TP. 6 354 885	13.53:13 V 1431 20:17:1 3:20:14 0859 20:17:2 T 5:2 0869 20:17:4 0875 20:17:6 3:514 2831 17:0:17:6 3:514 2831	Standard (7 Days)  Teassusucce  Sample Identification  Sampled  Matrix  Number of Containers  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM  (with low-level PAHs)	Sample   S	Sample   Marrix   Mumber of Containers	
6 V 69 69 69 69 69 69 69 69 69 69 69 69 69	76.TP.6 VN 09	70-1P-5 20-1P-5 20-1P-6 20-1P-6 4-96-1P-6	20. TP. 1 3.20.14 0851 20. TP. 3 0869 20. TP. 4 0816 20. TP. 4 0816 20. TP. 6 VM 0832	13.53:13 V 1439 20.77:1 3:20.14 0859 20.77:2 T 5:2 0859 20.77:4 0816 20.77:4 0816 20.77:4 0816	Sample Identification	Sample   Sample   Same Day	Same Day	
3.20.TP:4 BNG	20-TP:3 -20-TP:4 -20-TP:4 -8	20-1P:3 09 20-1P:4 09 20-1P:4 09	20. TP. 1 3.20.14 6852 20. TP. 3 6859 20. TP. 4 6816 20. TP. 4 6816	13.53:13 V 1431 20:TP:1 3:20.14 6851 20:7P:2 TP:2 6859 20:TP:4 6825	Sample Identification  Identification  Sample Identification  Sample Identification  Identification  Sample Identification  Identification  Sample Identification  Sample Identification  Identification  Sample Identification  Identification  Sample Identification  Sample Identification  Identification  Sample Identification  Id	Sample Identification	Sample Identification  Sample Identification	
3.20. To. 4 816	20-TP:3 ON	70-7P-3 09 20-1P-3 09	20. TP: 1 3.20.14 0851 20. TP: 5 0859 20. TP: 4 0859	13.53:13 V 1431 20:TP:1 3:20.14 6851 20:72-75:2 6859 20:72-75:4 6869 20:75:4 6866	Standard (7 Days)  The Asusuck Haus  (TPH analysis 5 Days)  Time  Sample Identification  Sample Matrix  Sample Matrix  Sampled Sampled  Sampled Sampled Sampled  Number of Containers  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)	Sample Identification  Sample Identification  Sampled Sampled Matrix  Number of Containers  NWTPH-HCID  NWTPH-Gx  NWTPH-Gx  NWTPH-Gx  NWTPH-Gx  NWTPH-Gx  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)	Same Day	
	20-TP-3	20:70:2 TR:2 0	20.TP.1 3.20.14 0852 20.7P.3 0859	13.53:13 V 1439 20:TP:1 3:2014 6859 20:70-72 TP:2 0859	Standard (7 Days)  Standard (7 Days)  (TPH analysis 5 Days)  (Other)  (Ot	Same Day	Sample   S	
3, 55, 12 1434 13, 53, 13 V 1439 20, Tr, 1 3,20, 4, 6859 70, 72, 72, 74, 75	55:12 1434 .55:13 \ 1439 .TP:1 \ 3204 0852	55:12 1434	55:12		Sample Identification  Standard (7 Days)  (TPH analysis 5 Days)  (TPH analysis 5 Days)  (Other)  Number of Containers  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)	Sample Identification  Same Day  Same Day  Standard (7 Days)  (TPH analysis 5 Days)  (TPH analysis 5 Days)  Number of Containers  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8270D/SIM (with low-level PAHs)	Sample Identification    Same Day	. ×
13:55.11 3.13.4 1431 501 2 13:55:12 1434 1 13:55:13 1439 1 20:70:70:277:27 320.1439 3	13:55:11 3:13:14:14:31 501.2 13:55:12 14:34 1 13:55:13 14:34 1 13:55:13 14:34 1	13:55:11 3:13:4 1431 501C2 13:55:13 1434 1	13.55.11 3.13.4 1431 501C 2 13.55.12 1434 1	13.55.11 3.13.4 1431 50162	Standard (7 Days)  (ITPH analysis 5 Days)  er of Containers H-HCID H-Gx/BTEX H-Dx as 8260C containers 8270D/SIM ow-level PAHs)	Same Day 1 Day    Standard (7 Days)   3 Days   Standard (7 Days)   3 Days	Check One)    Same Day	Haloge Semive (with le
13   SS   1   3-13-14   143   Sent   2   NWTPH   NWT	13   55   17   3/20/4 6851   3/13-14   1431   50/L 2   NWTPH	13   SS   17   143  Senc 2   143    NWTPH	Sample Identification  Sampled Sampled Matrix Number  Sampled Sampled Matrix Number  NWTPH  NWTPH  Volatile  Semivor  (with lo	Sample Identification  Date Time Sampled Sampled Matrix Number NWTPH  NWTPH  Volatile  Semivor (with lo	Standard (7 Days)  (TPH analysis 5 Days)  Italiners  EX	Same Day	Phone: (425) 883-3881 • www.onsite-env.com  (Check One)    Same Day	nated Vo
Sample Identification  Number of Col  NWTPH-HCID  NWTPH-GX  Volatiles 82600  Halogenated Volatiles 8  (with low-level Identification)  Semivolatiles 8  (with low-level Identification)	Sample Identification  Number of Col  NWTPH-HCID  NWTPH-Gx  Volatiles 82600  Halogenated Volatiles 8  (with low-level Identification)  Semivolatiles 8  (with low-level Identification)	Sample Identification  Number of Col  NWTPH-HCID  NWTPH-Gx  Volatiles 82600  Halogenated Volatiles 8  (with low-level Identification)  Semivolatiles 8  (with low-level Identification)	Sample Identification  Sampled	Sample Identification  Sample Identification  Sampled Sampled Sampled Sampled Number of Col NWTPH-HCID NWTPH-GX  NWTPH-DX  Volatiles 82600  Halogenated Volatiles 8 (with low-level	Standard (7 Days)  (TPH analysis 5 Days)  (TPH analysis 5 Days)	Same Day	Check One	olatiles 270D/ PAHs)
Sample Identification  Sample Identification  Sampled Sampled Sampled Sampled Number of Containe  NWTPH-HCID  NWTPH-Gx  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles  Semivolatiles 8270D/ (with low-level PAHs)	Sample Identification  Sample Identification  Sample Identification  Date Time Sampled Sampled Matrix  Number of Containe  NWTPH-HCID  NWTPH-Gx  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles  Semivolatiles 8270D/ (with low-level PAHs)	Sample Identification  (other)  Number of Containe  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles  Semivolatiles 8270D/ (with low-level PAHs)	Sample Identification  Sample Identification  Sampled Sampled Sampled Number of Containe  NWTPH-HCID  NWTPH-GX  NWTPH-DX  Volatiles 8260C  Halogenated Volatiles  Semivolatiles 8270D/ (with low-level PAHs)	Sample Identification  Sampled Sampled Sampled Number of Containe  NWTPH-HCID  NWTPH-GX  NWTPH-GX  Volatiles 8260C  Halogenated Volatiles  Semivolatiles 8270D/ (with low-level PAHs)		Same Day 1 Day 2 Days 3 Days	Check One	SIM
Standard (7 Days)  Standard (7 Days)  (IPH analysis 5 Days)	Sample Identification	Sample Identification	Sample Identification  Sample Identification  Sampled Sampled Sampled Number of Containers  NWTPH-HCID  NWTPH-Gx/BTEX  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)	Sample Identification  Sample Identification  Sample Identification  Sample Sampled  Sampled Sampled Sampled  Sampled Sampled Sampled Natrix  NWTPH-HCID  NWTPH-Gx  NWTPH-Gx  NWTPH-Dx  Volatiles 8260C  Halogenated Volatiles 8260C  Semivolatiles 8270D/SIM (with low-level PAHs)				



Page S of S

Chromatograms with final report
Chromatograms with final report  Time  Volatiles 82  Halogenate  Semivolatil (with low-le  PAHs 8270  PCBs 8082  Organophol  Organophol  Total RCR/  Total MTC/  TCLP Meta
TCLP Metal



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 14, 2014

Peter Trabusiner Blue Mountain Environmental, Inc. 1500 Adair Drive Richland, WA 99352

Re: Analytical Data for Project E2014/0303; Horse Heaven Hills

Laboratory Reference No. 1404-075

## Dear Peter:

Enclosed are the analytical results and associated quality control data for samples submitted on April 10, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Project: E2014/0303; Horse Heaven Hills

### **Case Narrative**

Samples were collected on April 9, 2014 and received by the laboratory on April 10, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Project: E2014/0303; Horse Heaven Hills

## **NWTPH-Dx**

Matrix: Soil

Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	4-9-SP1					
Laboratory ID:	04-075-01					
Diesel Range Organics	ND	30	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil	88	60	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	91	50-150				
Client ID:	4-9-SP2					
Laboratory ID:	04-075-02					
Diesel Fuel #2	280	27	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	54	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	100	50-150				
Client ID:	4-9-SP3					
Laboratory ID:	04-075-03					
Diesel Fuel #2	200	28	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	57	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	109	50-150				
Client ID:	4-9-SP4					
Laboratory ID:	04-075-04					
Diesel Fuel #2	84	29	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	58	NWTPH-Dx	4-11-14 4-11-14	4-11-14 4-11-14	
Surrogate:	Percent Recovery	Control Limits	INVVIFII-DX	4-11-14	4-11-14	
o-Terphenyl	91	50-150				
0-Terprienyi	91	30-730				
Client ID:	4-9-SP5					
Laboratory ID:	04-075-05					
Diesel Range Organics	ND	29	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	58	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	95	50-150				
Client ID:	4-9-SP6					
Laboratory ID:	04-075-06					
Diesel Fuel #2	200	28	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	56	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	77	50-150				

Project: E2014/0303; Horse Heaven Hills

## **NWTPH-Dx**

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	4-9-SP7					
Laboratory ID:	04-075-07					
Diesel Fuel #2	85	29	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	57	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	79	50-150				
Client ID:	4-9-SP8					
Laboratory ID:	04-075-08					
Diesel Fuel #2	530	27	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil	160	54	NWTPH-Dx	4-11-14	4-11-14	N1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	104	50-150				

Project: E2014/0303; Horse Heaven Hills

## NWTPH-Dx **QUALITY CONTROL**

Matrix: Soil

Units: mg/Kg (ppm)

Analysta	Dogult	PQL	Mathad	Date	Date	Flores
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0411S1					
Diesel Range Organics	ND	25	NWTPH-Dx	4-11-14	4-11-14	
Lube Oil Range Organics	ND	50	NWTPH-Dx	4-11-14	4-11-14	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	99	50-150				

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	04-07	75-01								
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil	73.8	56.4	NA	NA		NA	NA	27	NA	
Surrogate:										
o-Terphenyl						91 76	50-150			

o- I erphenyl

Project: E2014/0303; Horse Heaven Hills

## % MOISTURE

Date Analyzed: 4-11-14

Client ID	Lab ID	% Moisture
4-9-SP1	04-075-01	16
4-9-SP2	04-075-02	7
4-9-SP3	04-075-03	12
4-9-SP4	04-075-04	13
4-9-SP5	04-075-05	13
4-9-SP6	04-075-06	11
4-9-SP7	04-075-07	13
4-9-SP8	04-075-08	8



### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical \_\_\_\_\_
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

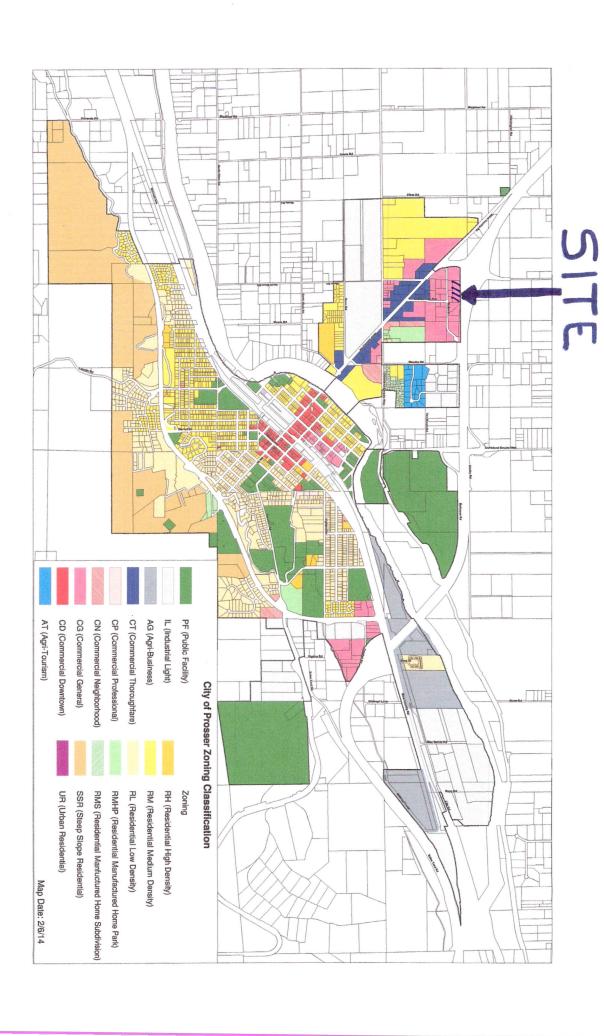
ND - Not Detected at PQL PQL - Practical Quantitation Limit RPD - Relative Percent Difference



Date  Date	Number of Containers  NWTPH-HCID  NWTPH-GX/BTEX
	(With low level 1741s)

# APPENDIX F

CITY OF PROSSER ZONING CLASSIFICATION MAP



# APPENDIX G

# DETERMINATION OF NON-SIGNIFICANCE DOCUMENTATION



# CITY OF PROSSER, WASHINGTON NOTICE OF COMPLETE APPLICATION AND OPTIONAL DETERMINATION OF NONSIGNIFICANCE [DNS]

# Notice of Application and Optional Determination of Non-significance posted April 9, 2014

Type of Application: SEPA Checklist Date of Application: March 28, 2014
Name of Applicant: Christensen 1 LLC

Location of Project: 101 Merlot Drive, Prosser, WA

Description of proposed project: Installing 2 new 20,000 gallon diesel tanks and 1 new 6,000 gallon diesel exhaust fluid (DEF) tank as well as 6 new fuel islands, new plumbing and a new 24' by 110' canopy. Remodeling the inside of the building and will be adding drivit (stucco), CMU Block and ledgestone rock to the outside of the building.

# Other permits:

The following additional permits are associated with this application: Applicant has contacted Department of Ecology and obtained permits and approvals for clean-up plans of existing tanks. The City of Prosser has received a validated 30 day notice.

The following studies have been required pursuant to RCW 36.70B.070: None

## Preliminary determination of consistency:

The City has determined that this application is consistent with the City's Development Regulations and Comprehensive Plan.

Environmental Review: The City is using the optional process contained in Washington Administrative Code (WAC) Section 197-11-355 to make its threshold determination. The City expects to issue a **Determination of Non-significance (DNS)** for this project. This may be your only opportunity to comment on the environmental impacts of the proposed project. A copy of the subsequent Threshold Determination for the project may be obtained upon request. The lead agency, the City of Prosser, will not act on this proposal for 14 days from the published date below.

City of Prosser Contact: Prosser City Clerk.

Comments: The public is invited to comment on the application and environmental review. The public comment period shall be 15-days and will begin April 9, 2014. All public comments received on the Notice of Application must be received by the City of Prosser no later than 5:00 pm, April 25, 2014. Comments may be mailed or personally delivered to the:

# Attn: Prosser City Clerk 601 7<sup>th</sup> Street, Prosser, Washington, 99350

All available information and related documents for the application may be viewed at the City Clerk's Office, located at Prosser City Hall, 601 7th St, Prosser, Washington, between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday, excluding official holidays and lunch hours between 11:00 a.m. and 12:00 p.m., or may be viewed at <a href="https://www.cityofprosser.com">www.cityofprosser.com</a>.

The person(s) receiving this notice may request a copy of the final decision in this matter.

The final decisions may be appealed in accordance with the Land Use Petition Act (RCW 36.70C).

Dated: April 1, 2014

Rachel Shaw CMC

City Clerk

City of Prosser

Published: Prosser Record Bulletin

Publish Date: April 9, 2014



# LAND USE ZONING & PERMIT APPLICATION CITY OF PROSSER, WASHINGTON

APPLICANT'S NAME Christensen 1, LLC		
PROJECT NAME Ameristar Travel Plaza 20, (Horse Heaven Hills Truck Stop)		
PARCEL INFORMATION (Include all parcel(s) information. Attach additional sheets, if necessary.)		
Project Address: 101 Merlot Drive (Leave blank if not assigned)		
Parcel Number (Property Tax Account Number): 135943011661001		
Legal Description: short plat #1661 LOT 1: together with that portion of vacated Gap Road ORD #1557		
PROPERTY OWNER INFORMATION		
Name: Christensen 1, LLC		
Address: PO BOX 98 City: Grandview State: WA Zip: 98930		
Phone: 509-882-2115 Cell Phone: 509-830-3704		
Email: gary.christensen@repowell.net (email will not be used for transmittal of official findings)		
OWNERS AUTHORIZED AGENT: Brandon Christensen		
Address: PO Box 4753 City: West Richland State: WA Zip: 99353		
Phone: 509-882-2115 Cell Phone: 509-830-3706		
Email: brandon.christensen@repowell.net (email will not be used for transmittal of official findings)		
PROJECT INFORMATION  Site Review Conditional Use (requires Conditional Use form LUA-S1)  Variance (requires Variance request form LUA-S2) Similar Use Similar Use Conditional Use (requires Conditional Use form LUA-S1)  Variance (requires Variance request form LUA-S2) Similar Use Conditional Use (requires Conditional Use form LUA-S1)  Variance (requires Conditional Use form LUA-S1)  Similar Use Conditional Use (requires Conditional Use form LUA-S1)  Variance (requires Conditional Use form LUA-S1)  National Use form LUA-S1)  Change of Zone Cha		
a 24x110 canopy, remodeling interior and exterior of the building.  City of Prosser		

601 7<sup>th</sup> Street
Prosser WA 99350
(509) 786-2332

# PLEASE ATTACH THE REQUIRED VICINITY MAP

ESTIMATED PROJECT VALUATION: \$ 180,000 CONTRACTOR INFORMATION Company Name: Powell-Christensen Inc. Email: brandon.christensen@repowell.net Contact Person: Brandon Christensen Contact Phone: 509-830-3706 Address: PO Box 98 City: Grandview State: WA Zip: 98930 Contractor's Registration No.: POWELCI02703 Expiration Date: 11-8-14 I, the undersigned, do hereby certify that, to the best of my knowledge, the information on this application and other submitted information is true and correct. In addition, I understand that acceptance of this application and fees does not constitute submittal of a valid application until so informed by the City. I have attached, enclosed, or submitted the applicable fees for this application. 3-28-14 Applicant Signature Date If the property owner is other than an individual such as a corporation, partnership or agency, please provide proof of signatory authorization. Deposits are required at the time an application is SITE REVIEW Application must include the following. submitted. You will still get a monthly bill for Critical Areas Worksheet 1. actual costs incurred. Your deposit will not be 2. Proof of Legal Lot refunded until the project has closed. Proof of ownership or authority 3. 4. 25 year Storm Water Calculations stamped by an engineer \$500.00 Deposit SITE REVIEW Site Plan Drawing which shows.... ☐ All existing and proposed lot lines. \$500.00 Deposit VARIANCE ☐ The location of all existing structures to remain and the location \$500.00 Deposit SITE REVIEW of all proposed structures. \$500.00 Deposit **SEPA** ☐ The location of all utilities proposed to be used. ☐ The proposed number and location of water meters. \$500.00 Deposit ANNEXATION ☐ The location of all solid waste receptacle areas. \$1000.00 Deposit ZONE CHANGE ☐ The method of handling storm water removal. \$500.00 Deposit CONDITIONAL USE ☐ All easements and right-of-ways. All off-street parking and loading areas. ☐ All driveway locations. ☐ All landscaping, outdoor lighting and fencing.. ☐ A north arrow. ☐ Scale of drawing **CITY USE ONLY** RECIEVED BY \_\_\_\_\_\_DATE APPROVED BY\_\_\_\_\_\_DATE\_\_\_\_ RETURNED BY \_\_\_\_\_DATE

REASON FOR APPLICATION RETURN

Revised 12-29-07

### **ENVIRONMENTAL CHECKLIST**

### Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter <u>43.21C</u> RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

### A. BACKGROUND

- 1. Name of proposed project, if applicable: Ameristar Travel Plaza #20 (formerly Horse Heaven Hills Truck Stop)
- 2. Name of applicant: Christensen 1, LLC
- 3. Address and phone number of applicant and contact person: PO Box 98, Grandview, WA 98930, Brandon Christensen 509-830-3706
- 4. Date checklist prepared: March 28, 2014
- 5. Agency requesting checklist: City of Prosser

- 6. Proposed timing or schedule (including phasing, if applicable): March thru May 2014
- 7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. Yes. The interior and exterior of the building is being remodeled
- 8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. Blue Mountain Environmental Consulting Company, Inc, has prepared a detailed Environmental Study and Underground Storage Tank Cleanup Plan for this facility.
- 9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. All work is approved by City of Prosser and Washington Department of Ecology
- 10. List any government approvals or permits that will be needed for your proposal, if known.

City of Prosser Building Permit

Washington Labor and Industries - Electrical Permit

Washington Department of Ecology approval to install new underground storage tanks

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

We will be installing 2 new 20,000 gallon diesel tanks and 1 new 6,000 gallon diesel exhaust fluid (DEF) tank as well as 6 new fuel islands, new plumbing and a new 24' by 110' canopy. We are also remodeling the inside of the building and will be adding drivit (stucco), CMU Block and ledgestone rock to the outside of the building.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Project is located at 101 Merlot Drive, Prosser, WA 99350 which is off Interstate 82 and the Gap Road Exit. Parcel # 135943011661001, Legal Description: Short plat #1661 LOT 1: together with that portion of vacated Gap Road ORD #1557

TO BE COMPLETED BY APPLICANT

**EVALUATION FOR** 

AGENCY USE

ONLY

- B. ENVIRONMENTAL ELEMENTS
- 1. Earth
- a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other . .

	FLAT
b. What is the steepest slope on the site (approximate percent slope)?	
	1%
c. What general types of soils are found on the site (for example, clay, sand,	
you know the classification of agricultural soils, specify them and note any p	Ashue Silt Loam with moderately coarse textures and gravelly sandy loam as well as a layer of light yellowish brown and pale brown very gravelly sand.
d. Are there surface indications or history of unstable soils in the immediate describe.	vicinity? If so,
	NO
e. Describe the purpose, type, and approximate quantities of any filling or grandicate source of fill.	ading proposed.
f. Could erosion occur as a result of clearing, construction, or use? If so, gen	Due to recent excavation we will be backfilling with pit run from a gravel pit located 2 miles from the site. This backfill of pit run will be within 24 inches of finish grade erally describe. NO
g. About what percent of the site will be covered with impervious surfaces a (for example, asphalt or buildings)?	fter project construction

	70%, the same percentage that has been covered since 1990.
h. Proposed measures to reduce or control erosion, or other impacts to the	arth, <b>if</b> any:
	NONE NEEDED
2. Air a. What types of emissions to the air would result from the proposal (i.e., du industrial wood smoke) during construction and when the project is completed describe and give approximate quantities if known.	
	Only emissions will be from the construction equipment needed to erect the canopy
b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.	
	NO
c. Proposed measures to reduce or control emissions or other impacts to air,	if any:
	N/A
3. Water 1) Is there any surface water body on or in the immediate vicinity of the site and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe typ appropriate, state what stream or river it flows into.	
	NO
2) Will the project require any work over, in, or adjacent to (within 200 feet)	the described waters?

If yes, please describe and attach available plans.
NO
3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill
material.
N/A
4) Will the proposal require surface water withdrawals or diversions? Give general description,
purpose, and approximate quantities if known.
NO
5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
NO
6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the
type of waste and anticipated volume of discharge.
NO
b. Ground:
1) Will ground water be withdrawn, or will water be discharged to ground water? Give general
description, purpose, and approximate quantities if known.

		YES, A FIVE FOO! WELL WILL BE DUG, A PUMP WILL REMOVE WATER FROM THIS SITE DIRECTLY INTO THE CITY SEWER SYSTEM	
sources, agricultu of house	2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.		
		NONE	
c. Water runoff (including stormwater):  1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.			
		STORM WATER WILL RUNOFF AS IT HAS SINCE 1990. THERE ARE STORMDRAINS LOCATED THROUGHOUT THE PROPERTY THAT ARE CONNECTED TO THE CITY STORM WATER SYSTEM.	
2) Could	waste materials enter ground or surface waters? If so, generally de	scribe.	
		NO	
4. Plant	sed measures to reduce or control surface, ground, and runoff wates - NONE EFFECTED	er impacts, if any:	
a. Check	or circle types of vegetation found on the site:  Deciduous tree: Alder, maple, aspen, other	NONE	
	Evergreen tree: Fir, cedar, pine, other	NONE	
	Shrubs	NONE	
	Grass	NONE	
	Pasture	NONE	
_	Crop or grain	NONE	
_	Wet soil plants: Cattail, buttercup, bullrush, skunk cabbage, other	NONE	

— Water plants: Water lily, eelgrass, milfoil, other	NONE
Other types of vegetation	NONE
b. What kind and amount of vegetation will be removed or altered?	
	NO VEGETATION IS PRESENT
c. List threatened or endangered species known to be on or near the site.	
	NONE
d. Proposed landscaping, use of native plants, or other measures to preserve on the site, if any:	e or enhance vegetation
	NONE
5. <b>Animals</b> a. Circle any birds and animals which have been observed on or near the sit or near the site:	te or are known to be on
Birds: Hawk, heron, eagle, songbirds, other:	NONE
Mammals: Deer, bear, elk, beaver, other:	NONE
Fish: Bass, salmon, trout, herring, shellfish, other:	NONE
b. List any threatened or endangered species known to be on or near the site	Э.
	NONE
c. Is the site part of a migration route? If so, explain.	
	NO
d. Proposed measures to preserve or enhance wildlife, if any:	
	NONE NEEDED
6. Energy and natural resources	14
a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be completed project's energy needs? Describe whether it will be used for heat	

	POWER THE LIGHTS, SIGNAGE AND THE PUMPS
b. Would your project affect the potential use of solar energy by adjacent projects.	operties? If so,
generally describe.	
	NO
c. What kinds of energy conservation features are included in the plans of the proposed measures to reduce or control energy impacts, if any:	nis proposal? List other
	LED LIGHTS WILL
	BE USED TO USE UP TO 90% LESS
	ENERGY THAN
	BEFORE
7. Environmental health	
a. Are there any environmental health hazards, including exposure to toxic	chemicals, risk of fire
and explosion, spill, or hazardous waste, that could occur as a result of this r	
	A DIESEL FUEL SPILL IS POSSIBLE. WE
	ARE INSTALLING
	CONTAINMENT SUMPS TO MINIMIZE
	ENVIRONMENTAL
1) Describe an exist among an expensive sample of the topical the magnitude	EXPOSURE
Describe special emergency services that might be required.	NONE
	NONE
2) Proposed measures to reduce or control environmental health hazards, if	any:
	CONTAINMENT
	SUMPS WILL BE INSTALLED UNDER
	THE PUMPS, AT ANY
	VALVING OR MANIFOLDING POINT
	AND AT THE
	TURBINE ABOVE THE TANKS.
b. Noise	
1) What types of noise exist in the area which may affect your project (for ex	xample: traffic,
equipment, operation, other)?	

	NONE
2) What types and levels of noise would be created by or associated with the or a long-term basis (for example: traffic, construction, operation, other)? In would come from the site.	
would come nom the site.	NONE
2) Decreased accounts to understanding in immediate if any u	
<ul><li>3) Proposed measures to reduce or control noise impacts, if any:</li><li>8. Land and shoreline use</li></ul>	
a. What is the current use of the site and adjacent properties?	N/A
b. Has the site been used for agriculture? If so, describe.	
	NOT FOR OVER 25 YEARS
c. Describe any structures on the site	
	2 FUEL CANOPIES AND A CONVENIENCE STORE BUILDING AS WELL AS TEMPORARY STORAGE BUILDINGS
d. Will any structures be demolished? If so, what?	
	THE OLD DIESEL CANOPY WAS ALREADY DEMOLISHED
e. What is the current zoning classification of the site?	
	COMMERCIAL
c. Describe any structures on the site.  d. Will any structures be demolished? If so, what?	2 FUEL CANOPIES AND A CONVENIENCE STORE BUILDING AS WELL AS TEMPORARY STORAGE BUILDINGS  THE OLD DIESEL CANOPY WAS ALREADY DEMOLISHED

A CONTRACTOR AND A CONT	**************************************
	NOT KNOWN
g. If applicable, what is the current shoreline master program designation of	f the site?
	NOT KNOWN
1 TT	0.16:6.
h. Has any part of the site been classified as an "environmentally sensitive"	
	NO
i. Approximately how many people would reside or work in the completed	project?
	12
j. Approximately how many people would the completed project?	
1. Approximatory now many people would the completed project:	140
	12
1. D	
k. Proposed measures to avoid or reduce displacement impacts, if any:	
	NONE NECESSARY.
	PROJECT WILL
	INCREASE
	POTENTIAL JOBS
l. Proposed measures to ensure the proposal is compatible with existing and	projected land uses and
plans, if any:	
	LAND USE IS
	STAYING THE
	SAME

9. Housing	
a. Approximately how many units would be provided, if any? Indicate who low-income housing.	ether high, middle, or
low-modific nousing.	NONE
	NONE
b. Approximately how many units, if any, would be eliminated? Indicate v	whether high, middle, or
low-income housing.	
	NONE
c. Proposed measures to reduce or control housing impacts, if any:	NAME IN TRACTER
	NONE IMPACTED
10. Aesthetics	
<ul><li>10. Aesthetics</li><li>a. What is the tallest height of any proposed structure(s), not including ante</li></ul>	nnas: what is the
principal exterior building material(s) proposed?	
	20 FEET, ACM
	(ALUMINIM
	COMPOSITE METAL)
	AND STEEL, BUILDING WILL HAVE
	CMU BLOCK, DRIVIT
	AND ROCK
b. What views in the immediate vicinity would be altered or obstructed?	
	NO ALTERATIONS
c. Proposed measures to reduce or control aesthetic impacts, if any:	
c. Froposed measures to reduce or control aesthetic impacts, if any.	

	AESTHETICS WILL BE POSITIVELY IMPACTED
11. <b>Light and glare</b> a. What type of light or glare will the proposal produce? What time of day y	yould it mainly occur?
a. What type of right of glare will the proposal produce: What time of day	LIGHT GLARE ONLY AT NIGHT FROM FUEL CANOPIES
b. Could light or glare from the finished project be a safety hazard or interfe	ere with views?
	NO
c. What existing off-site sources of light or glare may affect your proposal?	
	NONE
d. Proposed measures to reduce or control light and glare impacts, if any:	
12. Recreation	NONE
a. What designated and informal recreational opportunities are in the immed	
	WINE TASTING RV PARK
b. Would the proposed project displace any existing recreational uses? If so	, describe.
c. Proposed measures to reduce or control impacts on recreation, including	NO recreation opportunities

to be provided by the project or applicant, if any:	
	NONE
12 Historia and antiqued accounting	
13. Historic and cultural preservation  a. Are there any places or objects listed on, or proposed for, national, state,	or local preservation
registers known to be on or next to the site? If so, generally describe.	of local preservation
registers known to be on or now to are site. It so, generally describes	NO
b. Generally describe any landmarks or evidence of historic, archaeological	, scientific, or cultural
importance known to be on or next to the site.	N/A
	N/A
c. Proposed measures to reduce or control impacts, if any:	
	NONE
14. Transportation	ad account a the aviating
a. Identify public streets and highways serving the site, and describe propositive street system. Show on site plans, if any.	ed access to the existing
stroot system. Show on site plans, it airy.	INTERSTATE 82
	MERLOT DRIVE
	GAP ROAD
	ACCESS WILL NOT
	CHANGE
b. Is site currently served by public transit? If not, what is the approximate	listance to the nearest
transit stop?	arguation to the hearest
	NOT KNOWN
c. How many parking spaces would the completed project have? How many	would the project

eliminate?	14 PARKING SPACES ADJASCENT TO CONVENIENCE STORE WILL BE MAINTAINED PARKING SPACES WILL NOT BE ELIMINATED	
Will the proposal require any new roads or streets, or improvements to existing roads or streets, or including driveways? If so, generally describe (indicate whether public or private).		
	NO	
e. Will the project use (or occur in the immediate vicinity of) water, rail, or	air transportation? If so,	
generally describe.	NO	
f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.		
	778. PEAK TIMES WILL BE MORNING 6A-9A AND EVENINGS 330P TO 630P.	
g. Proposed measures to reduce or control transportation impacts, if any:		
	NONE	
15. <b>Public services</b> a. Would the project result in an increased need for public services (for example: Fire protection, police protection, health care, schools, other)? If so, generally describe.		
F,,,,,	NO	

b. Proposed measures to reduce or control direct impacts on public service		
	NONE	
16. Utilities		
a. Circle utilities currently available at the site: Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.		
	ELECTRICITY, WATER, REFUSE SERVICE, TELEPHONE, SANITARY SEWER	
b. Describe the utilities that are proposed for the project, the utility providing the service, and the		
general construction activities on the site or in the immediate vicinity which		
	UTILITIES ARE NOT CHANGING	
C. SIGNATURE The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.  Signature:  Date Submitted:  SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (do not use this sheet for project actions)  Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.  When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.		
1.  How would the proposal be likely to increase discharge to water; emissions to air; production,		
storage, or release of toxic or hazardous substances; or production of noise?		
	NONE	

Proposed measures to avoid or reduce such increases are:		
·	N/A	
2.		
How would the proposal be likely to affect plants, animals, fish, or marine		
	NONE	
Proposed measures to protect or conserve plants, animals, fish, or marine l		
	N/A	
3.		
How would the proposal be likely to deplete energy or natural resources?		
	THIS IS A GAS	
	STATION THAT WILL	
	SELL GASOLINE AND	
	DIESEL FUEL AS IT HAS FOR 25 YEARS	
	HAS FOR 25 TEARS	
Proposed measures to protect or conserve energy and natural resources are		
	LED LIGHTS WILL BE	
	USED INSIDE AND	
	OUTSIDE TO REDUCE ENERGY	
	CONSUMPTION	
4.	a awaaa aw awaaa	
How would the proposal be likely to use or affect environmentally sensitive areas or areas		
designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands,		
floodplains, or prime farmlands?		
noodpland, or prime tammand.	NO EFFECT	
	110 211 201	
Proposed measures to protect such resources or to avoid or reduce impacts	070	
Proposed measures to protect such resources or to avoid or reduce impacts		
	N/A	

5.  How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?		
Proposed measures to avoid or reduce shoreline and land use impacts are:	NONE N/A	
6.  How would the proposal be likely to increase demands on transportation or utilities?	public services and	
Proposed measures to reduce or respond to such demand(s) are:	N/A	
7. Identify, if possible, whether the proposal may conflict with local, state, or requirements for the protection of the environment.	federal laws or  IT WILL NOT  CONFLICT	

CRO-Benton



ECY 020-95 (Rev. Feb. 2012)

### UNDERGROUND STORAGE TANK (UST) **30-DAY NOTICE**

(See back of form for instructions)

· F	OR OFFICE USE ONLY
Site ID#	100694

MAR 192014

Please ✓ the appropriate box: ☐ Intent to Install to Cl	Department of Ecology, HQ		
HQ (360)407-7170 / Central (509)575-2490 / Bastern (509)329	4.9		
SITEINFORMATION	##@WNER!INFORMATION Withinform will be returned to this address)		
91 1107733	Burell Christensen Inc		
Tag or UBI number	LIST Owner/Operator		
Horse Heaven Hills Irwk Stop	Mailing Address/PO Box		
Site Name 101 Merlot Drive	G=201.000 1		
Site Physical Address 99350	City Long Stenen /509 830 3706		
City Zip Code	Owner/Operator Phone Number		
509 786 1440 Site Phone Number	Owner/Operator Email Address		
FANK-INFORMATION Substance Date Projection	ect is		
Tank ID Stored Capacity Expected to	Begin Comments:		
5 (Five) Diese 2900 4-1-14	install due to cista a amanduster		
MAR 1 9 2014	ink request expedited approval to install due to rising groundwater during irrigation season.		
Department of Feelers			
Department of Ecology  Department of Ecology  Department of Ecology			
	ERVICES MUST BE ICC CERTIFIED OR HAVE		
Please note: Individuals performing UST services MUST be ICC certified or have passed another qualifying exam approved by the Department of Ecology.			
Installer Decommissioner Site Assessor	Jake Jobnsch		
Service Provider Company Name	Contact Person 360-473-2245		
Certified Service Provider Name	Contact Phone Number		
144704	jake Opnelong. Com		
ICC Certification #	Confact Email Address		
2) SERVICE BROVIDERINEORMATION (REQUIRED IF USING MORETUA	MioNejenoviper): enekthe appropriate boxes		
Installer Decommissioner Site Assessor	Jake Jobnsch		
Service Provider Company Name	Contact Person 423 2245		
Certified Service Provider Name	Contact Phone Number		
/1003	ole 6 pre corp. Can		
ICC Certification #	Contact Email-Address		

## DELINEATION AND REMEDIATION OF SUBSURFACE PETROLEUM HYDROCARBON CONTAMINATION

PART: 1 GENERAL

#### 1.1 SUMMARY

A. Blue Mountain Environmental and Consulting Co., Inc. (BMEC) will perform all work required to complete the delineation and the site remediation/cleanup after a confirmed diesel range petroleum hydrocarbon release at the dispenser islands of the Horse Heaven Hills Travel Plaza (Truck Stop), located at 101 Merlot Drive, in Prosser, Washington.

#### 1.2 SCOPE OF WORK

- A. Site remediation: BMEC will provide all labor and materials necessary to complete the site cleanup. All work is to be performed in a safe and environmentally acceptable manner and in strict accordance with all Federal, State, and local regulations. Work to be performed shall include, but is not limited to:
  - 1. After location all utilities on and adjoining to the site, we will initiate and supervise the removal and on-site storage of the protective canopy, which is necessary for safety reasons and to minimize liability. The canopy will be re-installed after the cleanup work has been finished (Changes or updates to the existing canopy are not included in BMEC's scope of work).
  - 2. The site cleanup will be done in two phases to minimize the revenue loss from retail fuel sales. After shutting down half of the existing fuel islands the dispenser pumps will be removed by others. After removing the concrete island and the concrete slab we will excavate obviously diesel impacted soils to the vertical and horizontal extent where visually diesel impacted soil is confirmed. To avoid over-excavation of clean material, constant field measurements are taken with a hand-held electronic instrument. The second half of the dispenser islands will be done in the same way.
  - 3. The excavated contaminated soil will be either stored properly on site before shipped to the certified disposal facility in Yakima, or loaded directly on trucks for transport to the facility (Anderson Rock PCS Treatment Facility).

- 4. Replacement of the fuel system with new dispensers, spill containments, and piping and all other required appurtenances will be done by others and is not part of BMECs scope of work.
- 5. Backfill of the excavation will be done according to code regulations up to 24 inches below grade to be finished by others after all new pipe installations and site upgrades are done.
- 6. All work documentation during the site cleanup will be submitted with the final cleanup report to the client and his attorney, to Colony Insurance, and the Washington Department of Ecology (DOE), in Yakima, Washington for final approval.
- B. This specifications do not include the restoration of landscaping, the repair or replacement of any unforeseen or unknown underground obstructions, Shoring, bracing and construction of barriers *if necessary* to protect public and adjacent facilities, utilities, or structures not designated for removal.

#### 1.3 RELATED WORK

All inspections, tests and reports contained herein and required by Federal, State, and local regulations shall be accomplished by BMEC.

#### 1.4 INTENT

The methods and procedures described are suggested as a means to accomplish the work. Alternative methods may be submitted to BMEC for review prior to implementation. The methods will be evaluated with regard to established codes, regulations and procedures governing the work.

#### 1.5 SEQUENCING AND SCHEDULING

A. All work shall be accomplished during normal working hours, 7:00 AM to 5.00 PM, Monday through Friday or otherwise requested by the client.

#### 1.6 REFERENCES

- A. In addition to standards described elsewhere in the specification the work will be performed in accordance with applicable Federal, State, and local regulations and the current edition of applicable standards and publications of the following organizations:
  - 1. National Fire Protection Association, National Fire Code
  - 2. Uniform Fire Code UFC Section 7902.1.7/Article 61
  - 3. American Petroleum Institute API 1604
  - 4. State Department of Ecology (DOE)
    Model Toxics Control Act (MTCA) Cleanup Regulations
  - 5. The Environmental Protection Agency (EPA)
  - 6. Applicable City, County, and/or Fire Department Standards

#### 1.7 ACCESS/INSPECTIONS

The client shall have free access to inspect the work at all times. The work shall not be covered or backfilled without the consent of the BMEC engineer or the approval of appropriate agencies.

#### 1.8 PREPARATION

A. BMECs contractor will provide barriers and fire protection to complete and protect the work. Barriers shall be designed and maintained for both pedestrian and vehicular traffic. The excavated site shall be secured during non-work hours to prevent falls into the excavation.

#### 1.9 DOCUMENTATION

- A. BMEC, Inc. will provide three (3) copies of all permits, approvals, sample documentation, sample transmittals, sample analysis and test results.
- B. The contractor will provide written documentation and an affidavit documentation for the appropriate disposal of contaminated soil.

#### PART 2: MATERIALS

#### 2.1 MATERIALS

Materials shall be in accordance with requirements established by ASTM.

#### **PART 3: EXECUTION**

- A. BMEC will obtain the necessary permits and approvals prior to commencement of the work, e.g., notify the "Department" (local Agency regulating Building Permits); and in an emergency, notify the "Department", local government and fire department.
- B. BMEC will locate and confirm the location of utilities in the area of the work.
- C. BMEC will not begin field work until authorized by the client and Colony Insurance.

#### 3.2 PROTECTION

- A. Temporary barriers and traffic control shall be established to protect workers and the public from excavations and hazards resulting from the performance of the work.
- B. Utility lines servicing the fuel islands shall be removed if possible; otherwise, these lines shall be disconnected, terminated and/or capped.

#### 3.4 PIPING

A. Product lines and other appurtenances shall be removed by others once they are unearthed.

#### 3.5 EQUIPMENT

A. Related fueling equipment designated for removal shall be decontaminated and disposed of as scrap for metals recycling by others.

#### 3.6 EXCAVATION

- A. BMEC will remove and dispose of properly all concrete and asphalt and excavate all clean overburden and store it on site for re-use. The work shall be performed in accordance with this specification and special standards referenced in this Section.
- B. Contaminated soils (soils which contain concentration of contaminants in excess of DOE-MTCA cleanup standards) and materials encountered during the tank removal process shall be segregated for treatment disposal in accordance with this specification and WA-State requirements.

  See Section 1.2 B for further clarification.

#### 3.7 BACKFILL

- A. Backfill will be performed in accordance with this specification and the special standards referenced in the Section and shall include pit-run backfill topped with minus 3/4-inch crushed rock, placed in maximum 8" lifts, and compaction to 95% ASTM D1557 to about 24 inches below finished grade.
- B. Backfill preparations should not be commenced until sample analysis or site screening results are available to confirm a clean site, or levels of remaining in ground contamination are below regulatory limits and the results have been reviewed with the appropriate agencies.
- C. Consent of the Engineer (BMEC) and governing agencies will be obtained prior to backfill of the excavation unless safety considerations dictate otherwise. A verbal OK from the Engineer via telephone to backfill is acceptable until written authorization is available.

#### 3.8 SALE OR REUSE OF MATERIALS

- A. Sale or reuse of materials salvaged from the site as part of this work is expressly prohibited. This includes excavated soils, piping and appurtenances.
  - Contaminated soils must be transported to a licensed treatment/disposal facility for disposal.
- B. All disposal operations shall be documented with regard to the quantity and description of the materials disposed, the date and location of the licensed facility providing the service, copies of receipts and transaction records and an affidavit from the contractor confirming the information.

#### 3.9 CLEANUP

The BMEC contractor shall be responsible for the cleanup and removal of all debris resulting from work under this project, with the exception of materials not specifically associated with the site cleanup scope of work.

#### 3.12 SAMPLING AND TESTING

- A. Soil and (groundwater if required) testing shall be conducted in accordance with Washington State Regulations.
- B. Site Assessment. After site cleanup, a site assessment will be done by our Washington State registered Geologist.

During the cleanup work the excavation will be observed and field tested for contamination. If no obvious remaining contamination is evident, soil samples shall be collected as follows:

Discrete grab soil samples will be taken from the excavation pit and from the sidewalls of the excavation (if composite samples are taken, sample two (2) adjacent sides of the excavation at the same depth per composite sample). The amount of samples will be based on the size of the excavation.

In addition, a minimum number of discrete samples shall be collected from stockpiled excavated obviously clean overburden soil according to the following table:

Cubic Yards of Soil	Minimum Number of Samples
0 - 100	3
101 - 500	5
501 - 1000	7
1001 - 2000	10
> 2000	10 + 1 for each additional 500 cubic yards
	of soil

#### C. Site Screening (during excavation)

All samples are to be placed in quart jars\* (half full) and covered with aluminum foil secured in place with a screw top. The samples will be allowed to equilibrate for fifteen minutes after which the probe of a direct reading instrument (PID) will be placed through the aluminum foil and the reading noted. If the reading is in excess of 50 ppm on the meter, excavation will continue until the soil indicates less than 50 ppm on the meter.

<sup>\*</sup>This procedure can be substituted with Zip-Lock bags

#### D. Soil Samples

When the reading indicates 50 ppm or less, a new sample will be collected near the last sample location and secured in an appropriate container (see 3 below). The sample shall be taken in a manner to provide a representative sample of the soil in the excavation and to prevent contamination of the sample. Identical duplicate samples shall be obtained for additional analysis if questions arise about the original analysis. The laboratory will retain the samples (refrigerated) for a period of 30 days.

#### E. Water Samples

If water is encountered and the direction of groundwater flow is known, a minimum of three (3) samples must be collected, one (1) up-gradient and two (2) down-gradient of the source. When the direction of the groundwater flow is unknown, at least four (4) groundwater samples must be collected, with one (1) groundwater sample collected midway along each of the four walls of the excavation. Samples shall be collected according to laboratory instruction in containers provided by the laboratory.

- 1. Samples shall be handled and transported in accordance with DOE sampling requirements which include Chain-of-Custody sample transmittal documentation, refrigerated storage of samples (4 grade C), and appropriate decontamination procedures.
- 2. Samples shall be analyzed in accordance with current procedures and protocols established by the Environmental Protection Agency. The laboratory shall be certified to perform the analysis and shall be preapproved by the Consultant.
- 3. Quality assurance procedures shall be observed to maintain sample integrity. Sample containers shall be sized and pre-cleaned by the laboratory. QA/QC procedures shall include the use of laboratory prepared travel blanks and analysis duplicates if needed.
- 4. Sample results shall be reported verbally to the client within 7 business days of the sampling event. The final report shall include a sample location plan, copies of the Chain-of-Custody documentation, laboratory analysis reports including copies of QA/QC test results and supporting documentation.

- F. Analysis of site specific soil and (if applicable groundwater) shall be done according to the following State of Washington DOE, and EPA prescribed analytical methods:
  - 1. Soils shall be analyzed for Diesel Range Organics NWTPH-Dx
  - 2. Benzene, Tolulene, Ethyl Benzene, and Xylenes (BTEX)
  - 3. Poly-Aromatic Hydrocarbons (PAHs) and Naphtalene
  - 4. Total Lead (for disposal profile)
  - 5. TCLP-Lead (for disposal screening)
- G. If ground water is detected in the excavations and contamination is confirmed, a certain number of groundwater monitoring wells would be required to be installed at the site by DOE.

However, at this point we are not sure if groundwater will be found or if it is impacted with petroleum hydrocarbons, and therefore we will not make any assumptions at this point of time.



# City of Prosser Washington Determination of Non-significance (DNS).

**Description of proposal:** Install two new 20,000 gallon fuel tanks and one new 6,000 gallon diesel exhaust fluid tank, 6 new fuel islands and canopy, and remodel of existing building.

Proponent: Christensen LLC

Location of proposal: 101 Merlot Drive, Prosser, WA

Lead Agency: City of Prosser

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

available to the public on request.	
There is no comment period for this DNS.	
This DNS is issued after using the optional DNS proces further comment period on the DNS.	ess in WAC <u>197-11-355</u> . There is no
This DNS is issued under WAC <u>197-11-340(2)</u> ; the lefor 14 days from the date below. Comments must be subm	ad agency will not act on this proposal itted by
Responsible Official: Steve Zetz Position/Title: City Planner Address: 601 7 <sup>th</sup> Street, Prosser, WA Date: April 29, 2014	
X A CO	
You may appeal this determination to comments  Prosser City Hall, 601 7 <sup>th</sup> Street, Prosser, WA. 993	50 (509) 786-2332 no later than
You should be prepared to make specific Prosser City Hall to read or ask questions about the procedure.	
There is no agency appeal	
NOTE: Applicant must comply with all Washington St	eata Danautment of Facilians

NOTE: Applicant must comply with all Washington State Department of Ecology requirements for soils clean-up, and tank instillation.