Soil Assessment

Frenchies' Fill-N-Food
Moxee, Washington

for
Washington State Department of Ecology

May 21, 2012

GeoEngineers
Earth Science + Technology

Soil Assessment

Frenchies' Fill-N-Food
Moxee, Washington

for
Washington State Department of Ecology

May 21, 2012

GeoEngineers

523 East Second Avenue
Spokane, Washington 99202
509.363.3125

Soil Assessment

Frenchies' Fill-N-Food
Moxee, Washington

File No. 0504-075-00

May 21, 2012

Prepared for:

Washington Department of Ecology
Toxics Cleanup Program - Central Region Office
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3452

Attention: Norm Hepner, PE, Environmental Engineer

Prepared by:

GeoEngineers, Inc.
523 East Second Avenue
Spokane, Washington 99202
509.363.3125

Prepared by:

Scott H. Lathen, PE
Staff Environmental Engineer

Reviewed by:

Jonathan E. Rudders, LHG
Senior Hydrogeologist

Reviewed by:

Bruce D. Williams
Principal

SHL:JRH:JHB:jrm:tlm:csv:mlh:jlr

GeoEngineers

Table of Contents

1.0 INTRODUCTION

This report describes soil assessment activities conducted at the Frenchies' Fill-N-Food site located at 106 East Moxee Avenue located in Moxee, Washington (herein referred to as "site"). The site is located approximately as shown in the attached Vicinity Map, Figure 1.

Environmental activities at the site currently are managed by the Washington State Department of Ecology (Ecology). This report describes field activities and observations with chemical analytical results from soil samples collected at the site, and provides recommendations for further assessment. The purpose of the assessment activities described herein was to evaluate if prior site remedial activities and subsequent contaminant attenuation were sufficient to warrant a No Further Action (NFA) designation for the site and, if not, to identify appropriate investigative and/or remedial activities for observed site conditions.

2.0 SITE DESCRIPTION AND BACKGROUND

The site, currently being used as a bakery and hair salon, formerly was operated as a gasoline station and auto service center. The adjacent property to the west is occupied by a preschool facility named Kid's Korner. The adjacent property to the south is a grass field. East Moxee Avenue and North Spokane Street bound the property to the north and east, respectively.

During January 1994, Cayuse Environmental (Cayuse) and their excavation contractor removed three 4,000-gallon and one 6,000-gallon gasoline underground storage tanks (USTs) from the site. The associated UST removal report (Cayuse 1994) indicated the four USTs were located south of the "store" building (assumed to be the existing building on site) and the associated fuel lines ran from the tanks to fuel dispensers located north of the store. The four USTs removed in 1994 reportedly were installed during the mid-1980s and replaced four previously-installed gasoline USTs at the site. Precise UST and dispenser locations were not provided by Cayuse.

Cayuse performed an environmental assessment of the UST excavation in 1994. Twelve in-situ soil samples, one water sample, and three soil stockpile samples were collected from various locations at the site. Soil samples contained concentrations of gasoline-range petroleum hydrocarbons (GRPH) greater than Model Toxics Control Act (MTCA) Method A cleanup criteria. Groundwater was encountered about 10 feet below grade during excavation activities. Laboratory results indicated a grab sample collected from groundwater accumulated in the excavation contained GRPH concentrations greater than MTCA Method A cleanup criteria.

The Cayuse report indicated approximately 1,800 cubic yards of petroleum-impacted soil were excavated and stockpiled on a lot located directly south of the site following UST removal activities. According to the Cayuse report the extent of soil contamination was not defined. The stockpile was removed from the site after the report was prepared; however stockpile removal and disposal activities were not documented.

The Cayuse report concluded that the extent of site contamination was unknown and recommended excavating a number of test pits and installing three monitoring wells to assess the boundaries of petroleum-impacted soil. Documentation of these recommended activities was not

identified. Additional details regarding site background and history are included in the technical memorandum "Frenchies' Fill-N-Food, File Review Summary" (GeoEngineers 2012A).

The suspected contamination sources at the site include former USTs, dispensers, underground fuel piping, and the former service station. The contaminants of potential concern (COPCs) include GRPH, volatile organic compounds (VOCs), naphthalenes, and lead in both soil and groundwater.

3.0 SCOPE OF SERVICES

GeoEngineers prepared a Sampling and Analysis Plan (SAP), dated February 1, 2012 (GeoEngineers, 2012B) based on a file review of site environmental activities performed to date. The SAP was designed to assess if residual soil, groundwater, and/or soil vapor contamination is located at the site and further remedial action and/or an environmental covenant was warranted. The scope of services performed by GeoEngineers during implementation of the SAP included:

- Prepared a Health and Safety Plan (HASP) for sampling activities.
- Drilled 13 soil borings using direct-push drilling methods at the locations described below and presented in Boring Locations, Figure 2. The borings were drilled to depths between 8 to 16 feet below ground surface (bgs).
- Collected soil samples in 4-foot acrylic sleeves continuously during drilling. Select sub-samples were field-screened using visual observations, water sheen methods, and headspace vapor measurements with a photoionization detector (PID) to assess the possible presence of petroleum-related contaminants. At least one sample from each 4-foot sleeve was retained for potential chemical analysis.
- Submitted 12 soil samples to TestAmerica Laboratories, Inc. (TestAmerica) of Spokane, Washington for chemical analysis. Soil samples were analyzed for GRPH using Northwest Method NWTPH-Gx; benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary-butyl ether (MTBE), n-hexane, 1,2-dichloroethane (EDC) using Environmental Protection Agency (EPA) Method 8260C; 1,2-dibromoethane (EDB) using EPA Method 8011; naphthalenes (including naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene) using EPA Methods 8260C and 8270; and lead using EPA Method 6010C. Two soil samples (collected from borings DP-3 and DP-8) were additionally analyzed for fractionalized petroleum hydrocarbons (aliphatics and aromatics) using Northwest VPH and EPH methods.
- Contained soil cuttings and decontamination water. The investigation-derived waste (IDW) was drummed separately, labeled, and stored on-site pending results of analytical testing.
- Subcontracted Able Cleanup Technologies, Inc. of Spokane, Washington to dispose IDW at Graham Road Landfill in Spokane County, Washington.
- Entered data results information into Ecology's Environmental Information Management database.
- Analyzed assessment data to evaluate if the site requires further investigative and/or remedial actions.

4.0 FIELD ACTIVITIES

4.1. General

A private utility locate of the site and adjacent areas was conducted on February 28, 2012. Environmental West Explorations (Environmental West) of Spokane, Washington, advanced 13 borings (B-1 through B-13) to depths of about 8 to 16 feet bgs using a direct-push Geoprobe drill rig on February 29, 2012. Boring locations are presented in Figure 2 and summarized by the following:

- Seven borings (DP-1 through DP-5, DP-9, and DP-10) were drilled between the existing structure on the site and the adjacent preschool, generally near the northwest corner of the building.
- Two borings (DP-7 and DP-8) were drilled north of the building.
- Two borings (DP-6 and DP-13) were drilled south of the building.
- Two borings, DP-11 and DP-12, were drilled to the south and west of the daycare building, respectively.

Boreholes were backfilled with bentonite and the surface was patched with cold patch asphalt as needed. Soil cuttings and decontamination water were placed in 55-gallon steel drums, labeled, and stored near the south side of the existing building.

Boring logs associated with borings DP-1 to DP-13 are provided in Appendix A. Representative site photographs demonstrating site conditions at the time of our assessment are provided in Appendix B.

4.2. Subsurface Conditions

Observed native soil conditions generally consisted of interbedded brown silt with fine sand and brown fine sand with silt. Fill material was observed in each boring except DP-4, at thicknesses that ranged from 1 foot (DP-2, DP-5, and DP-10) to 13½ feet (DP-13). In borings DP-1 and DP-13, fill material consisted of brown silt with sand and gravel. Elsewhere fill consisted of brown gravel with sand. Groundwater was encountered in each boring during drilling at depths that ranged from 10 to 11½ feet bgs. In several borings, the fine sand with silt layer was encountered roughly from 6 to 12 feet bgs, and in most borings, a silt layer was encountered at the base of the borings.

4.3. Field Screening and Sampling

Soil samples from each boring were field-screened for the potential presence of petroleum contamination by visual examination, headspace vapor monitoring with a PID, and water-sheen testing. Procedures for field-screening and sampling are provided in Appendix A. Headspace vapors were not detected and only slight sheens were observed on soil from borings DP-6, DP-7, and DP-11 through DP-13. Headspace vapor measurements ranged between 30 parts per million (ppm) and 2,060 ppm and slight to heavy sheens were observed from the remaining borings. Stained soil also was observed from soil samples collected from boring DP-1, DP-3, DP-5, and DP-13. Field screening indications of contaminated soil were observed both above and below the static water level. Twelve soil samples from depths ranging between 2½ to 11 feet bgs were

submitted to TestAmerica for chemical analysis; chemical analytical results are discussed below. Soil samples were collected from the vadose zone or near the groundwater interface.

5.0 CHEMICAL ANALYTICAL RESULTS

Twelve soil samples were analyzed by TestAmerica for GRPH, BTEX, MTBE, n-hexane, EDB, EDC, naphthalenes and lead concentrations by the methods listed in **Section 3.0**. TestAmerica's laboratory report is included in Appendix C; chemical analytical results are summarized in Soil Chemical Analytical Results, Table 1. Chemical analytical results are compared to Model Toxics Control Act (MTCA) Method A cleanup levels for Unrestricted Land Use and are summarized by the following:

- GRPH was detected at concentrations greater than MTCA Method A cleanup levels of 100 milligrams per kilogram (mg/kg) (30 mg/kg if benzene is present) in soil samples from borings DP-2 through DP-5 and DP-8 through DP-10. GRPH concentrations exceeding cleanup levels ranged from 65.2 mg/kg in the sample collected from DP-9 to 23,200 mg/kg in the sample collected from DP-8. GRPH was either not detected or detected at concentrations less than MTCA Method A cleanup levels in samples collected from the remaining borings.
- VOCs (BTEX, MTBE, n-hexane, and/or naphthalenes) were detected at concentrations greater than MTCA Method A cleanup levels from borings DP-3 through DP-5, DP-8 and DP-10. Note that the reporting limit (RL) for benzene was reported by TestAmerica at concentrations greater than the MTCA cleanup level (0.03 mg/kg) for samples from borings DP-6 and DP-7. VOCs were either not detected or detected at concentrations less than MTCA Method A cleanup levels in samples collected from the remaining borings.
- EDB and EDC were not detected in the 12 soil samples submitted for laboratory analysis. TestAmerica reported the RL for EDB in the sample collected from boring DP-5 at a concentration greater than the MTCA cleanup level (5 micrograms per kilogram).
- Lead was either not detected or detected at concentrations less than the MTCA Method A cleanup level in the analyzed samples.
- Samples collected from borings DP-3 and DP-8 were additionally analyzed for fractionalized petroleum hydrocarbons (aliphatics and aromatics). Total VPH was detected at concentrations of 1,700 mg/kg and 8,500 mg/kg from the samples collected for borings DP-3 and DP-8, respectively.
- Based on our evaluation of fractionalized petroleum hydrocarbons using Ecology's MTCATPH11.1 program, we calculated a site-specific MTCA Method B cleanup level for total petroleum hydrocarbons of 2,419 mg/kg using analytical results from DP-3. The cleanup level was exceeded in samples collected from borings DP-3, DP-4 and DP-8. A summary of our calculations is provided in Appendix D.

6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Soil assessment activities were conducted on February 29, 2012 at the Frenchies' Fill-N-Food site located at 106 East Moxee Avenue in Moxee, Washington. Thirteen direct-push soil borings were

advanced to depths ranging from about 8 to 16 feet bgs. Shallow native soil conditions at the site generally consists of interbedded silt and fine sand. Overlying fill material is composed primarily of silt or gravel (depending on location) and ranges from about 1 to 13½ feet in observed thickness. Groundwater was encountered in the borings at about 10 to 11 feet bgs.

GRPH were detected at concentrations greater than MTCA Method A cleanup levels in soil samples collected from borings DP-2 through DP-5 and DP-8 through DP-10. VOCs were detected at concentrations greater than MTCA Method A cleanup levels in soil samples collected from borings DP-3 through DP-5, DP-8, and DP-10. Soil borings with samples exceeding MTCA Method A cleanup levels generally were located near and surrounding the northwest corner of the existing bakery/hair salon building, as shown in Cleanup Level Exceedance and Proposed Exploration Locations, Figure 3. Although information regarding the locations of equipment associated with former service station operations is limited, the source of the observed contamination could have been the former dispensers and associated piping that transported petroleum from the USTs to the dispensers. As shown in Figure 3, samples from four borings with an exceedance of cleanup level were collected from the vadose zone (above the groundwater table), and suggests that residual source material exists in this portion of the site. Samples from three borings with exceedances were collected near the groundwater table, which suggest that groundwater transport of site contamination could be occurring. Note that, based on area groundwater flow conditions, a westerly or southwesterly groundwater flow direction is anticipated within shallow aquifer underlying the site, though this has not been confirmed with site specific information.

Based on these considerations, additional assessment at the site appears warranted. Existing data gaps consist of the following:

- Groundwater elevation and flow distribution across the site, including any seasonal variation in groundwater flow associated with fluctuations in recharge or irrigation operations.
- Presence and extent of existing groundwater contamination at and potentially downgradient of the source area(s).
- The lateral extent of soil contamination exceeding cleanup levels to the northwest of DP-10, south of DP-2, between DP-8 and DP-7, and north-northeast of DP-8. However, the data gap can be addressed during performance of a soil removal-based remedial action.

To address the groundwater-based data gaps outlined above, the recommended next phase of investigation include the following components.

- Install four 2-inch-diameter polyvinyl chloride (PVC) groundwater monitoring wells screened across the groundwater table in the locations presented in Proposed Monitoring Well Locations, Figure 4. Monitoring wells should be installed using conventional hollow-stem auger drilling methods.
    - MW-1 is intended to be an up-gradient monitoring well, for the purpose of establishing background groundwater quality entering the site.
    - MW-2 and MW-3 are proposed to be sited directly downgradient of potential source areas, to assess the potential presence and magnitude of site impacts to groundwater quality.

  - MW-4 is a proposed down-gradient monitoring well to evaluate if site contamination could be exiting site boundaries via groundwater transport.

- Initiate a quarterly groundwater monitoring program during which samples collected from site monitoring wells should be analyzed for: GRPH using Northwest Method NWTPH-Gx; BTEX, MTBE, n-hexane, and EDC using EPA Method 8260C; EDB using EPA Method 8011; naphthalenes (including naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene) using EPA Methods 8260C and 8270; and lead using EPA Method 6010C. Compounds that are not detected during the first groundwater monitoring event, and were not detected in the soil samples described herein, should be removed from the analytical suite during subsequent events.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Ecology and their authorized agents.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to "Report Limitations and Guidelines for Use", Appendix E for additional information pertaining to use of this report.

8.0 REFERENCES

Cayuse Environmental, 1994. Letter to Mr. Jay LaCourisere entitled "Notification of tank removal and contaminated soil removal at 106 Moxee Avenue, Moxee, WA. January 14.

GeoEngineers, Inc. 2012A. Memorandum, Frenchies Fill-N-Food, File Review Summary. January 24.

GeoEngineers, Inc. 2012B. Sampling and Analysis Plan, Soil and Groundwater Assessment, Frenchies Fill-N-Food, Moxee, Washington. February 1.

TABLES

GeoEngineers

Table 1

Summary of Chemical Analytical Results - Soil[1]

Frenchies Fill-n-Food
Moxee, Washington

Sample Number		DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11	DP-12	MTCA Method A Cleanup Levels[2]
Date Sampled		**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	**02/29/12**	
Sample Depth (feet bgs)		**10-10.5**	**10.5-11**	**6.5-7**	**9.5-10**	**11-11.5**	**10-10.5**	**9.5-10**	**7-8**	**2.5-3**	**6.5-7.5**	**10-11**	**10-11**	
GRPH[3] (mg/kg)		20.0	**167**	**5,630**	**5,090**	**286**	<12.9	<13.7	**23,200**	**65.2**	**512**	<8.48	<9.69	30/100
MTBE[4] (mg/kg)		<0.0402	<0.0481	**<0.485**	**<0.705**	<0.0463	<0.0774	<0.0824	**<0.736**	<0.0441	<0.0667	<0.0509	<0.0581	0.1
Benzene[4] (mg/kg)		<0.0201	<0.0240	**<0.242**	**0.847**	**0.113**	<0.0129	<0.0137	**0.380**	0.0286	**<0.0334**	<0.0254	<0.0291	0.03
Ethylbenzene[4] (mg/kg)		<0.134	<0.160	**16.5**	**24.5**	<0.154	<0.258	<0.275	**77.8**	0.391	0.653	<0.170	<0.194	6
Toluene[4] (mg/kg)		<0.134	<0.160	<1.62	4.91	<0.154	<0.258	<0.275	**7.37**	<0.147	<0.222	<0.170	<0.194	7
Total Xylenes[4] (mg/kg)		<2.01	<2.40	**43.3**	**94.3**	<2.32	<3.87	<4.12	**445**	<2.20	<3.34	<2.54	<2.91	9
2-Methylnaphthalene[5] (mg/kg)		<0.0120	<0.0132	**12.4**	3.16	1.13	<0.0156	<0.0159	**8.74**	0.117	1.79	<0.0135	<0.0141	5
1-Methylnaphthalene[5] (mg/kg)		<0.0120	<0.0132	4.57	1.21	0.438	<0.0156	<0.0159	3.30	0.0421	0.709	<0.0135	<0.0141	5
Naphthalene[5] (mg/kg)		<0.268	<0.321	**38.5**	**19.6**	0.827	<0.516	<0.550	**108**	0.637	**5.32**	<0.339	<0.388	5
1,2-Dichloroethane (EDC)[4] (mg/kg)		<0.134	<0.160	<1.62	<2.35	<0.154	<0.258	<0.275	<2.45	<0.147	<0.222	<0.170	<0.194	NE
1,2-Dibromoethane (EDB)[6] (µg/kg)		<1.21	<1.22	<1.21	<1.38	**<12.4**	<1.62	<1.57	<1.28	<1.17	<1.28	<1.32	<1.40	5
Hexane[4] (mg/kg)		<0.134	<0.160	<1.62	7.36	0.574	<0.258	<0.275	5.57	<0.147	<0.222	<0.170	<0.194	NE
C5-C6 Aliphatics (mg/kg)	VPH[7]	–	–	<27	–	–	–	–	<74	–	–	–	–	NE
C6-C8 Aliphatics (mg/kg)		–	–	180	–	–	–	–	1,600	–	–	–	–	NE
C8-C10 Alphatics (mg/kg)		–	–	370	–	–	–	–	1,800	–	–	–	–	NE
C10-C12 Alphatics (mg/kg)		–	–	470	–	–	–	–	1,700	–	–	–	–	NE
C8-C10 Aromatics (mg/kg)		–	–	230	–	–	–	–	1,400	–	–	–	–	NE
C10-C12 Aromatics (mg/kg)		–	–	370	–	–	–	–	1,600	–	–	–	–	NE
C12-C13 Aromatics (mg/kg)		–	–	100	–	–	–	–	370	–	–	–	–	NE
Total VPH (mg/kg)		–	–	1,700	–	–	–	–	8,500	–	–	–	–	NE
C10-C12 Aliphatics (mg/kg)	EPH[8]	–	–	340	–	–	–	–	410	–	–	–	–	NE
C12-C16 Aliphatics (mg/kg)		–	–	85	–	–	–	–	96	–	–	–	–	NE
C16-C21 Aliphatics (mg/kg)		–	–	14	–	–	–	–	14	–	–	–	–	NE
C21-C34 Alphatics (mg/kg)		–	–	<6.1	–	–	–	–	<6.3	–	–	–	–	NE
C10-C12 Aromatics (mg/kg)		–	–	300	–	–	–	–	450	–	–	–	–	NE
C12-C16 Aromatics (mg/kg)		–	–	85	–	–	–	–	140	–	–	–	–	NE
C16-C21 Aromatics (mg/kg)		–	–	9.8	–	–	–	–	13	–	–	–	–	NE
C21-C34 Aromatics (mg/kg)		–	–	<6.1	–	–	–	–	<6.3	–	–	–	–	NE
Lead[9] (mg/kg)		13.1	2.95	8.86	4.25	6.28	<2.27	<2.12	11.1	27.6	5.72	2.46	3.28	250

Notes:

[1]Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

[2]Washington State Model Toxics Control Act (MTCA) Method A Unrestricted Land Use cleanup levels. Bold font indicates analyte concentrations in excess of respective cleanup levels.

[3]Gasoline-range petroleum hydrocarbons (GRPH) analyzed using Northwest Method NWTPH-Gx. GRPH cleanup levels are 30 mg/kg when benzene is detected and 100 mg/kg when benzene is not detected.

[4]Volatile organic compounds (VOCs) analyzed using Environmental Protection Agency (EPA) Method 8260C. Total Xylenes includes o-xylene and m,p-xylene.

[5]Naphthalene concentration analyzed using EPA Method 8260C. 1-methylnaphthalene and 2-methylnaphthalene analyzed by EPA Method 8270. MTCA Method A cleanup level (5 mg/kg) refers to the sum of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

[6]1,2-Dibromoethane (EDB) analyzed using EPA Method 8011.

[7]Volatile petroleum hydrocarbons (VPH) analyzed using Nprthwest Method NWTPH/VPH.

[8]Extractable petroleum hydrocarbons (EPH) analyzed using Nprthwest Method NWTPH/EPH.

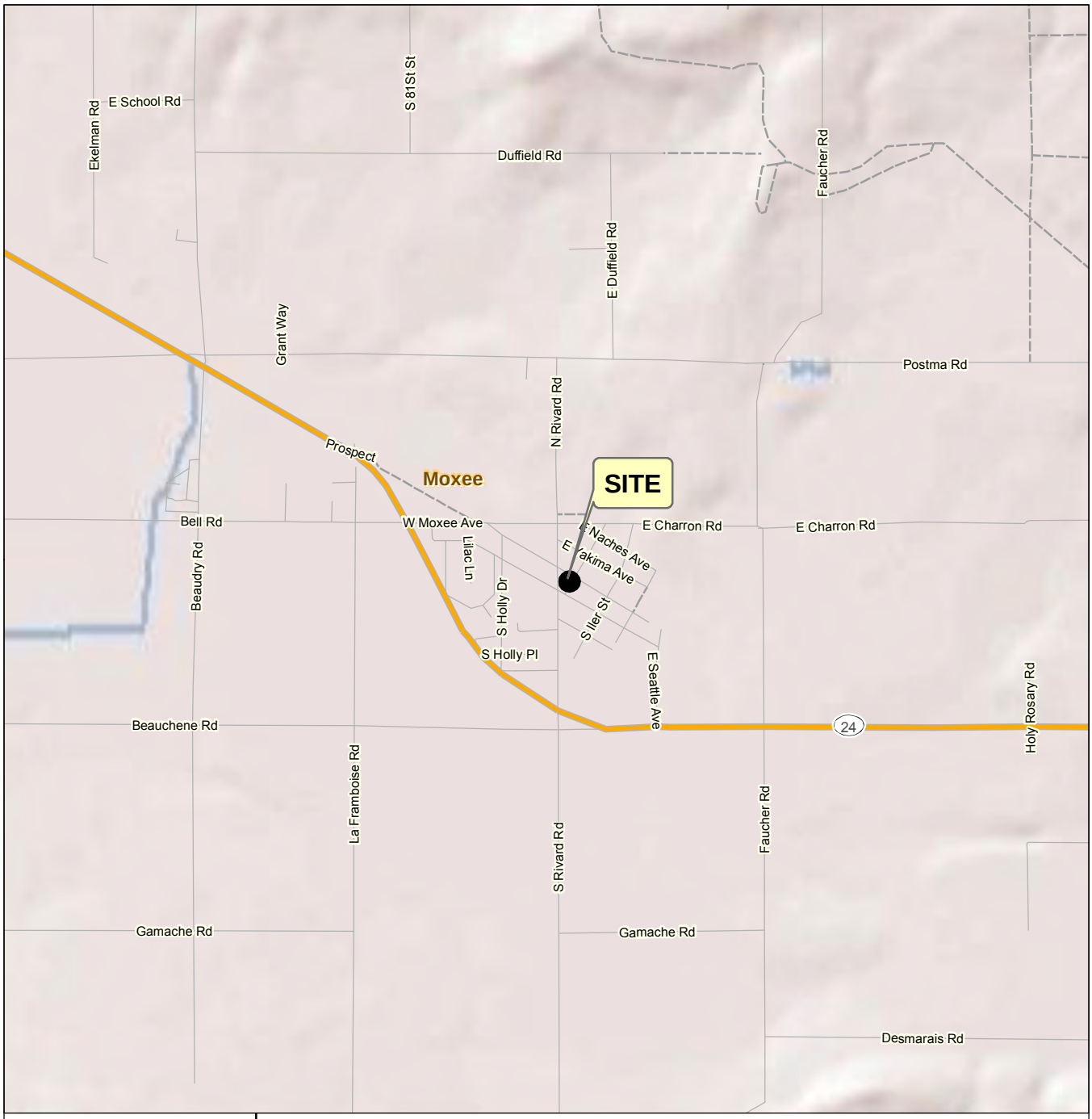
[9]Total lead analyzed using EPA Method 6010C.

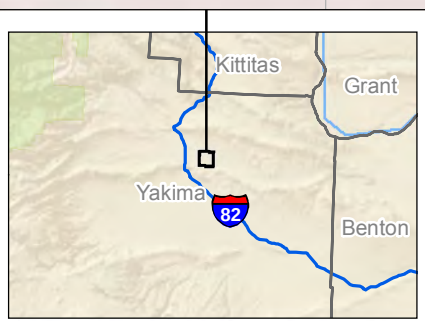
mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; bgs = below ground surface; NE = Not Established; MTBE=methyl tertiary-butyl ether

https://projects.geoengineers.com/sites/0050407500/Final/Report/[0504-075-00 Table 1.xlsx]Soil

FIGURES

GeoEngineers





N
W E
S

2,000 0 2,000
Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Data Sources: ESRI Data & Maps, Street Maps 2008.
Projection: NAD 1983, UTM Zone 10 North.

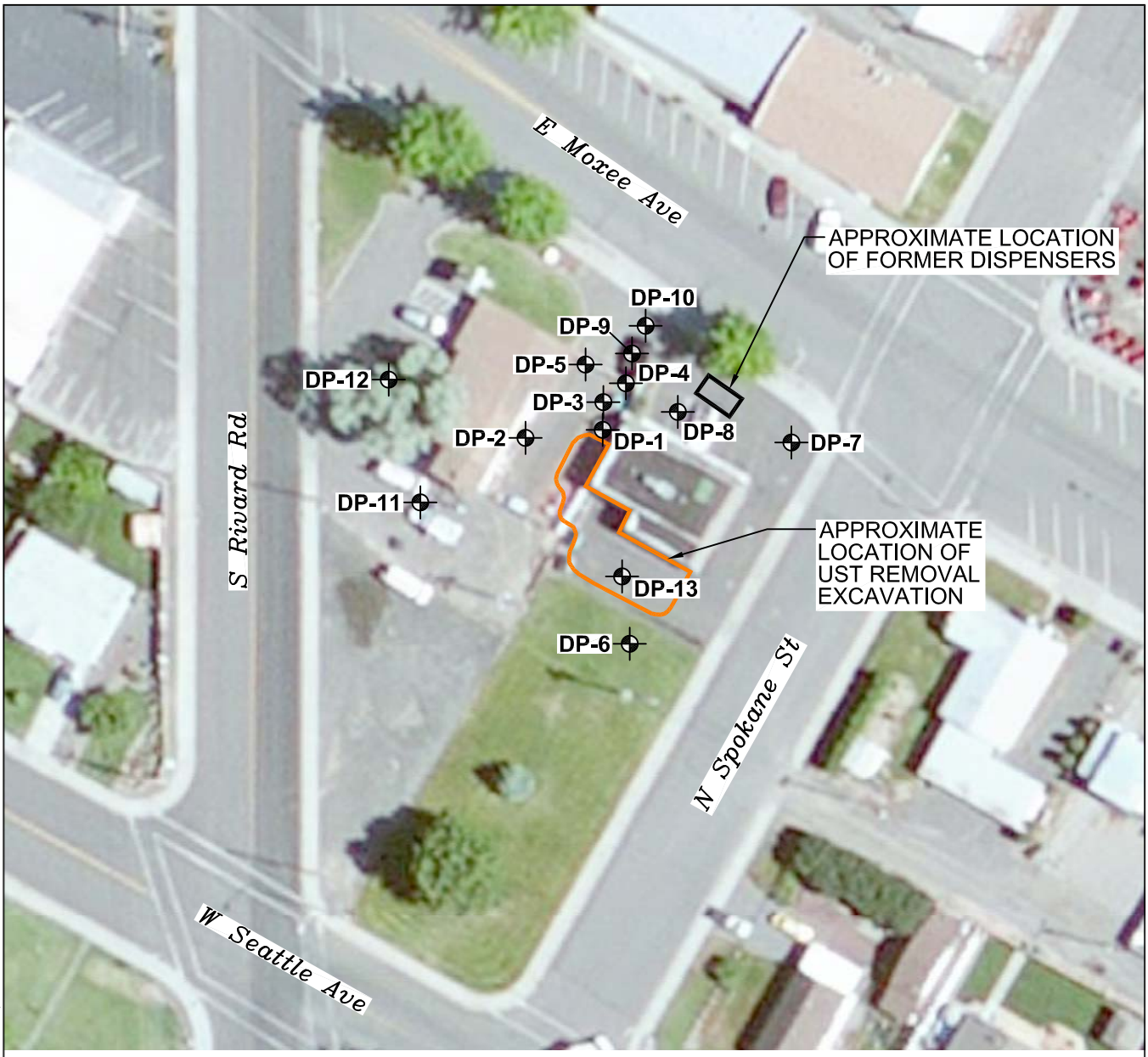
Vicinity Map

Frenchies' Fill-N-Food
Moxee, Washington

GeoEngineers

Figure 1

Office: SPO Path:W:\Spokane\Projects\0\0504075\GIS\00\0504075 00_F1_VicinityMap.mxd Map Revised: 12/14/2011 CRC



Legend

DP-1 ⊕ Approximate Location of Direct-Push Boring

N
W E
S

60 0 60
Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Aerial photo provided by ESRI Bing Maps Aerial.

Boring Locations

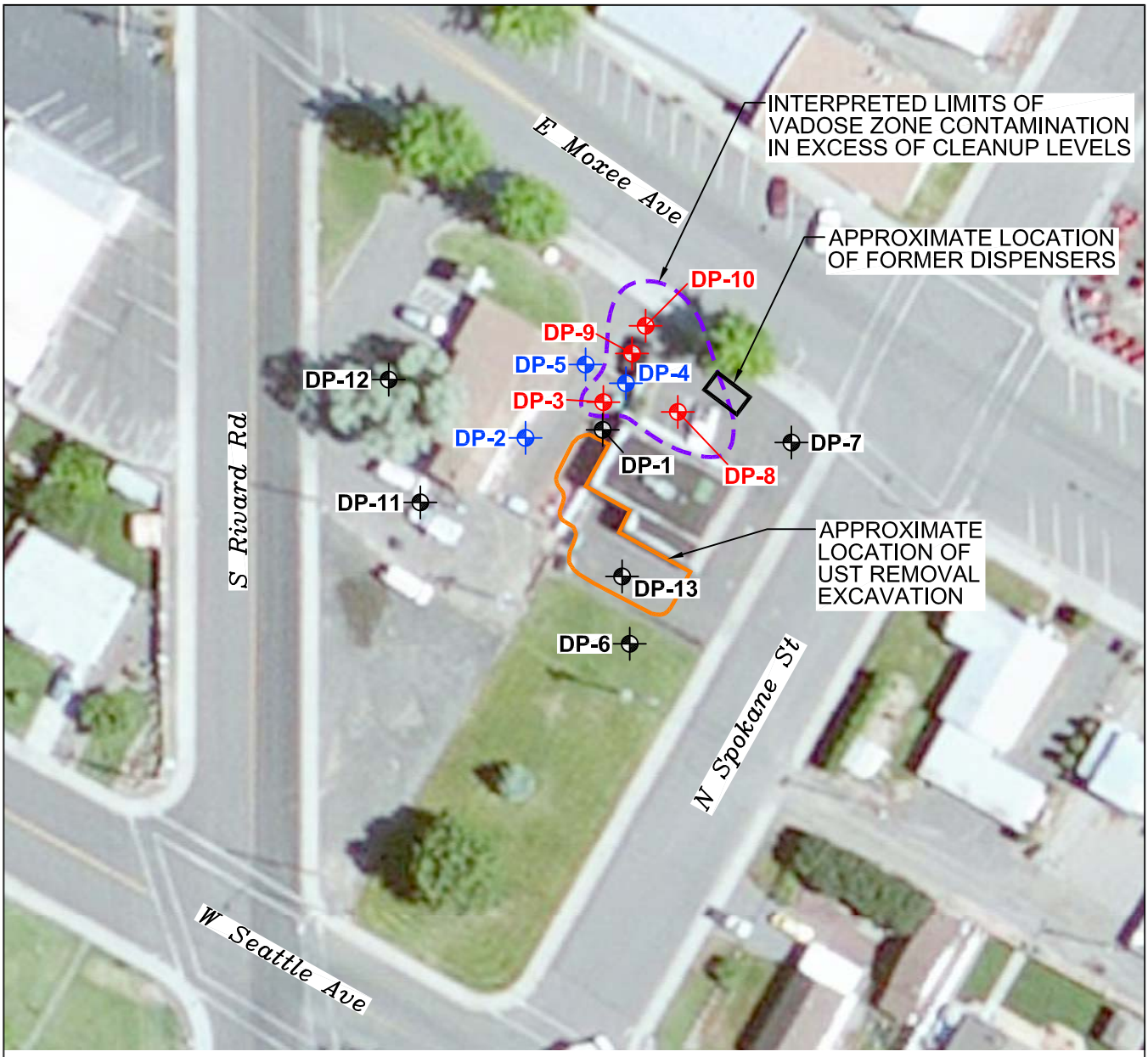
Frenchies' Fill-N-Food
Moxee, Washington

GeoEngineers

Figure 2

SPOK:JR : SCY

D:\PROJECT\SPOKANE\0504075\00\CAD\0504075 00_F2.dwg\TAB:F2 modified on Apr 30, 2012 - 2:31pm



Legend

DP-1 Direct-Push Boring with no Cleanup Level Exceedance

DP-8 Direct-Push Boring with Contaminant Soil Concentration in Vadose Zone that Exceeded Cleanup Levels

DP-4 Direct-Push Boring with Contaminant Soil Concentration near the Groundwater Table that Exceeded Cleanup Levels

N W E S

60 0 60

Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. Soil sample contaminant concentrations were referenced to Model Toxics Control Act Method A Cleanup Levels for Unrestricted Land Use to establish exceedance locations.
4. Interpreted limits of Vadose Zone contamination based on laboratory and field screening results.

Reference: Aerial photo provided by ESRI Bing Maps Aerial.

Cleanup Level Exceedance Locations

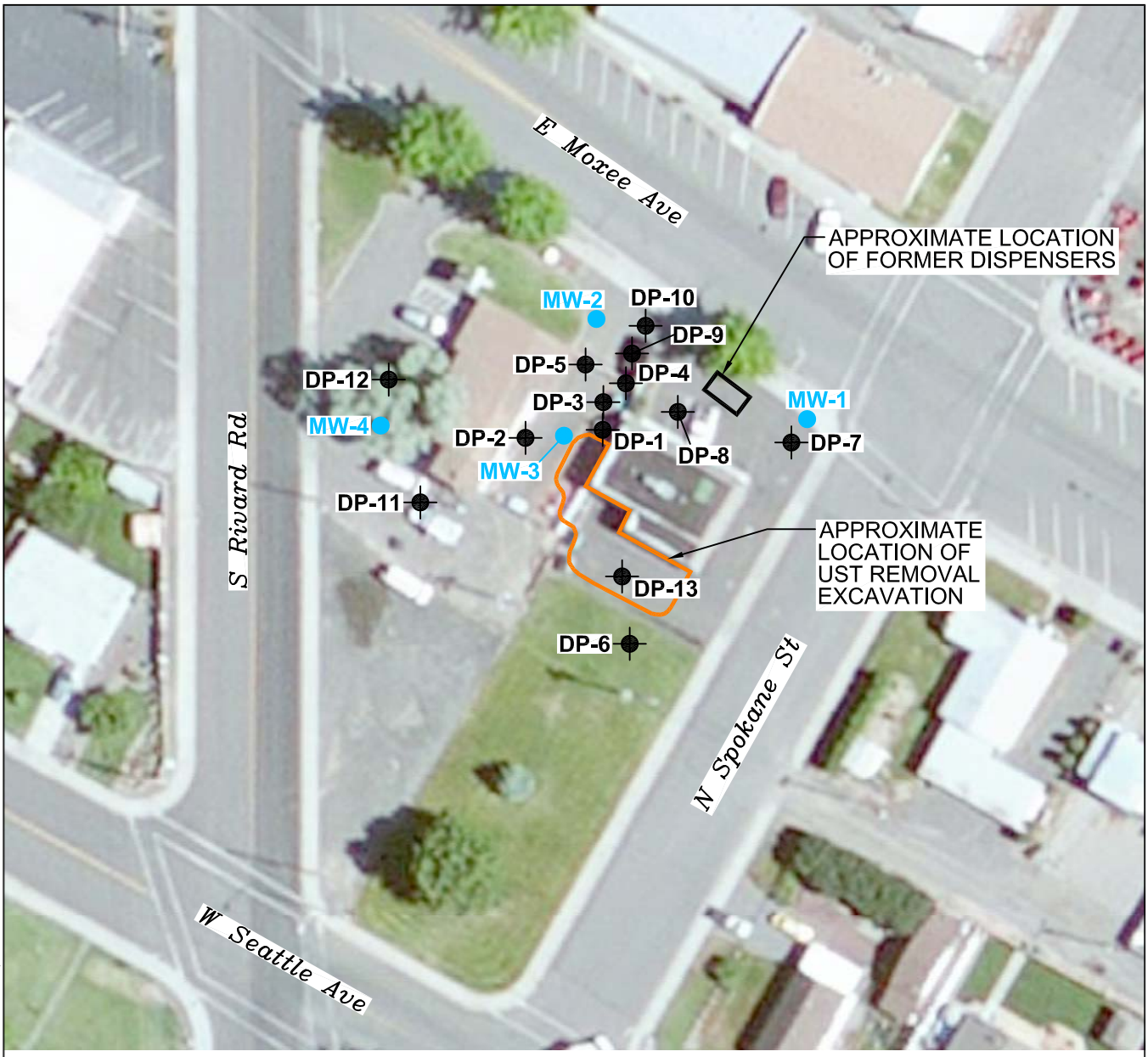
Frenchies' Fill-N-Food
Moxee, Washington

GeoEngineers

Figure 3

SPOK:JR : SCY

D:\PROJECT\SPOKANE\0504075\00\CAD\0504075500_F3.dwg\TAB:F3 modified on May 08, 2012 - 8:13am



Legend

DP-1 — Previous Direct-Push Boring Locations

MW-1 — Proposed Monitoring Well Location

N
W E
S

60 0 60

Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Aerial photo provided by ESRI Bing Maps Aerial.

Proposed Monitoring Well Locations

Frenchies' Fill-N-Food
Moxee, Washington

GeoEngineers

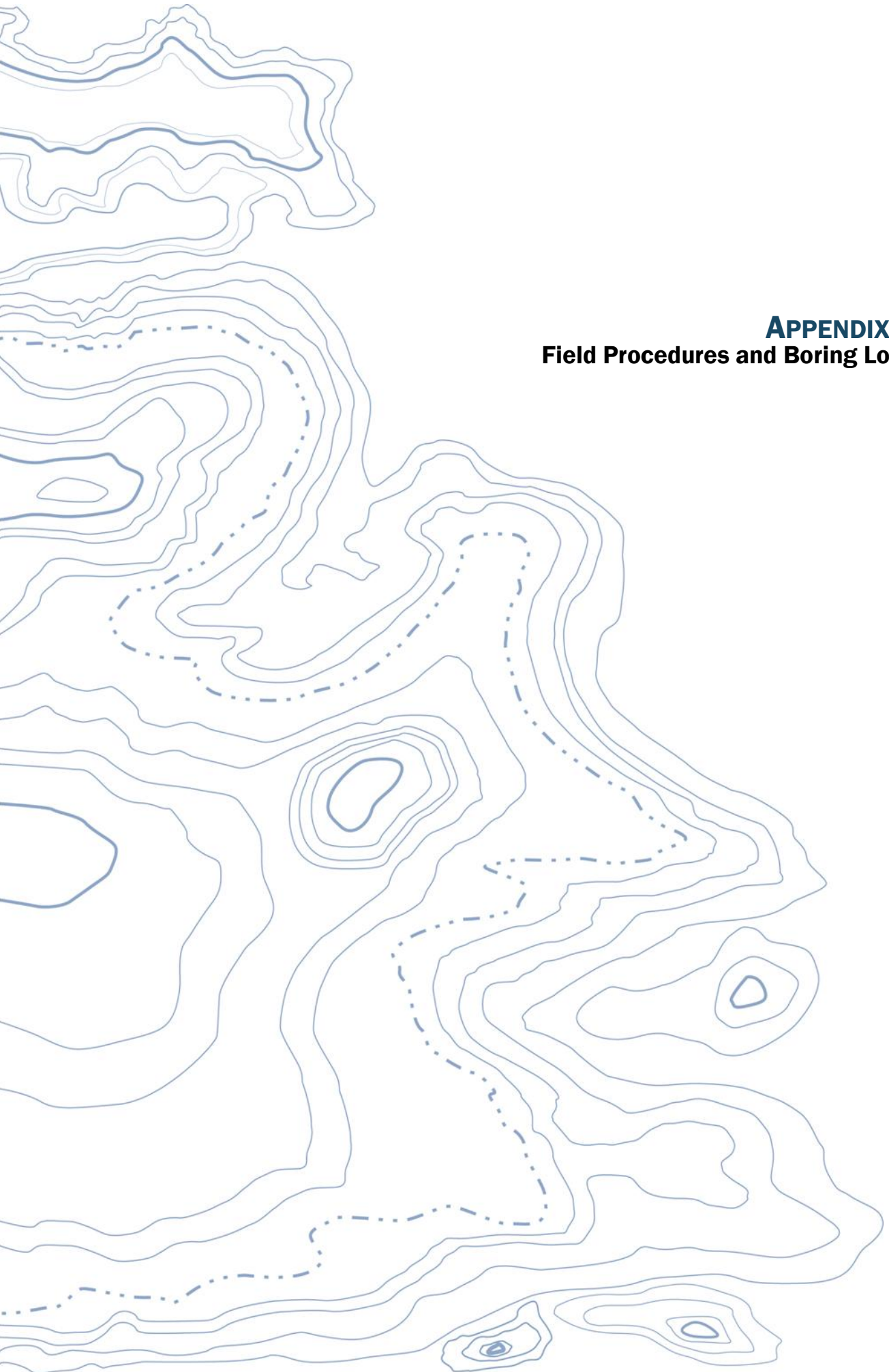
Figure 4

SPOK:JR : MGF

P:\0\05040751\00\CAD\05040751\00_F4_MonitoringWellLocations.dwg\TAB:F4 modified on May 21, 2012 - 12:28pm

APPENDICES

GeoEngineers



APPENDIX A
Field Procedures and Boring Logs

APPENDIX A
FIELD METHODS

General

Field methods performed in compliance with the project Sampling and Analysis Plan (SAP) (GeoEngineers 2012B).

Soil Sample Collection

Environmental Protection Agency (EPA) 5035 sampling methods were used to collect the soil samples for gasoline-range petroleum hydrocarbon (GRPH), volatile organic compound (VOC) and fractionalized petroleum hydrocarbon analyses. The soil for analysis of other parameters were placed in laboratory-supplied sample bottles and filled to minimize headspace. All soil samples were stored in a chilled cooler until delivery to the analytical laboratory.

Subsurface conditions at the Frenchies' Fill-N-Food site were explored at select locations on February 29, 2012 by advancing 13 borings (DP-1 to DP-13) at the approximate locations shown on Figure 2. The borings were advanced about 8 to 16 feet below existing site grade using a direct-push drill rig. Boring locations were established in the field by taping from existing site features. Consequently, exploration locations should be considered accurate to the degree implied by the method used.

The direct-push boring operations were monitored by staff from our firm who examined and classified the soil encountered; obtained soil samples and maintained a continuous log of exploration. Soil encountered in the borings was classified in general accordance with ASTM D 2488 and the classification chart listed in Key to Exploration Logs, Figure A-1. Logs of the borings are presented in Figures A-2 through A-14. The logs are based on interpretation of the field data and indicate the depth at which subsurface materials or their characteristics change, although these changes might actually be gradual.

Field Screening of Soil Samples

GeoEngineers' field representative performed field-screening tests on soil samples obtained from the borings. Field screening results were used as a general guideline to assess areas of possible petroleum-related contamination. The field screening methods used include: (1) visual screening; (2) water-sheen screening; and (3) headspace-vapor screening using a MiniRAE Photo Ionization Detector (PID) calibrated to isobutylene on the day of testing.

Visual screening consisted of observing soil for stains indicative of metal- or petroleum-related contamination. Water-sheen screening involved placing soil in a pan of water and observing the water surface for signs of sheen. Sheen screening may detect both volatile and nonvolatile petroleum hydrocarbons. Sheens observed are classified as follows:

No Sheen (NS)	No visible sheen on the water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.

Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on the water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involved placing a soil sample in a plastic sample bag. Air was captured in the bag, and the bag was shaken to expose the soil to the air trapped in the bag. Headspace vapor screening targeted volatile petroleum hydrocarbon compounds. In this application, the PID measured concentration of organic vapors ionizable by a 10.6 electron volt (ev) lamp in the range between 1.0 and 2,000 parts per million (ppm), with a resolution of +/- 2 ppm.

Field screening results can be site specific. The effectiveness of field screening can vary with temperature, moisture content, organic content, soil type and type and age of contaminant. The presence or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of contaminants.

SOIL CLASSIFICATION CHART

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

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

- **Measured groundwater level in exploration, well, or piezometer**
- **Groundwater observed at time of exploration**
- **Perched water observed at time of exploration**
- **Measured free product in well or piezometer**

Graphic Log Contact

- **Distinct contact between soil strata or geologic units**
- **Approximate location of soil strata change within a geologic soil unit**

Material Description Contact

- **Distinct contact between soil strata or geologic units**
- **Approximate location of soil strata change within a geologic soil unit**

Sampler Symbol Descriptions

- **2.4-inch I.D. split barrel**
- **Standard Penetration Test (SPT)**
- **Shelby tube**
- **Piston**
- **Direct-Push**
- **Bulk or grab**

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

Drilled Start	Drilled End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	16	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	11.5	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		31						AC	Approximately 2 inches asphalt concrete pavement			
									ML	Brown silt with trace fine sand and gravel (medium stiff, moist) (fill)			
						1					NS	<1	
			36										
	5												
						2					NS	<1	
			30										
	10					3 CA					NS	<1	DP-1(10-10.5)
							▽		ML	Brown silt with trace fine sand (soft, moist) (native) Wet from approximately 11 to 12 feet			Interpreted depth of 1994 tank removal excavation
			48										
						4					SS	585	Petroleum odor and staining below 12½ feet
	15												

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-1

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-2
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	2/29/2012	2/29/2012	16	KLR	SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	11.0	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		28						AC	Approximately 1 inch asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand (dense, moist) (fill)			
									ML	Brown silt with fine sand (soft to medium stiff, moist) (native)			
						1			SP-SM	Brown fine sand with silt (loose to medium dense, moist)	NS	<1	
			40										
	5								ML	Brown silt with fine sand (soft to medium stiff, moist)			
						2			SP-SM	Brown fine sand with silt (medium dense, moist)	NS	<1	
			36										
	10					3 CA	▽				SS	30.8	Mild petroleum odor DP-2(10.5-11)
			48			4					SS	46.2	Mild petroleum odor and stained soil
									ML	Brown silt with fine sand (soft to medium stiff, wet)			
	15												

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-2

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-3
Sheet 1 of 1

Drilled: Start 2/29/2012 End 2/29/2012	Total Depth (ft): 16	Logged By: KLR Checked By: SHL	Driller: Environmental West	Drilling Method: Direct Push	
Surface Elevation (ft) Vertical Datum: Undetermined		Hammer Data: Not Applicable		Drilling Equipment: Truck-Mounted GeoProbe	
Easting (X) Northing (Y): 1		System Datum: Not Applicable		Groundwater: Date Measured 2/29/2012; Depth to Water (ft) 10.5; Elevation (ft)	
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0								AC	Approximately 2 inches asphalt concrete pavement			
		1	36						GP	Brown gravel with fine to coarse sand and silt (medium dense, moist) (fill)			
									ML	Brown silt with fine sand (medium stiff, moist) (native)			
						1					NS	<1	
		2	36										
	5												
						2 / CA			SP-SM	Gray fine sand with silt, staining throughout (medium dense, moist)	HS	1835	Strong petroleum odor and stained soil DP-3(6.5-7)
		3	24										
						3					HS	1725	Strong petroleum odor and stained soil
	10						▽		ML	Brownish gray silt with fine sand (soft, wet)			
		4	36										
						4					HS	310	Strong petroleum odor and stained soil
		5											
						5					HS	575	Strong petroleum odor and stained soil
	15												

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-3

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-4
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	16	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	10.5	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		30						AC	Approximately 2 inches asphalt concrete pavement			
									ML	Brown to gray silt with trace fine sand (medium stiff, moist)			
						1					SS	120	Mild petroleum odor and stained soil
			24										
	5					2					HS	1250	Strong petroleum odor and stained soil
									SP-SM	Gray fine sand with silt (medium dense, moist)			
			24										
	10					3 CA	▽				HS	2060	Strong petroleum odor and stained soil DP-4(9.5-10)
									ML	Brownish gray silt with fine sand (soft, wet)			
			36										Visible petroleum sheen within moisture retained in soil sample
	15					4							

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-4

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-5
Sheet 1 of 1

Drilled Start	Drilled End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	12	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	10.5	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		24						AC	Approximately 2 inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand and silt (dense, moist) (fill)			
									ML	Brown silt with fine sand (medium stiff, moist) (native)			
						1					NS	<1	
			40										
	5												
						2					NS	<1	
			40										
									SP-SM	Brown fine sand with silt (medium dense, moist)			
	10						▽						
						3 CA					SS	820	Petroleum odor and stained soil below 11 feet DP-5(11-11.5)

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-5

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-6
Sheet 1 of 1

Drilled Start	Drilled End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	12	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	10.0	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32						ML	Brown silt with trace sand (medium stiff, moist) (topsoil)			
									ASH	2 inch layer of white ash			
						1			GP	Brown gravel with fine sand, silt, debris and glass (medium dense, moist) (fill)	NS	<1	
			40										
	5								ML	Brown silt with trace fine sand (medium stiff, moist) (native)			
						2					NS	<1	
			44										
									SP-SM	Light brown fine sand with silt (medium dense, moist)			
	10					3 CA	▽		ML	Brown silt with trace fine sand (medium stiff, wet)	NS	<1	DP-6(10-10.5)

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-6

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-7
Sheet 1 of 1

Drilled Start	Drilled End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	12	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable	2/29/2012	9.8	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36						AC	Approximately 2 inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand, silt, and debris (wood) (medium dense to dense, moist) (fill)			
									ML	Brown silt with trace fine sand (medium stiff, moist) (native)			
						1					NS	<1	
			36										
	5								SP-SM	Brown fine sand with silt (medium dense, moist)			
						2					NS	<1	
									ML	Brown silt with fine sand (medium stiff, moist)			
			40										
									SP-SM	Brown fine sand with silt (medium dense, moist)			
	10					3 CA	▽				NS	<1	DP-7(9.5-10)
									ML	Brown silt with trace fine sand (medium stiff, wet)			

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-7

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-8
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	2/29/2012	2/29/2012	12	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater
1	Not Applicable	Date Measured / Depth to Water (ft) / Elevation (ft): Not encountered

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		30						AC	Approximately 2 inches asphalt concrete pavement			
									ML	Brown silt with fine sand and gravel (medium stiff, moist) (fill)			
						1					SS	<1	
			48						ML	Brown silt with fine sand, no gravel (medium stiff, moist) (native)			
	5									Visible gray staining from 6 to 8 feet			
						2 CA					HS	1840	Strong petroleum odor DP-8(7-8)
			0						Unknown	Unknown			No recovery from 8 to 12 feet
	10												

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-8

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-9
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	8	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater
1	Not Applicable	Date Measured / Depth to Water (ft) / Elevation (ft): Not encountered

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36						AC	Approximately 2 inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand and silt (medium dense to dense, moist) (fill)			
									ML	Brown silt with trace sand (medium stiff to moist) (native)			
					✓	1 / CA					SS to HS	725	Petroleum odor and stained soil DP-9(2.5-3)
			48										
	5									Gray silt with fine sand (medium stiff, moist)			
					✓	2					HS	1975	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-9

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-10
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
2/29/2012	2/29/2012	8	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater
1	Not Applicable	Date Measured / Depth to Water (ft) / Elevation (ft): Not encountered

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32						AC	Approximately 2 inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand and silt			
									ML	Brown silt with fine sand (medium stiff, moist) (native)			
						1					NS	<1	
			48						SP-SM	Brown fine sand with silt (medium dense, moist)			
	5					2 CA					HS	875	Petroleum odor and stained soil DP-10(6.5-7.5)

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-10

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-11
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	2/29/2012	2/29/2012	12	KLR / SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater
1	Not Applicable	Date Measured: 2/29/2012; Depth to Water (ft): 10.5; Elevation (ft):

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32						AC	Approximately 2 inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand and silt (dense, moist) (fill)			
									ML	Brown silt with fine sand (medium stiff, moist) (native)			
						1					NS	<1	
			24										
	5								SP-SM	Brown fine sand with silt (medium dense, moist)			
						2					NS	<1	
									ML	Brown silt with trace fine sand (medium stiff, moist)			
			24										
	10					3 CA	▽		SP	3 inch seam of brown fine sand (medium dense, moist)	NS	<1	DP-11(10-11)
									ML	Brown silt with trace fine sand (medium stiff, wet)			

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-11

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-12
Sheet 1 of 1

Drilled: Start 2/29/2012 End 2/29/2012	Total Depth (ft): 12	Logged By: KLR Checked By: SHL	Driller: Environmental West	Drilling Method: Direct Push	
Surface Elevation (ft) Vertical Datum: Undetermined		Hammer Data: Not Applicable		Drilling Equipment: Truck-Mounted GeoProbe	
Easting (X) Northing (Y): 1		System Datum: Not Applicable		Groundwater: Date Measured 2/29/2012; Depth to Water (ft) 10.5; Elevation (ft)	
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36						AC	Approximately 2½ inches asphalt concrete pavement			
									GP	Brown gravel with fine to coarse sand (medium dense to dense, moist) (fill)			
									ML	Brown silt with trace fine sand (medium stiff, moist) (native)			
					●	1					NS	<1	
			24										
	5								SP-SM	Brown fine sand with silt (medium stiff, moist)			
					●	2					NS	<1	
			48						ML	Brown silt with trace fine sand (medium stiff, moist)			
	10				●	3 CA	▽				NS	<1	DP-12(10-11)
									SP	3 inch seam of tan fine sand (medium dense, wet)			
									ML	Brown silt with trace fine sand (medium stiff, wet)			

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-12

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-13
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	2/29/2012	2/29/2012	16	KLR	SHL	Environmental West	Direct Push

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
Undetermined	Not Applicable	Truck-Mounted GeoProbe

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
1	Not Applicable			

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36						ML	Brown silt with gravel and fine to coarse sand (medium stiff, moist) (fill)			
						1					NS	<1	
			26										
	5					2					NS	<1	
			30										
	10					3					NS	<1	
										Wet below 11 feet			
			48										
						4			ML	Gray silt with trace fine sand (medium stiff, wet)	SS	<1	Very faint petroleum odor Minor staining of soil
	15									Grades to brown			
						5					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-13

GeoEngineers

Project: Frenchies' Fill-N-Food
Project Location: Moxee, Washington
Project Number: 0504-075-00

Figure A-14
Sheet 1 of 1

APPENDIX B
Representative Site Photographs

View of existing site building (view to southwest)

View of existing site building (view to northeast)

Representative Site Photographs	
Frenchies' Fill-N-Food Moxee, Washington	
GeoEngineers	Figure B-1

File No. 0504-075-00

View of adjacent childcare facility and associated outdoor play area (view to northeast)

View of south portion of site (view to northwest)

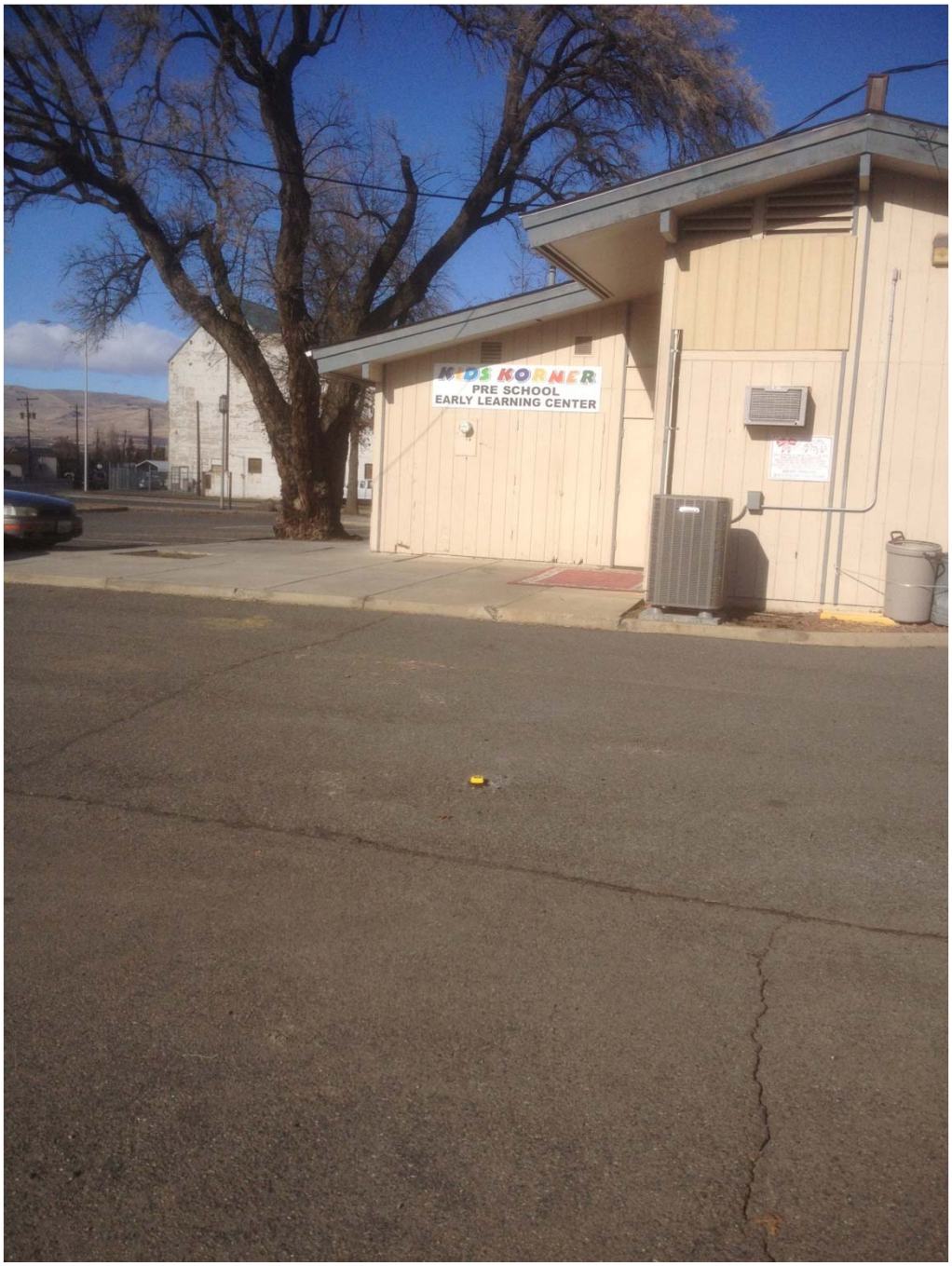
Representative Site Photographs

Frenchies' Fill-N-Food
Moxee, Washington

GeoEngineers

Figure B-2

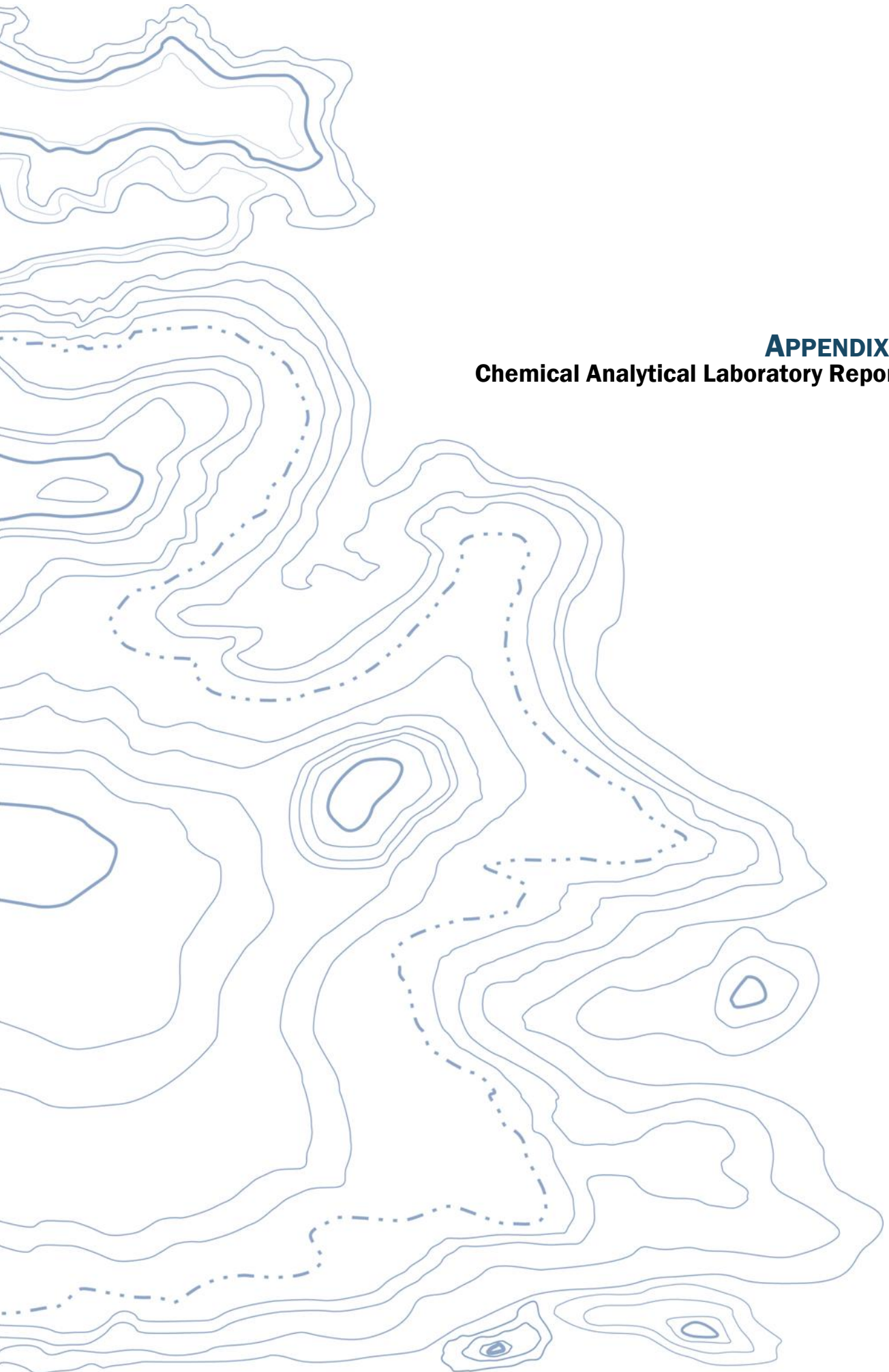
File No. 0504-075-00



View of adjacent childcare facility with boring DP-11 in foreground
(view to north)

Representative Site Photographs	
Frenchies' Fill-N-Food Moxee, Washington	
GeoEngineers	Figure B-3

File No. 0504-075-00



APPENDIX C
Chemical Analytical Laboratory Reports

APPENDIX C
CHEMICAL ANALYTICAL DATA

Samples

Chain-of-custody procedures were followed during the transport of the field samples to TestAmerica Laboratories, Inc. located in Spokane, Washington. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this appendix.

Analytical Data Review

The laboratory maintains an internal quality assurance/quality control (QA/QC) program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted the following exceptions in the laboratory report.

- The surrogate recovery of 4-bromofluorobenzene was outside acceptance limits with respect to samples collected from DP-2, DP-3, DP-4, DP-5, DP-8 and DP-10.
- Sample DP-3(6.5-7) required a dilution. As a result, the surrogate spike concentration in the sample was reduced to a level where the laboratory indicated the recovery calculation did not provide useful information.
- Because of interference, percent recovery of 4-bromofluorobenzene was not calculated for the following samples: DP-3(6.5-7); DP-8(7-8); 580-31626-2 MS; and 580-31626-2 MSD.
- The reporting limit of 1,2-Dibromoethane was raised in sample DP-5(11-11.5) because of sample matrix effects.

Analytical Data Review Summary

We reviewed the laboratory internal quality assurance/quality control (QA/QC) in the context of data quality goals. Based on our review, in our opinion, the quality of the analytical data is acceptable for the intended use.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: SVC0026
Client Project/Site: 0504-075-00
Client Project Description: Frenchies Fill-n-Food
Revision: 2

For:
Geo Engineers - Spokane
523 East Second Ave.
Spokane, WA 99202

Attn: Jon Rudders

Authorized for release by:
4/10/2012 2:28:11 PM

Randee Decker
Project Manager
Randee.Decker@testamericainc.com

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

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

Table of Contents

Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SVC0026-02	DP-1(10-10.5)	Soil	02/29/12 08:15	03/05/12 17:05
SVC0026-04	DP-2(10.5-11)	Soil	02/29/12 09:00	03/05/12 17:05
SVC0026-08	DP-3(6.5-7)	Soil	02/29/12 09:45	03/05/12 17:05
SVC0026-09	DP-4(9.5-10)	Soil	02/29/12 10:50	03/05/12 17:05
SVC0026-10	DP-5(11-11.5)	Soil	02/29/12 11:15	03/05/12 17:05
SVC0026-11	DP-6(10-10.5)	Soil	02/29/12 12:30	03/05/12 17:05
SVC0026-12	DP-7(9.5-10)	Soil	02/29/12 13:00	03/05/12 17:05
SVC0026-13	DP-8(7-8)	Soil	02/29/12 13:35	03/05/12 17:05
SVC0026-14	DP-9(2.5-3)	Soil	02/29/12 13:50	03/05/12 17:05
SVC0026-15	DP-10(6.5-7.5)	Soil	02/29/12 14:15	03/05/12 17:05
SVC0026-16	DP-11(10-11)	Soil	02/29/12 14:50	03/05/12 17:05
SVC0026-17	DP-12 (10-11)	Soil	02/29/12 15:10	03/05/12 17:05

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Qualifiers

GCMS Volatiles

Qualifier	Qualifier Description
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
M7	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Semivolatiles

Qualifier	Qualifier Description
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
RL1	Reporting limit raised due to sample matrix effects.

GC VOA

Qualifier	Qualifier Description
I	Indicates the presence of an interference, recovery is not calculated.
X	Surrogate is outside control limits
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DP-1(10-10.5)

Lab Sample ID: SVC0026-02

Date Collected: 02/29/12 08:15

Matrix: Soil

Date Received: 03/05/12 17:05

Percent Solids: 81.2

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**20.0**		6.70		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Methyl tert-butyl ether	ND		0.0402		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Benzene	ND		0.0201		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Ethylbenzene	ND		0.134		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Toluene	ND		0.134		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
o-Xylene	ND		0.268		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
m,p-Xylene	ND		0.536		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Naphthalene	ND		0.268		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
1,2-Dichloroethane (EDC)	ND		0.134		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Xylenes (total)	ND		2.01		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00
Hexane	ND		0.134		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:04	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 14:04*	*1.00*
Toluene-d8	*112*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 14:04*	*1.00*
4-bromofluorobenzene	*116*		*51 - 136*	*03/07/12 09:50*	*03/07/12 14:04*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.21		ug/kg dry	☼	03/09/12 13:34	03/12/12 11:43	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0120		mg/kg dry	☼	03/07/12 08:35	03/07/12 17:22	1.00
1-Methylnapthalene	ND		0.0120		mg/kg dry	☼	03/07/12 08:35	03/07/12 17:22	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*110*		*30 - 140*	*03/07/12 08:35*	*03/07/12 17:22*	*1.00*
2-FBP	*93.0*		*30 - 140*	*03/07/12 08:35*	*03/07/12 17:22*	*1.00*
p-Terphenyl-d14	*69.2*		*30 - 150*	*03/07/12 08:35*	*03/07/12 17:22*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**13.1**		1.74		mg/kg dry	☼	03/09/12 09:35	03/14/12 10:43	1.00

Client Sample ID: DP-2(10.5-11)

Lab Sample ID: SVC0026-04

Date Collected: 02/29/12 09:00

Matrix: Soil

Date Received: 03/05/12 17:05

Percent Solids: 75

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**167**		8.02		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Methyl tert-butyl ether	ND		0.0481		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Benzene	ND		0.0240		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Ethylbenzene	ND		0.160		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Toluene	ND		0.160		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
o-Xylene	ND		0.321		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
m,p-Xylene	ND		0.641		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Naphthalene	ND		0.321		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
1,2-Dichloroethane (EDC)	ND		0.160		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Xylenes (total)	ND		2.40		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00
Hexane	ND		0.160		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:27	1.00

Client Sample ID: DP-2(10.5-11)

Lab Sample ID: SVC0026-04

Date Collected: 02/29/12 09:00

Matrix: Soil

Date Received: 03/05/12 17:05

Percent Solids: 75

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*113*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 14:27*	*1.00*
Toluene-d8	*113*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 14:27*	*1.00*
4-bromofluorobenzene	*152*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 14:27*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.22		ug/kg dry	☼	03/09/12 13:34	03/12/12 12:20	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0132		mg/kg dry	☼	03/07/12 08:35	03/07/12 18:38	1.00
1-Methylnapthalene	ND		0.0132		mg/kg dry	☼	03/07/12 08:35	03/07/12 18:38	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*116*		*30 - 140*	*03/07/12 08:35*	*03/07/12 18:38*	*1.00*
2-FBP	*107*		*30 - 140*	*03/07/12 08:35*	*03/07/12 18:38*	*1.00*
p-Terphenyl-d14	*98.8*		*30 - 150*	*03/07/12 08:35*	*03/07/12 18:38*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.95**		1.92		mg/kg dry	☼	03/09/12 09:35	03/14/12 10:47	1.00

Client Sample ID: DP-3(6.5-7)

Lab Sample ID: SVC0026-08

Date Collected: 02/29/12 09:45

Matrix: Soil

Date Received: 03/05/12 17:05

Percent Solids: 80.6

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.485		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Benzene	ND		0.242		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Ethylbenzene	**16.5**		1.62		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Toluene	ND		1.62		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
o-Xylene	ND		3.23		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
m,p-Xylene	**41.6**		6.46		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Naphthalene	**38.5**		3.23		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
1,2-Dichloroethane (EDC)	ND		1.62		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Xylenes (total)	**43.3**		24.2		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0
Hexane	ND		1.62		mg/kg dry	☼	03/07/12 09:50	03/07/12 14:50	10.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*115*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 14:50*	*10.0*
Toluene-d8	*118*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 14:50*	*10.0*
4-bromofluorobenzene	*199*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 14:50*	*10.0*

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**5630**		808		mg/kg dry	☼	03/07/12 09:50	03/08/12 10:38	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*94.2*		*42.7 - 151*	*03/07/12 09:50*	*03/08/12 10:38*	*100*
Toluene-d8	*95.8*		*50.8 - 132*	*03/07/12 09:50*	*03/08/12 10:38*	*100*
4-bromofluorobenzene	*96.6*		*51 - 136*	*03/07/12 09:50*	*03/08/12 10:38*	*100*

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-3(6.5-7)
Date Collected: 02/29/12 09:45
Date Received: 03/05/12 17:05

Lab Sample ID: SVC0026-08
Matrix: Soil
Percent Solids: 80.6

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.21		ug/kg dry	☼	03/09/12 13:34	03/12/12 12:32	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**12.4**		0.246		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:03	20.0
1-Methylnapthalene	**4.57**		0.246		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:03	20.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*192*	*Z3*	*30 - 140*	*03/07/12 08:35*	*03/07/12 19:03*	*20.0*
2-FBP	*108*		*30 - 140*	*03/07/12 08:35*	*03/07/12 19:03*	*20.0*
p-Terphenyl-d14	*88.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 19:03*	*20.0*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C6-C8 Aliphatics	**180**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C10-C12 Aliphatics	**470**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C8-C10 Aromatics	**230**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C8-C10 Aliphatics	**370**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C10-C12 Aromatics	**370**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
Total VPH	**1700**		190		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10
C12-C13 Aromatics	**100**		27		mg/Kg	☼	03/09/12 11:21	03/13/12 13:53	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*165*	*I X*	*60 - 140*	*03/09/12 11:21*	*03/13/12 13:53*	*10*
BFB - PID	*93*		*60 - 140*	*03/09/12 11:21*	*03/13/12 13:53*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aliphatics	ND		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1
C16-C21 Aliphatics	**14**		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1
C12-C16 Aromatics	**85**		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1
C12-C16 Aliphatics	**85**		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1
C21-C34 Aromatics	ND		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1
C16-C21 Aromatics	**9.8**		6.1		mg/Kg	☼	03/13/12 15:49	03/20/12 00:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*85*		*60 - 140*	*03/13/12 15:49*	*03/20/12 00:06*	*1*
o-Terphenyl	*82*		*60 - 140*	*03/13/12 15:49*	*03/20/12 00:06*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**340**		12		mg/Kg	☼	03/13/12 15:49	03/20/12 07:22	2
C10-C12 Aromatics	**300**		12		mg/Kg	☼	03/13/12 15:49	03/20/12 07:22	2

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**8.86**		1.66		mg/kg dry	☼	03/09/12 09:35	03/14/12 10:51	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-4(9.5-10)

Lab Sample ID: SVC0026-09

Date Collected: 02/29/12 10:50
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 70.6

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**5090**		118		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Methyl tert-butyl ether	ND		0.705		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Benzene	**0.847**		0.353		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Ethylbenzene	**24.5**		2.35		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Toluene	**4.91**		2.35		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
o-Xylene	**11.4**		4.70		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
m,p-Xylene	**82.9**		9.41		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Naphthalene	**19.6**		4.70		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
1,2-Dichloroethane (EDC)	ND		2.35		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Xylenes (total)	**94.3**		35.3		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0
Hexane	**7.36**		2.35		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:14	10.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*116*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 15:14*	*10.0*
Toluene-d8	*120*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 15:14*	*10.0*
4-bromofluorobenzene	*155*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 15:14*	*10.0*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.38		ug/kg dry	☼	03/09/12 13:34	03/12/12 12:44	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**3.16**		0.697		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:29	50.0
1-Methylnapthalene	**1.21**		0.697		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:29	50.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*410*	*Z3*	*30 - 140*	*03/07/12 08:35*	*03/07/12 19:29*	*50.0*
2-FBP	*80.0*		*30 - 140*	*03/07/12 08:35*	*03/07/12 19:29*	*50.0*
p-Terphenyl-d14	*70.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 19:29*	*50.0*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.25**		2.15		mg/kg dry	☼	03/09/12 09:35	03/14/12 10:55	1.00

Client Sample ID: DP-5(11-11.5)

Lab Sample ID: SVC0026-10

Date Collected: 02/29/12 11:15
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 77.4

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**286**		7.72		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Methyl tert-butyl ether	ND		0.0463		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Benzene	**0.113**		0.0232		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Ethylbenzene	ND		0.154		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Toluene	ND		0.154		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
o-Xylene	ND		0.309		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
m,p-Xylene	ND		0.618		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Naphthalene	**0.827**		0.309		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
1,2-Dichloroethane (EDC)	ND		0.154		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Xylenes (total)	ND		2.32		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00
Hexane	**0.574**		0.154		mg/kg dry	☼	03/07/12 09:50	03/07/12 15:37	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-5(11-11.5)

Lab Sample ID: SVC0026-10

Date Collected: 02/29/12 11:15
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 77.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*115*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 15:37*	*1.00*
Toluene-d8	*114*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 15:37*	*1.00*
4-bromofluorobenzene	*147*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 15:37*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND	RL1	12.4		ug/kg dry	☼	03/09/12 13:34	03/12/12 12:57	10.0

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**1.13**		0.253		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:54	20.0
1-Methylnapthalene	**0.438**		0.253		mg/kg dry	☼	03/07/12 08:35	03/07/12 19:54	20.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*132*		*30 - 140*	*03/07/12 08:35*	*03/07/12 19:54*	*20.0*
2-FBP	*100*		*30 - 140*	*03/07/12 08:35*	*03/07/12 19:54*	*20.0*
p-Terphenyl-d14	*80.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 19:54*	*20.0*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**6.28**		1.81		mg/kg dry	☼	03/09/12 09:35	03/14/12 10:59	1.00

Client Sample ID: DP-6(10-10.5)

Lab Sample ID: SVC0026-11

Date Collected: 02/29/12 12:30
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 60.7

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		12.9		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Methyl tert-butyl ether	ND		0.0774		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Benzene	ND		0.0129		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Ethylbenzene	ND		0.258		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Toluene	ND		0.258		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
o-Xylene	ND		0.516		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
m,p-Xylene	ND		1.03		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Naphthalene	ND		0.516		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
1,2-Dichloroethane (EDC)	ND		0.258		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Xylenes (total)	ND		3.87		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00
Hexane	ND		0.258		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:00	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 16:00*	*1.00*
Toluene-d8	*113*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 16:00*	*1.00*
4-bromofluorobenzene	*118*		*51 - 136*	*03/07/12 09:50*	*03/07/12 16:00*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.62		ug/kg dry	☼	03/09/12 13:34	03/12/12 13:09	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0156		mg/kg dry	☼	03/07/12 08:35	03/07/12 20:19	1.00
1-Methylnapthalene	ND		0.0156		mg/kg dry	☼	03/07/12 08:35	03/07/12 20:19	1.00

Client Sample ID: DP-6(10-10.5)

Lab Sample ID: SVC0026-11
Date Collected: 02/29/12 12:30
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 60.7

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*89.0*		*30 - 140*	*03/07/12 08:35*	*03/07/12 20:19*	*1.00*
2-FBP	*85.2*		*30 - 140*	*03/07/12 08:35*	*03/07/12 20:19*	*1.00*
p-Terphenyl-d14	*92.8*		*30 - 150*	*03/07/12 08:35*	*03/07/12 20:19*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.27		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:02	1.00

Client Sample ID: DP-7(9.5-10)

Lab Sample ID: SVC0026-12
Date Collected: 02/29/12 13:00
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 61.6

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		13.7		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Methyl tert-butyl ether	ND		0.0824		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Benzene	ND		0.0137		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Ethylbenzene	ND		0.275		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Toluene	ND		0.275		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
o-Xylene	ND		0.550		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
m,p-Xylene	ND		1.10		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Naphthalene	ND		0.550		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
1,2-Dichloroethane (EDC)	ND		0.275		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Xylenes (total)	ND		4.12		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00
Hexane	ND		0.275		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:23	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 16:23*	*1.00*
Toluene-d8	*111*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 16:23*	*1.00*
4-bromofluorobenzene	*116*		*51 - 136*	*03/07/12 09:50*	*03/07/12 16:23*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.57		ug/kg dry	☼	03/09/12 13:34	03/12/12 13:45	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0159		mg/kg dry	☼	03/07/12 08:35	03/07/12 20:44	1.00
1-Methylnapthalene	ND		0.0159		mg/kg dry	☼	03/07/12 08:35	03/07/12 20:44	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*100*		*30 - 140*	*03/07/12 08:35*	*03/07/12 20:44*	*1.00*
2-FBP	*91.6*		*30 - 140*	*03/07/12 08:35*	*03/07/12 20:44*	*1.00*
p-Terphenyl-d14	*81.2*		*30 - 150*	*03/07/12 08:35*	*03/07/12 20:44*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.12		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:06	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-8(7-8)
Date Collected: 02/29/12 13:35
Date Received: 03/05/12 17:05

Lab Sample ID: SVC0026-13
Matrix: Soil
Percent Solids: 75.4

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.736		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0
Benzene	**0.380**		0.368		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0
Ethylbenzene	**77.8**		2.45		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0
Toluene	**7.37**		2.45		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0
1,2-Dichloroethane (EDC)	ND		2.45		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0
Hexane	**5.57**		2.45		mg/kg dry	☼	03/07/12 09:50	03/07/12 16:46	10.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 16:46*	*10.0*
Toluene-d8	*125*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 16:46*	*10.0*
4-bromofluorobenzene	*345*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 16:46*	*10.0*

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**23200**		1230		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:02	100
o-Xylene	**45.1**		24.5		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:02	100
m,p-Xylene	**400**		98.1		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:02	100
Naphthalene	**108**		49.0		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:02	100
Xylenes (total)	**445**		368		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*113*		*42.7 - 151*	*03/07/12 09:50*	*03/08/12 11:02*	*100*
Toluene-d8	*112*		*50.8 - 132*	*03/07/12 09:50*	*03/08/12 11:02*	*100*
4-bromofluorobenzene	*128*		*51 - 136*	*03/07/12 09:50*	*03/08/12 11:02*	*100*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.28		ug/kg dry	☼	03/09/12 13:34	03/12/12 13:57	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**8.74**		0.643		mg/kg dry	☼	03/07/12 08:35	03/07/12 21:10	50.0
1-Methylnapthalene	**3.30**		0.643		mg/kg dry	☼	03/07/12 08:35	03/07/12 21:10	50.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*520*	*Z3*	*30 - 140*	*03/07/12 08:35*	*03/07/12 21:10*	*50.0*
2-FBP	*100*		*30 - 140*	*03/07/12 08:35*	*03/07/12 21:10*	*50.0*
p-Terphenyl-d14	*90.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 21:10*	*50.0*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C6-C8 Aliphatics	**1600**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C10-C12 Aliphatics	**1700**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C8-C10 Aromatics	**1400**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C8-C10 Aliphatics	**1800**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C10-C12 Aromatics	**1600**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
Total VPH	**8500**		520		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20
C12-C13 Aromatics	**370**		74		mg/Kg	☼	03/09/12 11:21	03/13/12 14:45	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*217*	*I X*	*60 - 140*	*03/09/12 11:21*	*03/13/12 14:45*	*20*
BFB - PID	*114*		*60 - 140*	*03/09/12 11:21*	*03/13/12 14:45*	*20*

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-8(7-8)

Date Collected: 02/29/12 13:35
Date Received: 03/05/12 17:05

Lab Sample ID: SVC0026-13

Matrix: Soil
Percent Solids: 78.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aliphatics	ND		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1
C16-C21 Aliphatics	**14**		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1
C12-C16 Aromatics	**140**		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1
C12-C16 Aliphatics	**96**		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1
C21-C34 Aromatics	ND		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1
C16-C21 Aromatics	**13**		6.3		mg/Kg	☼	03/13/12 15:49	03/20/12 00:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*79*		*60 - 140*	*03/13/12 15:49*	*03/20/12 00:30*	*1*
o-Terphenyl	*91*		*60 - 140*	*03/13/12 15:49*	*03/20/12 00:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**410**		13		mg/Kg	☼	03/13/12 15:49	03/20/12 07:49	2
C10-C12 Aromatics	**450**		13		mg/Kg	☼	03/13/12 15:49	03/20/12 07:49	2

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**11.1**		2.03		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:10	1.00

Client Sample ID: DP-9(2.5-3)

Date Collected: 02/29/12 13:50
Date Received: 03/05/12 17:05

Lab Sample ID: SVC0026-14

Matrix: Soil
Percent Solids: 81.5

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**65.2**		7.34		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Methyl tert-butyl ether	ND		0.0441		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Benzene	**0.0286**		0.0220		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Ethylbenzene	**0.391**		0.147		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Toluene	ND		0.147		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
o-Xylene	ND		0.294		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
m,p-Xylene	**1.49**		0.588		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Naphthalene	**0.637**		0.294		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
1,2-Dichloroethane (EDC)	ND		0.147		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Xylenes (total)	ND		2.20		mg/kg dry	☼	03/07/12 09:50	03/08/12 11:25	1.00
Hexane	ND		0.147		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:09	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/08/12 11:25*	*1.00*
Toluene-d8	*112*		*50.8 - 132*	*03/07/12 09:50*	*03/08/12 11:25*	*1.00*
4-bromofluorobenzene	*123*		*51 - 136*	*03/07/12 09:50*	*03/08/12 11:25*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.17		ug/kg dry	☼	03/09/12 13:34	03/12/12 14:09	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**0.117**		0.0122		mg/kg dry	☼	03/07/12 08:35	03/08/12 15:28	1.00
1-Methylnapthalene	**0.0421**		0.0122		mg/kg dry	☼	03/07/12 08:35	03/08/12 15:28	1.00

Client Sample ID: DP-9(2.5-3)

Lab Sample ID: SVC0026-14
Date Collected: 02/29/12 13:50
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 81.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*117*		*30 - 140*	*03/07/12 08:35*	*03/08/12 15:28*	*1.00*
2-FBP	*110*		*30 - 140*	*03/07/12 08:35*	*03/08/12 15:28*	*1.00*
p-Terphenyl-d14	*123*		*30 - 150*	*03/07/12 08:35*	*03/08/12 15:28*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**27.6**		14.2		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:26	1.00

Client Sample ID: DP-10(6.5-7.5)

Lab Sample ID: SVC0026-15
Date Collected: 02/29/12 14:15
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 78

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**512**		11.1		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Methyl tert-butyl ether	ND		0.0667		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Benzene	ND		0.0334		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Ethylbenzene	**0.653**		0.222		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Toluene	ND		0.222		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
o-Xylene	ND		0.445		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
m,p-Xylene	**3.10**		0.890		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Naphthalene	**5.32**		0.445		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
1,2-Dichloroethane (EDC)	ND		0.222		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Xylenes (total)	ND		3.34		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00
Hexane	ND		0.222		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:33	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*110*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 17:33*	*1.00*
Toluene-d8	*113*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 17:33*	*1.00*
4-bromofluorobenzene	*176*	*ZX*	*51 - 136*	*03/07/12 09:50*	*03/07/12 17:33*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.28		ug/kg dry	☼	03/09/12 13:34	03/12/12 14:22	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**1.79**		0.127		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:00	10.0
1-Methylnapthalene	**0.709**		0.127		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:00	10.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*130*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:00*	*10.0*
2-FBP	*92.0*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:00*	*10.0*
p-Terphenyl-d14	*86.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 22:00*	*10.0*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.72**		1.92		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:29	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-11(10-11)

Lab Sample ID: SVC0026-16

Date Collected: 02/29/12 14:50
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 72.7

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		8.48		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Methyl tert-butyl ether	ND		0.0509		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Benzene	ND		0.0254		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Ethylbenzene	ND		0.170		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Toluene	ND		0.170		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
o-Xylene	ND		0.339		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
m,p-Xylene	ND		0.678		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Naphthalene	ND		0.339		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
1,2-Dichloroethane (EDC)	ND		0.170		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Xylenes (total)	ND		2.54		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00
Hexane	ND		0.170		mg/kg dry	☼	03/07/12 09:50	03/07/12 17:56	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*114*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 17:56*	*1.00*
Toluene-d8	*113*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 17:56*	*1.00*
4-bromofluorobenzene	*115*		*51 - 136*	*03/07/12 09:50*	*03/07/12 17:56*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.32		ug/kg dry	☼	03/09/12 13:34	03/12/12 14:34	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0135		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:25	1.00
1-Methylnapthalene	ND		0.0135		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:25	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*66.4*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:25*	*1.00*
2-FBP	*61.4*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:25*	*1.00*
p-Terphenyl-d14	*85.4*		*30 - 150*	*03/07/12 08:35*	*03/07/12 22:25*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.46**		2.02		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:33	1.00

Client Sample ID: DP-12 (10-11)

Lab Sample ID: SVC0026-17

Date Collected: 02/29/12 15:10
Matrix: Soil
Date Received: 03/05/12 17:05
Percent Solids: 70.4

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		9.69		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Methyl tert-butyl ether	ND		0.0581		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Benzene	ND		0.0291		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Ethylbenzene	ND		0.194		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Toluene	ND		0.194		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
o-Xylene	ND		0.388		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
m,p-Xylene	ND		0.775		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Naphthalene	ND		0.388		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
1,2-Dichloroethane (EDC)	ND		0.194		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Xylenes (total)	ND		2.91		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00
Hexane	ND		0.194		mg/kg dry	☼	03/07/12 09:50	03/07/12 18:19	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Client Sample ID: DP-12 (10-11)
Date Collected: 02/29/12 15:10
Date Received: 03/05/12 17:05

Lab Sample ID: SVC0026-17
Matrix: Soil
Percent Solids: 70.4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*113*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 18:19*	*1.00*
Toluene-d8	*112*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 18:19*	*1.00*
4-bromofluorobenzene	*119*		*51 - 136*	*03/07/12 09:50*	*03/07/12 18:19*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.40		ug/kg dry	☼	03/09/12 13:34	03/12/12 14:46	1.00

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.0141		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:51	1.00
1-Methylnapthalene	ND		0.0141		mg/kg dry	☼	03/07/12 08:35	03/07/12 22:51	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*91.2*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:51*	*1.00*
2-FBP	*85.0*		*30 - 140*	*03/07/12 08:35*	*03/07/12 22:51*	*1.00*
p-Terphenyl-d14	*75.4*		*30 - 150*	*03/07/12 08:35*	*03/07/12 22:51*	*1.00*

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.28**		2.05		mg/kg dry	☼	03/09/12 09:35	03/14/12 11:37	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Lab Sample ID: 12C0025-BLK1
Matrix: Soil
Analysis Batch: 12C0025

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12C0025_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		5.00		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Methyl tert-butyl ether	ND		0.0300		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Benzene	ND		0.00500		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Ethylbenzene	ND		0.100		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Toluene	ND		0.100		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
o-Xylene	ND		0.200		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
m,p-Xylene	ND		0.400		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Naphthalene	ND		0.200		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
1,2-Dichloroethane (EDC)	ND		0.100		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Xylenes (total)	ND		1.50		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00
Hexane	ND		0.100		mg/kg wet		03/07/12 09:50	03/07/12 12:54	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*113*		*42.7 - 151*	*03/07/12 09:50*	*03/07/12 12:54*	*1.00*
Toluene-d8	*110*		*50.8 - 132*	*03/07/12 09:50*	*03/07/12 12:54*	*1.00*
4-bromofluorobenzene	*108*		*51 - 136*	*03/07/12 09:50*	*03/07/12 12:54*	*1.00*

Lab Sample ID: 12C0025-BS1
Matrix: Soil
Analysis Batch: 12C0025

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12C0025_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	50.0	48.6		mg/kg wet		97.2	74.4 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*93.6*		*42.7 - 151*
Toluene-d8	*95.0*		*50.8 - 132*
4-bromofluorobenzene	*91.8*		*51 - 136*

Lab Sample ID: 12C0025-BS2
Matrix: Soil
Analysis Batch: 12C0025

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12C0025_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	0.500	0.524		mg/kg wet		105	50 - 150
Benzene	0.500	0.478		mg/kg wet		95.7	50 - 150
Ethylbenzene	0.500	0.487		mg/kg wet		97.4	50 - 150
Toluene	0.500	0.499		mg/kg wet		99.8	50 - 150
o-Xylene	0.500	0.496		mg/kg wet		99.2	50 - 150
m,p-Xylene	1.00	1.02		mg/kg wet		102	50 - 150
Naphthalene	0.500	0.535		mg/kg wet		107	50 - 150
Xylenes (total)	1.50	1.51		mg/kg wet		101	50 - 150
Hexane	0.500	0.526		mg/kg wet		105	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*112*		*42.7 - 151*
Toluene-d8	*113*		*50.8 - 132*
4-bromofluorobenzene	*111*		*51 - 136*

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C (Continued)

Lab Sample ID: 12C0025-MS1 — **Client Sample ID: DP-5(11-11.5)**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0025 — **Prep Batch: 12C0025_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	286		62.6	420	E M7	mg/kg dry	☼	214	50 - 133

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
Dibromofluoromethane	*91.4*		*42.7 - 151*
Toluene-d8	*96.4*		*50.8 - 132*
4-bromofluorobenzene	*124*		*51 - 136*

Lab Sample ID: 12C0025-MS2 — **Client Sample ID: DP-12 (10-11)**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0025 — **Prep Batch: 12C0025_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	ND		0.759	1.05		mg/kg dry	☼	138	50 - 150
Benzene	ND		0.759	0.970		mg/kg dry	☼	128	50 - 150
Ethylbenzene	ND		0.759	0.979		mg/kg dry	☼	129	50 - 150
Toluene	ND		0.759	1.01		mg/kg dry	☼	134	50 - 150
o-Xylene	ND		0.759	0.980		mg/kg dry	☼	129	50 - 150
m,p-Xylene	ND		1.52	2.03		mg/kg dry	☼	134	50 - 150
Naphthalene	ND		0.759	1.06		mg/kg dry	☼	139	50 - 150
Xylenes (total)	ND		2.28	3.01		mg/kg dry	☼	132	50 - 150

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
Dibromofluoromethane	*110*		*42.7 - 151*
Toluene-d8	*112*		*50.8 - 132*
4-bromofluorobenzene	*114*		*51 - 136*

Lab Sample ID: 12C0025-DUP1 — **Client Sample ID: Duplicate**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0025 — **Prep Batch: 12C0025_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Hydrocarbons	ND			ND		mg/kg dry	☼				32.3
Methyl tert-butyl ether	ND			ND		mg/kg dry	☼				20
Benzene	ND			ND		mg/kg dry	☼				20
Ethylbenzene	ND			ND		mg/kg dry	☼				20
Toluene	ND			ND		mg/kg dry	☼				20
o-Xylene	ND			ND		mg/kg dry	☼				20
m,p-Xylene	ND			ND		mg/kg dry	☼				20
Naphthalene	ND			ND		mg/kg dry	☼				20
Xylenes (total)	ND			ND		mg/kg dry	☼				20
Hexane	ND			ND		mg/kg dry	☼				20

Surrogate	*Duplicate %Recovery*	*Duplicate Qualifier*	*Limits*
Dibromofluoromethane	*109*		*42.7 - 151*
Toluene-d8	*109*		*50.8 - 132*
4-bromofluorobenzene	*109*		*51 - 136*

Method: EPA 8011 - EDB by EPA Method 8011

Lab Sample ID: 12C0044-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0044 — **Prep Batch: 12C0044_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.00		ug/kg wet		03/09/12 13:34	03/12/12 11:13	1.00

Lab Sample ID: 12C0044-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0044 — **Prep Batch: 12C0044_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	5.00	5.66		ug/kg wet		113	60 - 140

Lab Sample ID: 12C0044-BS2 — **Client Sample ID: Lab Control Sample**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0044 — **Prep Batch: 12C0044_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	5.00	5.76		ug/kg wet		115	60 - 140

Lab Sample ID: 12C0044-MS1 — **Client Sample ID: DP-1(10-10.5)**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0044 — **Prep Batch: 12C0044_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	ND		6.08	6.90		ug/kg dry	☼	113	60 - 140

Lab Sample ID: 12C0044-MSD1 — **Client Sample ID: DP-1(10-10.5)**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0044 — **Prep Batch: 12C0044_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane	ND		6.10	6.57		ug/kg dry	☼	108	60 - 140	4.91	20

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Lab Sample ID: 12C0024-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0024 — **Prep Batch: 12C0024_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0100		mg/kg wet		03/07/12 08:35	03/07/12 16:32	1.00
2-Methylnaphthalene	ND		0.0100		mg/kg wet		03/07/12 08:35	03/07/12 16:32	1.00
1-Methylnapthalene	ND		0.0100		mg/kg wet		03/07/12 08:35	03/07/12 16:32	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*118*		*30 - 140*	*03/07/12 08:35*	*03/07/12 16:32*	*1.00*
2-FBP	*104*		*30 - 140*	*03/07/12 08:35*	*03/07/12 16:32*	*1.00*
p-Terphenyl-d14	*81.0*		*30 - 150*	*03/07/12 08:35*	*03/07/12 16:32*	*1.00*

Method: EPA 8270 mod. - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Lab Sample ID: 12C0024-BS1
Matrix: Soil
Analysis Batch: 12C0024

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12C0024_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene			0.133	0.103		mg/kg wet		77.5	40 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*111*		*30 - 140*
2-FBP	*103*		*30 - 140*
p-Terphenyl-d14	*111*		*30 - 150*

Lab Sample ID: 12C0024-MS1
Matrix: Soil
Analysis Batch: 12C0024

Client Sample ID: DP-1(10-10.5)
Prep Type: Total
Prep Batch: 12C0024_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene	0.00480		0.158	0.122		mg/kg dry	☼	74.0	30 - 120		

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
Nitrobenzene-d5	*114*		*30 - 140*
2-FBP	*93.6*		*30 - 140*
p-Terphenyl-d14	*63.0*		*30 - 150*

Lab Sample ID: 12C0024-MSD1
Matrix: Soil
Analysis Batch: 12C0024

Client Sample ID: DP-1(10-10.5)
Prep Type: Total
Prep Batch: 12C0024_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	0.00480		0.164	0.128		mg/kg dry	☼	75.1	30 - 120	5.11	35

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
Nitrobenzene-d5	*116*		*30 - 140*
2-FBP	*91.2*		*30 - 140*
p-Terphenyl-d14	*71.2*		*30 - 150*

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

Lab Sample ID: MB 580-106890/1-A
Matrix: Solid
Analysis Batch: 107109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C6-C8 Aliphatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C10-C12 Aliphatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C8-C10 Aromatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C8-C10 Aliphatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C10-C12 Aromatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
Total VPH	ND		14		mg/Kg		03/09/12 11:21	03/13/12 11:41	1
C12-C13 Aromatics	ND		2.0		mg/Kg		03/09/12 11:21	03/13/12 11:41	1

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

Lab Sample ID: MB 580-106890/1-A
Matrix: Solid
Analysis Batch: 107109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106890

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	104		60 - 140	03/09/12 11:21	03/13/12 11:41	1
BFB - PID	103		60 - 140	03/09/12 11:21	03/13/12 11:41	1

Lab Sample ID: LCS 580-106890/2-A
Matrix: Solid
Analysis Batch: 107109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	8.00	8.72		mg/Kg		109	70 - 130
C6-C8 Aliphatics	4.00	4.45		mg/Kg		111	70 - 130
C10-C12 Aliphatics	4.00	4.96		mg/Kg		124	70 - 130
C8-C10 Aromatics	16.0	15.6		mg/Kg		98	70 - 130
C8-C10 Aliphatics	8.00	9.60		mg/Kg		120	70 - 130
C10-C12 Aromatics	4.00	3.78		mg/Kg		95	70 - 130
C12-C13 Aromatics	8.00	6.59		mg/Kg		82	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	104		60 - 140
BFB - PID	101		60 - 140

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

Lab Sample ID: 580-31626-2 MS
Matrix: Solid
Analysis Batch: 107109

Client Sample ID: SVC0026-13
Prep Type: Total/NA
Prep Batch: 106890

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics - DL	ND		300	339		mg/Kg	☼	108	70 - 130
C6-C8 Aliphatics - DL	1600		150	1780	4	mg/Kg	☼	123	70 - 130
C10-C12 Aliphatics - DL	1700		150	1910	4	mg/Kg	☼	151	70 - 130
C8-C10 Aromatics - DL	1400		600	1940		mg/Kg	☼	82	70 - 130
C8-C10 Aliphatics - DL	1800		300	2410	4	mg/Kg	☼	205	70 - 130
C10-C12 Aromatics - DL	1600		150	1760	4	mg/Kg	☼	88	70 - 130
C12-C13 Aromatics - DL	370		300	626		mg/Kg	☼	84	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene - DL	157	I X	60 - 140
BFB - PID - DL	113		60 - 140

Lab Sample ID: 580-31626-2 MSD
Matrix: Solid
Analysis Batch: 107109

Client Sample ID: SVC0026-13
Prep Type: Total/NA
Prep Batch: 106890

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics - DL	ND		249	280		mg/Kg	☼	106	70 - 130	19	25
C6-C8 Aliphatics - DL	1600		125	1480	4	mg/Kg	☼	-89	70 - 130	18	25
C10-C12 Aliphatics - DL	1700		125	1690	4	mg/Kg	☼	7	70 - 130	12	25
C8-C10 Aromatics - DL	1400		498	1550	4	mg/Kg	☼	20	70 - 130	22	25
C8-C10 Aliphatics - DL	1800		249	2140	4	mg/Kg	☼	137	70 - 130	12	25

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

Lab Sample ID: 580-31626-2 MSD — **Client Sample ID: SVC0026-13**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 107109 — **Prep Batch: 106890**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aromatics - DL	1600		125	1390	4	mg/Kg	☼	-189	70 - 130	23	25
C12-C13 Aromatics - DL	370		249	491	4	mg/Kg	☼	47	70 - 130	24	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene - DL	*166*	*I X*	*60 - 140*
BFB - PID - DL	*107*		*60 - 140*

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

Lab Sample ID: MB 580-107155/1-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 107520 — **Prep Batch: 107155**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aliphatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C16-C21 Aliphatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C12-C16 Aromatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C10-C12 Aliphatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C10-C12 Aromatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C21-C34 Aromatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1
C16-C21 Aromatics	ND		5.0		mg/Kg		03/13/12 15:49	03/19/12 22:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*93*		*60 - 140*	*03/13/12 15:49*	*03/19/12 22:03*	*1*
o-Terphenyl	*93*		*60 - 140*	*03/13/12 15:49*	*03/19/12 22:03*	*1*

Lab Sample ID: LCS 580-107155/2-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 107520 — **Prep Batch: 107155**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C21-C34 Aliphatics	40.0	37.5		mg/Kg		94	70 - 130
C16-C21 Aliphatics	20.0	19.2		mg/Kg		96	70 - 130
C12-C16 Aromatics	20.0	16.6		mg/Kg		83	70 - 130
C10-C12 Aliphatics	6.67	5.22		mg/Kg		78	70 - 130
C10-C12 Aromatics	6.67	5.43		mg/Kg		81	70 - 130
C12-C16 Aliphatics	13.3	12.0		mg/Kg		90	70 - 130
C21-C34 Aromatics	53.3	68.2		mg/Kg		128	70 - 130
C16-C21 Aromatics	40.0	30.9		mg/Kg		77	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*95*		*60 - 140*
o-Terphenyl	*89*		*60 - 140*

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Lab Sample ID: 12C0038-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0038 — **Prep Batch: 12C0038_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.50		mg/kg wet		03/09/12 09:35	03/14/12 10:41	1.00

Lab Sample ID: 12C0038-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0038 — **Prep Batch: 12C0038_P**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			50.0	51.7		mg/kg wet		103	80 - 120		

Lab Sample ID: 12C0038-MS1 — **Client Sample ID: Matrix Spike**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0038 — **Prep Batch: 12C0038_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	ND		46.3	46.9		mg/kg wet		101	75 - 125		

Lab Sample ID: 12C0038-MSD1 — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0038 — **Prep Batch: 12C0038_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		45.0	46.2		mg/kg wet		102	75 - 125	1.70	20

Lab Sample ID: 12C0038-DUP1 — **Client Sample ID: Duplicate**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12C0038 — **Prep Batch: 12C0038_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Lead	ND			ND		mg/kg wet					20

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Spokane	Alaska (UST)	State Program	10	UST-071
TestAmerica Spokane	Washington	State Program	10	C569
TestAmerica Seattle	Alaska (UST)	State Program	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana (UST)	State Program	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	Federal		P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

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

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-075-00

TestAmerica Job ID: SVC0026

Method	Method Description	Protocol	Laboratory
EPA 8260C	NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C		TAL SPK
EPA 8011	EDB by EPA Method 8011		TAL SPK
EPA 8270 mod.	Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring		TAL SPK
NWTPH/VPH	Northwest - Volatile Petroleum Hydrocarbons (GC)	NWTPH	TAL SEA
NWTPH/EPH	Northwest - Extractable Petroleum Hydrocarbons (GC)	NWTPH	TAL SEA
EPA 6010C	Total Metals by EPA 6010/7000 Series Methods		TAL SPK
D 2216	Percent Moisture	ASTM	TAL SEA
TA SOP	Conventional Chemistry Parameters by APHA/EPA Methods		TAL SPK

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

Laboratory References:

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

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

4/10/2012

CHAIN OF CUSTODY REPORT

Work Order #: SVC0026

CLIENT: GeoEngineers Inc.

REPORT TO: Jon Rudders
ADDRESS: 523 E 2nd Ave
Spokane WA 99202

PHONE: 509-363-3125 FAX: 509-363-3126

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: Frenchies Fill-n-Food

PROJECT NUMBER: 0504-075-00

SAMPLED BY: KLR

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	NWTPH-Gx	VOC's EPA 8260B	1,2,4-Methyl Naphthalene EPA 8270SIM	Lead EPA 6010C	EDB EPA 8011	EDC EPA 8260B	NWTPH-VPH	NWTPH-EPH					MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 DP-1 (2-2.5)	2/29/12 0744																	
2 DP-1 (10-10.5)	0815		X	X	X	X	X	X										
3 DP-1 (12.5-13.5)	0800																	
4 DP-2 (10.5-11)	0900		X	X	X	X	X	X										
5 DP-2 (12.5-13)	0915																	
6 DP-3 (14.5-15)	1000																	
7 DP-4 (5.5-6)	1045																	
8 DP-3 (6.5-7)	0945		X	X	X	X	X	X	X	X								
9 DP-4 (9.5-10)	1050		X	X	X	X	X	X										
10 DP-5 (11-11.5)	1115		X	X	X	X	X	X										

RELEASED BY: Kevin Rondan		DATE: 3/5/12	RECEIVED BY: Cat Stapleton		DATE: 3-5-12
PRINT NAME: Kevin Rondan	FIRM: GEI	TIME: 1900	PRINT NAME:	FIRM: TestAmerica	TIME: 1705
RELEASED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS:

TEMP: 4.8

PAGE 1 OF 2

TAL-1000(0408)

Kevin 342-8714

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

4/10/2012

CHAIN OF CUSTODY REPORT

Work Order #: SNC0091

CLIENT: GeoEngineers Inc.

INVOICE TO:

REPORT TO: Jon Rudders
ADDRESS: 523 E 2nd Ave
Spokane WA 99202

PHONE: 509-363-3125 FAX: 509-363-3125

P.O. NUMBER:

PROJECT NAME: Frenchies Fill-n-Food

PROJECT NUMBER: 0504-075-00

SAMPLED BY: KLR

TURNAROUND REQUEST

in Business Days *

Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NWTPH-Gx EPA 5030	VOCs * EPA 8260B	1&2 Methylnaphthalene EPA 8270SIM	Lead EPA 6010C	EDB, EDC EPA 8011	EDC EPA 8260B	NWTPH-EPH	NWTPH-VPH	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 DP-6 (10-10.5)	2/29/12 1230	X	X	X	X	X	X						
2 DP-7 (9.5-10)	1300	X	X	X	X	X	X						
3 DP-8 (8-9)	1335	X	X	X	X	X	X	X	X				
4 DP-9 (2.5-3)	1350	X	X	X	X	X	X						
5 DP-10 (6.5-7.5)	1415	X	X	X	X	X	X						
6 DP-11 (10-11)	1450	X	X	X	X	X	X						
7 DP-12 (10-11)	1510	X	X	X	X	X	X						
8 DP-13 (13.25-14)	1540												
9 DP-13 (15.5-16)	1550												
10													

RELEASED BY: Kevin Rudders DATE: 3/5/12
PRINT NAME: Kevin Rudders FIRM: GEI TIME: 1700

RECEIVED BY: Cat Stapleton DATE: 3-5-12
PRINT NAME: Cat Stapleton FIRM: TestAmerica TIME: 17:05

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

TEMP: 4.8

PAGE 2 OF 2

* VOCs include BTEX, MTBE, n-hexane, Naphthalenes, &

TAL-1000(0408)

TestAmerica Spokane
Sample Receipt Form

Work Order #: SVC0026	**Client:** GeoEngineers	**Project:** Frenchies Fill-n-Food
Date/Time Received: 3-5-12 17:05	By: CS	

Samples Delivered By: ☐Shipping Service ☐Courier ☒Client ☐Other:_____

List Air Bill Number(s) or Attach a photocopy of the Air Bill:

Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	X			
Custody Seals are present and intact:			X	
Are CoC documents present:	X			
Necessary signatures:	X			

Thermal Preservation Type: ☐Blue Ice ☒Gel Ice ☐Real Ice ☐Dry Ice ☐None ☐Other:_____

Temperature by IR Gun: 4.8 °C Thermometer Serial #81500 (acceptance criteria 0-6 °C)

Temperature out of range: ☐Not enough ice ☐Ice melted ☐w/in 4hrs of collection ☐NA ☐Other:_____

Log-in Phase Date/Time: 3-6-12 9:30 By: MS	Yes	No	NA	Comments
Are sample labels affixed and completed for each container	X			
Samples containers were received intact:	X			
Do sample IDs match the CoC		X		~~Received sample DP-1(4-4.5).~~ SP 3/6/12
Appropriate sample containers were received for tests requested	X			
Are sample volumes adequate for tests requested	X			
Appropriate preservatives were used for the tests requested	X			
pH of inorganic samples checked and is within method specification	X			
Are VOC samples free of bubbles >6mm (1/4" diameter)			X	
Are dissolved parameters field filtered			X	
Do any samples need to be filtered or preserved by the lab		X		
Does this project require quick turnaround analysis		X		
Are there any short hold time tests (see chart below)		X		
Are any samples within 2 days of or past expiration		X		
Was the CoC scanned	X			
Were there Non-conformance issues at login		X		
If yes, was a CAR generated #_____			X	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep

APPENDIX D
Site Specific Cleanup Level Calculation

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/07/12
Site Name: Frenchies Fill and Feed
Sample Name: DP-3 (6.5-7)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	13.5	0.69%
AL_EC >6-8	180	9.22%
AL_EC >8-10	370	18.96%
AL_EC >10-12	470	24.08%
AL_EC >12-16	85	4.36%
AL_EC >16-21	14	0.72%
AL_EC >21-34	3.05	0.16%
AR_EC >8-10	230	11.79%
AR_EC >10-12	370	18.96%
AR_EC >12-16	85	4.36%
AR_EC >16-21	9.8	0.50%
AR_EC >21-34	3.05	0.16%
Benzene	0.141	0.01%
Toluene	0.81	0.04%
Ethylbenzene	16.5	0.85%
Total Xylenes	43.3	2.22%
Naphthalene	38.5	1.97%
1-Methyl Naphthalene	12.4	0.64%
2-Methyl Naphthalene	4.57	0.23%
n-Hexane	0.81	0.04%
MTBE	0.243	0.01%
Ethylene Dibromide (EDB)	0.000605	0.00%
1,2 Dichloroethane (EDC)	0.81	0.04%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	1951.484605	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared

REMARK:
Enter site-specific information here.....

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/7/2012
Site Name: Frenchies Fill and Feed
Sample Name: DP-3 (6.5-7)
Measured Soil TPH Concentration, mg/kg: **1,951.485**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,419	1.43E-07	8.07E-01	Pass
	Method C	43,852	2.40E-08	4.45E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	30	2.72E-04	3.29E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	51	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,418.90**	**43,851.72**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.42E+03	1.78E-07	1.00E+00	YES	4.39E+04	5.39E-07	1.00E+00
Total Risk=1E-5	*NO*	1.36E+05	1.00E-05	5.63E+01	*NO*	8.14E+05	1.00E-05	1.86E+01
Risk of Benzene= 1E-6	*NO*	2.51E+05	1.84E-05	1.04E+02	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	*NO*	3.51E+04	2.57E-06	1.45E+01				
EDC	*NO*	2.45E+04	1.79E-06	1.01E+01				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**342.74**
Protective Soil Concentration, mg/kg	**30.01**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.43E+02	9.17E-06	1.00E+00	3.00E+01
Total Risk = 1E-5	*NO*	3.67E+02	1.00E-05	1.07E+00	3.28E+01
Total Risk = 1E-6	YES	4.07E+01	1.00E-06	1.20E-01	3.25E+00
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	1.11E+03	1.44E-04	2.91E+00	6.83E+02
MTBE = 20 ug/L	*NO*	1.12E+03	1.49E-04	2.92E+00	7.10E+02

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.54E-05	1.43E+00	**5.09E+01**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/07/12
Site Name: Frenchies Fill and Feed
Sample Name: DP-8 (7-8)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	37	0.41%
AL_EC >6-8	1600	17.65%
AL_EC >8-10	1800	19.86%
AL_EC >10-12	1700	18.76%
AL_EC >12-16	96	1.06%
AL_EC >16-21	14	0.15%
AL_EC >21-34	3.15	0.03%
AR_EC >8-10	1400	15.45%
AR_EC >10-12	1600	17.65%
AR_EC >12-16	140	1.54%
AR_EC >16-21	13	0.14%
AR_EC >21-34	3.15	0.03%
Benzene	0.38	0.00%
Toluene	7.37	0.08%
Ethylbenzene	77.8	0.86%
Total Xylenes	445	4.91%
Naphthalene	108	1.19%
1-Methyl Naphthalene	3.3	0.04%
2-Methyl Naphthalene	8.74	0.10%
n-Hexane	5.57	0.06%
MTBE	0.368	0.00%
Ethylene Dibromide (EDB)	0.00064	0.00%
1,2 Dichloroethane (EDC)	1.225	0.01%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	9064.05364	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared

REMARK:
Enter site-specific information here.....

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/7/2012
Site Name: Frenchies Fill and Feed
Sample Name: DP-8 (7-8)
Measured Soil TPH Concentration, mg/kg: **9,064.054**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,883	2.00E-07	3.14E+00	Fail
	Method C	54,806	3.32E-08	1.65E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	30	1.40E-04	3.02E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	34	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,883.35**	**54,805.74**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.88E+03	6.38E-08	1.00E+00	YES	5.48E+04	2.01E-07	1.00E+00
Total Risk=1E-5	*NO*	4.52E+05	1.00E-05	1.57E+02	*NO*	2.73E+06	1.00E-05	4.98E+01
Risk of Benzene= 1E-6	*NO*	4.33E+05	9.58E-06	1.50E+02	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	*NO*	1.54E+05	3.40E-06	5.34E+01				
EDC	*NO*	7.51E+04	1.66E-06	2.61E+01				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

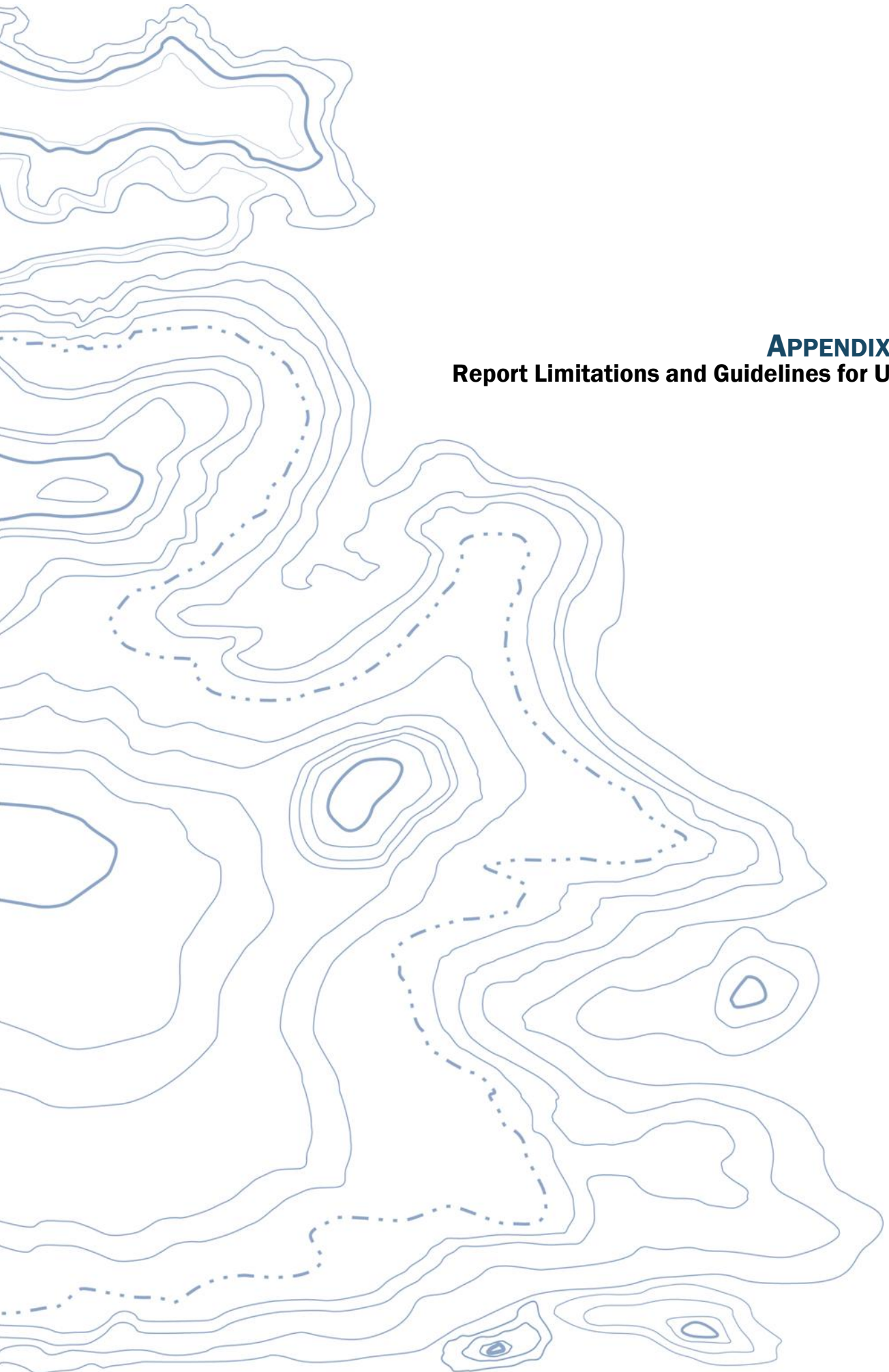
3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**458.07**
Protective Soil Concentration, mg/kg	**30.21**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	4.58E+02	2.81E-06	1.00E+00	3.02E+01
Total Risk = 1E-5	*NO*	9.96E+02	1.00E-05	2.02E+00	1.13E+02
Total Risk = 1E-6	YES	1.72E+02	1.00E-06	3.79E-01	1.07E+01
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	1.51E+03	1.14E-04	2.94E+00	4.15E+03
MTBE = 20 ug/L	*NO*	1.48E+03	9.21E-05	2.87E+00	2.42E+03

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	3.13E-06	1.09E+00	**3.37E+01**



APPENDIX E
Report Limitations and Guidelines for Use

APPENDIX E
REPORT LIMITATIONS AND GUIDELINES FOR USE1

This Appendix provides information to help you manage your risks with respect to the use of this report.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of the Washington State Department of Ecology (Ecology). This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ecology should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the Frenchies' Fill-N-Food site located at 106 East Moxee Avenue located in Moxee, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Ecology. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm and Ecology with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Ecology and generally accepted environmental practices in this area at the time this report was prepared.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproductions are acceptable, but recognize that separating logs from the report can elevate risk.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Geotechnical, Geologic and Geoenvironmental Reports Should Not be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Ecology desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?
Please let us know by visiting **www. geoengineers.com/feedback**.

GeoEngineers