Soil and Groundwater Assessment

City Shop and Sewage Treatment Plant
Moxee, Washington

for
Washington Department of Ecology

May 14, 2013

GeoEngineers
Earth Science + Technology

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File No. 0504-078-00

May 14, 2013

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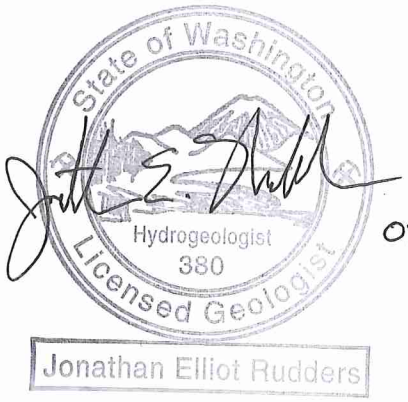

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1.0 INTRODUCTION

This report describes supplemental groundwater monitoring well installation and groundwater monitoring activities conducted at the City Shop and Sewage Treatment Plant (STP) site 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). GeoEngineers was retained by Ecology to assess subsurface soil and groundwater conditions at the site and provide recommendations and steps to either remediate the site or bring it to regulatory closure. This report describes associated field activities and observations, includes chemical analytical results from soil and groundwater samples collected at the site, and provides recommendations for further assessment. The purpose of the assessment activities described herein was to (1) further evaluate soil and groundwater conditions at the site to determine 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) evaluate groundwater elevation and flow distribution across the site; and 3) delineate the presence and extent of existing groundwater contamination downgradient of the former underground storage tank (UST) excavation, particularly as it relates to the site's south boundary.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is located at 7520 Postma Road in Moxee, Washington and occupies about 2.8 acres. The site is bounded by a railroad line and State Route 24 on the south, and commercial properties on the west, north and east. The site, currently being used as a shop servicing City of Moxee equipment, formerly contained an operational STP. Several buildings and structures associated with the STP remain in the western portion of the site. The active portion of the site, which contains two buildings and an asphalt parking area associated with shop operations, is situated with the eastern portion of the site.

Our understanding of previous site assessment and remedial activities was primarily obtained through review of the following two reports:

- Report by Sage Earth Sciences, Inc. (Sage) summarizing results of 1996 underground storage tank (UST) removal activities performed at the site, (June 1996).
- Report by Maxim Technologies, Inc. (Maxim) summarizing results of a 1996 environmental investigation performed at the site, (December 1996).

A summary of our review of these two reports is provided below. Additional details regarding site background and history are included in our previous technical memorandum dated January 31, 2012 (GeoEngineers 2012A).

Two, 1,000-gallon capacity, gasoline USTs were removed from the site during May 1996. During UST removal activities, corrosion, pitting, and small holes were observed on the tanks. Approximately 50 cubic yards of petroleum-contaminated soil encountered during excavation

activities were excavated, treated on-site via bio-remediation and subsequently used to backfill the excavation. Groundwater was encountered between 4 and 5 feet below ground surface (bgs) in the UST excavation. These USTs were believed to have been installed in 1977 and used to fuel City vehicles. The USTs were located about 40 feet south of the former STP Control Office, approximately as shown in Site Plan, Figure 2.

Confirmation soil samples collected from the UST excavation did not contain concentrations of petroleum hydrocarbons in excess of Model Toxics Control Act (MTCA) Method A cleanup levels. However, a groundwater sample collected from the excavation contained concentrations of the following analytes that were several orders of magnitude greater than MTCA Method A groundwater cleanup levels: gasoline-range petroleum hydrocarbons (GRPH); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and lead.

Additional soil assessment activities were conducted in August 1996 by Maxim. These activities included expanding the UST excavation (to the west) to confirm the original soil excavation activities had sufficiently removed petroleum-contaminated soil. Maxim concluded that all petroleum-contaminated soil associated with the USTs had been successfully removed and treated. However, no discussion of assessment associated with dispensers or underground piping is presented in either the Sage or Maxim reports.

Maxim also excavated four test pits to depths of about 8 feet bgs to collect groundwater samples. Approximate test pit locations are presented in Figure 2. Encountered soil reportedly consisted of a surficial silty clay layer that extended about 6 feet bgs and was underlain by sand and gravel. Groundwater was encountered at depths between about 6 and 8 feet bgs. Maxim indicated that groundwater flow direction at the site likely was to the west/southwest, although site-specific groundwater elevation data were not collected. Groundwater samples were collected from each test pit and submitted to an analytical laboratory for GRPH and BTEX analyses. Results indicated GRPH, benzene, ethylbenzene, and xylenes were detected in the groundwater sample collected from test pit 3 (located about 10 feet southwest of the UST excavation) at concentrations greater than MTCA Method A cleanup criteria.

GeoEngineers conducted a soil assessment and groundwater assessment for Ecology at the Site in March 2012 (GeoEngineers 2012C). Six direct-push soil borings (DP-1 through DP-6) were advanced to depths ranging from about 8 to 12 feet bgs. Encountered shallow native soil conditions at the site generally were fine-grained and consisted of brown fine sand with silt overlying and interbedded with brown silt with sand. Overlying fill material was composed primarily of silt and fine sand or gravel (depending on location) and ranges from about ½-foot to 6½ feet in observed thickness. Groundwater was encountered in the borings at about 4½ to 5 feet bgs.

During GeoEngineers March 2012 investigation, contaminants of concern were not detected in soil samples at concentrations greater than MTCA Method A cleanup levels. However, GRPH were detected at concentrations greater than the applicable MTCA Method A cleanup level in the primary and duplicate groundwater samples collected from monitoring well MW-1, which was installed in boring DP-6. These results suggested that groundwater transport of residual site contamination could be occurring.

3.0 SCOPE OF SERVICES

GeoEngineers prepared a Work Amendment Request No. 2 (dated September 4, 2012) based on the file review and results of additional site environmental activities performed to date (GeoEngineers, 2012C). The scope of services performed by GeoEngineers during implementation of the Work Amendment is summarized in this report and included:

3.1. General

- Updated the existing Health and Safety Plan (HASP), Sampling and Analysis Plan (SAP) (GeoEngineers, 2012 B) and Quality Assurance Project Plan (QAPP) for sampling activities (previously provided as appendices to the SAP, January 2012).
- Coordinated underground utility location services using the Call-Before-You-Dig utility notification service before beginning drilling activities.
- Subcontracted a private utility locator to clear explorations located on private property before drilling.
- Coordinated with the property owner to facilitate drilling operations.

3.2. Soil Assessment

- Subcontracted Environmental West Exploration Inc. (Environmental West) to drill three soil borings (MW-2 through MW-4) using hollow-stem drilling methods. Approximate boring locations are presented in Figure 2.
- Collected soil samples at 2.5-foot intervals during drilling. Select sub-samples were field-screened using visual observations, water sheen tests, and headspace vapor measurements with a photoionization detector (PID) to assess the possible presence of petroleum-related contaminants. At least one sample from each boring was collected for chemical analysis.
- Submitted three soil samples to TestAmerica Inc. (TestAmerica) located in Spokane, Washington for chemical analysis. The soil samples collected from the vadose zone from each boring exhibiting the greatest indications of petroleum contamination, based on field-screening measurements, were submitted for chemical analysis. The soil samples were analyzed for:
    - GRPH using Northwest Method NWTPH-Gx,
    - BTEX and n-hexane using EPA Method 8260C, and
    - Naphthalenes using EPA Method 8270 modified with Selected Ion Monitoring (SIM).
- Contained soil cuttings and groundwater from assessment and/or well construction activities. 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 of the IDW at Graham Road Landfill in Spokane County, Washington.

3.3. Monitoring Well Installation

- Constructed three monitoring wells within borings MW-2 through MW-4 at the approximate locations presented in Figure 2. Wells were constructed of 2-inch-diameter, Schedule 40, polyvinyl chloride (PVC) casing and well screens. Each well was completed with a bentonite

seal and a flush-mount surface monument. The concrete surface-seal was placed around the monument at the ground surface to divert surface water away from the well location. A lockable cap and lock was installed in the top of each PVC well casing.

- Developed monitoring wells MW-2 through MW-4 by pumping and surging.
- Measured stabilized depth to groundwater within each monitoring well.
- Subcontracted TDH Engineering, Inc. of Spokane, Washington to measure and record elevations and horizontal locations of the borings and wells.

3.4. Groundwater Monitoring

A quarterly groundwater monitoring event was performed on November 1, 2012, during which the following activities were performed:

- Measured the depth to groundwater in each of the four site groundwater monitoring wells.
- Collected groundwater samples from each monitoring well using low-flow/low-stress sampling techniques. During well purging, water quality parameters (pH, conductivity, temperature, dissolved oxygen, and reduction-oxidation potential) were monitored and recorded.
- Collected groundwater samples from monitoring wells MW-1 through MW-4 and submitted the water samples to TestAmerica for chemical analysis. Samples were analyzed for:
    - GRPH using NWTPH-Gx methods,
    - BTEX, and n-hexane using EPA Method 8260B, and
    - Naphthalenes using EPA Method 8270 modified with Selected Ion Monitoring (SIM).

  Groundwater samples were additionally analyzed for natural attenuation parameters including nitrate, soluble manganese (Mn^{+2}), sulfate (SO_4), methane (CH_4) and alkalinity (in addition to field measurements of dissolved oxygen (DO), temperature, specific conductivity, pH and reduction oxidation potential (ORP)).

- One duplicate sample also was collected and analyzed for the above parameters.

3.5. Results Evaluation

- Compared laboratory analytical results with applicable MTCA Method A groundwater cleanup criteria.
- Estimated groundwater flow direction and the range in hydraulic gradient across the site.
- Entered data results information into Ecology's Environmental Information Management (EIM) database.
- Developed recommendations regarding appropriate supplemental activities that should be performed to investigate and address residual contamination remaining on-site.

4.0 FIELD ACTIVITIES

4.1. General

Advanced Underground Utility Locating, Inc. of Spokane, Washington conducted a private utility locate of the site on October 31, 2012. Environmental West Explorations (Environmental West) of Spokane, Washington, advanced three borings (MW-2 through MW-4) to depths of about 12 feet bgs using hollow stem auger drilling methods on October 31, 2012. Boring MW-2 was positioned upgradient (northeast) of the former UST excavation; borings MW-3 and MW-4 were positioned downgradient (south to southwest) of the former UST excavation, as shown in Figure 2.

Borings MW-2 through MW-4 were completed as monitoring wells to evaluate groundwater conditions at the site. Soil cuttings and decontamination/development water were placed in 55-gallon steel drums, labeled, and stored on-site.

Boring logs and monitoring well completion logs associated with borings MW-2 through MW-4 are provided in Figures A-3 through A-5 of Appendix A.

4.2. Subsurface Conditions

Observed native soil conditions generally are fine-grained and were consistent within the three soil borings described herein. Brown fine sand with silt and varying amounts of gravel were observed in each boring to the completed depth of the borings at 12 feet. About 2 ½ inches of asphalt was observed at the surface of each boring.

Groundwater was encountered in each boring during drilling operations at depths that ranged from about 7.5 to 8 feet bgs.

4.3. Field Screening and Sampling

Soil samples were collected from each boring at 2.5-foot intervals during drilling. Soil samples were field-screened using visual observations, water sheen tests, and headspace vapor measurements with a PID to assess possible presence of petroleum-related contaminants. Procedures for field-screening and sampling are provided in Appendix A. Field screening results are summarized by the following:

- Slight sheens were observed in samples collected from boring MW-2 and boring MW-4 at a depth of about 5.0 feet bgs (above the groundwater table) and in the sample from boring MW-4 at a depth of about 8.0 feet bgs (at the observed groundwater table).
- No sheen was observed in the remaining soil samples collected from borings MW-2 through MW-4.
- No headspace vapor measurements above background conditions were observed in the soil samples collected from borings MW-2 through MW-4.

Soil samples collected from the following borings and depths were submitted to TestAmerica for chemical analysis:

- A depth of about 6 feet in MW-2.

- A depth of about 6 feet in MW-3.
- A depth of about 2.5 feet in MW-4.

Chemical analytical results are discussed in "Section 5.0".

4.4. Monitoring Well Installation

Three monitoring wells, designated MW-2 through MW-4, were installed in the approximate locations presented in Figure 2. Well construction details are provided in Figure A-3 through A-5 of Appendix A. The monitoring wells were installed using hollow-stem drilling techniques and constructed of 2-inch-diameter, Schedule 40 PVC casing and 0.010-inch slot Schedule 40 PVC well screen surrounded by a sand filter pack and bentonite seal. The installed well screen extends from about 4.0 to 12.0 feet bgs in each of the monitoring wells. Depth to groundwater in the monitoring wells at the time of installation was about 7.7 to 8.0 feet bgs.

Monitoring wells MW-2 through MW-4 were completed with flush-mount surface monuments. Lockable compression caps were installed to seal the tops of the PVC well casings. A concrete surface seal was constructed around the monument at the ground surface to divert surface water away from the well casings.

The horizontal locations and relative elevations of the top of well casing at each new monitoring well location were surveyed on November 12, 2012 by Thomas, Dean & Hoskins, Inc. of Spokane, Washington. Horizontal locations were surveyed relative to, Washington State Plane Coordinates (WASPC), South Zone. Elevations were surveyed relative to the North American Vertical Datum of 1988 (NAVD 1988). Survey results are presented in Summary of Groundwater Level Measurements, Table 1.

4.5. Groundwater Elevation Monitoring

Following installation and development of monitoring wells MW-2 through MW-4, static depth to groundwater was measured in MW-1 through MW-4 on November 1, 2012 using an electronic water level indicator. Depths ranged from 7.35 feet (MW-1) to 7.95 feet (MW-4) below the top of well casing. Corresponding groundwater elevations ranged from about 1,017.43 feet in MW-3 to 1,017.84 feet in MW-2.

Based on groundwater elevations measured on November 1, 2012, groundwater flow in shallow groundwater beneath the site generally was toward the southwest. Hydraulic gradient was about 0.003 feet per foot (about 15 to 20 feet per mile) throughout most of the site, but steepened to 0.008 feet per foot between MW-1 and MW-3 (about 40 to 45 feet per mile).

Groundwater elevations in the shallow unconfined aquifer underlying the site are influenced by the rate of groundwater recharge (infiltration of precipitation and snowmelt) within associated upland areas to the north, west and south of the site and, potentially, the stage of adjacent surface water within the Yakima River and irrigation canals. Groundwater elevations, hydraulic gradient, and groundwater flow direction are likely to vary seasonally.

Groundwater depths and relative elevations are included in Table 1. Groundwater Elevations – November 2012, Figure 3 presents relative groundwater elevations, approximate groundwater elevation contours and interpreted groundwater flow direction on November 1, 2012.

4.6. Groundwater Sampling

Monitoring wells were purged and sampled on November 1, 2012 using standard low-flow sampling methodology. A portable bladder pump equipped with a disposable bladder and disposable tubing was used to purge and sample each well. Groundwater water quality parameters generally were measured at 3-minute intervals during well purging. Groundwater samples were collected when each water quality parameter had stabilized in conformance with the criteria presented in Appendix A. Groundwater samples were submitted to TestAmerica for analysis using the methods described in "Section 3.0"; chemical analytical results are discussed in "Section 5.0".

Purge water generated during groundwater sampling was drummed, labeled and stored on the site pending analytical results for profiling and disposal.

5.0 CHEMICAL ANALYTICAL RESULTS

Three soil samples (listed in Section 4.3) and five groundwater samples (the primary samples obtained from monitoring wells MW-1 through MW-4 and duplicate sample collected from monitoring well MW-1) were analyzed by TestAmerica for concentrations of the site contaminants of concern (GRPH, BTEX, n-hexane, and naphthalenes) by the methods listed in "Section 3.0". TestAmerica's laboratory report is provided in Appendix B. Analytical results are tabulated in Summary of Chemical Analytical Results – Soil, Table 2 and Summary of Chemical Analytical Results – Groundwater, Table 3. Chemical analytical results are compared to MTCA Method A cleanup levels for Unrestricted Land Use and are summarized by the following:

5.1. Soil Chemical Analytical Results

- Contaminants of concern either were not detected or were detected at concentrations less than MTCA Method A cleanup levels in the three soil samples submitted for chemical analysis.

5.2. Groundwater Chemical Analytical Results

5.2.1. Contaminants of Concern

Groundwater analytical results for the project contaminants of concern are summarized by the following:

- GRPH were detected in the primary and duplicate groundwater samples collected from monitoring well MW-1 at concentrations of 2,500 and 2,280 micrograms per liter (µg/l), respectively). These concentrations exceed the applicable MTCA Method A cleanup level of 800 µg/l.
- The remaining contaminants of concern were either not detected or detected at concentrations less than respective cleanup levels in the groundwater samples collected from monitoring well MW-1.

- No contaminants of concern were detected in upgradient well MW-2 or downgradient wells MW-3 or MW4.

5.2.2. Natural Attenuation Parameters

In addition to the contaminants of concern, groundwater samples were analyzed for natural attenuation parameters. DO, temperature, specific conductivity, pH and ORP were estimated in the field using a calibrated Troll 9500 multi-parameter meter equipped with a flow-through cell. Field measurement results are provided in Summary of Field-Measured Natural Attenuation Parameters, Table 4. Reported field parameters reflect stabilized conditions at the conclusion of well purging during low-flow sampling.

Concentrations of the following natural attenuation parameters were analyzed in the laboratory by TestAmerica: nitrate, soluble manganese, sulfate, methane and alkalinity. Laboratory results are provided in Table 3.

Field and laboratory analytical results for natural attenuation parameters are summarized by the following:

- DO ranged from 0.65 milligrams per liter (mg/L) in MW-1 to 4.70 mg/L in MW-4.
- Temperature ranged from 17.47 degrees Celsius in MW-4 to 19.15 degrees Celsius in MW-1.
- Specific conductivity ranged from 0.4627 milliSiemens per centimeter (mS/cm) in MW-4 to 2.079 mS/cm in MW-2.
- pH ranged from 7.66 in MW-2 to 8.77 in MW-4.
- ORP ranged from -36 millivolts (mV) in MW-1 to 313 mV in MW-2.
- Nitrate-Nitrogen concentration ranged from <0.200 mg/L in MW-1 to 176 mg/L in MW-2.
- Soluble manganese concentration ranged from 0.178 mg/L in MW-3 to 0.950 mg/L in the duplicate sample collected from MW-1.
- Sulfate concentration ranged from 18.3 mg/L in MW-1 to 290 mg/L in MW-2.
- Methane concentration ranged from <0.005 mg/L in MW-2, MW-3 and MW-4 to 0.0131 mg/L in the duplicate sample collected from MW-1.
- Total alkalinity ranged from 230 mg/L in MW-2 to 480 mg/L in MW-1.

6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1. Subsurface Conditions

Monitoring well installation activities were conducted on October 31 and November 1, 2012 at the Moxee City Shop and STP site located at 7520 Postma Road in Moxee, Washington. Three hollow-stem auger soil borings were advanced to depths of about 12 feet bgs. Shallow native soil conditions observed at the site generally are fine-grained and consist of brown fine sand with silt with varying amounts of gravel. These soil conditions generally are similar to those observed during previous assessment activities conducted in March 2012. Groundwater was encountered in the borings during drilling at about 7½ to 8 feet bgs. At the time of our groundwater investigation,

groundwater was interpreted to flow to the southwest under a hydraulic gradient that ranged from about 0.003 feet per foot (about 15 to 20 feet per mile) to about 0.008 feet per foot (about 40 to 45 feet per mile).

Soil samples from each boring were field-screened for the potential presence of petroleum contamination by water sheen tests and headspace vapor monitoring with a PID (among other methods). Slight sheen was observed on the soil samples obtained from MW-2 at about 6 feet bgs and from MW-4 at 2 ½ and 8 feet bgs. Field screening results indicated PID measurements at background concentrations.

6.2. Chemical Analytical Results and Contaminant Distribution

Contaminants of concern were not detected in soil samples at concentrations greater than MTCA Method A cleanup levels. However, GRPH were detected at concentrations greater than the applicable MTCA Method A cleanup level in the primary and duplicate groundwater samples collected from monitoring well MW-1, located immediately downgradient of the approximate location of the 1996 UST excavation. GRPH and other analytes were not detected in the water samples obtained from MW-2, located upgradient of the UST excavation, and from MW-3 and MW-4, located downgradient of potential source areas and near the downgradient site boundary.

6.3. Natural Attenuation Processes

In general, observed natural attenuation parameters suggest that natural attenuation processes (and associated loss of contaminant mass) are ongoing near monitoring well MW-1. This conclusion is based the following observed conditions in monitoring wells MW-1 relative to monitoring wells MW-2 through MW-4.

- An increase in methane concentration.
- A decrease in nitrate and sulfate concentrations relative to downgradient wells MW-3 and MW-4.
- A decrease in DO and ORP.
- An increase in alkalinity.

An extremely high nitrate concentration (176 mg/L) was observed in the groundwater sample collected from upgradient monitoring well MW-2. This observation along with the high specific conductivity (7.079 mS/cm) and sulfate results reported for MW-2, suggests a wastewater influence could be occurring in this area.

6.4. Data Gaps

Existing data gaps consist of the following:

- The seasonal variation in groundwater flow and associated impact on contaminant transport.
- The effectiveness of natural attenuation processes at reducing or stabilizing site groundwater contaminant plume geometry and concentrations with time.
- The presence of a septic or other source of the high nitrate concentrations observed in the groundwater sample collected from monitoring well MW-2.

- None of the prior reports noted the location of the fuel dispensers or associated underground piping. It is not known if contaminated soil was associated with these features or if remediation was conducted in these areas. This represents a data gap.

6.5. Recommendations

The observed petroleum contamination observed in groundwater samples collected from well MW-1 likely represents residual impact associated with former City Shop UST operation. None of the soil samples collected during this assessment or the source assessment contained petroleum hydrocarbons greater than cleanup criteria. Ecology might consider additional borings to further investigate the potential for an ongoing source. We recommend that Ecology continue the quarterly groundwater monitoring program currently planned for the site. We further recommend that, to monitor natural attenuation of groundwater contaminants, the natural attenuation parameters continue to be measured during the quarterly monitoring program. We also recommend that Ecology consider assessing the source(s) of the nitrate concentration in samples collected from upgradient well MW-2.

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 C for additional information pertaining to use of this report.

8.0 REFERENCES

GeoEngineers, Inc. 2012A. "Memorandum, Moxee City Shop and STP, File Review Summary." January 31, 2012.

GeoEngineers, Inc. 2012B. "Sampling and Analysis Plan, Soil and Groundwater Assessment, Moxee City Shop and STP, Moxee, Washington." January 31, 2012.

GeoEngineers, Inc. 2012C "Source Assessment, Moxee City Shop and STP, Moxee, Washington." May 21, 2012.

TABLES

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Table 1

Summary of Groundwater Level Measurements

Moxee City Shop and STP
Moxee, Washington

Well Number	Date Measured	Grid Northing[1] (feet)	Grid Easting[1] (feet)	Top of Casing Elevation[2] (feet)	Monitoring Well Headspace (ppm)	Depth to Groundwater[3] (feet)	Groundwater Elevation (feet)
MW-1	11/01/12	447991.6467	1665554.1011	1,024.95	0.0	7.35	1,017.60
MW-2	11/01/12	448024.9190	1665615.7296	1,025.49	0.0	7.65	1,017.84
MW-3	11/01/12	447983.3715	1665532.0329	1,025.24	0.0	7.81	1,017.43
MW-4	11/01/12	447957.5523	1665573.9717	1,025.56	0.0	7.95	1,017.61

Notes:

[1]Grid northing and easting are referenced to NAVD88, Washington State Plane Coordinate System, South Zone.

[2]Top of well casing elevations are referenced to the North American Vertical Datum of 1988 (NAVD88).

[3]Depth to water measurements obtained from top of well casing.

https://projects.geoengineers.com/sites/0050407800/Final/Soil and Groundwater Assessment Report/[Moxee City Shop Soil and GW Analytical Tables.xlsx]Table 1

Table 2

Summary of Chemical Analytical Results - Soil[1]

Moxee City Shop and STP
Moxee, Washington

Boring	MTCA Method	MW-2	MW-3	MW-4
Sample Depth (feet)	A Cleanup	6	6	2.5
Date Sampled	Levels[2]	10/31/12	10/31/12	10/31/12
Method EPA 8260C - NWTPH-Gx and Volatile Organic Compounds (mg/kg)				
Gasoline-range hydrocarbons	30/100[3]	73.5	<7.75	<8.18
Benzene	0.03	<0.00732	<0.00775	<0.00818
Ethylbenzene	6	<0.146	<0.155	<0.164
Toluene	7	<0.146	<0.155	<0.164
o-Xylene	9[4]	<0.293	<0.310	<0.327
m,p-Xylene	9[4]	<0.586	<0.620	<0.654
Xylenes (total)	9[4]	<2.20	<2.33	<2.45
Hexane	NE	<0.146	<0.155	<0.164
Method EPA 8270 mod. - Polynuclear Aromatic Compounds (PAH) by GC/MS with Selected Ion Monitoring (mg/kg)				
Naphthalene	5[5]	<0.0126	<0.0129	<0.0132
2-Methylnaphthalene	5[5]	<0.0126	<0.0129	<0.0132
1-Methylnaphthalene	5[5]	<0.0126	<0.0129	<0.0132

Notes:

[1]Chemical analyses conducted by TestAmerica Laboratories, Inc. of Spokane, Washington. All analyte concentrations presented in mg/kg.

[2]Washington State Model Toxics Control Act (MTCA) Method A Unrestricted Land Use cleanup levels.

[3]Gasoline-range petroleum hydrocarbon cleanup levels in soil are 30 mg/kg when benzene is detected and 100 mg/kg when benzene is not detected.

[4]Cleanup level for total xylenes.

[5]Cleanup level refers to sum of naphthalenes.

mg/kg = milligrams per kilogram; NT = not tested; NE = not established; EPA = Washington State Environmental Protection Agency

https://projects.geoengineers.com/sites/0050407800/Final/Soil and Groundwater Assessment Report/[Moxee City Shop Soil and GW Analytical Tables.xlsx]Table 2

Table 3

Summary of Chemical Analytical Results - Groundwater[1]

Moxee City Shop and STP
Moxee, Washington

	MTCA Method A Cleanup Levels[2]	Monitoring Well and Date Sampled					
		MW-1			MW-2	MW-3	MW-4
		03/01/12	11/01/12	DUP 11/01/12	11/01/12	11/01/12	11/01/12
Method EPA 8260C (µg/l)							
Gasoline-range petroleum hydrocarbons	1,000/800[3]	1,550	2,500	2,280	<90.0	<90.0	<90.0
Benzene	5	0.210	0.300	0.290	<0.200	<0.200	<0.200
Toluene	1,000	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	700	80.9	101	104	<0.500	<0.500	<0.500
m,p-Xylene	1,000[4]	NT	15.5	15.2	<0.500	<0.500	<0.500
o-Xylene	1,000[4]	NT	2.44	2.37	<0.500	<0.500	<0.500
Xylenes (total)	1,000[4]	11.1	18.0	17.6	<1.50	<1.50	<1.50
Hexane	NE	1.30	3.46	3.50	<1.00	<1.00	<1.00
Method EPA 8270 (µg/l)							
Naphthalene	160[5]	9.32	4.47	3.78	<0.191	<0.190	<0.190
2-Methylnaphthalene	160[5]	0.495	0.944	0.816	<0.191	<0.190	<0.190
1-Methylnapthalene	160[5]	4.74	7.77	6.69	<0.191	<0.190	<0.190
Method RSK-175 - Dissolved Gases (GC) (µg/l)							
Methane	NE	NT	0.0108	0.0131	<0.00500	<0.00500	<0.00500
Method EPA 200.7 - Dissolved Metals by EPA 200 Series Methods (mg/l)							
Manganese	2.2[6]	NT	0.943	0.950	0.678	0.178	0.208
Method EPA 300.0 - Anions by EPA Method 300.0 (mg/l)							
Nitrate-Nitrogen	10[7]	NT	<0.200	<0.200	176	1.12	0.420
Sulfate	NE	NT	18.3	18.2	290	34.2	31.7
Method SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods (mg/l)							
Total Alkalinity	NE	NT	480	480	230	335	245

Notes:

[1]Chemical analyses conducted by TestAmerica Laboratories, Inc. of Spokane, Washington.

[2]Washington State Model Toxics Control Act Method A cleanup levels for groundwater.

[3]Washington State Model Toxics Control Act (MTCA) Method A cleanup level for gasoline-range petroleum hydrocarbons is 1,000 µg/l, if benzene is not detected; otherwise the cleanup level is 800 µg/l.

[4]Cleanup level for total xylenes.

[5]Cleanup level refers to sum of naphthalenes.

[6]MTCA Method B cleanup level for groundwater.

[7]Maximum Contaminant Level (MCL).

NE = not established; NT = not tested

Table 4

Summary of Field-Measured Natural Attenuation Parameters

Moxee City Shop and STP
Moxee, Washington

Well Number	Date Collected	pH	Temperature (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)
MW-1	11/01/12	7.69	19.15	0.833	0.65	-36
MW-2	11/01/12	7.66	18.77	2.079	1.99	313
MW-3	11/01/12	8.73	17.82	0.6172	3.29	289
MW-4	11/01/12	8.77	17.47	0.4627	4.70	297

Notes:

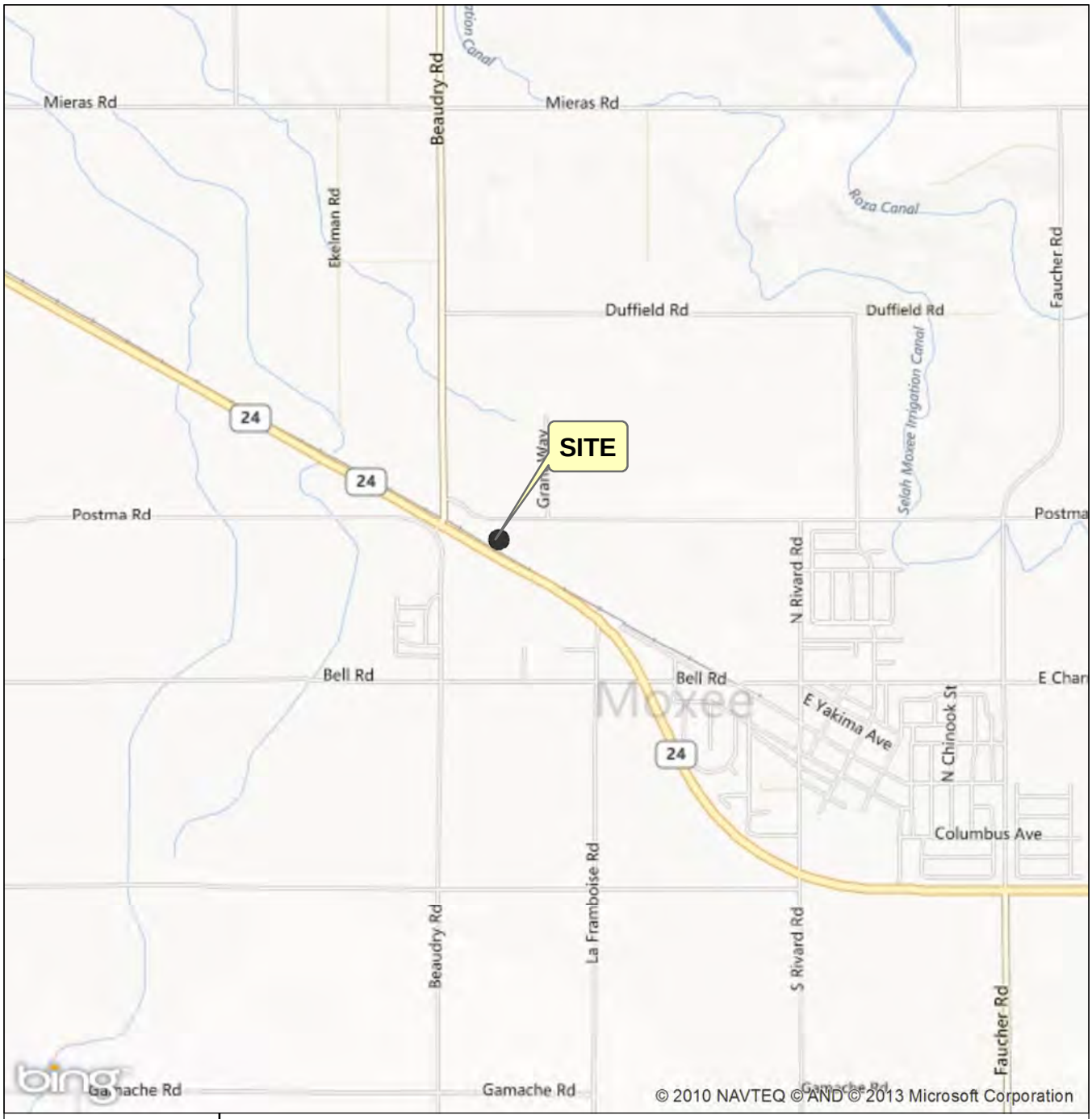
[1]Reported water quality parameters reflect stabilized conditions at the conclusion of well purging during low-flow sampling.

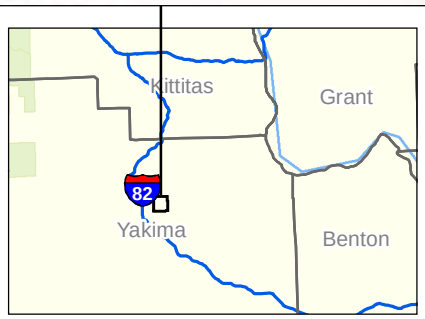
°C = degrees Celsius; mS/cm = millisiemens per centimeter; mg/l - milligrams per liter; mV = millivolts

https://projects.geoengineers.com/sites/0050407800/Final/Soil and Groundwater Assessment Report/[Moxee City Shop Soil and GW Analytical Tables.xlsx]Table 4

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.
Bing Maps Road from ESRI Data Online.
Projection: NAD 1983, Washington State Plane South, feet.

Vicinity Map

Moxee City Shop and STP
Moxee, Washington

GeoEngineers

Figure 1

Map Revised: 01/21/2013 CRC
Path: W:\Spokane\Projects\00\0504078\GIS\00\0504078007800_F1_VicinityMap.mxd
Office: SPOK

Approximate Direct-Push Boring Location (March 2012)

Approximate Monitoring Well Location (March and October 2012)

Approximate Location of 1996 UST Excavation

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.
Data Sources: Bing Maps Aerial from ESRI Data Online.
Projection: NAD 1983, Washington State Plane South, feet.

Site Plan

Moxee City Shop and STP
Moxee, Washington

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Figure 2

Map Revised: 01/21/2013 CRC

Office: SPOK Path: P:\0\0504078\GIS\00\0504078 00_F2_SitePlan.mxd

MW-1 1,017.60 — Approximate Monitoring Well Location and Groundwater Elevation

1017.6' — Approximate Groundwater Elevation Contour (0.2 - foot Interval)

Approximate Location of 1996 UST Excavation

Interpreted Groundwater Flow Direction

N W E S

40 0 40

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: Bing Maps Aerial from ESRI Data Online.
Projection: NAD 1983, Washington State Plane South, feet.

Groundwater Elevations - November 2012

Moxee City Shop and STP
Moxee, Washington

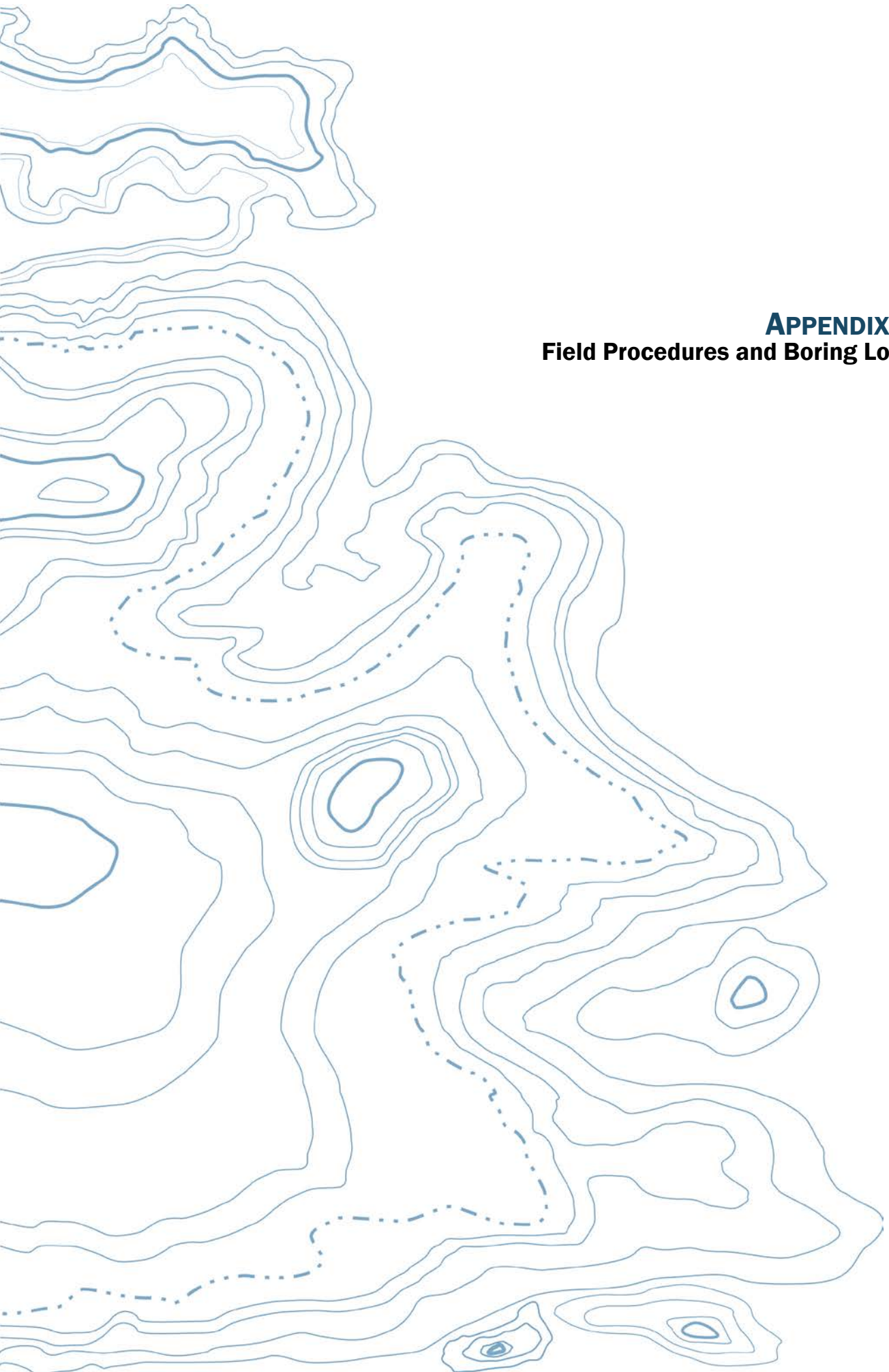
GeoEngineers

Figure 3

Office: SPOK Path: W:\Spokane\Projects\0\05040781GIS\00\00050407800_F2_GW_Nov2012.mxd Map Revised: 01/21/2013 CRC

APPENDICES

GeoEngineers



APPENDIX A
Field Procedures and Boring Logs

APPENDIX A
FIELD PROCEDURES AND BORING LOGS

General

Field methods were 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) and volatile organic compound (VOC) analyse s. Soil for analysis of other parameters was 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 Moxee City Shop and Sewage Treatment Plant site were explored at select locations on October 31, 2012 by advancing three borings (MW-2 to MW-4) at the approximate locations shown on Figure 2. The borings were advanced about 12 feet below existing site grade using a hollow-stem auger drill rig. Monitoring wells MW-1 through MW-4 were located by professional survey. Consequently, exploration locations should be considered accurate to the degree implied by the method used.

The hollow-stem auger drilling 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-5 (the log for MW-1, drilled in March 2012, is shown as Figure A-2). 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.

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.

Monitoring Well Construction and Development

Monitoring wells MW-2 through MW-4 were constructed using approximate 2-inch-diameter Schedule 40 PVC pipe and well screen material with 0.010 inches slot size. Processed 10-20 Colorado silica sand was used as filter pack. Bentonite chips were used as impermeable backfill. At the ground surface, the wells were protected by steel flush-mount monuments. Well construction details for monitoring wells MW-2 through MW-4 are presented graphically in Figures A-3 through A-5.

After installation, monitoring wells were developed by a combination of pumping and surging until purge water was relatively clear and free of suspended sediment.

Groundwater Elevations

Depths to groundwater were measured relative to the monitoring well casing rim using an electric water level indicator. The probe of the water level indicator was decontaminated after use with a detergent wash, followed by two distilled water rinses. Depths to groundwater measured in the monitoring wells are summarized in Table 1. The corresponding groundwater elevations are summarized in Table 1 and shown in Figure 3.

Low-Flow Sampling Procedures

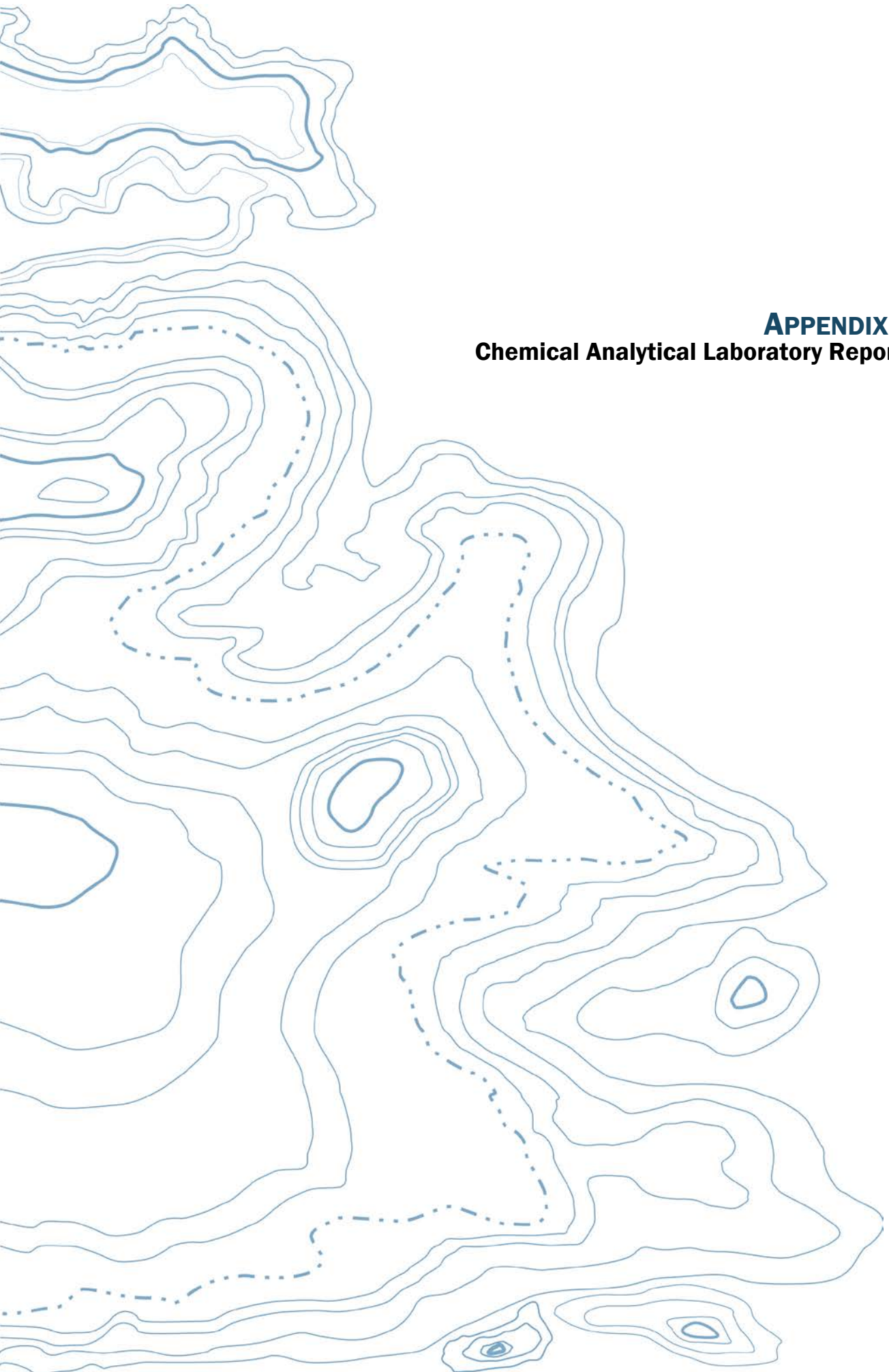
Groundwater sampling was performed consistent with the EPA's low-flow groundwater sampling procedure, as described by EPA (1996) and Puls and Barcelona (1996). Monitoring well purging activities were accomplished using a Cole-Parmer MasterFlex peristaltic pump equipped with disposable tubing. During purging activities, water quality parameters, including pH, conductivity, temperature, turbidity, oxidation-reduction potential and dissolved oxygen, were measured using a Troll 9500 multi-parameter meter equipped with a flow-through cell; measurements were recorded approximately every three minutes. The meter calibration was verified at the beginning of each work day consistent with manufacturer recommendations prior to purging and sampling activities.

Groundwater samples were collected after (1) water quality parameters had stabilized; or (2) a maximum purge time of thirty minutes was achieved. During purging and sampling, purge rate was not allowed to exceed 500 milliliters per minute. Water quality parameter stabilization criteria include the following:

- Turbidity: ±10 percent or ±10 nephelometric turbidity units (NTU);
- Dissolved oxygen: ±10 percent;
- Conductivity: ±3 percent;
- pH: ±0.1 unit;
- Temperature: ±3 percent; and
- Oxidation reduction potential: ±10 percent or ±10 millivolts (mV).

After groundwater quality stabilization criteria were reached, the pump's discharge tubing was disconnected from the flow-through cell and groundwater samples were collected for analysis.

Each sample was pumped directly into sample containers supplied by the laboratory. All groundwater samples collected for chemical analysis were kept cool during on-site storage and transport to the laboratory. Chain-of-custody procedures were observed during transport of the groundwater samples.



APPENDIX B
Chemical Analytical Laboratory Reports

APPENDIX B
CHEMICAL ANALYTICAL LABORATORY REPORTS

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

During the groundwater sampling event described herein, a duplicate sample was collected from MW-1 and designated DUP. Gasoline-range petroleum hydrocarbons (GRPH) were detected at concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels in both samples. The relative percent differences (RPDs) between the concentrations reported for the primary (X_1) and duplicate (X_2) samples were calculated using the following equation:

$$RPD = \frac{|X_1 - X_2|}{(X_1 + X_2)/2} * 100$$

The resulting RPDs calculated for contaminants of concern are summarized below:

- GRPH – 9.2 percent.
- Benzene – 3.4 percent.
- Ethylbenzene – 2.9 percent.
- Total xylenes – 2.2 percent.
- 2-Methylnaphthalene – 14.5 percent.
- 1-Methylnaphthalene – 14.9 percent.
- Naphthalene – 16.7 percent.
- Hexane – 1.1 percent
- Methane – 19.2 percent
- Manganese – 0.7 percent
- Sulfate – 0.5 percent
- Total Alkalinity – 0 percent
- Toluene and nitrate-nitrogen were not detected greater than respective method reporting limits in either the primary or duplicate sample.

RPD goals for this assessment, as specified in the project QAPP, are 30 percent in groundwater, unless the duplicate sample values are within 5 times the reporting limit. Therefore, the RPD values specified above are within acceptable limits.

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 any exceptions in the laboratory report.

The laboratory compared each group of samples with the existing data quality goals and noted the following exceptions in the laboratory report.

- Due to the high concentration of methane in the parent sample, the matrix spike/matrix spike duplicate (MS/MSD) for batch 35533 for the GC Semi Volatiles Method(s) RSK-175 had results above the upper level of the initial calibration curve and the results are estimated.

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: SVK0027
Client Project/Site: 0504-078-00
Client Project Description: Moxee City Shop
Revision: 1

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

Attn: Jon Rudders

Authorized for release by:
1/4/2013 9:30:05 AM

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

Case Narrative

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Job ID: SVK0027

Laboratory: TestAmerica Spokane

Narrative

Revision1: Due to a log-in error the sample ID for sample SVK0027-05 was not entered incorrectly. The error has been corrected and is reflected in the amended report. This final report replaces the final report generated on 11/19/12.

Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SVK0027-02	MW-2(6)	Soil	10/31/12 09:28	11/05/12 13:00
SVK0027-05	MW-4(2.5)	Soil	10/31/12 11:25	11/05/12 13:00
SVK0027-10	MW-3(6)	Soil	10/31/12 13:25	11/05/12 13:00

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

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
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
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
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Client Sample ID: MW-2(6)

Date Collected: 10/31/12 09:28
Date Received: 11/05/12 13:00

Lab Sample ID: SVK0027-02

Matrix: Soil
Percent Solids: 77

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00732		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
Ethylbenzene	ND		0.146		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
Toluene	ND		0.146		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
o-Xylene	ND		0.293		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
m,p-Xylene	ND		0.586		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
Xylenes (total)	ND		2.20		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00
Hexane	ND		0.146		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:21	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*42.4 - 163*	*11/08/12 14:01*	*11/08/12 20:21*	*1.00*
Toluene-d8	*109*		*45.8 - 155*	*11/08/12 14:01*	*11/08/12 20:21*	*1.00*
4-bromofluorobenzene	*104*		*41.5 - 162*	*11/08/12 14:01*	*11/08/12 20:21*	*1.00*

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	**73.5**		7.32		mg/kg dry	☼	11/08/12 14:01	11/12/12 10:32	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*111*		*42.4 - 163*	*11/08/12 14:01*	*11/12/12 10:32*	*1.00*
Toluene-d8	*110*		*45.8 - 155*	*11/08/12 14:01*	*11/12/12 10:32*	*1.00*
4-bromofluorobenzene	*117*		*41.5 - 162*	*11/08/12 14:01*	*11/12/12 10:32*	*1.00*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0126		mg/kg dry	☼	11/07/12 13:44	11/09/12 14:25	1.00
2-Methylnaphthalene	ND		0.0126		mg/kg dry	☼	11/07/12 13:44	11/09/12 14:25	1.00
1-Methylnapthalene	ND		0.0126		mg/kg dry	☼	11/07/12 13:44	11/09/12 14:25	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*81.8*		*54 - 129*	*11/07/12 13:44*	*11/09/12 14:25*	*1.00*

Client Sample ID: MW-4(2.5)

Date Collected: 10/31/12 11:25
Date Received: 11/05/12 13:00

Lab Sample ID: SVK0027-05

Matrix: Soil
Percent Solids: 75.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00818		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
Ethylbenzene	ND		0.164		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
Toluene	ND		0.164		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
o-Xylene	ND		0.327		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
m,p-Xylene	ND		0.654		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
Xylenes (total)	ND		2.45		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00
Hexane	ND		0.164		mg/kg dry	☼	11/08/12 14:01	11/08/12 20:44	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*42.4 - 163*	*11/08/12 14:01*	*11/08/12 20:44*	*1.00*
Toluene-d8	*109*		*45.8 - 155*	*11/08/12 14:01*	*11/08/12 20:44*	*1.00*
4-bromofluorobenzene	*103*		*41.5 - 162*	*11/08/12 14:01*	*11/08/12 20:44*	*1.00*

Client Sample ID: MW-4(2.5)

Lab Sample ID: SVK0027-05
Date Collected: 10/31/12 11:25
Matrix: Soil
Date Received: 11/05/12 13:00
Percent Solids: 75.8

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	ND		8.18		mg/kg dry	☼	11/08/12 14:01	11/12/12 10:55	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*109*		*42.4 - 163*	*11/08/12 14:01*	*11/12/12 10:55*	*1.00*
Toluene-d8	*109*		*45.8 - 155*	*11/08/12 14:01*	*11/12/12 10:55*	*1.00*
4-bromofluorobenzene	*108*		*41.5 - 162*	*11/08/12 14:01*	*11/12/12 10:55*	*1.00*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0132		mg/kg dry	☼	11/07/12 13:44	11/09/12 15:37	1.00
2-Methylnaphthalene	ND		0.0132		mg/kg dry	☼	11/07/12 13:44	11/09/12 15:37	1.00
1-Methylnapthalene	ND		0.0132		mg/kg dry	☼	11/07/12 13:44	11/09/12 15:37	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*72.8*		*54 - 129*	*11/07/12 13:44*	*11/09/12 15:37*	*1.00*

Client Sample ID: MW-3(6)

Lab Sample ID: SVK0027-10
Date Collected: 10/31/12 13:25
Matrix: Soil
Date Received: 11/05/12 13:00
Percent Solids: 76

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00775		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
Ethylbenzene	ND		0.155		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
Toluene	ND		0.155		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
o-Xylene	ND		0.310		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
m,p-Xylene	ND		0.620		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
Xylenes (total)	ND		2.33		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00
Hexane	ND		0.155		mg/kg dry	☼	11/08/12 14:01	11/08/12 21:08	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*108*		*42.4 - 163*	*11/08/12 14:01*	*11/08/12 21:08*	*1.00*
Toluene-d8	*109*		*45.8 - 155*	*11/08/12 14:01*	*11/08/12 21:08*	*1.00*
4-bromofluorobenzene	*104*		*41.5 - 162*	*11/08/12 14:01*	*11/08/12 21:08*	*1.00*

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	ND		7.75		mg/kg dry	☼	11/08/12 14:01	11/12/12 11:18	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*108*		*42.4 - 163*	*11/08/12 14:01*	*11/12/12 11:18*	*1.00*
Toluene-d8	*111*		*45.8 - 155*	*11/08/12 14:01*	*11/12/12 11:18*	*1.00*
4-bromofluorobenzene	*106*		*41.5 - 162*	*11/08/12 14:01*	*11/12/12 11:18*	*1.00*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0129		mg/kg dry	☼	11/07/12 13:44	11/09/12 16:01	1.00
2-Methylnaphthalene	ND		0.0129		mg/kg dry	☼	11/07/12 13:44	11/09/12 16:01	1.00
1-Methylnapthalene	ND		0.0129		mg/kg dry	☼	11/07/12 13:44	11/09/12 16:01	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*84.4*		*54 - 129*	*11/07/12 13:44*	*11/09/12 16:01*	*1.00*

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

Lab Sample ID: 12K0062-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12K0062 — **Prep Batch: 12K0062_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.00600		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Benzene	ND		0.00500		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Ethylbenzene	ND		0.100		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Toluene	ND		0.100		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
o-Xylene	ND		0.200		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
m,p-Xylene	ND		0.400		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Naphthalene	ND		0.200		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Xylenes (total)	ND		1.50		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00
Hexane	ND		0.100		mg/kg wet		11/08/12 14:01	11/08/12 18:47	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*42.4 - 163*	*11/08/12 14:01*	*11/08/12 18:47*	*1.00*
Toluene-d8	*110*		*45.8 - 155*	*11/08/12 14:01*	*11/08/12 18:47*	*1.00*
4-bromofluorobenzene	*106*		*41.5 - 162*	*11/08/12 14:01*	*11/08/12 18:47*	*1.00*

Lab Sample ID: 12K0062-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12K0062 — **Prep Batch: 12K0062_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		5.00		mg/kg wet		11/08/12 14:01	11/09/12 08:23	1.00

Lab Sample ID: 12K0062-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12K0062 — **Prep Batch: 12K0062_P**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Hydrocarbons			50.0	52.8		mg/kg wet		106	74.4 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*108*		*42.4 - 163*
Toluene-d8	*110*		*45.8 - 155*
4-bromofluorobenzene	*108*		*41.5 - 162*

Lab Sample ID: 12K0062-BS2 — **Client Sample ID: Lab Control Sample**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 12K0062 — **Prep Batch: 12K0062_P**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether			0.500	0.461		mg/kg wet		92.2	79 - 127		
Benzene			0.500	0.515		mg/kg wet		103	75.9 - 123		
Ethylbenzene			0.500	0.504		mg/kg wet		101	80.7 - 112		
Toluene			0.500	0.524		mg/kg wet		105	77.3 - 126		
o-Xylene			0.500	0.520		mg/kg wet		104	85.3 - 117		
m,p-Xylene			1.00	1.04		mg/kg wet		104	86.1 - 116		
Naphthalene			0.500	0.444		mg/kg wet		88.8	58.8 - 130		
Xylenes (total)			1.50	1.56		mg/kg wet		104	50 - 150		

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

Lab Sample ID: 12K0062-BS2
Matrix: Soil
Analysis Batch: 12K0062

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0062_P

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	*110*		*42.4 - 163*
Toluene-d8	*110*		*45.8 - 155*
4-bromofluorobenzene	*108*		*41.5 - 162*

Lab Sample ID: 12K0062-BS3
Matrix: Soil
Analysis Batch: 12K0062

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0062_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hexane			0.500	0.446		mg/kg wet		89.2	50 - 150		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	*109*		*42.4 - 163*
Toluene-d8	*109*		*45.8 - 155*
4-bromofluorobenzene	*107*		*41.5 - 162*

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

Lab Sample ID: 12K0054-BLK1
Matrix: Soil
Analysis Batch: 12K0054

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12K0054_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0100		mg/kg wet		11/07/12 13:44	11/09/12 13:37	1.00
2-Methylnaphthalene	ND		0.0100		mg/kg wet		11/07/12 13:44	11/09/12 13:37	1.00
1-Methylnapthalene	ND		0.0100		mg/kg wet		11/07/12 13:44	11/09/12 13:37	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*83.2*		*54 - 129*	*11/07/12 13:44*	*11/09/12 13:37*	*1.00*

Lab Sample ID: 12K0054-BS1
Matrix: Soil
Analysis Batch: 12K0054

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0054_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene			0.133	0.100		mg/kg wet		75.0	59 - 100		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	*79.6*		*54 - 129*

Lab Sample ID: 12K0054-MS1
Matrix: Soil
Analysis Batch: 12K0054

Client Sample ID: MW-2(6)
Prep Type: Total
Prep Batch: 12K0054_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene	ND		0.202	0.153		mg/kg dry	☼	75.5	30 - 120		

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

Lab Sample ID: 12K0054-MS1
Matrix: Soil
Analysis Batch: 12K0054

Client Sample ID: MW-2(6)
Prep Type: Total
Prep Batch: 12K0054_P

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
Nitrobenzene-d5	*84.4*		*54 - 129*

Lab Sample ID: 12K0054-MSD1
Matrix: Soil
Analysis Batch: 12K0054

Client Sample ID: MW-2(6)
Prep Type: Total
Prep Batch: 12K0054_P

Analyte	Sample Result	Sample Qualifier	Spike Added	trix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	ND		0.234	0.147		mg/kg dry	☼	62.5	30 - 120	4.15	35

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
Nitrobenzene-d5	*69.2*		*54 - 129*

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Client Sample ID: MW-2(6)

Lab Sample ID: SVK0027-02

Date Collected: 10/31/12 09:28
Matrix: Soil
Date Received: 11/05/12 13:00
Percent Solids: 77

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.898	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0062	11/08/12 20:21	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.898	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	1.00	12K0062	11/12/12 10:32	CBW	TAL SPK
Total	Prep	EPA 3550B		0.972	12K0054_P	11/07/12 13:44	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12K0054	11/09/12 14:25	MS	TAL SPK
Total	Prep	Wet Chem		1.00	12K0118_P	11/07/12 14:45	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12K0118	11/08/12 10:30	CM	TAL SPK

Client Sample ID: MW-4(2.5)

Lab Sample ID: SVK0027-05

Date Collected: 10/31/12 11:25
Matrix: Soil
Date Received: 11/05/12 13:00
Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.998	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0062	11/08/12 20:44	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.998	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	1.00	12K0062	11/12/12 10:55	CBW	TAL SPK
Total	Prep	EPA 3550B		0.998	12K0054_P	11/07/12 13:44	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12K0054	11/09/12 15:37	MS	TAL SPK
Total	Prep	Wet Chem		1.00	12K0118_P	11/07/12 14:45	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12K0118	11/08/12 10:30	CM	TAL SPK

Client Sample ID: MW-3(6)

Lab Sample ID: SVK0027-10

Date Collected: 10/31/12 13:25
Matrix: Soil
Date Received: 11/05/12 13:00
Percent Solids: 76

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.938	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0062	11/08/12 21:08	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.938	12K0062_P	11/08/12 14:01	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	1.00	12K0062	11/12/12 11:18	CBW	TAL SPK
Total	Prep	EPA 3550B		0.984	12K0054_P	11/07/12 13:44	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12K0054	11/09/12 16:01	MS	TAL SPK
Total	Prep	Wet Chem		1.00	12K0118_P	11/07/12 14:45	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12K0118	11/08/12 10:30	CM	TAL SPK

Laboratory References:

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

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-13
Washington	State Program	10	C569	01-06-13

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0027

Method	Method Description	Protocol	Laboratory
EPA 8260C	NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C		TAL SPK
EPA 8270C	Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring		TAL SPK
TA SOP	Conventional Chemistry Parameters by APHA/EPA Methods		TAL SPK

Protocol References:

Laboratory References:

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
5755 8TH Street East, Tacoma, Wa 98424 253-922-2310 FAX 922-5047
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

CHAIN OF CUSTODY REPORT

Work Order #: SVK0027

CLIENT: GEO ENGINEERS

INVOICE TO: JON RUDDERS

REPORT TO: JON RUDDERS
ADDRESS: 523 E. 2ND AVE
SPOKANE, WA 99202
PHONE: 509-363-3125 FAX: 509-363-3124

P.O. NUMBER:

PROJECT NAME: MOXEE CITY SHOP

PROJECT NUMBER: 0504-078-00

SAMPLED BY: KATIE HALL

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				REQUESTED ANALYSES								MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
			MeOH	MeOH	MeOH		GRPH BY NWTPH-GX	BTEX BY EPA 8260C	N-HEXANE BY EPA 8260C	NAPHTHALENES BY EPA 8270D SIM*								
1	MW-2 (2.5)	10/31/12 0925													S	3		
2	MW-2 (6)	0928	X	X	X	X									S	3		
3	MW-2 (7.5)	0957													S	3		
4	MW-2 (11)	1002													S	3		
5	MW-4 (25)	1125	X	X	X	X									S	3		
6	MW-4 (55)	1132	X	X	X	X	SER	11/5/12 Do not analyze							S	3		
7	MW-4 (8.5)	1138													S	3		
8	MW-4 (11)	1145													S	3		
9	MW-3 (3)	1317													S	3		
10	MW-3 (16)	1325	X	X	X	X									S	3		

RELEASED BY:		DATE: 11/5/12	RECEIVED BY:		DATE:
PRINT NAME: KATIE HALL	FIRM: GEI	TIME: 1700	PRINT NAME:	FIRM:	TIME:
RELEASED BY:		DATE: 11-5-12	RECEIVED BY:		DATE: 11-5-12
PRINT NAME: Dave Thompson	FIRM: GEI	TIME: 13:00	PRINT NAME: Cat Templeton	FIRM: TestAmerica	TIME: 13:00

ADDITIONAL REMARKS:
* NAPHTHALENES - INCLUDING NAPHTHALENE, 1-METHYLNAPHTHALENE AND 2-METHYLNAPHTHALENE

TEMP: 1.5

PAGE 1 OF 2

TAL-1000 (0212)

TestAmerica Spokane
Sample Receipt Form

Work Order #: SNK0087	Client: GeoEngineers	Project: Moxee City Shop
Date/Time Received: 11-5-12 13:00	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: 1.5 °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: 11-5-12 13:19 By: CS	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			
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

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: SVK0021
Client Project/Site: 0504-078-00
Client Project Description: Moxee City Shop

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

Attn: Jon Rudders

Authorized for release by:
11/20/2012 12:24:44 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

Case Narrative

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Job ID: SVK0021

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-10938-1

Comments
No additional comments.

Receipt
The samples were received on 11/7/2012 8:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9º C.

GC Semi VOA
Method(s) RSK-175: Due to the high concentration of methane in the parent sample, the matrix spike / matrix spike duplicate (MS/MSD) for batch 35533 had results above the upper level of the initial calibration curve. Results are estimated.

No other analytical or quality issues were noted.

Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SVK0021-01	MW-1-110112	Water	11/01/12 17:38	11/02/12 16:15
SVK0021-02	MW-2-110112	Water	11/01/12 11:27	11/02/12 16:15
SVK0021-03	MW-3-110112	Water	11/01/12 15:07	11/02/12 16:15
SVK0021-04	MW-4-110112	Water	11/01/12 13:15	11/02/12 16:15
SVK0021-05	Duplicate-1-110112	Water	11/01/12 12:34	11/02/12 16:15
SVK0021-06	Trip Blank	Water	11/01/12 00:00	11/02/12 16:15

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Qualifiers

GCMS Volatiles

Qualifier	Qualifier Description
M7	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

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
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
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
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Client Sample ID: MW-1-110112

Date Collected: 11/01/12 17:38
Date Received: 11/02/12 16:15

Lab Sample ID: SVK0021-01

Matrix: Water

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	**2500**		90.0		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
Benzene	**0.300**		0.200		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
m,p-Xylene	**15.5**		0.500		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
o-Xylene	**2.44**		0.500		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
Xylenes (total)	**18.0**		1.50		ug/l		11/06/12 07:37	11/06/12 11:53	1.00
Hexane	**3.46**		1.00		ug/l		11/06/12 07:37	11/06/12 11:53	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*109*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 11:53*	*1.00*
Toluene-d8	*110*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 11:53*	*1.00*
4-bromofluorobenzene	*104*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 11:53*	*1.00*

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
Ethylbenzene	**101**		5.00		ug/l		11/06/12 07:37	11/06/12 17:01	10.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*107*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 17:01*	*10.0*
Toluene-d8	*107*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 17:01*	*10.0*
4-bromofluorobenzene	*102*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 17:01*	*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
Naphthalene	**4.47**		0.193		ug/l		11/07/12 10:56	11/09/12 11:36	1.00
2-Methylnaphthalene	**0.944**		0.193		ug/l		11/07/12 10:56	11/09/12 11:36	1.00
1-Methylnapthalene	**7.77**		0.193		ug/l		11/07/12 10:56	11/09/12 11:36	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*63.3*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 11:36*	*1.00*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0108**		0.00500		mg/L			11/12/12 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetylene (Surr)	*82*		*62 - 124*		*11/12/12 14:37*	*1*

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.943**		0.0100		mg/l		11/09/12 09:36	11/12/12 15:27	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	ND		0.200		mg/l		11/02/12 16:25	11/02/12 16:26	1.00
Sulfate	**18.3**		0.500		mg/l		11/02/12 16:25	11/02/12 16:26	1.00

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**480**		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Client Sample ID: MW-2-110112

Lab Sample ID: SVK0021-02

Date Collected: 11/01/12 11:27

Matrix: Water

Date Received: 11/02/12 16:15

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		90.0		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
Benzene	ND		0.200		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
Ethylbenzene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
m,p-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
o-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
Xylenes (total)	ND		1.50		ug/l		11/06/12 07:37	11/06/12 12:17	1.00
Hexane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 12:17	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 12:17*	*1.00*
Toluene-d8	*108*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 12:17*	*1.00*
4-bromofluorobenzene	*104*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 12:17*	*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
Naphthalene	ND		0.191		ug/l		11/07/12 10:56	11/09/12 12:01	1.00
2-Methylnaphthalene	ND		0.191		ug/l		11/07/12 10:56	11/09/12 12:01	1.00
1-Methylnapthalene	ND		0.191		ug/l		11/07/12 10:56	11/09/12 12:01	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*46.6*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 12:01*	*1.00*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.00500		mg/L			11/12/12 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetylene (Surr)	*88*		*62 - 124*		*11/12/12 14:40*	*1*

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.678**		0.0100		mg/l		11/09/12 09:36	11/12/12 15:30	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	**176**		20.0		mg/l		11/02/12 16:25	11/02/12 18:00	100
Sulfate	**290**		50.0		mg/l		11/02/12 16:25	11/02/12 18:00	100

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**230**		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Client Sample ID: MW-3-110112

Lab Sample ID: SVK0021-03

Date Collected: 11/01/12 15:07

Matrix: Water

Date Received: 11/02/12 16:15

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		90.0		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
Benzene	ND		0.200		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:40	1.00

Client Sample ID: MW-3-110112

Lab Sample ID: SVK0021-03

Date Collected: 11/01/12 15:07

Matrix: Water

Date Received: 11/02/12 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
m,p-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
o-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
Xylenes (total)	ND		1.50		ug/l		11/06/12 07:37	11/06/12 12:40	1.00
Hexane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 12:40	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 12:40*	*1.00*
Toluene-d8	*108*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 12:40*	*1.00*
4-bromofluorobenzene	*104*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 12:40*	*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
Naphthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:24	1.00
2-Methylnaphthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:24	1.00
1-Methylnapthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:24	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*63.2*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 12:24*	*1.00*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.00500		mg/L			11/12/12 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetylene (Surr)	*76*		*62 - 124*		*11/12/12 14:49*	*1*

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.178**		0.0100		mg/l		11/09/12 09:36	11/12/12 15:34	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	**1.12**		0.200		mg/l		11/02/12 16:25	11/02/12 17:04	1.00
Sulfate	**34.2**		0.500		mg/l		11/02/12 16:25	11/02/12 17:04	1.00

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**335**		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Client Sample ID: MW-4-110112

Lab Sample ID: SVK0021-04

Date Collected: 11/01/12 13:15

Matrix: Water

Date Received: 11/02/12 16:15

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		90.0		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
Benzene	ND		0.200		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
Ethylbenzene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
m,p-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
o-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:04	1.00

Client Sample ID: MW-4-110112

Lab Sample ID: SVK0021-04

Date Collected: 11/01/12 13:15

Matrix: Water

Date Received: 11/02/12 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes (total)	ND		1.50		ug/l		11/06/12 07:37	11/06/12 13:04	1.00
Hexane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 13:04	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*110*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 13:04*	*1.00*
Toluene-d8	*107*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 13:04*	*1.00*
4-bromofluorobenzene	*105*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 13:04*	*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
Naphthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:48	1.00
2-Methylnaphthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:48	1.00
1-Methylnapthalene	ND		0.190		ug/l		11/07/12 10:56	11/09/12 12:48	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*63.0*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 12:48*	*1.00*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.00500		mg/L			11/12/12 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetylene (Surr)	*86*		*62 - 124*		*11/12/12 14:51*	*1*

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.208**		0.0100		mg/l		11/09/12 09:36	11/12/12 15:37	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	**0.420**		0.200		mg/l		11/02/12 16:25	11/02/12 17:22	1.00
Sulfate	**31.7**		0.500		mg/l		11/02/12 16:25	11/02/12 17:22	1.00

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**245**		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Client Sample ID: Duplicate-1-110112

Lab Sample ID: SVK0021-05

Date Collected: 11/01/12 12:34

Matrix: Water

Date Received: 11/02/12 16:15

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	**2280**		90.0		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
Benzene	**0.290**		0.200		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
m,p-Xylene	**15.2**		0.500		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
o-Xylene	**2.37**		0.500		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
Xylenes (total)	**17.6**		1.50		ug/l		11/06/12 07:37	11/06/12 13:27	1.00
Hexane	**3.50**		1.00		ug/l		11/06/12 07:37	11/06/12 13:27	1.00

Client Sample ID: Duplicate-1-110112

Lab Sample ID: SVK0021-05

Date Collected: 11/01/12 12:34

Matrix: Water

Date Received: 11/02/12 16:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*107*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 13:27*	*1.00*
Toluene-d8	*109*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 13:27*	*1.00*
4-bromofluorobenzene	*103*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 13:27*	*1.00*

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
Ethylbenzene	**104**		5.00		ug/l		11/06/12 07:37	11/06/12 17:24	10.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*110*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 17:24*	*10.0*
Toluene-d8	*105*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 17:24*	*10.0*
4-bromofluorobenzene	*102*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 17:24*	*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
Naphthalene	**3.78**		0.192		ug/l		11/07/12 10:56	11/09/12 13:12	1.00
2-Methylnaphthalene	**0.816**		0.192		ug/l		11/07/12 10:56	11/09/12 13:12	1.00
1-Methylnapthalene	**6.69**		0.192		ug/l		11/07/12 10:56	11/09/12 13:12	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*53.7*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 13:12*	*1.00*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0131**		0.00500		mg/L			11/12/12 14:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetylene (Surr)	*73*		*62 - 124*		*11/12/12 14:54*	*1*

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.950**		0.0100		mg/l		11/09/12 09:36	11/12/12 15:39	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	ND		0.200		mg/l		11/02/12 16:25	11/02/12 17:41	1.00
Sulfate	**18.2**		0.500		mg/l		11/02/12 16:25	11/02/12 17:41	1.00

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**480**		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Client Sample ID: Trip Blank

Lab Sample ID: SVK0021-06

Date Collected: 11/01/12 00:00

Matrix: Water

Date Received: 11/02/12 16:15

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		90.0		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
Benzene	ND		0.200		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
Ethylbenzene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:51	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Client Sample ID: Trip Blank
Date Collected: 11/01/12 00:00
Date Received: 11/02/12 16:15

Lab Sample ID: SVK0021-06
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
o-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
Xylenes (total)	ND		1.50		ug/l		11/06/12 07:37	11/06/12 13:51	1.00
Hexane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 13:51	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*105*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 13:51*	*1.00*
Toluene-d8	*108*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 13:51*	*1.00*
4-bromofluorobenzene	*105*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 13:51*	*1.00*

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

Lab Sample ID: 12K0038-BLK1
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12K0038_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		90.0		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Methyl tert-butyl ether	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Benzene	ND		0.200		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Toluene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Ethylbenzene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
m,p-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
o-Xylene	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Naphthalene	ND		2.00		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
1,2-Dibromoethane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Xylenes (total)	ND		1.50		ug/l		11/06/12 07:37	11/06/12 10:19	1.00
Hexane	ND		1.00		ug/l		11/06/12 07:37	11/06/12 10:19	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*109*		*71.2 - 143*	*11/06/12 07:37*	*11/06/12 10:19*	*1.00*
Toluene-d8	*107*		*74.1 - 135*	*11/06/12 07:37*	*11/06/12 10:19*	*1.00*
4-bromofluorobenzene	*105*		*68.7 - 141*	*11/06/12 07:37*	*11/06/12 10:19*	*1.00*

Lab Sample ID: 12K0038-BS1
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0038_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Hydrocarbons			1000	1090		ug/l		109	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*110*		*71.2 - 143*
Toluene-d8	*109*		*74.1 - 135*
4-bromofluorobenzene	*106*		*68.7 - 141*

Lab Sample ID: 12K0038-BS2
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0038_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether			10.0	8.83		ug/l		88.3	80.1 - 128		
Benzene			10.0	10.4		ug/l		104	84.2 - 122		
Toluene			10.0	10.5		ug/l		105	85.8 - 123		
Ethylbenzene			10.0	10.2		ug/l		102	83.6 - 111		
m,p-Xylene			20.0	21.1		ug/l		106	86.4 - 115		
o-Xylene			10.0	10.6		ug/l		106	90.2 - 116		
Naphthalene			10.0	7.03		ug/l		70.3	62.8 - 132		
Xylenes (total)			30.0	31.7		ug/l		106	91.4 - 114		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*109*		*71.2 - 143*
Toluene-d8	*108*		*74.1 - 135*

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

Lab Sample ID: 12K0038-BS2
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0038_P

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-bromofluorobenzene	*104*		*68.7 - 141*

Lab Sample ID: 12K0038-BS3
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0038_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hexane			10.0	8.63		ug/l		86.3	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	*107*		*71.2 - 143*
Toluene-d8	*109*		*74.1 - 135*
4-bromofluorobenzene	*107*		*68.7 - 141*

Lab Sample ID: 12K0038-MS2
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: MW-1-110112
Prep Type: Total
Prep Batch: 12K0038_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether	ND		10.0	8.90		ug/l		89.0	44.3 - 150		
Benzene	0.300		10.0	10.6		ug/l		104	72.3 - 120		
Toluene	0.360		10.0	10.8		ug/l		104	62.7 - 137		
Ethylbenzene	101		10.0	118	M7	ug/l		170	71.2 - 128		
m,p-Xylene	15.5		20.0	37.2		ug/l		108	70 - 134		
o-Xylene	2.44		10.0	13.1		ug/l		107	78.5 - 120		
Naphthalene	7.90		10.0	18.9		ug/l		110	45.4 - 150		
Xylenes (total)	18.0		30.0	50.3		ug/l		108	80 - 130		

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Dibromofluoromethane	*110*		*71.2 - 143*
Toluene-d8	*108*		*74.1 - 135*
4-bromofluorobenzene	*99.8*		*68.7 - 141*

Lab Sample ID: 12K0038-MS3
Matrix: Water
Analysis Batch: 12K0038

Client Sample ID: MW-2-110112
Prep Type: Total
Prep Batch: 12K0038_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Hexane	ND		10.0	9.07		ug/l		90.7	70 - 130		

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Dibromofluoromethane	*108*		*71.2 - 143*
Toluene-d8	*107*		*74.1 - 135*
4-bromofluorobenzene	*105*		*68.7 - 141*

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

Lab Sample ID: 12K0052-BLK1
Matrix: Water
Analysis Batch: 12K0052

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12K0052_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.200		ug/l		11/07/12 10:56	11/09/12 10:48	1.00
2-Methylnaphthalene	ND		0.200		ug/l		11/07/12 10:56	11/09/12 10:48	1.00
1-Methylnapthalene	ND		0.200		ug/l		11/07/12 10:56	11/09/12 10:48	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*79.3*		*31.6 - 137*	*11/07/12 10:56*	*11/09/12 10:48*	*1.00*

Lab Sample ID: 12K0052-BS1
Matrix: Water
Analysis Batch: 12K0052

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0052_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	4.00	1.81		ug/l		45.2	27.6 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*55.9*		*31.6 - 137*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 490-35533/33
Matrix: Water
Analysis Batch: 35533

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.00500		mg/L			11/12/12 13:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetylene (Surr)	*93*		*62 - 124*		*11/12/12 13:59*	*1*

Lab Sample ID: LCS 490-35533/34
Matrix: Water
Analysis Batch: 35533

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	0.273	0.2520		mg/L		92	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Acetylene (Surr)	*94*		*62 - 124*

Lab Sample ID: LCSD 490-35533/35
Matrix: Water
Analysis Batch: 35533

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane	0.273	0.2439		mg/L		89	80 - 120	3	33

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 490-35533/35
Matrix: Water
Analysis Batch: 35533

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Acetylene (Surr)	89		62 - 124

Lab Sample ID: 490-10949-D-2 MS
Matrix: Water
Analysis Batch: 35533

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	0.330		0.273	0.5631	E	mg/L		85	46 - 142

Surrogate	MS %Recovery	MS Qualifier	Limits
Acetylene (Surr)	87		62 - 124

Lab Sample ID: 490-10949-D-2 MSD
Matrix: Water
Analysis Batch: 35533

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane	0.330		0.273	0.5618	E	mg/L		85	46 - 142	0	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Acetylene (Surr)	82		62 - 124

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods

Lab Sample ID: 12K0070-BLK1
Matrix: Water
Analysis Batch: 12K0070

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12K0070_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.0100		mg/l		11/09/12 09:36	11/12/12 15:02	1.00

Lab Sample ID: 12K0070-BS1
Matrix: Water
Analysis Batch: 12K0070

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0070_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1.00	0.989		mg/l		98.9	85 - 115

Lab Sample ID: 12K0070-MS1
Matrix: Water
Analysis Batch: 12K0070

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 12K0070_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	ND		1.00	0.977		mg/l		97.7	75 - 125

Method: EPA 200.7 - Dissolved Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 12K0070-MSD1 — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0070 — **Prep Batch: 12K0070_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	ND		1.00	0.976		mg/l		97.6	75 - 125	0.027 4	20

Lab Sample ID: 12K0070-DUP1 — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0070 — **Prep Batch: 12K0070_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Manganese	ND		ND		mg/l			20

Method: EPA 300.0 - Anions by EPA Method 300.0

Lab Sample ID: 12K0014-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0014 — **Prep Batch: 12K0014_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	ND		0.200		mg/l		11/02/12 11:24	11/02/12 15:13	1.00
Sulfate	ND		0.500		mg/l		11/02/12 11:24	11/02/12 15:13	1.00

Lab Sample ID: 12K0014-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0014 — **Prep Batch: 12K0014_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate-Nitrogen	5.00	5.25		mg/l		105	90 - 110
Sulfate	12.5	13.3		mg/l		107	90 - 110

Lab Sample ID: 12K0014-MS1 — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0014 — **Prep Batch: 12K0014_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate-Nitrogen	26.8		50.0	84.0		mg/l		114	80 - 120
Sulfate	140		125	285		mg/l		116	80 - 120

Lab Sample ID: 12K0014-MSD1 — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0014 — **Prep Batch: 12K0014_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate-Nitrogen	26.8		50.0	84.8		mg/l		116	80 - 120	0.912	12.1
Sulfate	140		125	286		mg/l		117	80 - 120	0.269	10

Method: EPA 300.0 - Anions by EPA Method 300.0 (Continued)

Lab Sample ID: 12K0014-DUP1 — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0014 — **Prep Batch: 12K0014_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Nitrate-Nitrogen	26.8			26.7		mg/l				0.374	13.1
Sulfate	140			140		mg/l				0.214	15.7

Method: SM 2320B - Conventional Chemistry Parameters by APHA/EPA Methods

Lab Sample ID: 12K0090-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0090 — **Prep Batch: 12K0090_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		4.00		mg/l		11/14/12 10:04	11/14/12 15:00	1.00

Lab Sample ID: 12K0090-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0090 — **Prep Batch: 12K0090_P**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity			500	480		mg/l		96.0	90 - 110		

Lab Sample ID: 12K0090-DUP1 — **Client Sample ID: Duplicate-1-110112**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 12K0090 — **Prep Batch: 12K0090_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity	480			475		mg/l				1.05	10

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Client Sample ID: MW-1-110112

Lab Sample ID: SVK0021-01

Date Collected: 11/01/12 17:38

Matrix: Water

Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 11:53	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	10.0	12K0038	11/06/12 17:01	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series		1.93	12K0052_P	11/07/12 10:56	CBW	TAL SPK
Total	Analysis	EPA 8270 mod.		1.00	12K0052	11/09/12 11:36	MS	TAL SPK
Total/NA	Analysis	RSK-175		1	35533	11/12/12 14:37	MH	TAL NSH
Total	Prep	EPA 3005A		1.00	12K0070_P	11/09/12 09:36	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	12K0070	11/12/12 15:27	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0090_P	11/14/12 10:04	JSP	TAL SPK
Total	Analysis	SM 2320B		1.00	12K0090	11/14/12 15:00	JSP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0014_P	11/02/12 16:25	CBW	TAL SPK
Total	Analysis	EPA 300.0		1.00	12K0014	11/02/12 16:26	CBW	TAL SPK

Client Sample ID: MW-2-110112

Lab Sample ID: SVK0021-02

Date Collected: 11/01/12 11:27

Matrix: Water

Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 12:17	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series		1.91	12K0052_P	11/07/12 10:56	CBW	TAL SPK
Total	Analysis	EPA 8270 mod.		1.00	12K0052	11/09/12 12:01	MS	TAL SPK
Total/NA	Analysis	RSK-175		1	35533	11/12/12 14:40	MH	TAL NSH
Total	Prep	EPA 3005A		1.00	12K0070_P	11/09/12 09:36	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	12K0070	11/12/12 15:30	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0090_P	11/14/12 10:04	JSP	TAL SPK
Total	Analysis	SM 2320B		1.00	12K0090	11/14/12 15:00	JSP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0014_P	11/02/12 16:25	CBW	TAL SPK
Total	Analysis	EPA 300.0		100	12K0014	11/02/12 18:00	CBW	TAL SPK

Client Sample ID: MW-3-110112

Lab Sample ID: SVK0021-03

Date Collected: 11/01/12 15:07

Matrix: Water

Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 12:40	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series		1.90	12K0052_P	11/07/12 10:56	CBW	TAL SPK
Total	Analysis	EPA 8270 mod.		1.00	12K0052	11/09/12 12:24	MS	TAL SPK
Total/NA	Analysis	RSK-175		1	35533	11/12/12 14:49	MH	TAL NSH
Total	Prep	EPA 3005A		1.00	12K0070_P	11/09/12 09:36	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	12K0070	11/12/12 15:34	ICP	TAL SPK

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Client Sample ID: MW-3-110112

Lab Sample ID: SVK0021-03

Date Collected: 11/01/12 15:07
Matrix: Water
Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Wet Chem		1.00	12K0090_P	11/14/12 10:04	JSP	TAL SPK
Total	Analysis	SM 2320B		1.00	12K0090	11/14/12 15:00	JSP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0014_P	11/02/12 16:25	CBW	TAL SPK
Total	Analysis	EPA 300.0		1.00	12K0014	11/02/12 17:04	CBW	TAL SPK

Client Sample ID: MW-4-110112

Lab Sample ID: SVK0021-04

Date Collected: 11/01/12 13:15
Matrix: Water
Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 13:04	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series		1.90	12K0052_P	11/07/12 10:56	CBW	TAL SPK
Total	Analysis	EPA 8270 mod.		1.00	12K0052	11/09/12 12:48	MS	TAL SPK
Total/NA	Analysis	RSK-175		1	35533	11/12/12 14:51	MH	TAL NSH
Total	Prep	EPA 3005A		1.00	12K0070_P	11/09/12 09:36	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	12K0070	11/12/12 15:37	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0090_P	11/14/12 10:04	JSP	TAL SPK
Total	Analysis	SM 2320B		1.00	12K0090	11/14/12 15:00	JSP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0014_P	11/02/12 16:25	CBW	TAL SPK
Total	Analysis	EPA 300.0		1.00	12K0014	11/02/12 17:22	CBW	TAL SPK

Client Sample ID: Duplicate-1-110112

Lab Sample ID: SVK0021-05

Date Collected: 11/01/12 12:34
Matrix: Water
Date Received: 11/02/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 13:27	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	10.0	12K0038	11/06/12 17:24	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series		1.92	12K0052_P	11/07/12 10:56	CBW	TAL SPK
Total	Analysis	EPA 8270 mod.		1.00	12K0052	11/09/12 13:12	MS	TAL SPK
Total/NA	Analysis	RSK-175		1	35533	11/12/12 14:54	MH	TAL NSH
Total	Prep	EPA 3005A		1.00	12K0070_P	11/09/12 09:36	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	12K0070	11/12/12 15:39	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0090_P	11/14/12 10:04	JSP	TAL SPK
Total	Analysis	SM 2320B		1.00	12K0090	11/14/12 15:00	JSP	TAL SPK
Total	Prep	Wet Chem		1.00	12K0014_P	11/02/12 16:25	CBW	TAL SPK
Total	Analysis	EPA 300.0		1.00	12K0014	11/02/12 17:41	CBW	TAL SPK

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Client Sample ID: Trip Blank
Date Collected: 11/01/12 00:00
Date Received: 11/02/12 16:15

Lab Sample ID: SVK0021-06
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12K0038_P	11/06/12 07:37	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12K0038	11/06/12 13:51	CBW	TAL SPK

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-13
Washington	State Program	10	C569	01-06-13

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	ACIL		393	10-30-13
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alabama	State Program	4	41150	05-31-13
Alaska (UST)	State Program	10	UST-087	07-24-13
Arizona	State Program	9	AZ0473	05-05-13
Arkansas DEQ	State Program	6	88-0737	04-25-13
California	NELAC	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Colorado	State Program	8	N/A	02-28-13
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAC	4	E87358	06-30-13
Illinois	NELAC	5	200010	12-09-12
Iowa	State Program	7	131	05-01-14
Kansas	NELAC	7	E-10229	10-31-13
Kentucky	State Program	4	90038	12-31-12
Kentucky (UST)	State Program	4	19	09-15-13
Louisiana	NELAC	6	LA120025	12-31-12
Louisiana	NELAC	6	30613	06-30-13
Maryland	State Program	3	316	03-31-13
Massachusetts	State Program	1	M-TN032	06-30-13
Minnesota	NELAC	5	047-999-345	12-31-12
Mississippi	State Program	4	N/A	06-30-13
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	07-31-13
New Hampshire	NELAC	1	2963	10-09-13
New Jersey	NELAC	2	TN965	06-30-13
New York	NELAC	2	11342	04-01-13
North Carolina DENR	State Program	4	387	12-31-12
North Dakota	State Program	8	R-146	06-30-13
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-13
Oregon	NELAC	10	TN200001	04-30-13
Pennsylvania	NELAC	3	68-00585	06-30-13
Rhode Island	State Program	1	LAO00268	12-30-12
South Carolina	State Program	4	84009 (001)	02-28-13
South Carolina	State Program	4	84009 (002)	02-23-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAC	6	T104704077-09-TX	08-31-13
USDA	Federal		S-48469	11-02-13
Utah	NELAC	8	TAN	06-30-13
Virginia	NELAC	3	460152	06-14-13
Washington	State Program	10	C789	07-19-13
West Virginia DEP	State Program	3	219	02-28-13
Wisconsin	State Program	5	998020430	08-31-13
Wyoming (UST)	A2LA	8	453.07	12-31-13

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-078-00

TestAmerica Job ID: SVK0021

Method	Method Description	Protocol	Laboratory
EPA 8260C	NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C		TAL SPK
EPA 8270 mod.	Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring		TAL SPK
RSK-175	Dissolved Gases (GC)	RSK	TAL NSH
EPA 200.7	Dissolved Metals by EPA 200 Series Methods		TAL SPK
EPA 300.0	Anions by EPA Method 300.0		TAL SPK
SM 2320B	Conventional Chemistry Parameters by APHA/EPA Methods		TAL SPK

Protocol References:

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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
5755 8th Street East, Tacoma, Wa 98424 253-922-2310 FAX 922-5047
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

CHAIN OF CUSTODY REPORT

Work Order #: SVK0021

CLIENT: GEO ENGINEERS

REPORT TO: JON RUDDERS
ADDRESS: 523 E 2ND AVE
SPOKANE, WA 99202
PHONE: 509-363-3125 FAX: 509-363-3126
PROJECT NAME: MCKEE CITY SHOP
PROJECT NUMBER: 0504-078-00
SAMPLED BY: KATIE HALL

INVOICE TO: JON RUDDERS

P.O. NUMBER:

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	GRPH BY NWTPH-Gx	BTEX BY EPA 8260C	N-HEXANE BY EPA 8260C	NAPHTHALENES* BY EPA 8270D SIM	NITRATE EPA 300	SOLUBLE MANGANESE EPA 200.7	SULFATE EPA 300	METHANE RSK-175	ALKALINITY SM2320B					MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 MW-1-110112	11/1/12	X	X	X	X	X	X	X	X	X					W	8		
2 MW-2-110112	11/1/12 1127	X	X	X	X	X	X	X	X	X					W	8		
3 MW-3-110112	11/1/12 1507	X	X	X	X	X	X	X	X	X					W	8		
4 MW-4-110112	11/1/12 1315	X	X	X	X	X	X	X	X	X					W	8		
5 DUPLICATE-1-110112	11/1/12 1234	X	X	X	X	X	X	X	X	X					W	7		
6 TRIP BLANK		X	X												W	1		
7																		
8																		
9																		
10																		

RELEASED BY: K Hall
PRINT NAME: KATIE HALL FIRM: GEI DATE: 11/2/12 TIME: 1615
RECEIVED BY: Cat Dhellon
PRINT NAME: FIRM: TestAmerica DATE: 11-2-12 TIME: 16:15
RELEASED BY:
PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:
*NAPHTHALENES – INCLUDING NAPHTHALENE, 1-METHYL NAPHTHALENE AND 2-METHYL NAPHTHALENE

TEMP: 2.9
PAGE 1 OF 1

TAL-1000 (0212)

TestAmerica Spokane
Sample Receipt Form

Work Order #: SNK004	Client: GeoEngineers	Project: Moxee
Date/Time Received: 11-2-12 16:15	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: 2.9 °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: 11-5-12 10:33 By: CS	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			
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			Filtered + Preserved w/HNO3
Does this project require quick turnaround analysis		X		
Are there any short hold time tests (see chart below)	X			Nitrate
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 C
Report Limitations and Guidelines for Use

APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

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 City Shop and Sewage Treatment Plant (STP) site 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