

January 4, 2013

Mr. James Melby
Kemper Development Company
575 Bellevue Square
Bellevue, WA 98004

**Re: Focused Phase II Environmental Soil and Groundwater
Sampling and Analysis Results
Bartell Drugs Property – 11919 NE 8th Street
Bellevue, Washington
17920-00**

Dear Jim:

This letter report presents the results of our focused Phase II Environmental Soil and Groundwater Sampling and Analysis at the Bartell Drugs (Bartells) property located at 11919 NE 8th Street, Bellevue, Washington. The purpose of the focused Phase II is to assess the soil and groundwater along the south half of the Bartells building and along the west boundary of the property, closest to where a Chevron service station/car wash (formerly Tiki Car Wash) is located. Petroleum-impacted soil on the former Tiki Car Wash site was removed from the subject property along this western boundary approximately 18 years ago.

Our report is organized as follows:

- Summary of Findings;
- Scope of Work;
- Site Background;
- Subsurface Soil and Groundwater Assessment; and
- Limitations.

Nine push probe borings were advanced on the subject property and soil and grab groundwater samples were collected and analyzed. Soil and groundwater analytical results are summarized in Tables 1 and 2, respectively. A composite soil sample of the soil cuttings was collected and analyzed for TCLP metals. The results are shown in Table 3. Figure 1 is a Vicinity Map showing the location of the property. A Site and Exploration Plan showing site features and exploration locations is presented on Figure 2. Figure 3 shows the groundwater concentrations of gasoline-range petroleum hydrocarbons (TPH-G) and benzene, toluene, ethylbenzene, and xylenes (BTEX).



Appendix A presents the field exploration methods and exploration logs. A chemical data quality review and laboratory reports are presented in Appendix B.

SUMMARY OF FINDINGS

The soil and groundwater analytical test results and our field observations did not indicate any soil impacts exceeding the MTCA Method A cleanup levels and groundwater exceeding MTCA Method A cleanup levels in only two of the six grab groundwater samples analyzed.

No soil or groundwater impacts were detected in the sample locations closest to the Bartells building. Gasoline-range petroleum hydrocarbons and benzene were detected in two of the six grab groundwater samples (HC-7 and HC-9). TPH-G and benzene were detected in grab groundwater sample HC-7 at concentrations of 1.8 mg/L and 650 ug/L, respectively, which exceeds the MTCA Method A groundwater cleanup levels of 0.8 mg/L and 5 mg/L, respectively. TPH-G and benzene were detected in grab groundwater sample HC-9 at 3.4 mg/L and 900 ug/L, respectively, also above the MTCA Method A groundwater cleanup levels. These two sample locations are along the western boundary next to the former Tiki Car wash property.

No significant petroleum-related impacts were detected in any of the 17 soil samples analyzed. Only two of the seventeen soil samples had any detectable petroleum hydrocarbon-related constituents above the laboratory detection limits, but the concentrations were far below the applicable MTCA Method A soil cleanup levels. In soil sample HC-6/S2, collected between 4 and 8 feet deep in the central area of the asphalt parking lot, gasoline-range TPH (TPH-G) was detected at 5.1 mg/kg, well below the MTCA Method A soil cleanup level of 100 mg/kg. No benzene or toluene concentrations exceeded the laboratory detection limit. Ethylbenzene and xylenes were detected at low concentrations of 68 ug/kg and 220 ug/kg, respectively, far below MTCA Method A soil cleanup levels of 6000 ug/kg and 9000 ug/kg, respectively. No TPH-G was detected in soil sample HC-9/S3, collected between 10 and 13 feet deep along the west boundary and southwest area of the property. Toluene and xylenes were detected at 59 ug/kg and 77 ug/kg, respectively, in HC-9/S3, which is also below the MTCA Method A soil cleanup levels. No benzene or ethylbenzene were detected in this soil sample.

Total and dissolved metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were analyzed on select soil and groundwater samples. All of the metal results were either below the laboratory detection limits or at low concentrations below MTCA cleanup levels.

According to the groundwater results, there appears to be petroleum-impacted groundwater from the former Tiki Car Wash in the area of the subject property. However, the groundwater plume



appears to be limited to this area and is not present on the northern half of the property where the Bartells building is located.

SCOPE OF WORK

The scope of work for this focused subsurface soil and groundwater assessment was completed in general accordance with our Proposal for Focused Phase II Environmental Services, dated November 27, 2012. The environmental activities included:

- Advancing nine push probes on the south half of the property and along the west boundary adjacent to the former Tiki Car Wash (now a Chevron service station/car wash);
- Field screening soil with PID and sheen tests;
- Collecting and chemically analyzing 17 select push-probe soil samples and six grab groundwater samples; and
- Preparing this letter report presenting the findings of our work.

SITE BACKGROUND

Property Description

The approximately 1-acre property is located at 11919 NE 8th Street in Bellevue, Washington (Figure 1). The property is developed with a retail building (Bartell Drugs) that was constructed in 1994. The property is bounded to the north by NE 8th Street, 120th Avenue NE to the east, an asphalt parking lot to the south, and a car wash to the west. Land use in the area consists primarily of commercial and retail property.

Geology/Hydrogeology Summary

The push probe borings indicate that the soil units at the subject property consist primarily of silty fine to medium sand with varying amounts of gravel. Layers of gravelly sand and sand are also present. Several silt layers, 1 to 4 feet thick, were present in borings HC-2, HC-4 and HC-6.

Groundwater was encountered in all nine probe locations at depths ranging from 4 to 9 feet below ground surface. Groundwater is expected to flow in a south to southwesterly direction.



SUBSURFACE SOIL AND GROUNDWATER ASSESSMENT

Field Investigation Activities and Observations

On November 30, 2012, nine explorations (HC-1 through HC-9) were advanced from 10 to 16 feet below ground surface with a truck-mounted push probe rig at the subject property (Figure 2). Probes HC-1, HC-2, HC-7, and HC-9 are near the western boundary of the subject property. HC-1, HC-3, and HC-4 are near the south side of the building. HC-4, HC-5, and HC-8 are near the eastern boundary of the subject property, and HC-6 is in the central portion of the asphalt parking lot.

Soil samples from the explorations were field screened and included PID tests and visual observations. Field screening results are presented on the exploration logs in Appendix A. Only two explorations, HC-2 and HC-7, indicated slight petroleum odors in the soil.

Soil Chemical Analysis and Results

Seventeen soil samples were selected for chemical analysis based on either field screening results or general representative locations across the site. The analytical results are summarized in Table 1. Soil samples were analyzed for one or more of the following analytes:

- Gasoline-range petroleum hydrocarbons (TPH-G) and Benzene, toluene, ethylbenzene, and xylenes (BTEX);
- Diesel-, and heavy-oil range petroleum hydrocarbons (TPH-Dx);
- Volatile organic compounds (VOCs);
- Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc); and
- Percent moisture.

For screening purposes, the sample results were compared to MTCA Method A soil cleanup levels for unrestricted land use. Based on the data, we observed the following:

- All seventeen soil samples were analyzed for TPH-G and BTEX and were detected in samples HC-6-S2 and HC-9-S3 at depths of 4 to 8 feet and 10 to 13 feet, respectively. TPH-G was detected at a concentration of 5.1 mg/kg in HC-6-S2 and was not detected in HC-9-S3. The TPH-G concentration of 5.1 mg/kg is below the MTCA Method A soil cleanup level of 100 mg/kg (without benzene). Benzene was not detected in either sample. Toluene was not detected in HC-6-S2 and was detected at a low concentration of 59 ug/kg in HC-9-S3. Ethylbenzene was not detected in HC-9-S3 and was detected at a low concentration of 68 ug/kg in HC-6-S2. Xylenes were detected at low concentrations of 220 and 77 ug/kg in HC-6-



S2 and HC-9-S3, respectively. These concentrations were all below MTCA Method A soil cleanup levels.

- All seventeen samples were analyzed for TPH-Dx. Heavy oil-range and diesel-range petroleum hydrocarbons were not detected in any samples.
- Six soil samples (HC-1-S3, HC-2-S3, HC-3-S2, HC-4-S2, HC-7-S2, and HC-9-S3) were analyzed for VOCs (EPA Method 8260b). No VOCs were detected above the laboratory detection limits in any of the soil samples except for HC-7-S2. Very low concentrations of toluene and xylenes were detected in soil sample HC-7-S2. These concentrations were far below the MTCA Method A soil cleanup levels. No chlorinated solvents were detected in any of the soil samples analyzed for VOCs.
- Metals were analyzed for all seventeen soil samples and they were either not detected or were detected at very low concentrations below the MTCA cleanup levels for all analytes.

Groundwater Chemical Analysis and Results

Grab groundwater samples were collected from six (HC-1, HC-2, HC-3, HC-4, HC-7, and HC-9) of the nine push probe locations for chemical analysis. The analytical results are summarized in Table 2. Groundwater samples were analyzed for one or more of the following analytes:

- TPH-G;
- TPH-Dx;
- VOCs - specifically BTEX;
- Dissolved metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc); and
- Total Suspended Solids (TSS).

For screening purposes, the sample results are compared to MTCA Method A groundwater cleanup levels. Based on the data, we observed the following:

- TPH-G was detected in three of the six groundwater samples at concentrations ranging from 0.15 to 3.4 mg/L. Two samples (HC-7 and HC-9) had concentrations of 1.8 and 3.4 mg/L, respectively, which are above the MTCA Method A groundwater cleanup level of 0.8 mg/L (with benzene).
- TPH-Dx was not detected in all six groundwater samples.



- BTEX was analyzed for all six groundwater samples and was only detected in the groundwater samples from HC-7 and HC-9. The detected benzene concentrations were 650 and 900 ug/L, respectively, which are greater than the Method A groundwater cleanup level of 5 ug/L. Toluene, ethylbenzene, and xylene were detected at concentrations below the respective MTCA Method A groundwater cleanup levels in the samples from HC-1 and HC-3.
- Dissolved metals were either not detected at the specified laboratory reporting limit or were detected at concentrations below the respective MTCA cleanup levels.
- TSS was analyzed for five of the six groundwater samples and the samples had concentrations ranging from 740 to 24,000 mg/L. TSS results can be used to examine the amount of soil particles within an unfiltered groundwater sample, since these particles can bias the metal results high. Of the five samples that were analyzed for dissolved metals, groundwater sample HC-1 has a high TSS concentration of 24,000 mg/L.

LIMITATIONS

Work for this project was performed, and this letter report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Kemper Development Company for specific application to the referenced property. This letter report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

Please call if you have any questions regarding our work and this letter report, the presentation of the information, or the interpretation of the data.

Sincerely,

HART CROWSER, INC.

ROY JENSEN, LG
Senior Hydrogeologist

JULIE K.W. WUKELIC
Principal Engineer



Kemper Development Company
January 4, 2013

17920-00
Page 7

Attachments:

Table 1 - Analytical Results for Soil Samples

Table 2 - Analytical Results for Groundwater Samples

Table 3 - Analytical Results for Composite Soil Samples

Figure 1 - Vicinity Map

Figure 2 - Site and Exploration Plan

Figure 3 - TPH-G and BTEX Concentrations in Groundwater

Appendix A - Field Exploration Methods and Exploration Logs

Appendix B - Chemical Data Quality Review and Laboratory Reports

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Table 1 - Analytical Results for Soil Samples

Sheet 1 of 8

Sample ID	MTCA	HC-1-S2	HC-1-S3	HC-2-S1	HC-2-S2
Sampling Date	Method A	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	Cleanup Level	4 to 6	8 to 12	0 to 1	4 to 7
Moisture in %		11	11	13	11
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	2000	20 U	20 U	20 U	20 U
Diesel/Fuel oil	2000	20 U	20 U	20 U	20 U
Heavy oil	2000	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	100/30 *	5 U	5 U	5 U	5 U
Gasoline	100/30 *	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene	30	20 U		20 U	20 U
Toluene	7000	50 U		50 U	50 U
Ethylbenzene	6000	50 U		50 U	50 U
Xylenes	9000	50 U		50 U	50 U
Total Metals in mg/kg					
Lead	250	2.3	1.0 U	1.1	1.5
Chromium	2000	2.0 U	2.0 U	1.0 U	2.0 U
Cadmium	2	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	20	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	2	0.5 U	0.5 U	0.5 U	0.5 U
Copper		15	1.0 U	3.1	16
Nickel		1.9 J	1.0 UJ	1.5 J	3.2 J
Zinc		25	3.1	7.2	33
Volatiles in µg/kg					
MTBE	100		100 U		
Chloromethane			50 U		
Vinyl chloride			50 U		
Bromomethane			50 U		
Chloroethane			50 U		
Trichlorofluoromethane			50 U		
1,1-Dichloroethene			50 U		
Methylene chloride	20		20 U		
trans-1,2-Dichloroethene			50 U		
1,1-Dichloroethane			50 U		
2,2-Dichloropropane			50 U		
cis-1,2-Dichloroethene			50 U		
Chloroform			50 U		
1,1,1-Trichloroethane	2000		50 U		
Carbon tetrachloride			50 U		
1,1-Dichloropropene			50 U		
Benzene	30		20 U		
1,2-Dichloroethane (EDC)			20 U		
Trichloroethene	30		20 U		
1,2-Dichloropropane			50 U		
Dibromomethane			50 U		

Table 1 - Analytical Results for Soil Samples

Sheet 2 of 8

Sample ID	MTCA	HC-1-S2	HC-1-S3	HC-2-S1	HC-2-S2
Sampling Date	Method A	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	Cleanup	4 to 6	8 to 12	0 to 1	4 to 7
	Level				
Bromodichloromethane			50 U		
cis-1,3-Dichloropropene			50 U		
Toluene	7000		50 U		
trans-1,3-Dichloropropene			50 U		
1,1,2-Trichloroethane			50 U		
Tetrachloroethene	50		50 U		
1,3-Dichloropropane			50 U		
Dibromochloromethane			20 U		
1,2-Dibromoethane (EDB)	5		5 U		
Chlorobenzene			50 U		
1,1,1,2-Tetrachloroethane			50 U		
Ethylbenzene	6000		50 U		
Xylenes	9000		50 U		
Styrene			50 U		
Bromoform			50 U		
Isopropylbenzene			50 U		
1,2,3-Trichloropropane			50 U		
Bromobenzene			50 U		
1,1,2,2-Tetrachloroethane			50 U		
n-Propylbenzene			50 U		
2-Chlorotoluene			50 U		
4-Chlorotoluene			50 U		
1,3,5-Trimethylbenzene			50 U		
tert-Butylbenzene			50 U		
1,2,4-Trimethylbenzene			50 U		
sec-Butylbenzene			50 U		
1,3-Dichlorobenzene			50 U		
Isopropyltoluene			50 U		
1,4-Dichlorobenzene			50 U		
1,2-Dichlorobenzene			50 U		
n-Butylbenzene			50 U		
1,2-Dibromo-3-Chloropropane			50 U		
1,2,4-Trichlorobenzene			50 U		
Naphthalene	5000		50 U		
1,2,3-Trichlorobenzene			50 U		

Table 1 - Analytical Results for Soil Samples

Sheet 3 of 8

Sample ID	HC-2-S3	HC-3-S2	HC-3-S3	HC-4-S2	HC-5-S3
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	8 to 10.5	4 to 8	8 to 12	4 to 6	8 to 12
Moisture in %	14	9.2	17	14	10
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	20 U	20 U	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	5 U	5 U	5 U	5 U	5 U
Gasoline	5 U	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene			20 U		20 U
Toluene			50 U		50 U
Ethylbenzene			50 U		50 U
Xylenes			50 U		50 U
Total Metals in mg/kg					
Lead	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Copper	1.0 U	1.0 U	3.1	1.0 U	2.1
Nickel	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.1 J
Zinc	1.5	3.1	14	2.6	5.8
Volatiles in µg/kg					
MTBE	100 U	100 U		100 U	
Chloromethane	50 U	50 U		50 U	
Vinyl chloride	50 U	50 U		50 U	
Bromomethane	50 U	50 U		50 U	
Chloroethane	50 U	50 U		50 U	
Trichlorofluoromethane	50 U	50 U		50 U	
1,1-Dichloroethene	50 U	50 U		50 U	
Methylene chloride	20 U	20 U		20 U	
trans-1,2-Dichloroethene	50 U	50 U		50 U	
1,1-Dichloroethane	50 U	50 U		50 U	
2,2-Dichloropropane	50 U	50 U		50 U	
cis-1,2-Dichloroethene	50 U	50 U		50 U	
Chloroform	50 U	50 U		50 U	
1,1,1-Trichloroethane	50 U	50 U		50 U	
Carbon tetrachloride	50 U	50 U		50 U	
1,1-Dichloropropene	50 U	50 U		50 U	
Benzene	20 U	20 U		20 U	
1,2-Dichloroethane (EDC)	20 U	20 U		20 U	
Trichloroethene	20 U	20 U		20 U	
1,2-Dichloropropane	50 U	50 U		50 U	
Dibromomethane	50 U	50 U		50 U	

Table 1 - Analytical Results for Soil Samples

Sheet 4 of 8

Sample ID	HC-2-S3	HC-3-S2	HC-3-S3	HC-4-S2	HC-5-S3
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	8 to 10.5	4 to 8	8 to 12	4 to 6	8 to 12
Bromodichloromethane	50 U	50 U		50 U	
cis-1,3-Dichloropropene	50 U	50 U		50 U	
Toluene	50 U	50 U		50 U	
trans-1,3-Dichloropropene	50 U	50 U		50 U	
1,1,2-Trichloroethane	50 U	50 U		50 U	
Tetrachloroethene	50 U	50 U		50 U	
1,3-Dichloropropane	50 U	50 U		50 U	
Dibromochloromethane	20 U	20 U		20 U	
1,2-Dibromoethane (EDB)	5 U	5 U		5 U	
Chlorobenzene	50 U	50 U		50 U	
1,1,1,2-Tetrachloroethane	50 U	50 U		50 U	
Ethylbenzene	50 U	50 U		50 U	
Xylenes	50 U	50 U		50 U	
Styrene	50 U	50 U		50 U	
Bromoform	50 U	50 U		50 U	
Isopropylbenzene	50 U	50 U		50 U	
1,2,3-Trichloropropane	50 U	50 U		50 U	
Bromobenzene	50 U	50 U		50 U	
1,1,2,2-Tetrachloroethane	50 U	50 U		50 U	
n-Propylbenzene	50 U	50 U		50 U	
2-Chlorotoluene	50 U	50 U		50 U	
4-Chlorotoluene	50 U	50 U		50 U	
1,3,5-Trimethylbenzene	50 U	50 U		50 U	
tert-Butylbenzene	50 U	50 U		50 U	
1,2,4-Trimethylbenzene	50 U	50 U		50 U	
sec-Butylbenzene	50 U	50 U		50 U	
1,3-Dichlorobenzene	50 U	50 U		50 U	
Isopropyltoluene	50 U	50 U		50 U	
1,4-Dichlorobenzene	50 U	50 U		50 U	
1,2-Dichlorobenzene	50 U	50 U		50 U	
n-Butylbenzene	50 U	50 U		50 U	
1,2-Dibromo-3-Chloropropane	50 U	50 U		50 U	
1,2,4-Trichlorobenzene	50 U	50 U		50 U	
Naphthalene	50 U	50 U		50 U	
1,2,3-Trichlorobenzene	50 U	50 U		50 U	

Table 1 - Analytical Results for Soil Samples

Sheet 5 of 8

Sample ID	HC-6-S2	HC-7-S2	HC-7-S3	HC-7-S4	HC-8-S2
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 8	4 to 7.5	8 to 12	12 to 14	4 to 8
Moisture in %	12	14	15	15	15
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	20 U	20 U	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	5 U	5 U	5 U	5 U	5 U
Gasoline	5.1	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene	20 U		20 U	20 U	20 U
Toluene	50 U		50 U	50 U	50 U
Ethylbenzene	68		50 U	50 U	50 U
Xylenes	220		50 U	50 U	50 U
Total Metals in mg/kg					
Lead	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Copper	4.9	1.0 U	1.0 U	4.4	1.0 U
Nickel	1.1 J	1.0 UJ	1.0 UJ	1.8 J	1.0 UJ
Zinc	10	3.8	4.5	9.4	3.7
Volatiles in µg/kg					
MTBE		100 U			
Chloromethane		50 U			
Vinyl chloride		50 U			
Bromomethane		50 U			
Chloroethane		50 U			
Trichlorofluoromethane		50 U			
1,1-Dichloroethene		50 U			
Methylene chloride		20 U			
trans-1,2-Dichloroethene		50 U			
1,1-Dichloroethane		50 U			
2,2-Dichloropropane		50 U			
cis-1,2-Dichloroethene		50 U			
Chloroform		50 U			
1,1,1-Trichloroethane		50 U			
Carbon tetrachloride		50 U			
1,1-Dichloropropene		50 U			
Benzene		20 U			
1,2-Dichloroethane (EDC)		20 U			
Trichloroethene		20 U			
1,2-Dichloropropane		50 U			
Dibromomethane		50 U			

Table 1 - Analytical Results for Soil Samples

Sheet 6 of 8

Sample ID	HC-6-S2	HC-7-S2	HC-7-S3	HC-7-S4	HC-8-S2
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 8	4 to 7.5	8 to 12	12 to 14	4 to 8
Bromodichloromethane		50 U			
cis-1,3-Dichloropropene		50 U			
Toluene		50 U			
trans-1,3-Dichloropropene		50 U			
1,1,2-Trichloroethane		50 U			
Tetrachloroethene		50 U			
1,3-Dichloropropane		50 U			
Dibromochloromethane		20 U			
1,2-Dibromoethane (EDB)		5 U			
Chlorobenzene		50 U			
1,1,1,2-Tetrachloroethane		50 U			
Ethylbenzene		50 U			
Xylenes		50 U			
Styrene		50 U			
Bromoform		50 U			
Isopropylbenzene		50 U			
1,2,3-Trichloropropane		50 U			
Bromobenzene		50 U			
1,1,2,2-Tetrachloroethane		50 U			
n-Propylbenzene		50 U			
2-Chlorotoluene		50 U			
4-Chlorotoluene		50 U			
1,3,5-Trimethylbenzene		50 U			
tert-Butylbenzene		50 U			
1,2,4-Trimethylbenzene		50 U			
sec-Butylbenzene		50 U			
1,3-Dichlorobenzene		50 U			
Isopropyltoluene		50 U			
1,4-Dichlorobenzene		50 U			
1,2-Dichlorobenzene		50 U			
n-Butylbenzene		50 U			
1,2-Dibromo-3-Chloropropane		50 U			
1,2,4-Trichlorobenzene		50 U			
Naphthalene		50 U			
1,2,3-Trichlorobenzene		50 U			

Table 1 - Analytical Results for Soil Samples

Sheet 7 of 8

Sample ID	HC-9-S2	HC-9-S3	HC-9-S4
Sampling Date	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 5	8 to 10	13 to 15
Moisture in %	12	15	15
NWTPH-Dx in mg/kg			
Kerosene/Jet fuel	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U
NWTPH-Gx in mg/kg			
Mineral spirits/Stoddard	5 U	5 U	5 U
Gasoline	5 U	5 U	5 U
BTEX in µg/kg			
Benzene	20 U		20 U
Toluene	50 U		50 U
Ethylbenzene	50 U		50 U
Xylenes	50 U		50 U
Total Metals in mg/kg			
Lead	1.0 U	1.0 U	1.0 U
Chromium	2.0	2.0 U	2.0 U
Cadmium	1.0 U	1.0 UJ	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 UJ	0.5 U
Copper	22	1.0 U	5
Nickel	2.5 J	1.0 UJ	2.7 J
Zinc	40	2.1	11
Volatiles in µg/kg			
MTBE		100 U	
Chloromethane		50 U	
Vinyl chloride		50 U	
Bromomethane		50 U	
Chloroethane		50 U	
Trichlorofluoromethane		50 U	
1,1-Dichloroethene		50 U	
Methylene chloride		20 U	
trans-1,2-Dichloroethene		50 U	
1,1-Dichloroethane		50 U	
2,2-Dichloropropane		50 U	
cis-1,2-Dichloroethene		50 U	
Chloroform		50 U	
1,1,1-Trichloroethane		50 U	
Carbon tetrachloride		50 U	
1,1-Dichloropropene		50 U	
Benzene		20 U	
1,2-Dichloroethane (EDC)		20 U	
Trichloroethene		20 U	
1,2-Dichloropropane		50 U	
Dibromomethane		50 U	

Table 1 - Analytical Results for Soil Samples

Sample ID	HC-9-S2	HC-9-S3	HC-9-S4
Sampling Date	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 5	8 to 10	13 to 15
Bromodichloromethane		50 U	
cis-1,3-Dichloropropene		50 U	
Toluene		59	
trans-1,3-Dichloropropene		50 U	
1,1,2-Trichloroethane		50 U	
Tetrachloroethene		50 U	
1,3-Dichloropropane		50 U	
Dibromochloromethane		20 U	
1,2-Dibromoethane (EDB)		5 U	
Chlorobenzene		50 U	
1,1,1,2-Tetrachloroethane		50 U	
Ethylbenzene		50 U	
Xylenes		77	
Styrene		50 U	
Bromoform		50 U	
Isopropylbenzene		50 U	
1,2,3-Trichloropropane		50 U	
Bromobenzene		50 U	
1,1,2,2-Tetrachloroethane		50 U	
n-Propylbenzene		50 U	
2-Chlorotoluene		50 U	
4-Chlorotoluene		50 U	
1,3,5-Trimethylbenzene		50 U	
tert-Butylbenzene		50 U	
1,2,4-Trimethylbenzene		50 U	
sec-Butylbenzene		50 U	
1,3-Dichlorobenzene		50 U	
Isopropyltoluene		50 U	
1,4-Dichlorobenzene		50 U	
1,2-Dichlorobenzene		50 U	
n-Butylbenzene		50 U	
1,2-Dibromo-3-Chloropropane		50 U	
1,2,4-Trichlorobenzene		50 U	
Naphthalene		50 U	
1,2,3-Trichlorobenzene		50 U	

U = Not detected at the reporting limit indicated.

J = Estimated value.

* 100 mg/kg for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 30 mg/kg for all other gasoline mixtures

Table 2 - Analytical Results for Groundwater Samples

Sheet 1 of 4

Sample ID Sampling Date	MTCA Method A Cleanup Level	HC-1 11/30/2012	HC-2 11/30/2012	HC-3 11/30/2012	HC-4 11/30/2012
Total Susp. Solids in mg/L		24000	840	7200	1700
NWTPH-Dx in mg/L					
Kerosene/Jet fuel	0.5	0.20 U	0.20 U	0.20 U	0.20 U
Diesel/Fuel oil	0.5	0.20 U	0.20 U	0.20 U	0.20 U
Heavy oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U
NWTPH-Gx in mg/L					
Mineral spirits/Stoddard	1/0.8 *	0.10 U	0.10 U	0.10 U	0.10 U
Gasoline	1/0.8 *	0.15	0.10	0.10 U	0.10 U
Dissolved Metals in mg/L					
Lead	0.015	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	0.05	0.01 U	0.01 U	0.01 U	0.01 U
Cadmium	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Arsenic	0.005	0.005 U	0.005 U	0.005 U	0.005 U
Mercury	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Copper		0.01 U	0.01 U	0.01 U	0.01 U
Nickel		0.03	0.03	0.02	0.01 U
Zinc		0.07	0.07	0.05	0.01
Volatiles in µg/L					
MTBE	20	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane		1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane		1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane		1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane		1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
Chloroform		1.1	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane (EDC)	5	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane		1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane		1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	3.1	4.2	1.0 U	1.0 U
trans-1,3-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane		1.0 U	1.0 U	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sheet 2 of 4

Sample ID Sampling Date	MTCA Method A Cleanup	HC-1 11/30/2012	HC-2 11/30/2012	HC-3 11/30/2012	HC-4 11/30/2012
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	0.01	0.01 U	0.01 U	0.01 U	0.01 U
Chlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane		1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	1000	13	6.0	1.0 U	1.0 U
Styrene		1.0 U	1.0 U	1.0 U	1.0 U
Bromoform		1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene		1.0 U	1.2	1.0 U	1.0 U
1,2,3-Trichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane		1.0 U	1.0 U	1.0 U	1.0 U
n-Propylbenzene		1.0 U	1.6	1.0 U	1.0 U
2-Chlorotoluene		1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene		1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene		1.5	1.0 U	1.0 U	1.0 U
tert-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene		4.0	1.0	1.0 U	1.0 U
sec-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
Isopropyltoluene		1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
n-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane		1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	160	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sheet 3 of 4

Sample ID	HC-7	HC-9
Sampling Date	11/30/2012	11/30/2012
Total Susp. Solids in mg/L		740
NWTPH-Dx in mg/L		
Kerosene/Jet fuel	0.20 U	0.20 U
Diesel/Fuel oil	0.20 U	0.20 U
Heavy oil	0.50 U	0.50 U
NWTPH-Gx in mg/L		
Mineral spirits/Stoddard	0.10 U	0.10 U
Gasoline	1.8	3.4
Dissolved Metals in mg/L		
Lead	0.002 U	0.002 UJ
Chromium	0.01 U	0.01 U
Cadmium	0.005 UJ	0.005 UJ
Arsenic	0.005 U	0.005 U
Mercury	0.0005 U	0.0005 U
Copper	0.01 U	0.01 U
Nickel	0.10	0.07
Zinc	0.26	0.20
Volatiles in µg/L		
MTBE	5.0 U	5.0 U
Chloromethane	1.0 U	1.0 U
Vinyl chloride	0.2 U	0.2 U
Bromomethane	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U
Trichlorofluoromethane	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U
Methylene chloride	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U
2,2-Dichloropropane	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U
1,1-Dichloropropene	1.0 U	1.0 U
Benzene	650	900
1,2-Dichloroethane (EDC)	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U
Dibromomethane	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U
Toluene	5.1	7.1
trans-1,3-Dichloropropene	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sample ID Sampling Date	HC-7 11/30/2012	HC-9 11/30/2012
Tetrachloroethene	1.0 U	1.0 U
1,3-Dichloropropane	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	0.01 U	0.01 U
Chlorobenzene	1.5	1.2
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U
Ethylbenzene	27	61
Xylenes	80	450
Styrene	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U
Isopropylbenzene	12	30
1,2,3-Trichloropropane	1.0 U	1.0 U
Bromobenzene	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U
n-Propylbenzene	17	55
2-Chlorotoluene	1.2	7.2
4-Chlorotoluene	1.0 U	1.0 U
1,3,5-Trimethylbenzene	11	75
tert-Butylbenzene	1.0 U	1.0 U
1,2,4-Trimethylbenzene	14	390
sec-Butylbenzene	1.0 U	3.0
1,3-Dichlorobenzene	1.0 U	1.0 U
Isopropyltoluene	1.0 U	1.6
1,4-Dichlorobenzene	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U
n-Butylbenzene	1.3	3.9
1,2-Dibromo-3-Chloropropane	1.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U
Naphthalene	2.5	11
1,2,3-Trichlorobenzene	1.3	1.7

U = Not detected at the reporting limit indicated.

J = Estimated value.

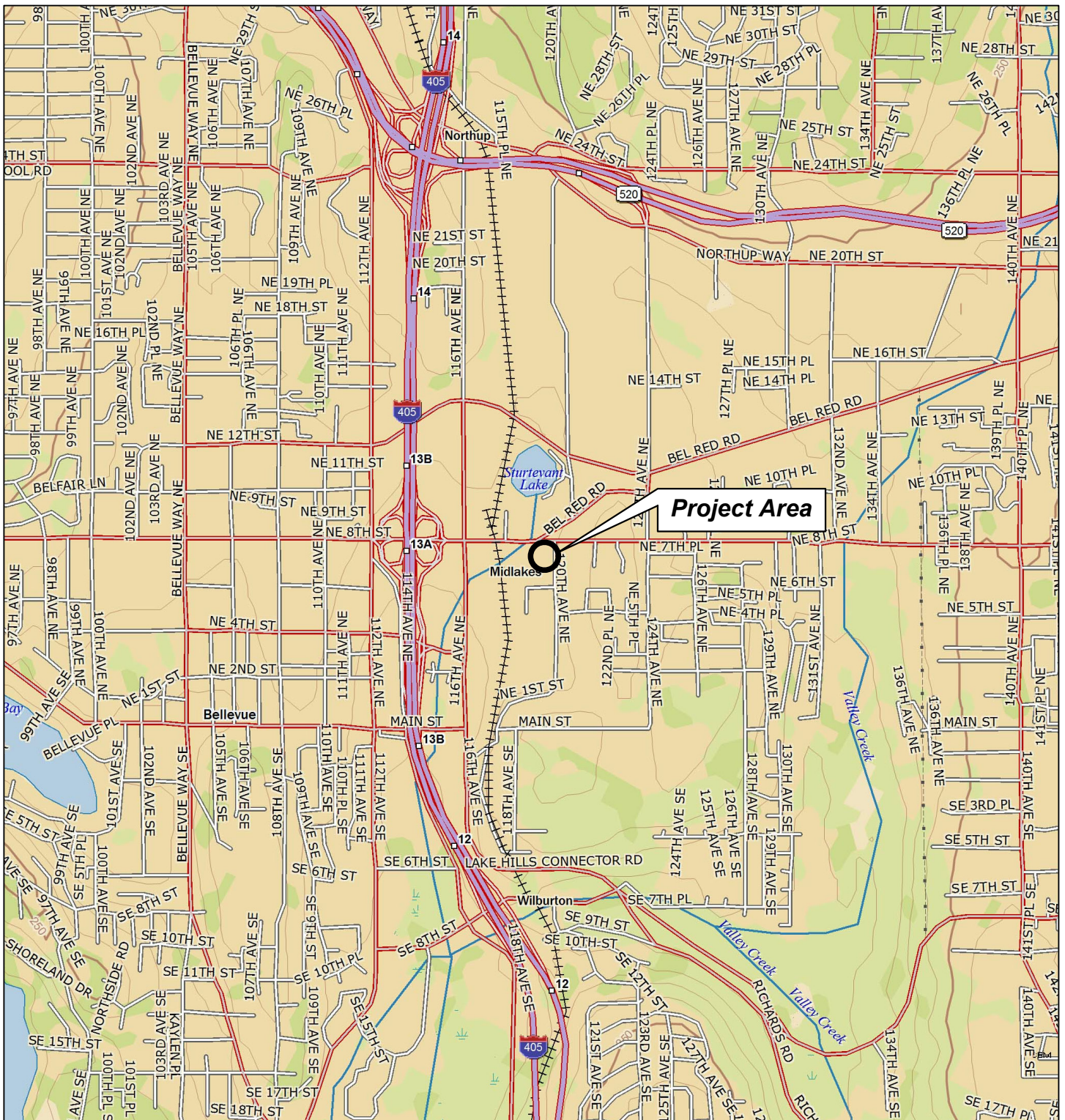
* 1 mg/L for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 0.8 mg/L for all other gasoline mixtures
Concentrations that exceed MTCA Method A cleanup level are boxed

Table 3 - Analytical Results for Composite Soil Samples

Sample ID	MTCA	Composite
Sampling Date	Method A	11/30/2012
	Cleanup	
	Level	
TCLP Metals in mg/L		
Lead	5	0.002 U
Chromium		0.01 U
Cadmium		0.005 UJ
Barium		0.05 U
Silver		0.01 U
Arsenic		0.005 U
Selenium		0.05 U
Mercury		0.0005 U

U = Not detected at the reporting limit indicated.

J = Estimated value.

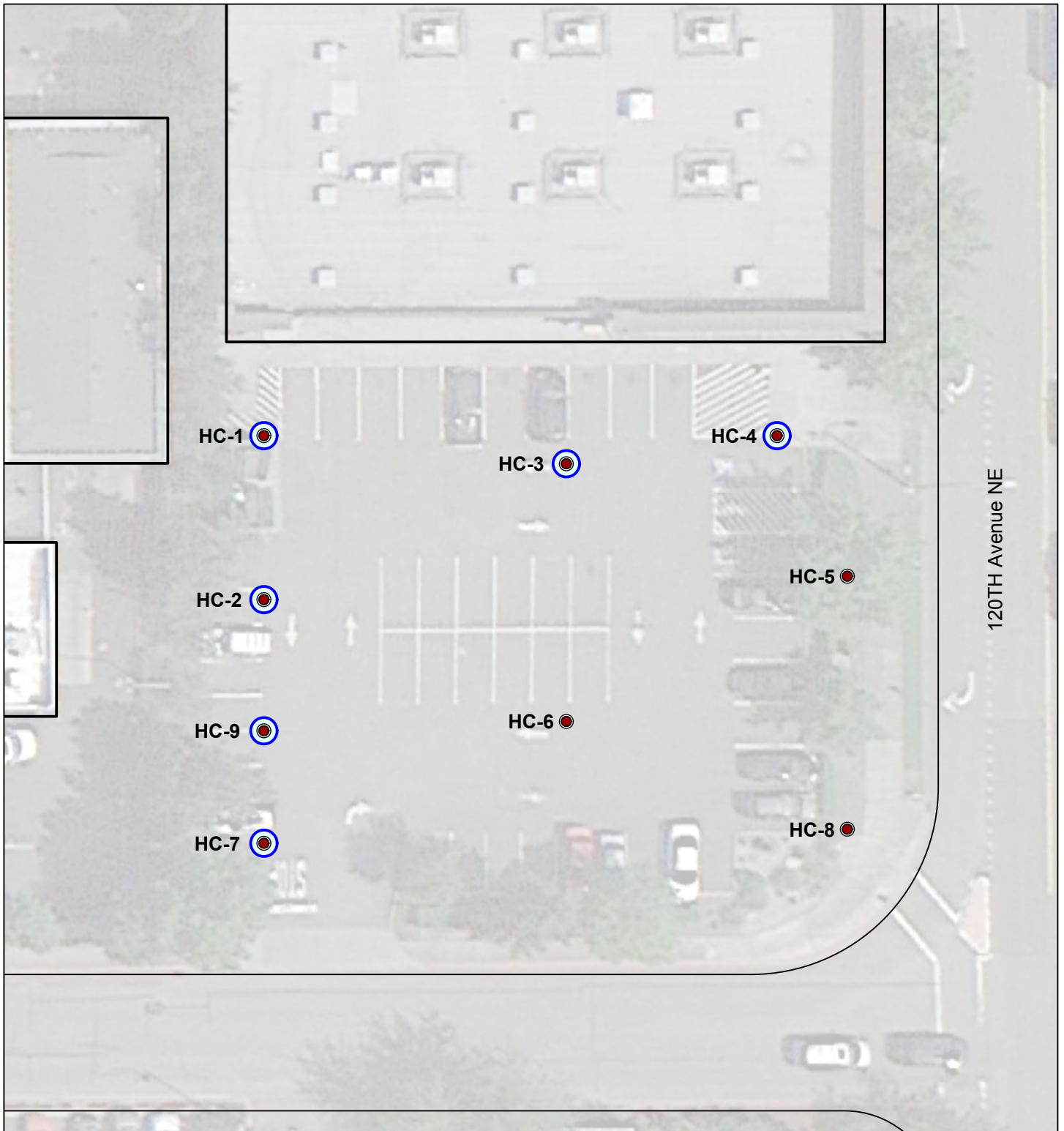


0 2,000 4,000
Scale in Feet



Bartells Property 11919 NE 8th Street, Bellevue, Washington	
Vicinity Map	
17920-00	1/13
	Figure 1

Source: DeLorme Topo USA®.



HC-1 ● Push Probe Location and Number

○ Groundwater Samples Collected

0 30 60
Approximate Scale in Feet



Bartells Property
11919 NE 8th Street, Bellevue, Washington

Site and Exploration Plan

17920-00

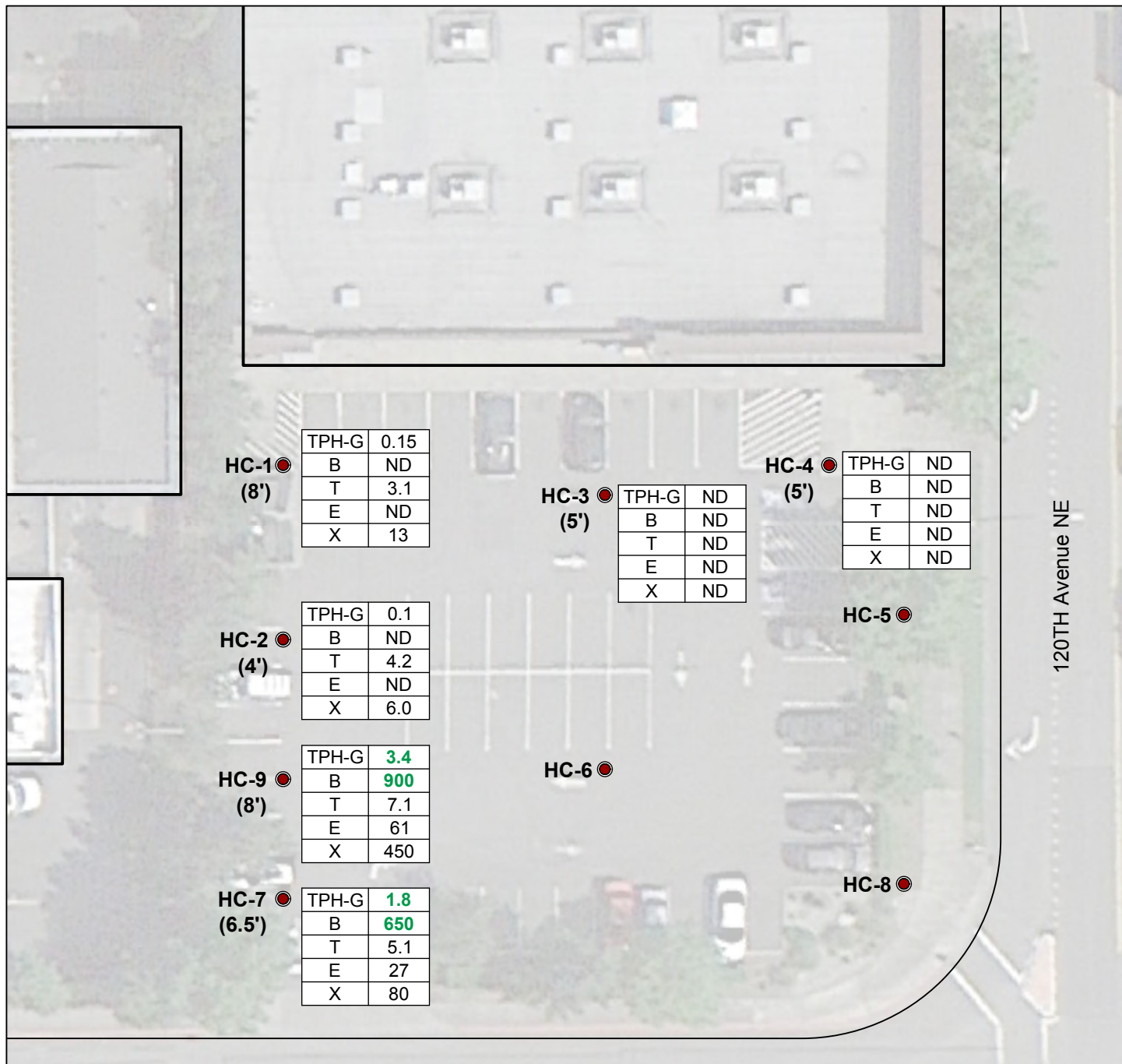
1/13



Figure

2

Source: Aerial photograph from Google Earth and field measurements by Hart Crowser personnel.



Concentrations in mg/L

TPH-G Gasoline-Range Hydrocarbons

MTCA Method A Cleanup Level

0.8 (with benzene)/1.0 (without benzene)

Concentrations in µg/L

B	Benzene	5
T	Toluene	1000
E	Ethylbenzene	70
X	Xylenes	1000
ND	Not Detected	

Green Indicates Exceedance of Cleanup Levels Listed Above

HC-1 (8') Push Probe Location and Number
(Depth to Water at Time of Drilling)

0 30 60
Approximate Scale in Feet

Source: Aerial photograph from Google Earth and field measurements by Hart Crowser personnel.

Bartells Property
11919 NE 8th Street, Bellevue, Washington

TPH-G and BTEX Concentrations in Groundwater

17920-00

1/13

HARTCROWSER

Figure

3

**APPENDIX A
FIELD EXPLORATION METHODS
AND EXPLORATION LOGS**

APPENDIX A FIELD EXPLORATION METHODS AND EXPLORATION LOGS

This appendix describes the field exploration methods we used to advance explorations, to collect soil and grab groundwater samples, and to field screen the soil for sheen and headspace vapor. The exploration logs in this appendix show our interpretation of the exploration sampling and testing data. The logs indicate the depth where the soils change. Note that the change may be gradual. In the field, we classified the samples taken from the explorations according to the methods presented on Figure A-1 - Key to Exploration Logs. This figure also provides a legend explaining the symbols and abbreviations used in the logs.

Direct Push Probes

Push probe explorations were completed at nine locations (HC-1 through HC-9) at depths ranging from 10 to 16 feet below ground surface on November 30, 2012. ESN Northwest of Olympia, Washington, completed the push probe explorations using a truck-mounted rig with a 2-inch-diameter probe. A field representative from Hart Crowser continuously observed the probing and collected the soil samples. Soil samples were collected using an acetate-lined plastic sleeve sampler. Soil samples were generally collected in continuous 4-foot-depth intervals. Samples were classified in general accordance with ASTM D 2488, and were screened for potential soil contamination. Detailed logs were prepared for each probe. The push probe logs are presented on Figures A-2 through A-10 at the end of this appendix.

Soil Sampling Procedures

Soil samples were collected for chemical analysis directly from the push probe acetate liner with a clean stainless steel spoon and placed in pre-cleaned, laboratory supplied containers. Soil samples collected for BTEX analysis used EPA Method 5035 soil collection procedures. Soil samples were stored in a cooler containing bagged ice and submitted to the laboratory under chain of custody protocols.

Soil Screening and Analysis

Field screening results were used as a general guideline to identify potential chemical constituents in soil samples. In addition, field screening results were used as a basis for selecting soil samples for chemical analysis.

Soil samples were field screened for evidence of petroleum- and/or VOC-related impacts using: (1) field observations, (2) sheen screening, and/or (3) headspace vapor screening using a MultiRAE photoionization detector (PID). The effectiveness of field screening varies with temperature, moisture content, organic content, soil type, and age of the constituents. Visual examination consists of inspecting the soil for stains. Visual screening is generally more effective when impacts are related to heavy petroleum hydrocarbons, such as motor or hydraulic oil, or when hydrocarbon concentrations are high.

We conducted water sheen testing by placing a small volume of soil in a pan of water and observing the water surface for signs of sheen. Sheens were classified as follows:

No Sheen (NS). No visible sheen on water surface.

Slight Sheen (SS). Light colorless film, spotty to globular; spread was irregular, not rapid, areas of no sheen remain, film dissipates rapidly.

Moderate Sheen (MS). Light to heavy film, may have some color or iridescence, globular to stringy, spread was irregular to flowing; few remaining areas of no sheen on water surface.

Heavy Sheen (HS). Heavy, colorful iridescent film; stringy, spread was rapid; sheen flows off the sample; most of the water surface might be covered with sheen.

Headspace vapor screening can indicate the presence of volatile organic vapors and involved placing a 3- to 6-ounce soil sample in a pint-sized plastic sample bag. The plastic bag was shaken for several minutes to expose and volatilize the soil sample to the air captured in the plastic bag headspace. The probe of the PID was inserted into the bag and the instrument measured the concentration of organic vapors in the soil sample bag headspace. The highest vapor reading was recorded for each sample. The PID measures concentrations in ppm and is calibrated to isobutylene. The PID is typically designed to quantify organic vapors concentrations in the range of 0 to 1,000 ppm. The presence or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Push Probe Grab Groundwater Sampling

Grab groundwater samples were collected at six push probe locations (HC-1, HC-2, HC-3, HC-4, HC-7, and HC-9). A temporary miniwell was installed by lowering a 4- or 5-foot stainless steel screen section and tubing to the bottom of

the boring. Samples were obtained using a peristaltic pump and low-flow groundwater sampling techniques. Grab groundwater samples were collected directly from the polyethylene tubing and placed in pre-cleaned, laboratory supplied jars. Grab groundwater samples were stored in a cooler containing bagged ice and submitted to the laboratory under chain of custody protocols. To avoid cross-contamination in the temporary miniwells, tubing was discarded after each use and the pump was refitted with new tubing at each miniwell location.

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Key to Exploration Logs

Sample Description

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and probes is estimated based on visual observation and is presented parenthetically on the logs.

SAND or GRAVEL Density	Standard Penetration Resistance (N) in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance (N) in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 to 4	Very soft	0 to 2	<0.125
Loose	4 to 10	Soft	2 to 4	0.125 to 0.25
Medium dense	10 to 30	Medium stiff	4 to 8	0.25 to 0.5
Dense	30 to 50	Stiff	8 to 15	0.5 to 1.0
Very dense	>50	Very stiff	15 to 30	1.0 to 2.0
		Hard	>30	>2.0

Sampling Test Symbols

1.5" I.D. Split Spoon	Grab (Jar)	3.0" I.D. Split Spoon
Shelby Tube (Pushed)	Bag	
Cuttings	Core Run	

SOIL CLASSIFICATION CHART

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

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, likely below optimum
Moist	Likely near optimum moisture content
Wet	Much perceptible moisture, likely above optimum

Minor Constituents

Estimated Percentage

Trace	<5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

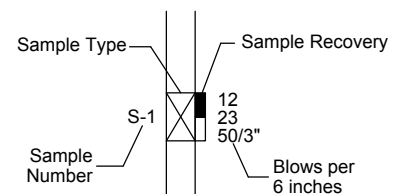
Laboratory Test Symbols

GS	Grain Size Classification
CN	Consolidation
UU	Unconsolidated Undrained Triaxial
CU	Consolidated Undrained Triaxial
CD	Consolidated Drained Triaxial
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer
	Approximate Compressive Strength in TSF
TV	Torvane
	Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits
	Water Content in Percent
	Liquid Limit
	Natural Plastic Limit
PID	Photoionization Detector Reading
CA	Chemical Analysis
DT	In Situ Density in PCF
OT	Tests by Others

Groundwater Indicators

	Groundwater Level on Date or (ATD) At Time of Drilling
	Groundwater Seepage (Test Pits)

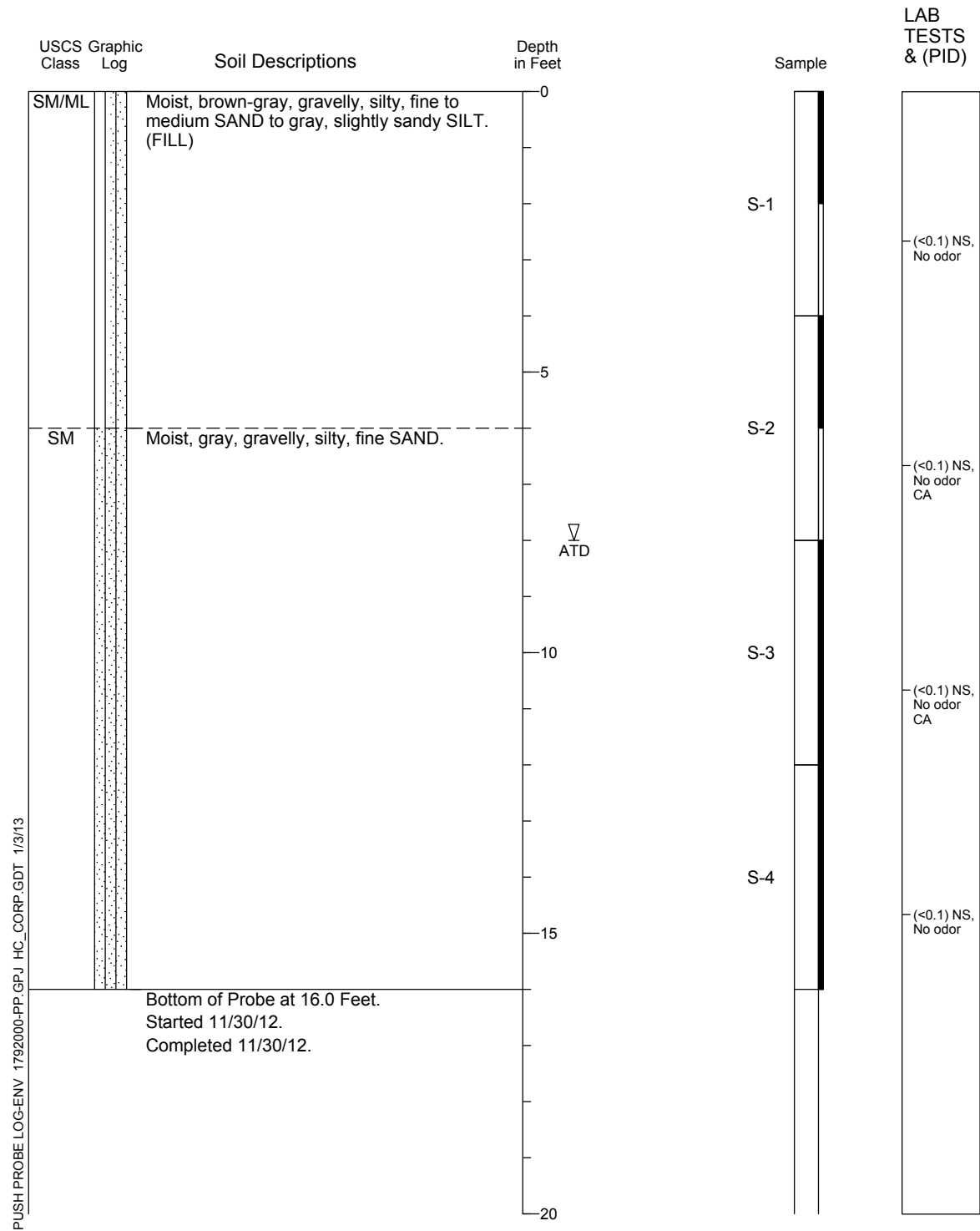
Sample Key



Push Probe Log HC-1

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen

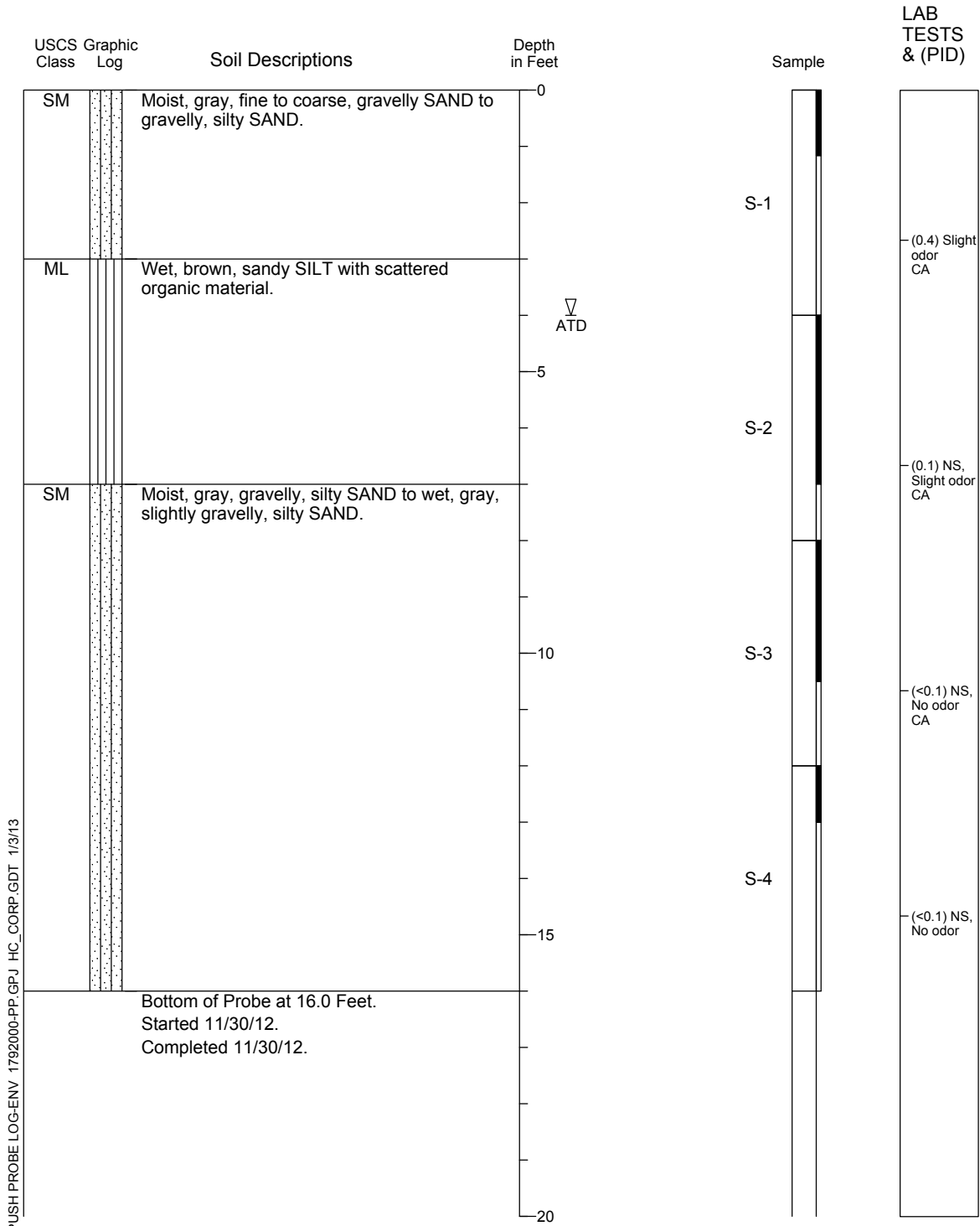


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Log HC-2

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen



PUSH PROBE LOG-ENV 1792000-PP.GPJ HC_CORP.GDT 1/3/13

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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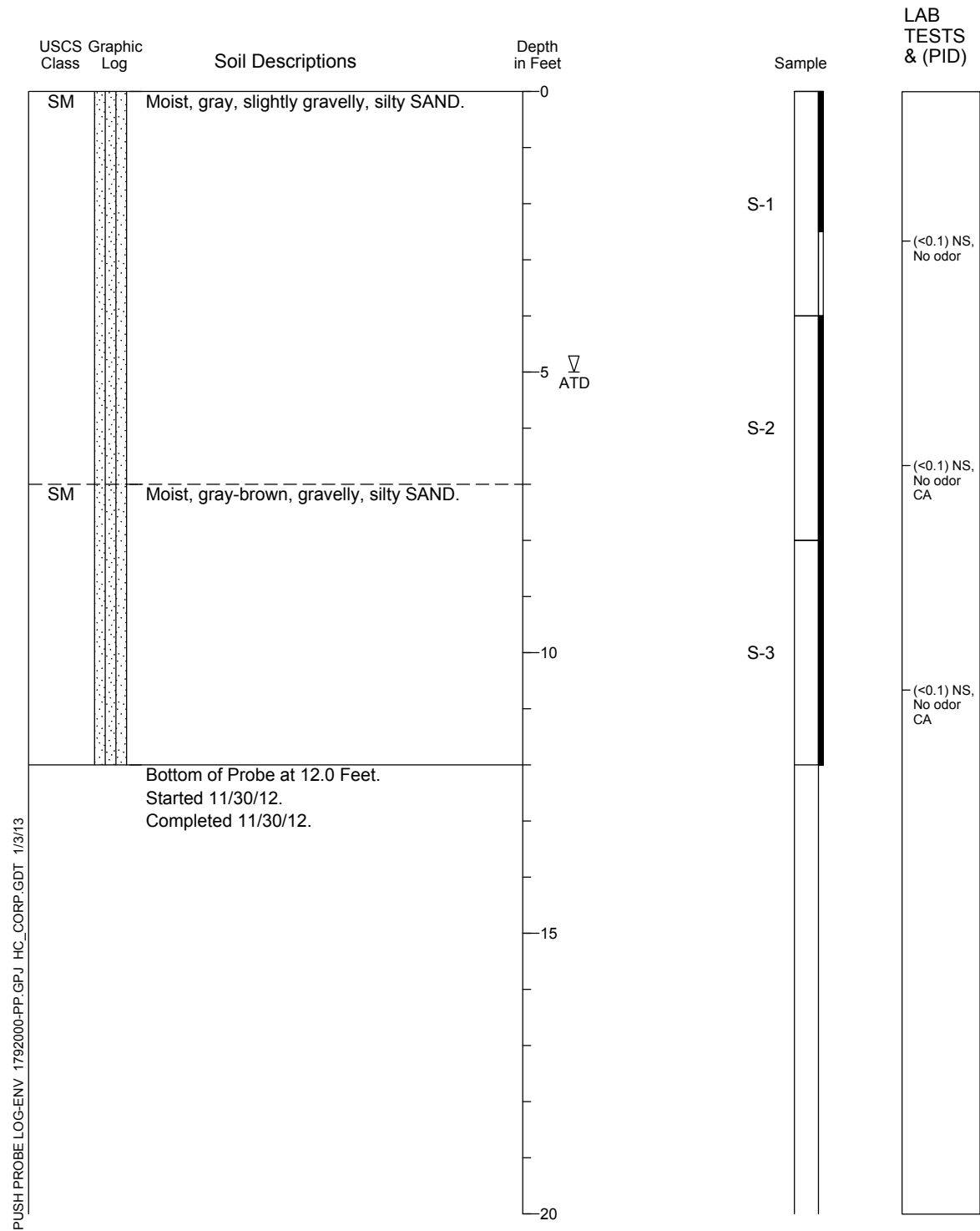
11/12

Figure A-3

Push Probe Log HC-3

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen

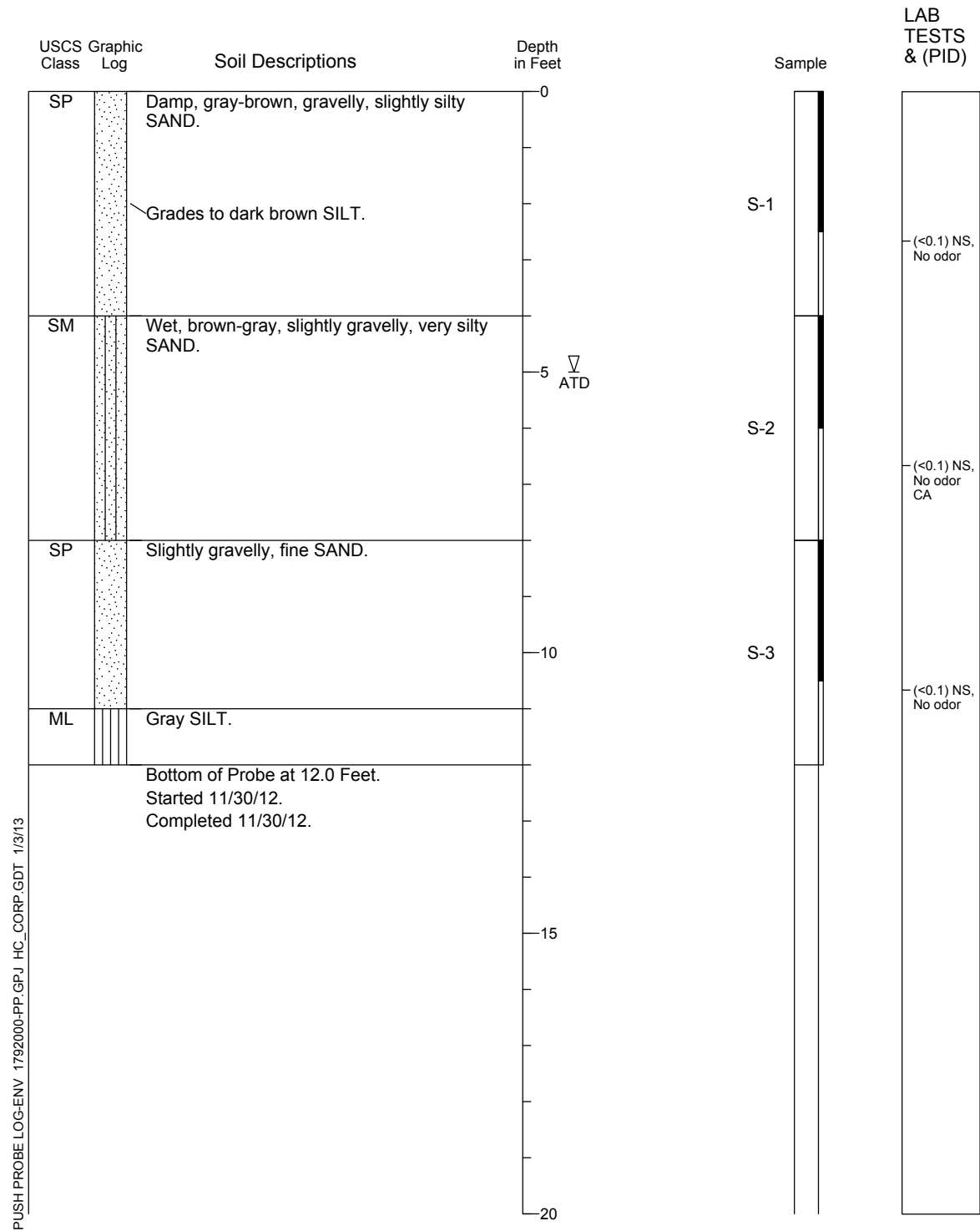


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Log HC-4

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen

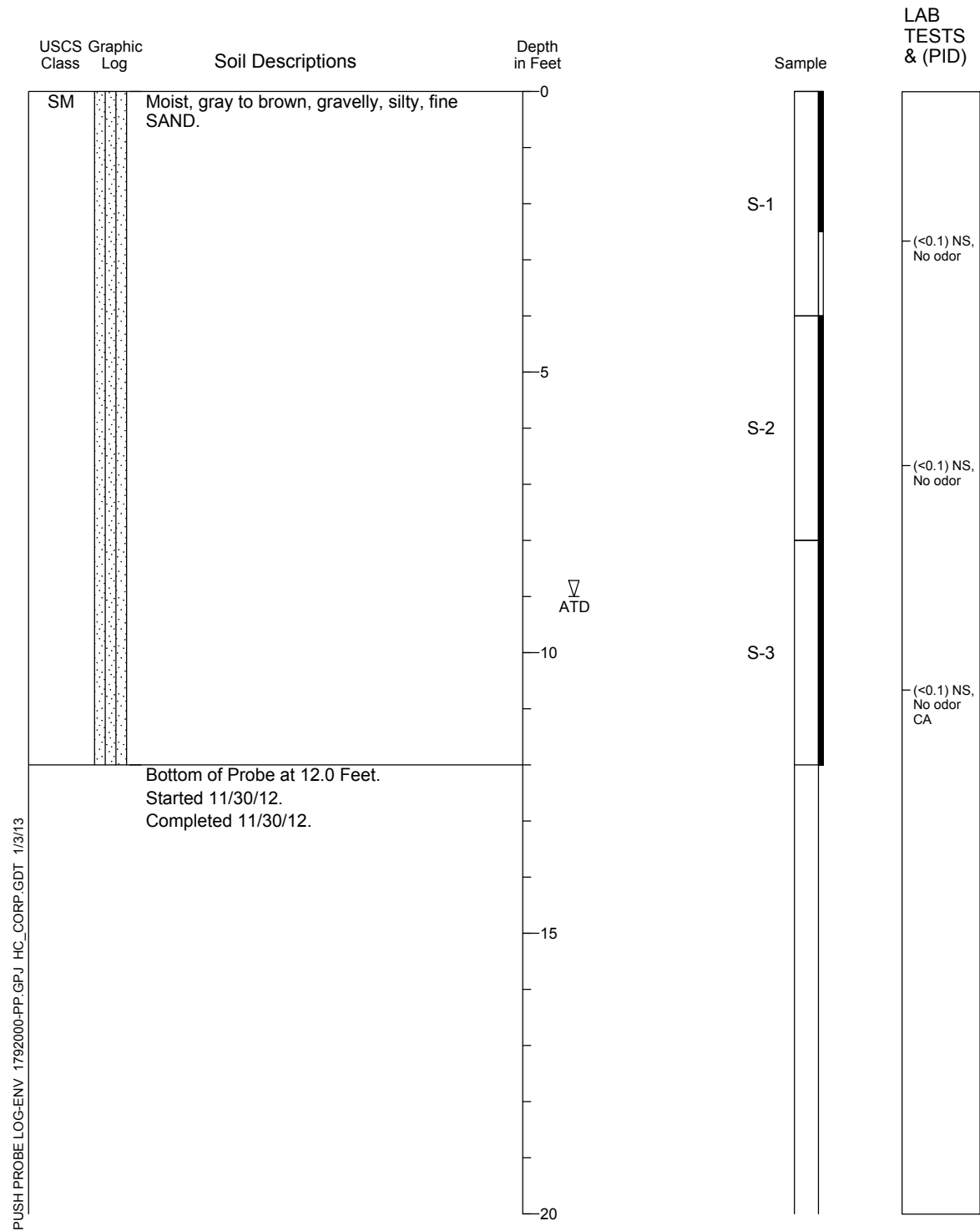


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Log HC-5

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen

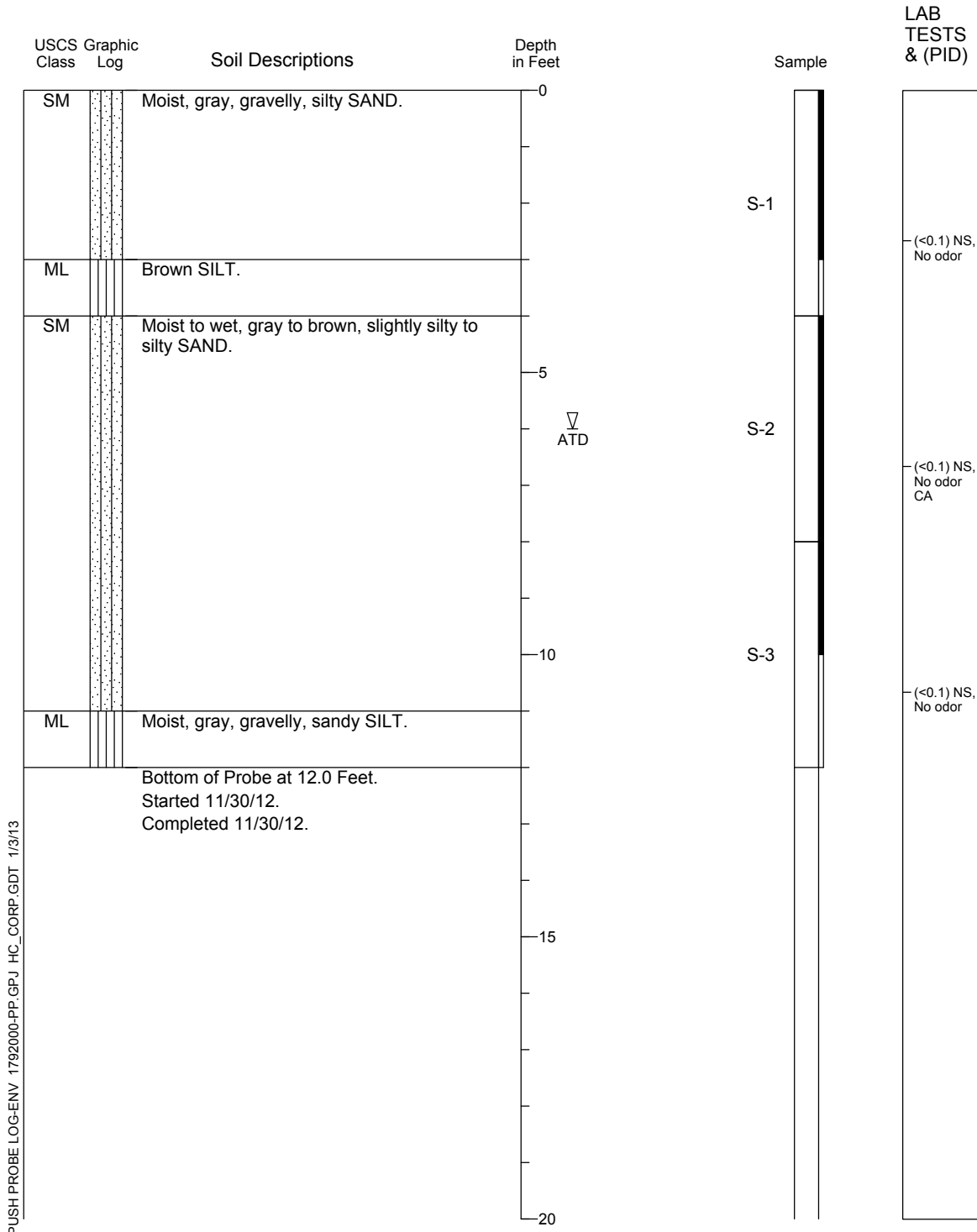


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Log HC-6

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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17920-00

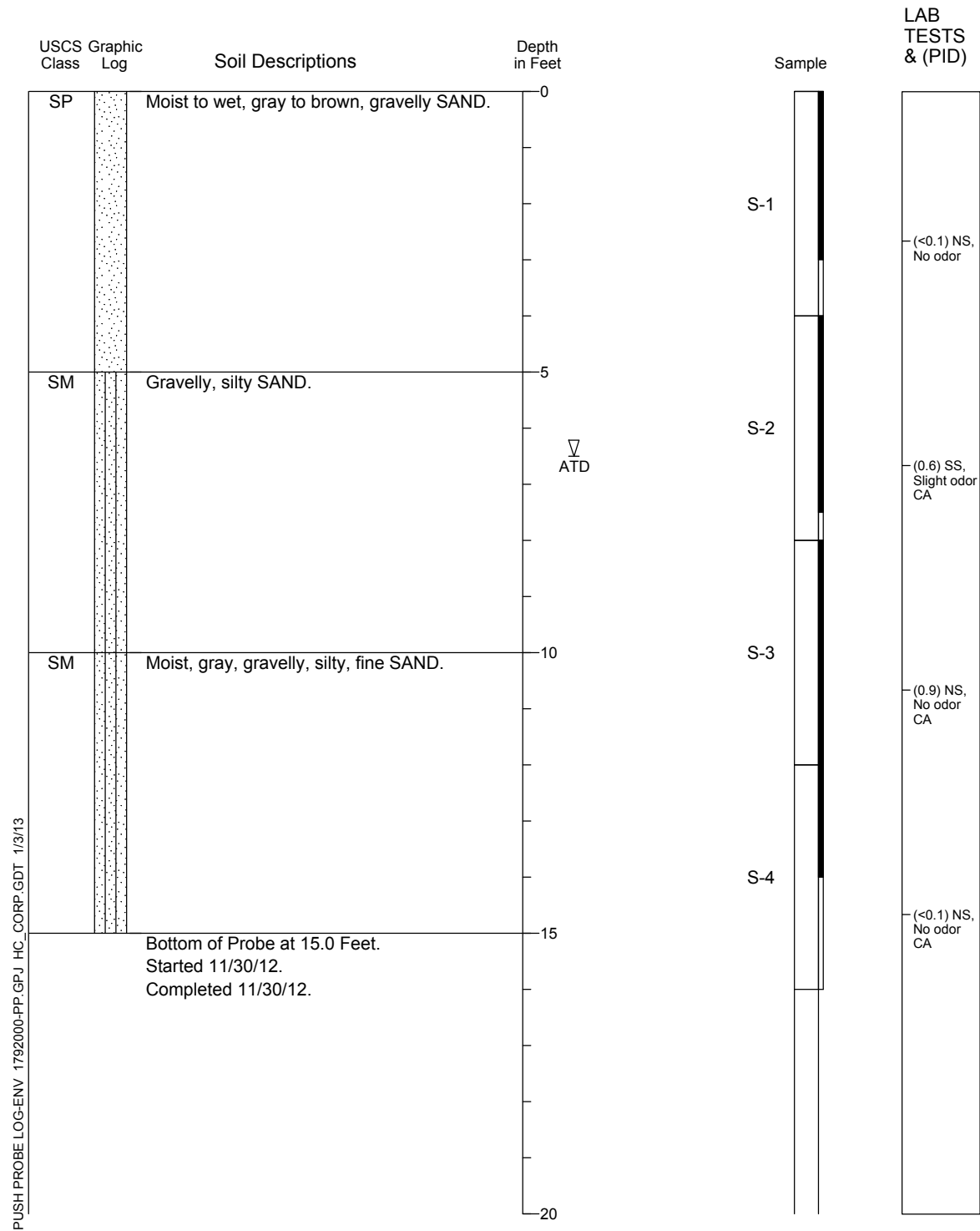
11/12

Figure A-7

Push Probe Log HC-7

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen

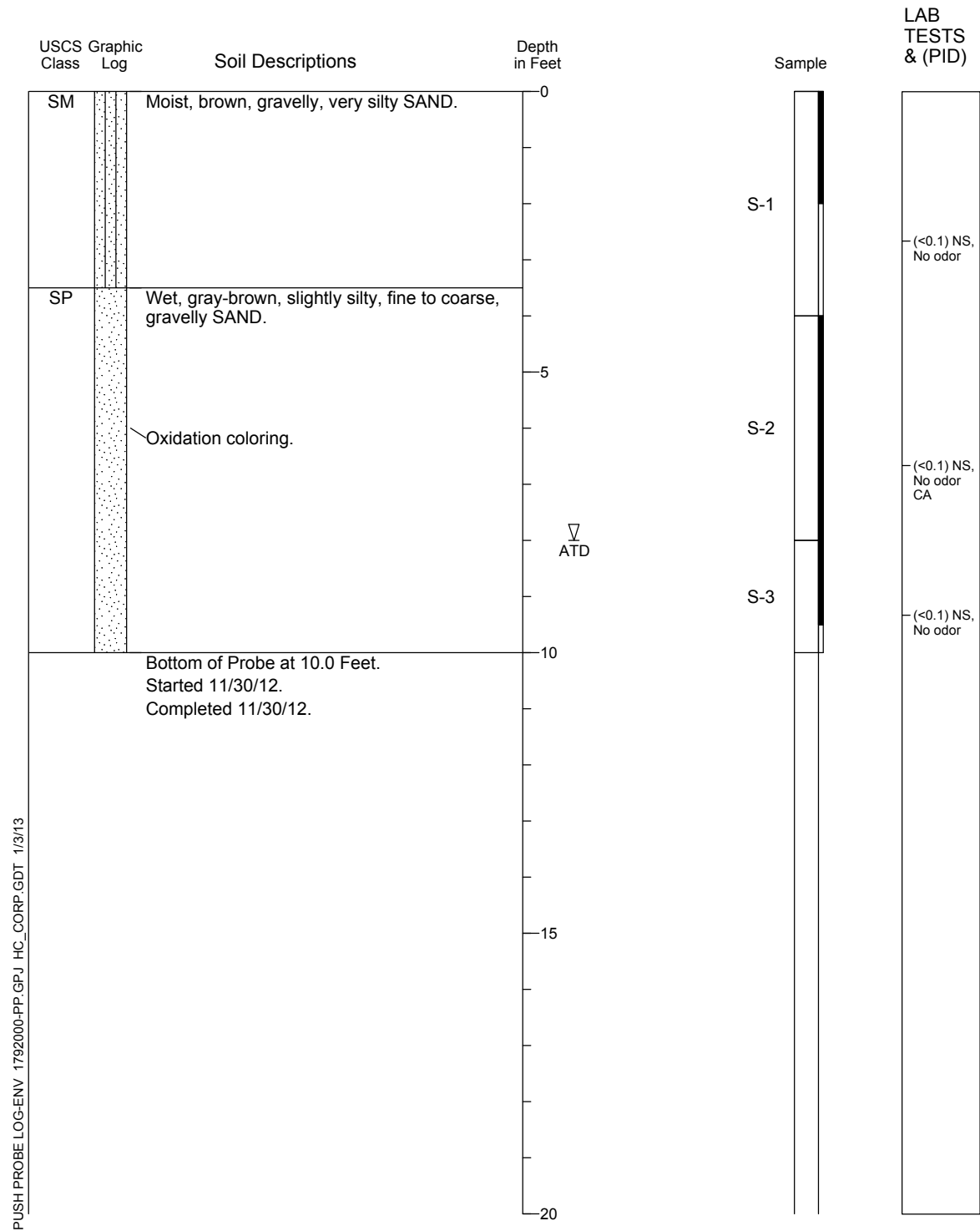


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Log HC-8

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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17920-00

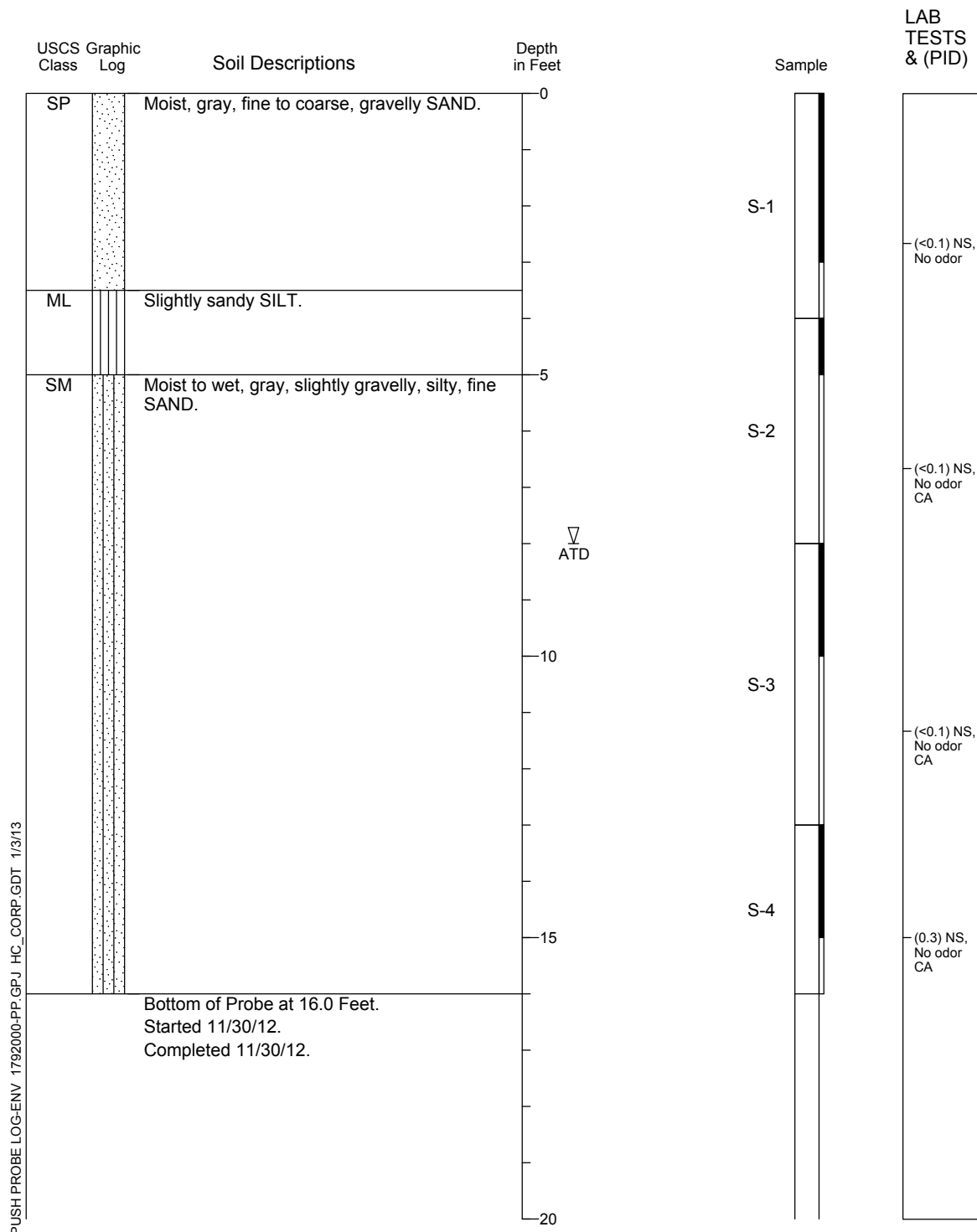
11/12

Figure A-9

Push Probe Log HC-9

Location:
Approximate Ground Surface Elevation: Feet
Horizontal Datum:
Vertical Datum:

Drill Equipment: Push Probe
Sample Type: Acetate Liner
Hole Diameter: inches
Logged By: W. McDonald Reviewed By: R. Jensen



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. USCS designations are based on visual manual classification (ASTM D 2488) unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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17920-00

11/12

Figure A-10

APPENDIX B
CHEMICAL DATA QUALITY REVIEW
AND LABORATORY REPORTS
ADVANCED ANALYTICAL LABORATORY

CHEMICAL DATA QUALITY REVIEW AND LABORATORY REPORTS

Chemical Data Quality Review

Seventeen discrete soil samples, one composite soil sample, and six groundwater samples were collected on November 30, 2012. The samples were submitted to Advanced Analytical Laboratory, Inc. (AAL), in Redmond, Washington, for chemical analysis. The laboratory reported results as AAL Job No. A21203-1.

The discrete soil samples were analyzed for one or more of the following:

- Gasoline by Ecology Method NWTPH-Gx;
- Diesel and heavy oil by Washington State Department of Ecology (Ecology) Method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B;
- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Total metals (As, Cr, Cd, Cu, Ni, Pb, and Zn) by EPA Method 7010;
- Total mercury by EPA Method 7471A; and
- Percent moisture by SM 2540B.

The composite soil sample was analyzed for the following:

- Leachable metals (As, Ba, Cd, Cr, Pb, Se, and Ag) by Toxicity Characteristic Leaching Procedure (TCLP) by EPA Methods 1311/7010; and
- TCLP mercury by EPA Methods 1311/7471A.

The water samples were analyzed for one or more of the following:

- Gasoline by Ecology Method NWTPH-Gx;
- Diesel and heavy oil by Washington State Department of Ecology (Ecology) Method NWTPH-Dx;
- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Dissolved metals (As, Cr, Cd, Cu, Ni, Pb, and Zn) by EPA Method 7010;
- Dissolved mercury by EPA Method 7470A; and
- Total suspended solids (TSS) by EPA Method 160.2.

The laboratory performed quality assurance/quality control (QA/QC) reviews on an ongoing basis. Hart Crowser reviewed the data to ensure they met data quality objectives for the project and recorded the results on laboratory quality control summary sheets.

The following criteria were evaluated during the standard data quality review process:

- Holding times;
- Reporting limits;
- Method blanks;
- Surrogate recoveries;
- Laboratory duplicate relative percent differences (RPDs);
- Laboratory control sample (LCS) recoveries; and
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries.

The data were determined to be acceptable for use with qualification, and the complete laboratory reports are presented at the end of this Appendix. The data review is summarized in the following pages.

Method Exceptions

NWTPH-Dx: The method requires the preparation and analysis of a laboratory duplicate for every ten samples. Insufficient volume for a laboratory duplicate was provided for the water samples. Only one laboratory duplicate was performed for the soil samples, though seventeen samples were analyzed. Sample results were not qualified.

NWTPH-Gx: The method requires the preparation and analysis of a laboratory duplicate for every ten samples. Only one laboratory duplicate was performed for the soil samples, though seventeen samples were analyzed. Sample results were not qualified.

EPA 7010: The method requires the preparation and analysis of a duplicate/matrix spike or matrix spike/matrix spike duplicate. The matrix spike prepared by the laboratory did not include the target metals copper, nickel, or zinc. Sample results were not qualified.

Soil Samples

VOCs by EPA 8260B

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate, LCS, and MS recoveries were within laboratory control limits.

Diesel and Heavy Oil by NWTPH-Dx

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate recoveries fell within laboratory control limits. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

Gasoline/BTEX by NWTPH-Gx/8021B

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate, LCS, and MS recoveries were within laboratory control limits. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

Total Metals by EPA 7010

Holding times and reporting limits were acceptable. No method blank contamination was detected.

LCS recoveries were within laboratory control limits. The recovery for nickel fell below the method control limits. The results for nickel in the associated samples (HC-1-S2, HC-2-S1, HC-2-S2, HC-3-S3, HC-5-S3, HC-6-S2, HC-7-S3, HC-7-S4, HC-8-S2, HC-9-S2, HC-9-S4, HC-1-S3, HC-2-S3, HC-3-S2, HC-4-S2, HC-7-S2, and HC-9-S3) were qualified as estimated (J).

MS recoveries were within laboratory control limits. The recovery for cadmium fell below method control limits. The result for cadmium in the source sample, HC-9-S3, was qualified as estimated (J).

The laboratory duplicate RPDs fell within laboratory and method control limits or were not applicable when the sample and duplicate results were below the reporting limit.

Total Mercury by EPA 7471A

Holding times and reporting limits were acceptable. No method blank contamination was detected. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

The LCS recovery fell within laboratory control limits, but exceeded the method control limits. As the associated samples were non-detect for mercury, no results were qualified.

The MS recovery fell within laboratory control limits, but fell below method control limits. The result for mercury in the source sample, HC-9-S3, was qualified as estimated (J).

TCLP Metals by EPA 1311/7010

Holding times and reporting limits were acceptable. No method blank contamination was detected. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

LCS recoveries fell within laboratory control limits. The recovery for cadmium fell below method control limits. The result for cadmium in the associated sample, Composite, was qualified as estimated (J).

TCLP Mercury by EPA 1311/7470A

Holding times and reporting limits were acceptable. No method blank contamination was detected. LCS recoveries were within laboratory and method control limits. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

Percent Moisture

Holding times and reporting limits were acceptable.

Water Samples

VOCs by EPA 8260B

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate, LCS, and MS recoveries were within laboratory control limits.

Diesel and Heavy Oil by NWTPH-Dx

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate recoveries were within laboratory control limits.

Insufficient sample was provided for laboratory duplicate analysis.

Gasoline by NWTPH-Gx

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate recoveries were within laboratory control limits. The laboratory duplicate RPDs fell within laboratory control limits.

Dissolved Metals by EPA 7010

Holding times and reporting limits were acceptable. No method blank contamination was detected.

LCS recoveries were within laboratory control limits. The recovery for cadmium fell below method control limits. The results for cadmium in the associated samples (HC-1, HC-2, HC-3, HC-4, HC-7, and HC-9) were qualified as estimated (J).

MS recoveries were within laboratory control limits. The recovery for lead fell below method control limits. The result for lead in the source sample, HC-9, was qualified as estimated (J).

The laboratory duplicate RPDs fell within laboratory and method control limits.

Dissolved Mercury by EPA 7470A

Holding times and reporting limits were acceptable. No method blank contamination was detected. LCS and MS recoveries were within laboratory and method control limits. The laboratory duplicate RPD was not applicable, as the sample and duplicate results were below the reporting limit.

TSS by EPA 160.2

Holding times and reporting limits were acceptable.

TSS was not performed on sample HC-7 as insufficient sample volume was available.

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**LABORATORY REPORTS –
ADVANCED ANALYTICAL LABORATORY**

December 10, 2012

*Julie Wukelic
Hart Crowser, Inc.
1700 Westlake Avenue North, Suite 200
Seattle, WA 98109*

Dear Ms. Wukelic:

Please find enclosed the analytical data report for the *Bartell's, 17920-00 (A21203-1)* Project.

Samples were received on *December 03, 2012*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 497-0110.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.
Laboratory Manager

Advanced Analytical Laboratory
(425)497-0110, fax(425)497-8089

AAL Job Number:	A21203-1
Client:	Hart Crowser, Inc.
Project Manager:	Julie Wukelic
Client Project Name:	Bartell's
Client Project Number:	17920-00
Date received:	12/03/12

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Gx		MTH BLK	HC-1	HC-2	HC-3	HC-4	HC-7	HC-9
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12

NWTPH-Gx, mg/L

Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd	nd	nd
Gasoline	0.10	nd	0.15	0.10	nd	nd	1.8	3.4

Surrogate recoveries:

Trifluorotoluene	110%	104%	105%	88%	102%	98%	117%
Bromofluorobenzene	75%	89%	95%	80%	89%	81%	93%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		Dupl	RPD
NWTPH-Gx		HC-9	HC-9
Matrix	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12

NWTPH-Gx, mg/L

Mineral spirits/Stoddard	0.10	nd	
Gasoline	0.10	3.2	6%

Surrogate recoveries:

Trifluorotoluene	103%
Bromofluorobenzene	81%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

8260B, µg/L		MTH BLK	LCS	HC-1	HC-2	HC-3	HC-4	HC-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
MTBE	5.0	nd		nd	nd	nd	nd	nd
Chloromethane	1.0	nd		nd	nd	nd	nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd	nd	nd	nd
Bromomethane	1.0	nd		nd	nd	nd	nd	nd
Chloroethane	1.0	nd		nd	nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd	nd	nd	nd
Methylene chloride	1.0	nd		nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd		nd	nd	nd	nd	nd
Chloroform	1.0	nd		1.1	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd	nd	nd	nd
Carbontetrachloride	1.0	nd		nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd	nd	nd	nd
Benzene	1.0	nd	89%	nd	nd	nd	nd	650
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd	nd	nd	nd
Trichloroethene	1.0	nd	92%	nd	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd		nd	nd	nd	nd	nd
Dibromomethane	1.0	nd		nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd		nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd	nd	nd	nd
Toluene	1.0	nd	85%	3.1	4.2	nd	nd	5.1
trans-1,3-Dichloropropene	1.0	nd		nd	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd	nd	nd	nd
Tetrachloroethene	1.0	nd		nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd		nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd		nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	71%	nd	nd	nd	nd	1.5
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd		nd	nd	nd	nd	27
Xylenes	1.0	nd		13	6.0	nd	nd	80
Styrene	1.0	nd		nd	nd	nd	nd	nd
Bromoform	1.0	nd		nd	nd	nd	nd	nd
Isopropylbenzene	1.0	nd		nd	1.2	nd	nd	12
1,2,3-Trichloropropane	1.0	nd		nd	nd	nd	nd	nd
Bromobenzene	1.0	nd		nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd	nd	nd	nd
n-Propylbenzene	1.0	nd		nd	1.6	nd	nd	17
2-Chlorotoluene	1.0	nd		nd	nd	nd	nd	1.2
4-Chlorotoluene	1.0	nd		nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd		1.5	nd	nd	nd	11
tert-Butylbenzene	1.0	nd		nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd		4.0	1.0	nd	nd	14
sec-Butylbenzene	1.0	nd		nd	nd	nd	nd	nd

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

8260B, µg/L		MTH BLK	LCS	HC-1	HC-2	HC-3	HC-4	HC-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
1,3-Dichlorobenzene	1.0	nd		nd	nd	nd	nd	nd
Isopropyltoluene	1.0	nd		nd	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd	nd	nd	nd
n-Butylbenzene	1.0	nd		nd	nd	nd	nd	1.3
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd	nd	nd	nd
Naphthalene	1.0	nd		nd	nd	nd	nd	2.5
1,2,3-Trichlorobenzene	1.0	nd		nd	nd	nd	nd	1.3
*-instrument detection limits								
Surrogate recoveries								
Dibromofluoromethane		105%	108%	109%	114%	109%	108%	110%
Toluene-d8		112%	107%	112%	117%	114%	114%	98%
1,2-Dichloroethane-d4		98%	94%	89%	90%	96%	92%	92%
4-Bromofluorobenzene		109%	108%	108%	106%	101%	96%	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		MS	MSD	RPD
8260B, µg/L	HC-9	HC-3	HC-3	HC-3
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12	12/03/12
MTBE	5.0	nd		
Chloromethane	1.0	nd		
Vinyl chloride(*)	0.2	nd		
Bromomethane	1.0	nd		
Chloroethane	1.0	nd		
Trichlorofluoromethane	1.0	nd		
1,1-Dichloroethene	1.0	nd		
Methylene chloride	1.0	nd		
trans-1,2-Dichloroethene	1.0	nd		
1,1-Dichloroethane	1.0	nd		
2,2-Dichloropropane	1.0	nd		
cis-1,2-Dichloroethene	1.0	nd		
Chloroform	1.0	nd		
1,1,1-Trichloroethane	1.0	nd		
Carbontetrachloride	1.0	nd		
1,1-Dichloropropene	1.0	nd		
Benzene	1.0	900	104%	96%
1,2-Dichloroethane(EDC)	1.0	nd		
Trichloroethene	1.0	nd	104%	97%
1,2-Dichloropropane	1.0	nd		
Dibromomethane	1.0	nd		
Bromodichloromethane	1.0	nd		
cis-1,3-Dichloropropene	1.0	nd		
Toluene	1.0	7.1	95%	93%
trans-1,3-Dichloropropene	1.0	nd		
1,1,2-Trichloroethane	1.0	nd		
Tetrachloroethene	1.0	nd		
1,3-Dichloropropane	1.0	nd		
Dibromochloromethane	1.0	nd		
1,2-Dibromoethane (EDB)*	0.01	nd		
Chlorobenzene	1.0	1.2	98%	104%
1,1,1,2-Tetrachloroethane	1.0	nd		
Ethylbenzene	1.0	61		
Xylenes	1.0	450		
Styrene	1.0	nd		
Bromoform	1.0	nd		
Isopropylbenzene	1.0	30		
1,2,3-Trichloropropane	1.0	nd		
Bromobenzene	1.0	nd		
1,1,2,2-Tetrachloroethane	1.0	nd		
n-Propylbenzene	1.0	55		
2-Chlorotoluene	1.0	7.2		
4-Chlorotoluene	1.0	nd		
1,3,5-Trimethylbenzene	1.0	75		
tert-Butylbenzene	1.0	nd		
1,2,4-Trimethylbenzene	1.0	390		
sec-Butylbenzene	1.0	3.0		

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		MS	MSD	RPD	
8260B, µg/L		HC-9	HC-3	HC-3	HC-3
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/03/12	12/03/12	12/03/12	12/03/12
1,3-Dichlorobenzene	1.0	nd			
Isopropyltoluene	1.0	1.6			
1,4-Dichlorobenzene	1.0	nd			
1,2-Dichlorobenzene	1.0	nd			
n-Butylbenzene	1.0	3.9			
1,2-Dibromo-3-Chloropropane	1.0	nd			
1,2,4-Trichlorobenzene	1.0	nd			
Naphthalene	1.0	11			
1,2,3-Trichlorobenzene	1.0	1.7			
*-instrument detection limits					
Surrogate recoveries					
Dibromofluoromethane		99%	112%	109%	
Toluene-d8		97%	109%	103%	
1,2-Dichloroethane-d4		90%	89%	88%	
4-Bromofluorobenzene		104%	103%	99%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Dx, mg/L		MTH BLK	HC-1	HC-2	HC-3	HC-4	HC-7	HC-9
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Date analyzed	Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	107%	115%	115%	114%	114%	114%	116%
o-Terphenyl	114%	113%	115%	113%	115%	117%	119%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Metals Dissolved (7010), mg/l		MTH BLK	LCS	HC-1	HC-2	HC-3	HC-4	HC-7
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12
Date analyzed	Limits	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12
Lead (Pb)	0.002	nd	93%	nd	nd	nd	nd	nd
Chromium (Cr)	0.01	nd	87%	nd	nd	nd	nd	nd
Cadmium (Cd)	0.005	nd	78%	nd	nd	nd	nd	nd
Arsenic (As)	0.005	nd	85%	nd	nd	nd	nd	nd
Mercury (Hg) (7470A)	0.0005	nd	93%	nd	nd	nd	nd	nd
Copper (Cu)	0.01	nd	83%	nd	nd	nd	nd	nd
Nickel (Ni)	0.01	nd	112%	0.03	0.03	0.02	nd	0.10
Zinc (Zn)	0.01	nd	95%	0.07	0.07	0.05	0.01	0.26

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		Dupl		RPD	MS
Metals Dissolved (7010), mg/l		HC-9	HC-9	HC-9	HC-9
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	12/06/12	12/06/12	12/06/12	12/06/12
Date analyzed	Limits	12/06/12	12/06/12	12/06/12	12/06/12
Lead (Pb)	0.002	nd	nd		72%
Chromium (Cr)	0.01	nd	nd		75%
Cadmium (Cd)	0.005	nd	nd		104%
Arsenic (As)	0.005	nd	nd		93%
Mercury (Hg) (7470A)	0.0005	nd	nd		97%
Copper (Cu)	0.01	nd	nd		
Nickel (Ni)	0.01	0.07	0.08	4%	
Zinc (Zn)	0.01	0.20	0.20	0%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
 Client: Hart Crowser, Inc.
 Project Manager: Julie Wukelic
 Client Project Name: Bartell's
 Client Project Number: 17920-00
 Date received: 12/03/12

Analytical Results

TSS (160.2)		HC-1	HC-2	HC-3	HC-4	HC-9
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/06/12
Total Suspended Solids, mg/L	10	24,000	840	7,200	1,700	740

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	HC-1-S2	HC-2-S1	HC-2-S2	HC-3-S3	HC-5-S3	HC-6-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Date analyzed	Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	107%	117%	115%	116%	113%	115%	115%
o-Terphenyl	114%	120%	114%	117%	113%	114%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

C - coelution with sample peaks

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Dx, mg/kg		HC-7-S3	HC-7-S4	HC-8-S2	HC-9-S2	HC-9-S4	HC-1-S3	HC-2-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Date analyzed	Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd	nd
Surrogate recoveries:								
Fluorobiphenyl		114%	115%	117%	116%	117%	116%	113%
o-Terphenyl		112%	113%	115%	114%	115%	115%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

C - coelution with sample peaks

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		Dupl				
NWTPH-Dx, mg/kg		HC-3-S2	HC-4-S2	HC-7-S2	HC-9-S3	HC-9-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Date analyzed	Limits	12/03/12	12/03/12	12/03/12	12/03/12	12/03/12
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd
Surrogate recoveries:						
Fluorobiphenyl		116%	117%	115%	115%	118%
o-Terphenyl		113%	114%	113%	112%	116%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
C - coelution with sample peaks
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

8260B, µg/kg		MTH BLK	LCS	HC-1-S3	HC-2-S3	HC-3-S2	HC-4-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
Date analyzed	Limits	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
MTBE	100	nd		nd	nd	nd	nd
Dichlorodifluoromethane	50	nd		nd	nd	nd	nd
Chloromethane	50	nd		nd	nd	nd	nd
Vinyl chloride	50	nd		nd	nd	nd	nd
Bromomethane	50	nd		nd	nd	nd	nd
Chloroethane	50	nd		nd	nd	nd	nd
Trichlorofluoromethane	50	nd		nd	nd	nd	nd
1,1-Dichloroethene	50	nd		nd	nd	nd	nd
Methylene chloride	20	nd		nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd		nd	nd	nd	nd
1,1-Dichloroethane	50	nd		nd	nd	nd	nd
2,2-Dichloropropane	50	nd		nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd		nd	nd	nd	nd
Chloroform	50	nd		nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd		nd	nd	nd	nd
Carbontetrachloride	50	nd		nd	nd	nd	nd
1,1-Dichloropropene	50	nd		nd	nd	nd	nd
Benzene	20	nd	82%	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd	nd	nd	nd
Trichloroethene	20	nd	81%	nd	nd	nd	nd
1,2-Dichloropropane	50	nd		nd	nd	nd	nd
Dibromomethane	50	nd		nd	nd	nd	nd
Bromodichloromethane	50	nd		nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd		nd	nd	nd	nd
Toluene	50	nd	83%	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd		nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd		nd	nd	nd	nd
Tetrachloroethene	50	nd		nd	nd	nd	nd
1,3-Dichloropropane	50	nd		nd	nd	nd	nd
Dibromochloromethane	20	nd		nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd	nd	nd	nd
Chlorobenzene	50	nd	88%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd	nd
Xylenes	50	nd		nd	nd	nd	nd
Styrene	50	nd		nd	nd	nd	nd
Bromoform	50	nd		nd	nd	nd	nd
Isopropylbenzene	50	nd		nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd		nd	nd	nd	nd
Bromobenzene	50	nd		nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd	nd	nd	nd
n-Propylbenzene	50	nd		nd	nd	nd	nd
2-Chlorotoluene	50	nd		nd	nd	nd	nd
4-Chlorotoluene	50	nd		nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd		nd	nd	nd	nd
tert-Butylbenzene	50	nd		nd	nd	nd	nd

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

8260B, µg/kg		MTH BLK	LCS	HC-1-S3	HC-2-S3	HC-3-S2	HC-4-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
Date analyzed	Limits	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
1,2,4-Trimethylbenzene	50	nd		nd	nd	nd	nd
sec-Butylbenzene	50	nd		nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd		nd	nd	nd	nd
Isopropyltoluene	50	nd		nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd		nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd		nd	nd	nd	nd
n-Butylbenzene	50	nd		nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd		nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd		nd	nd	nd	nd
Naphtahlene	50	nd		nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd		nd	nd	nd	nd
*-instrument detection limits							
Surrogate recoveries							
Dibromofluoromethane		113%	105%	106%	106%	115%	103%
Toluene-d8		107%	101%	106%	109%	114%	101%
1,2-Dichloroethane-d4		90%	88%	87%	88%	92%	88%
4-Bromofluorobenzene		105%	95%	102%	102%	93%	84%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

M-matrix interference

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		MS		MSD	RPD	
8260B, µg/kg		HC-7-S2	HC-9-S3	HC-3-S2	HC-3-S2	HC-3-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
Date analyzed	Limits	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
MTBE	100	nd	nd			
Dichlorodifluoromethane	50	nd	nd			
Chloromethane	50	nd	nd			
Vinyl chloride	50	nd	nd			
Bromomethane	50	nd	nd			
Chloroethane	50	nd	nd			
Trichlorofluoromethane	50	nd	nd			
1,1-Dichloroethene	50	nd	nd			
Methylene chloride	20	nd	nd			
trans-1,2-Dichloroethene	50	nd	nd			
1,1-Dichloroethane	50	nd	nd			
2,2-Dichloropropane	50	nd	nd			
cis-1,2-Dichloroethene	50	nd	nd			
Chloroform	50	nd	nd			
1,1,1-Trichloroethane	50	nd	nd			
Carbontetrachloride	50	nd	nd			
1,1-Dichloropropene	50	nd	nd			
Benzene	20	nd	nd	86%	96%	11%
1,2-Dichloroethane(EDC)	20	nd	nd			
Trichloroethene	20	nd	nd	95%	99%	4%
1,2-Dichloropropane	50	nd	nd			
Dibromomethane	50	nd	nd			
Bromodichloromethane	50	nd	nd			
cis-1,3-Dichloropropene	50	nd	nd			
Toluene	50	nd	59	99%	94%	5%
trans-1,3-Dichloropropene	50	nd	nd			
1,1,2-Trichloroethane	50	nd	nd			
Tetrachloroethene	50	nd	nd			
1,3-Dichloropropane	50	nd	nd			
Dibromochloromethane	20	nd	nd			
1,2-Dibromoethane (EDB)*	5	nd	nd			
Chlorobenzene	50	nd	nd	102%	101%	1%
1,1,1,2-Tetrachloroethane	50	nd	nd			
Ethylbenzene	50	nd	nd			
Xylenes	50	nd	77			
Styrene	50	nd	nd			
Bromoform	50	nd	nd			
Isopropylbenzene	50	nd	nd			
1,2,3-Trichloropropane	50	nd	nd			
Bromobenzene	50	nd	nd			
1,1,2,2-Tetrachloroethane	50	nd	nd			
n-Propylbenzene	50	nd	nd			
2-Chlorotoluene	50	nd	nd			
4-Chlorotoluene	50	nd	nd			
1,3,5-Trimethylbenzene	50	nd	nd			
tert-Butylbenzene	50	nd	nd			

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		MS		MSD		RPD
8260B, µg/kg		HC-7-S2	HC-9-S3	HC-3-S2	HC-3-S2	HC-3-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
Date analyzed	Limits	12/04/12	12/04/12	12/04/12	12/04/12	12/04/12
1,2,4-Trimethylbenzene	50	nd	nd			
sec-Butylbenzene	50	nd	nd			
1,3-Dichlorobenzene	50	nd	nd			
Isopropyltoluene	50	nd	nd			
1,4-Dichlorobenzene	50	nd	nd			
1,2-Dichlorobenzene	50	nd	nd			
n-Butylbenzene	50	nd	nd			
1,2-Dibromo-3-Chloropropane	50	nd	nd			
1,2,4-Trichlorobenzene	50	nd	nd			
Hexachloro-1,3-butadiene	50	nd	nd			
Naphtahlene	50	nd	nd			
1,2,3-Trichlorobenzene	50	nd	nd			
*-instrument detection limits						
Surrogate recoveries						
Dibromofluoromethane		110%	114%	107%	109%	
Toluene-d8		106%	111%	103%	101%	
1,2-Dichloroethane-d4		87%	87%	88%	87%	
4-Bromofluorobenzene		96%	100%	97%	93%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

M-matrix interference

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Gx / BTEX		MTH BLK	LCS	HC-1-S2	HC-2-S1	HC-2-S2	HC-3-S3	HC-5-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12

NWTPH-Gx, mg/kg

Mineral spirits/Stoddard	5.0	nd		nd	nd	nd	nd	nd
Gasoline	5.0	nd		nd	nd	nd	nd	nd

BTEX 8021B, µg/kg

Benzene	20	nd	93%	nd	nd	nd	nd	nd
Toluene	50	nd	104%	nd	nd	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd	nd	nd
Xylenes	50	nd		nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	80%	109%	110%	105%	112%	110%	110%
Bromofluorobenzene	95%	95%	98%	79%	99%	99%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

NWTPH-Gx / BTEX		HC-6-S2	HC-7-S3	HC-7-S4	HC-8-S2	HC-9-S2	HC-9-S4	HC-1-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12

NWTPH-Gx, mg/kg

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd	nd
Gasoline	5.0	5.1	nd	nd	nd	nd	nd	nd

BTEX 8021B, µg/kg

Benzene	20	nd	nd	nd	nd	nd	nd	
Toluene	50	nd	nd	nd	nd	nd	nd	
Ethylbenzene	50	68	nd	nd	nd	nd	nd	
Xylenes	50	220	nd	nd	nd	nd	nd	

Surrogate recoveries:

Trifluorotoluene	106%	109%	105%	120%	120%	122%	121%
Bromofluorobenzene	96%	99%	99%	107%	107%	109%	111%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results							Dupl	MS
NWTPH-Gx / BTEX		HC-2-S3	HC-3-S2	HC-4-S2	HC-7-S2	HC-9-S3	HC-9-S3	HC-7-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12

NWTPH-Gx, mg/kg

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd	
Gasoline	5.0	nd	nd	nd	nd	nd	nd	

BTEX 8021B, µg/kg

Benzene	20							82%
Toluene	50							104%
Ethylbenzene	50							
Xylenes	50							

Surrogate recoveries:

Trifluorotoluene	116%	119%	107%	116%	105%	92%	99%
Bromofluorobenzene	109%	112%	100%	109%	103%	89%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		MSD	RPD
NWTPH-Gx / BTEX		HC-7-S3	HC-7-S3
Matrix	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12

NWTPH-Gx, mg/kg

Mineral spirits/Stoddard	5.0
Gasoline	5.0

BTEX 8021B, µg/kg

Benzene	20	91%	10%
Toluene	50	118%	13%
Ethylbenzene	50		
Xylenes	50		

Surrogate recoveries:

Trifluorotoluene	109%
Bromofluorobenzene	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Metals (7010/7471), mg/kg		MTH BLK	LCS	HC-1-S2	HC-2-S1	HC-2-S2	HC-3-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Lead (Pb)	1.0	nd	112%	2.3	1.1	1.5	nd
Chromium (Cr)	2.0	nd	110%	nd	nd	nd	nd
Cadmium (Cd)	1.0	nd	99%	nd	nd	nd	nd
Arsenic (As)	2.0	nd	98%	nd	nd	nd	nd
Mercury (Hg) (7471)	0.5	nd	122%	nd	nd	nd	nd
Copper (Cu)	2.0	nd	97%	15	3.1	16	3.1
Nickel (Ni)	1.0	nd	72%	1.9	1.5	3.2	nd
Zinc (Zn)	1.0	nd	102%	25	7.2	33	14

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

M- matrix interference

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Metals (7010/7471), mg/kg		HC-5-S3	HC-6-S2	HC-7-S3	HC-7-S4	HC-8-S2	HC-9-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Lead (Pb)	1.0	nd	nd	nd	nd	nd	nd
Chromium (Cr)	2.0	nd	nd	nd	nd	nd	2.0
Cadmium (Cd)	1.0	nd	nd	nd	nd	nd	nd
Arsenic (As)	2.0	nd	nd	nd	nd	nd	nd
Mercury (Hg) (7471)	0.5	nd	nd	nd	nd	nd	nd
Copper (Cu)	2.0	2.1	4.9	nd	4.4	nd	22
Nickel (Ni)	1.0	1.1	1.1	nd	1.8	nd	2.5
Zinc (Zn)	1.0	5.8	10	4.5	9.4	3.7	40

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

M- matrix interference

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Metals (7010/7471), mg/kg		HC-9-S4	HC-1-S3	HC-2-S3	HC-3-S2	HC-4-S2	HC-7-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12	12/05/12
Lead (Pb)	1.0	nd	nd	nd	nd	nd	nd
Chromium (Cr)	2.0	nd	nd	nd	nd	nd	nd
Cadmium (Cd)	1.0	nd	nd	nd	nd	nd	nd
Arsenic (As)	2.0	nd	nd	nd	nd	nd	nd
Mercury (Hg) (7471)	0.5	nd	nd	nd	nd	nd	nd
Copper (Cu)	2.0	5.0	nd	nd	nd	nd	nd
Nickel (Ni)	1.0	2.7	nd	nd	nd	nd	nd
Zinc (Zn)	1.0	11	3.1	1.5	3.1	2.6	3.8

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

M- matrix interference

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results		Dupl		RPD	MS
Metals (7010/7471), mg/kg		HC-9-S3	HC-9-S3	HC-9-S3	HC-9-S3
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/05/12	12/05/12	12/05/12	12/05/12
Date analyzed	Limits	12/05/12	12/05/12	12/05/12	12/05/12
Lead (Pb)	1.0	nd	nd		98%
Chromium (Cr)	2.0	nd	nd		85%
Cadmium (Cd)	1.0	nd	nd		73%
Arsenic (As)	2.0	nd	nd		79%
Mercury (Hg) (7471)	0.5	nd	nd		73%
Copper (Cu)	2.0	nd	nd		
Nickel (Ni)	1.0	nd	nd		
Zinc (Zn)	1.0	2.1	2.2	5%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

M- matrix interference

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Dupl

TCLP Metals (7010/1311), mg/l	MTH BLK	LCS	Composite	Composite
Matrix	Soil Extract	Soil Extract	Soil Extract	Soil Extract
Date extracted	Reporting	12/06/12	12/06/12	12/06/12
Date analyzed	Limits	12/06/12	12/06/12	12/06/12
Lead (Pb)	0.002	nd	93%	nd
Chromium (Cr)	0.01	nd	87%	nd
Cadmium (Cd)	0.005	nd	78%	nd
Barium (Ba)	0.05	nd	120%	nd
Silver (Ag)	0.01	nd	101%	nd
Arsenic (As)	0.005	nd	85%	nd
Selenium (Se)	0.05	nd	94%	nd
Mercury (Hg) (7470A)	0.0005	nd	92%	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 30%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Moisture, SM2540B	HC-1-S2	HC-2-S1	HC-2-S2	HC-3-S3	HC-5-S3	HC-6-S2
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12
Moisture, %	11%	13%	11%	17%	10%	12%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Moisture, SM2540B	HC-7-S3	HC-7-S4	HC-8-S2	HC-9-S2	HC-9-S4	HC-1-S3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12
Moisture, %	15%	15%	15%	12%	15%	11%

AAL Job Number: A21203-1
Client: Hart Crowser, Inc.
Project Manager: Julie Wukelic
Client Project Name: Bartell's
Client Project Number: 17920-00
Date received: 12/03/12

Analytical Results

Moisture, SM2540B	HC-2-S3	HC-3-S2	HC-4-S2	HC-7-S2	HC-9-S3
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	12/06/12	12/06/12	12/06/12	12/06/12	12/06/12
Moisture, %	14%	9.2%	14%	14%	15%

Samples Shipped to: _____



pg 1 of 3

A21203-51

①

Hart Crowser, Inc.

1700 Westlake Avenue North, Suite 200

Seattle, Washington 98109-6212

Office: 206.324.9530 • Fax 206.328.5581

HART CROWSER

JOB <u>17920-00</u> LAB NUMBER _____ PROJECT NAME <u>Bartell's</u> HART CROWSER CONTACT <u>Roy Jensen</u>						REQUESTED ANALYSIS NO. OF CONTAINERS <table border="0"><tr><td>TPH-Gx</td><td>TPH-Dx</td><td>BETX</td><td>Total Metals</td><td>for As,Cd,</td><td>Cr,Pb,Hg,Zn,</td><td>[Cu,Ni]</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS</td></tr></table>																		TPH-Gx	TPH-Dx	BETX	Total Metals	for As,Cd,	Cr,Pb,Hg,Zn,	[Cu,Ni]														OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
TPH-Gx	TPH-Dx	BETX	Total Metals	for As,Cd,	Cr,Pb,Hg,Zn,	[Cu,Ni]														OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS																								
SAMPLED BY:																																												
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																2	I VOA, I Ja-																						
	HIC-1-S2		11/30/12	1310	Soil	X	X	X	X	X	X	X																																
	HC-2-S1			0955																																								
	HC-2-S2			1000																																								
	HIC-3-S3			0753																																								
	HC-5-S3			1255																																								
	HC-6-S2			0828																																								
	HC-7-S3			0855																																								
	HC-7-S4			0900																																								
	HC-8-S2			1225																																								
	HC-9-S2			1110																																								
	HC-9-S4		-	1140	-	-	-	-	-	-	-	-									-	-																						
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS: 																		22	TOTAL NUMBER OF CONTAINERS																			
SIGNATURE <u>Kerry Hosken</u>		12/3/12	SIGNATURE <u>V. Dwyer</u>		12/03/12																			SAMPLE RECEIPT INFORMATION CUSTODY SEALS: ☐ YES ☐ NO ☐ N/A GOOD CONDITION ☐ YES ☐ NO TEMPERATURE _____ SHIPMENT METHOD: ☐ HAND ☐ COURIER ☐ OVERNIGHT																				
PRINT NAME KC		1115	PRINT NAME V.DWYER		13 RD																																							
COMPANY			COMPANY																																									
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.: _____ STORAGE LOCATION: _____ See Lab Work Order No. _____ For Other Contract Requirements																		TURNAROUND TIME:																				
SIGNATURE		TIME	SIGNATURE		TIME																			☐ 24 HOURS ☐ 1 WEEK ☒ 48 HOURS ☐ STANDARD ☐ 72 HOURS OTHER _____																				
PRINT NAME			PRINT NAME																																									
COMPANY			COMPANY																																									

White and Yellow Copies to Lab

Pink to Project Manager

Lab to Return White Copy to Hart Crowser

Gold to Sample Custodian

Samples Shipped to: _____



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Sample Custody Record

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HART CROWSER

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Hart Crowser, Inc.

1700 Westlake Avenue North, Suite 200

Seattle, Washington 98109-6212

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