UNDERGROUND STORAGE TANK CLOSURE REPORT

PREPARED BY:

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PREPARED FOR:

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RGI PROJECT NO. 2013-364

FEDERAL CENTER SOUTH
4735 EAST MARGINAL WAY SOUTH
SEATTLE, WASHINGTON 98134

JULY 23, 2014

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1.0 INTRODUCTION

The Riley Group, Inc. (RGI) is pleased to present this Underground Storage Tank Closure Report documenting the decommissioning and removal of three underground storage tanks (USTs) and performing associated soil remediation activities at the Federal Center South facility located at 4735 East Marginal Way South in Seattle, Washington (herein referred to as the Site).

The Site is located on the southeastern portion of King County tax parcel number 3573200975 and is currently owned by United States government General Services Administration (GSA). The Site is surrounded by the Federal Center South property and the Duwamish River is situated approximately 100 feet west of the Site. The general location and layout of the Site are illustrated on Figures 1 and 2.

The Site contained three, approximately 30,000-gallon capacity USTs, which were reportedly used to store bunker C oil and heating oil. Multiple piping runs were also present on the Site, extending from the USTs to the building situated west of the USTs.

RGI was retained by Saybr Contractors, Inc. (Saybr) to oversee the removal of the USTs and associated piping, perform the UST assessment (soil sampling and documentation), and assisting with the characterization, disposal and/or remediation of any encountered contaminated soil and water. The work was performed in general accordance with RGI's *UST Site Assessment Proposal* dated August 26, 2013 and subsequent *Change Order No. 1* dated February 18, 2014 by RGI. Authorization to proceed with the work was granted by Mr. Mickey McAloon of Saybr.

The activities documented in this report comply the Washington State Department of Ecology (Ecology) *Guidelines for Site Checks and Site Assessments for USTs* (revised, May 2003) and the Model Toxics Control Act (MTCA, WAC 173-340-515) for conducting independent remedial actions. This report has been prepared in accordance with general guidance provided under the MTCA Cleanup Regulation (WAC 173-340).

2.0 PROJECT BACKGROUND

RGI reviewed the following documents provided to RGI by Saybr:

- *US General Services Administration Federal Center South Underground Storage Tank Assessment Final Report* (UA) dated October 5, 2011 by EHS-International, Inc (EHS).
- *Statement of Work: Design-Build Project, FCS Underground Storage Tank Removal* dated March 27, 2013 by GSA.

According to these documents, the Site was formerly occupied by the Ford Motor Company when the Federal Center South Campus was occupied an automobile manufacturing plant. The three USTs were installed around 1930 by the Ford Motor Company.

In 2001, GSA retained EHS to perform a UA of the three USTs. The results of the UA indicated that oil and/or sludge remained in the USTs consisting primarily of diesel-range total petroleum hydrocarbons (TPH) with small amounts of oil-range TPH. EHS indicated that the USTs were switched from bunker C to heating oil at some point and that the USTs were likely last used in the late 1970s or early 1980s. The boilers in the facility currently utilize natural gas.

3.0 SCOPE OF SERVICES

The scope of services performed for this project consisted of the following tasks:

- Performed UST assessment services associated with the removal of three USTs, which were decommissioned by Saybr.
- Directed the excavation of soil in areas where concentrations of contaminants of concern (COCs) exceeded the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses.
- Collected and analyzed soil samples from the limits of the UST excavation and remedial excavations to demonstrate that soil concentrations were in compliance MTCA Method A Soil Cleanup Levels.
- Coordinated contaminated soil disposal with the disposal facility.
- Collected and analyzed two samples of excavation water obtained from the UST excavation.
- Compared soil and excavation water analytical results to applicable MTCA Method A soil or groundwater cleanup levels.
- Prepared *Technical Memorandum No. 1* dated March 11, 2014 and *Technical Memorandum No. 2* dated April 2, 2014. These documents were intended to provide updates pertaining to environmental work on the Site and were previously submitted to Saybr.
- Prepared this UST Closure Report presenting our observations, findings and conclusions

4.0 REGULATORY ANALYSIS OF SITE CONDITIONS UNDER MTCA

4.1 MTCA CLEANUP REGULATION

In Washington State, the Model Toxics Control Act (MTCA, RCW 70.105D), mandates that site cleanups protect human health and the environment. The MTCA Cleanup Regulation (173-340 WAC) defines the approach for establishing cleanup requirements for individual sites, including the establishment of cleanup standards and selection of cleanup actions.

The MTCA regulation provides three options for establishing generic and site-specific cleanup levels for soil and groundwater. Method A cleanup levels have been adopted for specific purposes and are intended to provide conservative cleanup levels for sites undergoing routine site characterization or cleanup actions or those sites with relatively few hazardous substances. Method B and C cleanup levels are set using a site risk assessment, which focus on the use of "reasonable maximum exposure" assumptions based on site-specific characteristics and toxicity of COCs.

4.2 SOIL SCREENING LEVELS

The selected soil screening levels for the Site are the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses. RGI's evaluation of soil analytical data obtained during project indicate that these soil screening levels are sufficient to demonstrate that soil was adequately remediated in accordance with the MTCA regulation on the Site.

The MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses, referred to as soil screening levels herein, are summarized in Table 1.

4.3 EXCAVATION WATER SCREENING LEVELS

Excavation water analytical laboratory data for this project were compared to the MTCA Method A Cleanup Levels for Ground Water. These screening levels were considered sufficient to evaluate excavation water encountered in the UST excavation on the Site.

The MTCA Method A Cleanup Levels for Ground Water, referred to as excavation water screening levels herein, are summarized in Table 2.

4.4 MTCA METHOD A TPH SCREENING LEVELS

During the course of the project, numerous compounds were detected in soil and groundwater that are included in the calculation of the MTCA Method A TPH soil and groundwater screening levels. Therefore, these compounds (for example, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and isopropylbenzene) were not assessed individually as the MTCA Method A cleanup levels are sufficient to assess risks associated with these compounds.

4.5 CPAH SCREENING LEVELS

Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were analyzed in soil and groundwater and included benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene and ideno(1,2,3-cd)pyrene. If present in soil and/or groundwater, the cPAH concentrations were evaluated and compared to the applicable regulatory cleanup standards as discussed below.

When establishing compliance with MTCA, the mixture of the cPAH compounds is considered a single hazardous substance. The toxicity equivalency factor (TEF) methodology was developed by the EPA to evaluate the toxicity and assess the risks of a mixture of structurally related chemicals with a common mechanism of action. A TEF is an estimate of the relative toxicity of a chemical mixture compared to a reference chemical. For mixtures of cPAHs, the reference chemical is benzo(a)pyrene. Therefore, for screening purposes, the calculated total cPAHs (TEF modified) is compared to the MTCA Method A table value for benzo(a)pyrene of 0.1 milligrams/kilogram (mg/kg) for soil and 0.1 micrograms/liter (μg/L) for groundwater.

5.0 CONTAMINATED SOIL DISPOSAL

5.1 ECOLOGY GUIDELINES FOR REUSE OF PETROLEUM-CONTAMINATED SOIL

Ecology has categorized the end uses of petroleum-contaminated soil (PCS) into four separate categories (in regards to petroleum-contaminated sites undergoing cleanup and/or redevelopment). These soil categories are described in the *Guidance for Remediation of Petroleum Contaminated Sites,* dated September 2011 by Ecology. The four soil categories of PCS as defined by Ecology are as follows:

- **Category 1:** Soils with no detectable/quantifiable concentrations of petroleum hydrocarbons or constituents and not suspected of being contaminated with any other hazardous substances.
- **Category 2:** Soils with residual levels of petroleum hydrocarbons that could have adverse impacts on the environment in some circumstances.
- **Category 3:** Soils with moderate levels of residual petroleum contamination that could have adverse impacts on the environment unless re-used in carefully controlled situations.
- **Category 4:** Soils with high levels of petroleum contamination that should not be re-used except in very limited circumstances.

Category 2, 3, and 4 PCS were disposed of and/or handled during this project. The concentrations of COCs associated with each category are summarized in Table 1.

6.0 METHODOLOGY

6.1 SOIL REMEDIATION

The selected remedial alternative for remediating contaminated soil on the Site was direct excavation of contaminated soil with disposal off the Site. This approach was selected due to the fact that it was very effective, permanent, had a very short restoration time-frame and resulted in limited interference with redevelopment activities. This method was also was cost-effective and assured compliance with the MTCA regulation.

Soil remediaton also included necessary performance soil sampling to demonstrate compliance with the MTCA regulation. Performance sampling consisted of collecting soil samples from the limits of each remedial excavation and submitting those soil samples to a mobile or fixed-base analytical laboratory for the analyses deemed appropriate for a given area. In general, sidewall samples were collected at intervals that did not exceed 15 linear feet between samples and at least 1 bottom sample was collected for every 200 square feet of bottom of excavation.

Performance sampling and field screening were used to guide remedial excavation in Areas 1 and 2. Soil samples were collected either directly from the backhoe bucket or directly from the excavation and placed in laboratory approved sampled containers. Field screening consisted of visual and olfactory observations, photoionization detector (PID) readings, and/or sheen testing. Once field screening indicated that all contaimated soils had been removed, soil samples were collected and analyzed. These data guided any additional remedial excavation (if necessary) until analytical data demonstrated that soil concentrations were below the targeted soil screening levels throughout the lateral and vertical limits of each remedial excavation.

6.2 GROUNDWATER

Groundwater remediation was not undertaken as part of this project. Based on the depth to excavation water obtained from the UST excavation during this project, it is unclear whether or not the water present in the UST excavation was representative of actual groundwater on the Site.

6.3 UNDERGROUND STORAGE TANK ASSESSMENT AND DECOMMISSIONING

Prior to RGI's work on the project, Saybr decommissioned the three approximately 30,000-gallon USTs, which consisted of pumping, rinsing, and inerting the USTs. RGI was contracted by Saybr to perform the UST assessment (documentation and sampling) after the USTs were removed and to assist with the characterization and disposal of any contaminated soil or water. Details pertaining to the UST assessment are discussed in Section 8.0.

6.4 STANDARD SAMPLING PROTOCOLS & FIELD SCREENING

During UST assessment and remedial excavation work, soil samples were collected and field screened using visual and olfactory observations and screened for the presence of VOCs and/or petroleum hydrocarbons using a PID and/or sheen testing. All soil samples collected for potential analyses of VOCs at a fixed-base laboratory were collected using standard EPA Method 5035A sampling methodology. When the mobile laboratory was utilized all samples were immediately submitted to the chemist for extraction after collection.

Excavation water samples were collected by lowering a dedicated bailer into the excavation in the location indicated on Figure 5. Water was then transferred from the bailer into preconditioned, sterilized containers provided by an Ecology-accredited analytical laboratory. All soil and excavation

water samples were collected in accordance with RGI's standard operating and decontamination procedures.

7.0 LABORATORY ANALYSES

Soil and/or excavation water samples collected during this project were submitted to either the fixed-base Friedman & Bruya, Inc. laboratory or a mobile analytical laboratory operated by Libby Environmental for one or more of the following analyses:

- Hydrocarbon Identification using Northwest test method NWTPH-HCID.
- Diesel and oil-range TPH using Northwest test method NWTPH-Dx with silica gel cleanup (to remove naturally occurring biogenic material) and without silica gel cleanup.
- Volatile organic compounds (VOCs) using EPA Method 8260C.
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) using EPA =Method 8270D Select Ion Monitoring (SIM).
- Total lead using EPA Method 200.8.

Soil sample analytical results for all soil samples collected during this project are summarized in Table 1. Soil sample analytical results for UST assessment, soil characterization, and performance samples are illustrated on Figures 3 and 4, respectively. Analytical results for excavation water samples collected from the UST excavation are summarized in Table 2 and illustrated on Figure 5. Copies of final analytical laboratory reports are included in Appendix A.

8.0 UST ASSESSMENT AND REMOVAL

8.1 PRE-UST REMOVAL ACTIVITIES

Prior to the removal of the USTs and associated UST assessment, several activities were performed, which are discussed below.

8.1.1 Permitting

All of the necessary permits associated with UST removal and assessment activities were acquired by the general contractor prior to beginning the work. The activities performed and discussed herein were consistent with all permitting requirements.

8.1.2 Soil Characterization Samples

Prior to the removal of the USTs, RGI was on the Site between December 11, 2013 through March 17, 2014 to oversee the removal of soil overlaying the USTs and to characterize soil beneath piping runs and other areas of potential concern. The locations of characterization samples are illustrated on Figure 3.

RGI utilized field screening during excavation of these soils along with analytical data to assess soil impacts and segregate excavated soils into stockpiles (for example, clean, contaminated).

A total of 23 soil characterization samples were submitted for analyses of COCs. Analytical results from these samples identified the presence of COCs exceeding applicable soil screening levels in the following locations:

- Soil overlaying UST2 (sample UST2-5). Diesel- and oil-range TPH were both detected at concentrations of 5,600 milligrams/kilogram (mg/kg). Shallow diesel- and oil-range TPH soil impacts were likely related to overfilling.

- Soil in Area 1 (sample P12-6). Oil-range TPH was detected at a concentration of 40,000 mg/kg. Oil-range TPH soil impacts were likely the result of a release from piping associated with the USTs.
- Soil in Area 2 (sample P9-6). Diesel-range TPH was detected at a concentration of 6,300 mg/kg. Diesel-range TPH soil impacts were likely the result of a release from piping associated with the USTs.

These contaminated soils were stockpiled on the northeastern portion of the Site for later disposal. Soil analytical data from soil characterization samples were used to plan remedial excavations in Areas 1 and 2 and characterize soil for later disposal.

8.1.3 Soil Profiling

All contaminated soil encountered during this project consisted of petroleum-contaminated soil (PCS). RGI prepared the soil profile necessary for soil disposal and coordinated disposal of PCS off the Site with the Regional Disposal Company in Seattle, Washington.

8.2 UST Removal and Site Assessment

Prior to RGI's arrival on-Site, Saybr decommissioned (pumped, triple rinsed, and inerted) the three 30,000-gallon USTs. Mr. Jerry Sawetz of RGI (Washington State Site Assessor) performed the UST assessment. Documentation pertaining to UST decommissioning is contained in a file maintained by Saybr and a copy of the Underground Storage Tank Site Assessment Checklist is included in Appendix B.

On March 18 and 19, 2014, the three USTs were removed from the excavation by Jeff Johnson Excavating. All three USTs appeared to be in good condition with no evidence of significant pitting or visible holes. The bottom of all three USTs was situated in water present at the excavation at approximately 13 feet below ground surface (bgs) at the time of UST removal. No releases from the USTs were noted.

Soils within the UST excavation consisted primarily of sand (fill), which was underlain by a silt layer at approximately 14 feet bgs.

Between March 18 and March 20, 2014, RGI collected and submitted the following UST Assessment samples for analyses in accordance with Ecology's *Guidelines for Site Checks and Site Assessments for USTs*:

- Seven soils samples to characterize soil situated directly above the level where water was observed in the excavation in the sidewalls of the UST excavation (UA-4 through UA-9 and UA-11). It should be noted that a concrete wall situated along the north and east sides of the USTs prevented soil sampling in these locations.
- One excavation water sample was collected from the center of the UST excavation beneath UST2 (UA-WC) at approximately 13 feet bgs, which was the approximate level of the excavation water at the time of UST removal.

RGI also collected the following additional samples during the UST assessment:

- One soil sample from beneath each of the former UST locations (UA-1B through UA-3B) at approximately 14 feet bgs, which was approximately 2 to 3 feet below the level that water was observed in the UST excavation.
- Two soil samples to assess soil conditions in Area 1 (NWEX-10:6 and NWEX-12B). The remedial excavation of Area 1 and associated analytical data is discussed is Section 9.1.1.

- Two soil samples to assess soil in soil stockpile SSC (SSC-5 and SSC-6), which was situated on the southeaster portion of the Site and contained Category 2 soil to be re-used on the Site.

8.2.1 UST Assessment Soil Analytical Data

A total of 10 soil samples (UA-1 through UA-9 and UA-11) were submitted for analyses to assess soil conditions in the UST excavation sidewalls above the level of the excavation water and soil conditions beneath the USTs (approximately 2 to 3 feet below the level of the excavation water). Nine of the 10 soil samples did not contain concentrations of COCs above the laboratory method detection limits.

The only detection was encountered in soil sample UA-8W:12, where diesel-range TPH was detected at a concentration of 1,700 mg/kg, which is below the applicable soil screening level.

8.2.1 UST Assessment Excavation Water Analytical Data

Excavation water sample UA-WC was collected from the center of the UST excavation. Since the bottom of the USTs were situated in the excavation water it was necessary to collect an excavation water sample to comply with Ecology guidelines.

Excavation water sample UA-WC was initially analyzed for diesel- and oil-range TPH and contained an oil-range TPH concentration of 500 micrograms/liter (µg/L) and a flagged diesel-range TPH concentration of 620 µg/L. The chemist indicated that the flag was potentially due to the presence of organic material that could interfere with the analysis. The chemist recommended re-analyzing the sample using silica gel cleanup.

After analysis using silica gel cleanup, sample UA-WC contained a diesel-range TPH concentration of 230 µg/L and an oil-range TPH concentration of 300 µg/L. When diesel- and oil-range TPH are detected in a sample, Ecology requires combining the concentrations before comparing the concentrations to screening levels. Therefore, the combined diesel- and oil-range TPH concentration was 530 µg/L, which exceeded the applicable excavation water screening level of 500 µg/L.

Dewatering and additional sampling of excavation water are discussed further in Section 11.

9.0 SOIL REMEDIAL ACTION

The following section provides detailed descriptions of activities associated with soil remediation in Areas 1 and 2.

9.1 SOIL REMEDIATION

The general methodology for soil remediation was previously described in Section 6.1. Specific details pertaining to each excavation area are described below.

The final limits of each excavation area along with locations of performance and characterization soil samples are depicted on Figure 4. Analytical results for soil samples collected from remedial excavations are summarized in Table 1. Copies of final laboratory reports are included in Appendix A and documentation pertaining to contaminated soil disposal is included in Appendix C.

9.1.1 Area 1 Remedial Excavation

Remedial excavation Area 1 was situated to the northwest of UST1 in the vicinity of former product piping lines. Previous data obtained from soil characterization sample P12-6 indicated that oil-range TPH was present in soil at concentrations exceeding applicable soil screening levels.

The remedial excavation of Area 1 commenced on March 17, 2014. Field screening guided remedial excavation northwest until it was necessary to cease excavation due to the potential presence of underground utilities in the work area. Contaminated soil removed during this phase of excavation was stockpiled on plastic northeast of the UST excavation.

The Area 1 remedial excavation was completed on May 27, 2014. The final depth of excavation was approximately 8 feet bgs. A total of ten performance soil samples were collected from the terminal limits of the excavation (eight of which constituted final performance samples) and submitted to the mobile laboratory or fixed-base laboratory for analyses of COCs. Oil-range TPH concentrations of excavated soils ranged from 22,400 mg/kg to 40,000 mg/kg. Analytical data obtained from final performance samples indicated that no COCs were present at concentrations above the laboratory method detection limits at the limits of the Area 1 excavation.

9.1.2 Area 2 Remedial Excavation

Remedial excavation Area 2 was situated to the west of UST3 in the vicinity of former product piping lines. Previous data obtained from soil characterization sample P9-6 indicated that diesel-range TPH was present in soil at concentrations exceeding applicable soil screening levels.

The remedial excavation of Area 2 was completed on March 17 and 18, 2014, when field screening indicated the presence of contaminated soil during excavation around the USTs in the location of previous sample P9-6. UST assessment sample UA-8W:12 was obtained from the bottom of the Area 2 excavation and contained a diesel-range TPH concentration of 1,700 mg/kg, which was below the applicable soil screening level of 2,000 mg/kg. Contaminated soil removed from this location was stockpiled northeast of the UST excavation on plastic. Field screening indicated that all contaminated soil had been removed from Area 2.

On May 27, 2014, RGI directed exploratory excavation in Area 2 to confirm that all contaminated soil had been removed. Field screening did not indicate the presence of soil contamination in any locations surrounding Area 2. A total of five performance soil samples were collected from the terminal limits of the exploration area (all of which constituted final performance samples) and submitted to the mobile laboratory for analyses of COCs. Analytical data obtained from final performance samples indicated that no COCs were present at concentrations above the laboratory method detection limits of the Area 2 excavation.

10.0 CONTAMINATED SOIL DISPOSAL

A combined total of approximately 47 tons of Category 3/4 PCS were removed from Areas 1 and 2 and the UST excavation area and stockpiled on the Site during the course of UST Assessment activities and remedial excavations. These soils were transferred off the Site to the Regional Disposal Company disposal facility in Seattle, Washington under certification number LW-14143. Documentation pertaining to soil disposal is included in Appendix C.

11.0 UST EXCAVATION DEWATERING

Analytical data obtained from excavation water sample UA-WC at the time of UST removal contained a combined diesel- and oil-range concentration of 530 µg/L, which exceeded the applicable excavation water screening level.

On May 15, 2014, Saybr retained the services of Marine Vacuum Services, Inc. (Marvac) to pump approximately 10,000 gallons of water into two 5,000 gallon tanks for disposal off the Site. The depth to the top of excavation water increased from approximately 9 feet bgs prior to dewatering to approximately 10 feet bgs after the excavation was dewatered.

On May 16, 2014, RGI returned to the Site approximately 24 hours after dewatering and observed no change in the depth to water in the excavation. Therefore, it does not appear that any water recharge took place in that 24-hour period. RGI collected excavation water sample UA-WC-2 from the approximate location where UA-WC was collected utilizing a dedicated bailer and submitted the sample to the fixed-base laboratory for analyses of COCs.

Sample UA-WC-2 contained a combined diesel- and oil-range TPH concentration of 1,800 µg/L, which exceeded the applicable excavation water screening level of 500 µg/L.

It is unclear at this time whether or not the water observed in the excavation is representative of groundwater conditions on the Site. The fact that no recharge of water in the excavation was observed in a 24-hour period along with the fact that the depth to surface water in the Duwamish immediately west of the Site was approximately 14 feet bgs (approximately 4 feet lower than that observed in the UST excavation) appears to indicate that the water observed in the excavation may not be representative of groundwater conditions at the Site. Additional investigation would be necessary to determine actual groundwater conditions on the Site.

12.0 CONCLUSIONS

The actions documented in this RA Report support the following conclusions:

- Three 30,000-gallon USTs were decommissioned and removed from the Site in accordance with applicable regulations. The USTs appeared to be in good condition and no obvious or visual signs of releases from the USTs were observed (for example, no holes or excessive corrosion were observed).
- Relatively minor releases of diesel- and oil-range TPH observed on the Site appear to be the result of releases from former product piping and/or overfilling of USTs.
- All identified soil contamination at the Site has been fully remediated. The cleanup levels selected for COCs in soil were the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340-740).
- Excavation water samples obtained from the UST excavation contained combined concentrations of diesel- and oil-range TPH that exceed MTCA Method A Cleanup Levels for Ground Water. However, it is unclear at this time whether or not the water observed

in the UST excavation is representative of groundwater conditions on the Site. The fact that no recharge of water in the excavation was observed in a 24-hour period along with the fact that the depth to surface water in the Duwamish, immediately west of the Site, was approximately 14 feet bgs (approximately 4 feet lower than that observed in the UST excavation) appears to indicate that the water observed in the excavation may not be representative of groundwater conditions at the Site. Additional investigation would be necessary to determine actual groundwater conditions at the Site.

13.0 LIMITATIONS

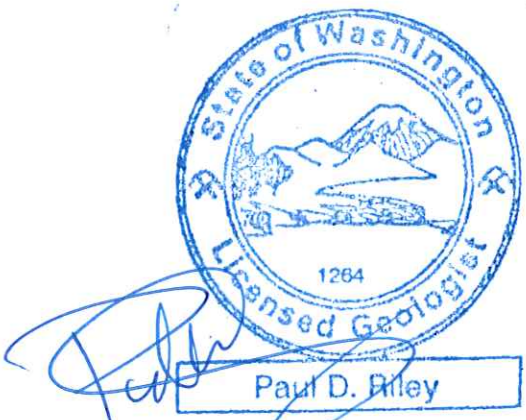
This report is the property of Saybr Contractors, Inc. and their authorized representatives and was prepared in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. This report is intended for specific application to the Site located at 4735 East Marginal Way South in Seattle, Washington. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based upon data obtained from our review of available information at the time of preparing this report, our soil excavation on the Site, or other noted data sources. Conditional changes may occur through time by natural or human-made process on this or adjacent properties. Additional changes may occur in legislative standards, which may or may not be applicable to this report. These changes, beyond RGI's control, may render this report invalid, partially or wholly. If variations appear evident, RGI should be requested to reevaluate the recommendations in this report.

If you have any questions, or need additional information, please contact us at (425) 415-0551.

Sincerely,

THE RILEY GROUP, INC.



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Principal Geologist

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Figures

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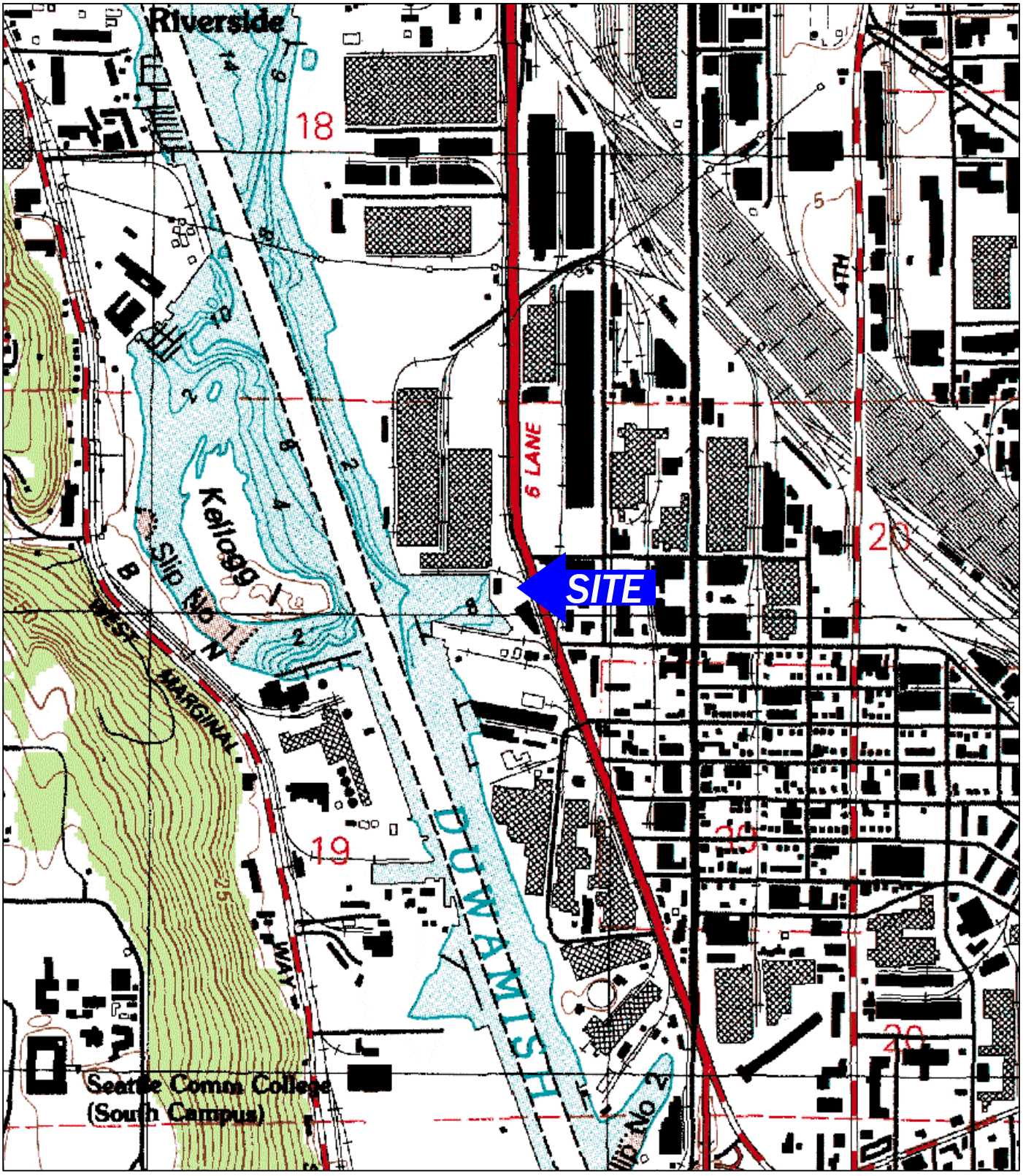

USGS, 1983, Seattle South, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'

0 500 1000 2000

N

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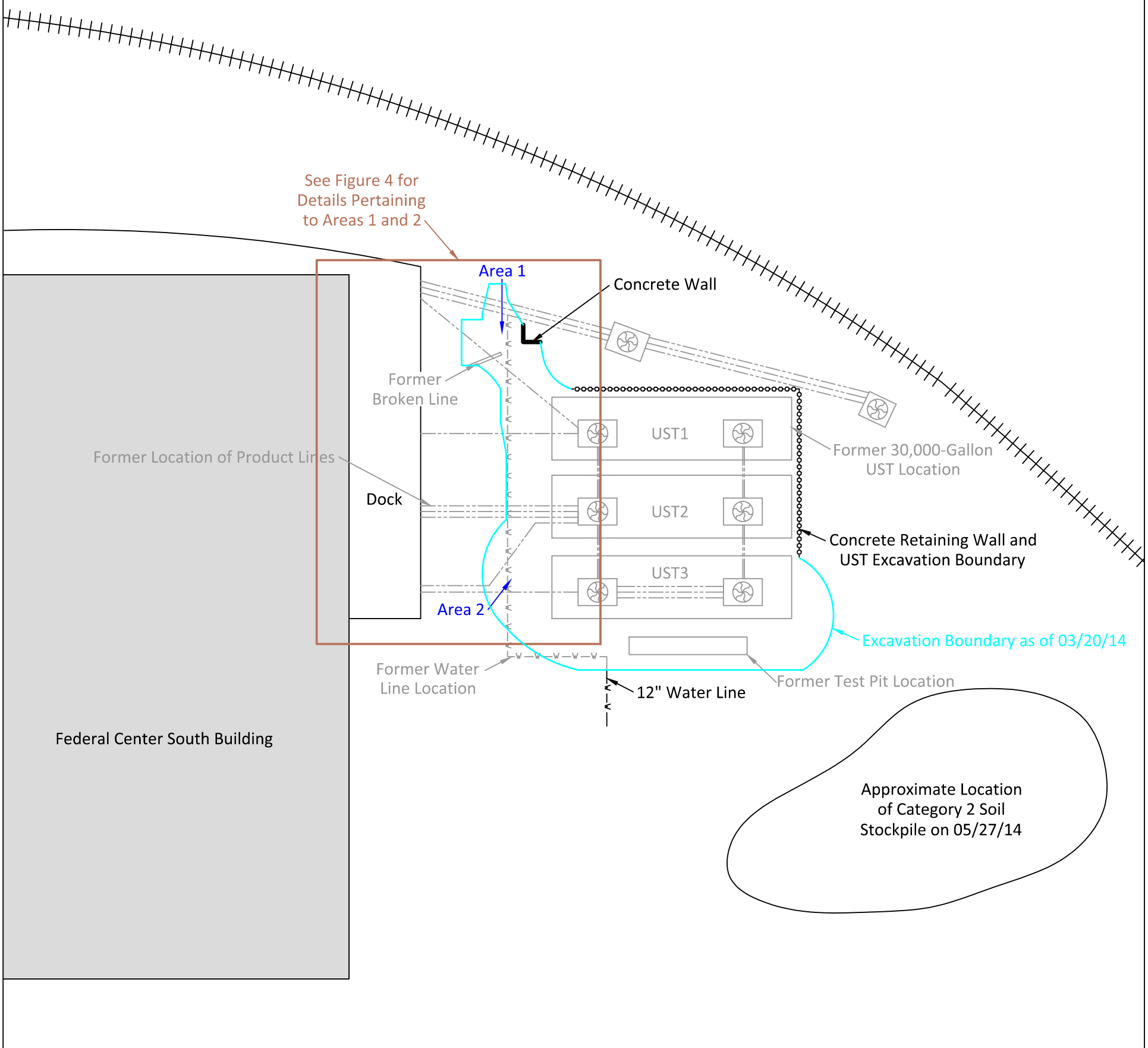
GSA Federal Center South Building		Figure 1
RGI Project Number 2013-364	Site Vicinity Map	Date Drawn: 07/2014
Address: 4735 East Marginal Way South, Seattle, Washington 98134		



= (in gray) Former concrete vault with valve

= (in gray) Former product line

= (in gray) Former water line

Approximate Scale: 1"=20'

0 10 20 40

N

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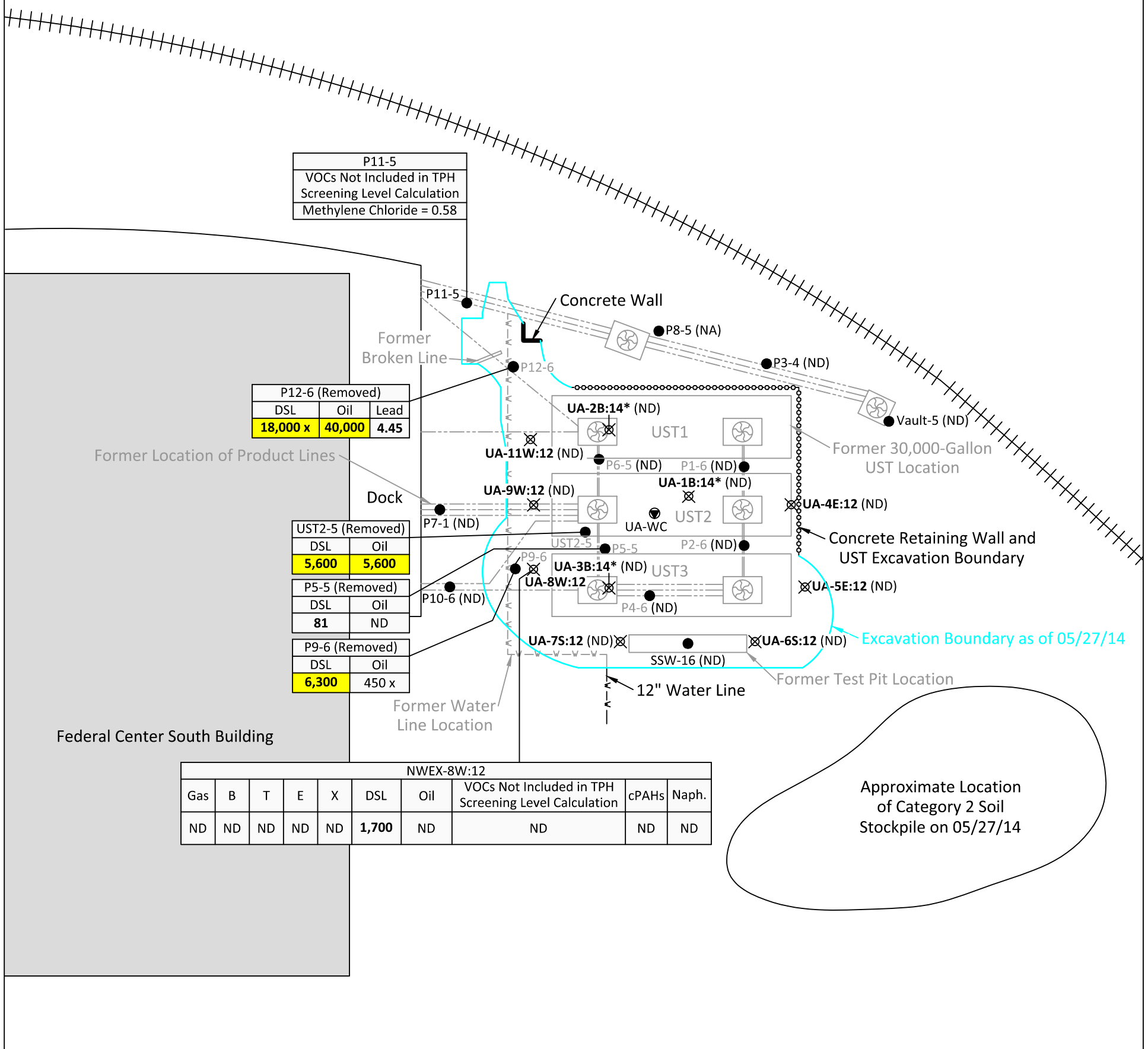
GSA Federal Center South Building		Figure 2
RGI Project Number 2013-364	Site Representation Map	Date Drawn: 07/2014
Address: 4735 East Marginal Way South, Seattle, Washington 98134		



= Soil analytical results in mg/kg

Gas = Gasoline hydrocarbon identification
BTEX = Benzene, toluene, ethylbenzene, xylenes
DSL/Oil = Diesel/Oil total petroleum hydrocarbons or hydrocarbon identification
VOCs = Volatile organic compounds
cPAHs = Carcinogenic polynuclear aromatic hydrocarbons
Naph. = Naphthalene
ND = Not detected at a concentration above the laboratory detection limit
Bold and yellow highlighted result indicates concentration exceeds the MTCA Method A Soil Cleanup Level.

(NA) = Not analyzed. Field screening did not indicate the presence of contamination. Therefore, no soil samples were submitted for analyses.

(ND) = Contaminants of concern not detected at a concentration above the laboratory method detection limit.

= Excavation water sample location by RGI (03/2014 and 05/2014)

= Performance soil sample location by RGI (03/2014 and 05/2014). Bold black ID indicates final performance sample.

= UST assessment soil sample by RGI (03/2014)

= Soil characterization sample location by RGI (12/2013)

* = Soil sample was collected from beneath the level of the water in the UST excavation.

= (in gray) Former concrete vault with valve

= (in gray) Former product line

= (in gray) Former water line

Note: Gray sample ID indicates sample removed as part of remedial excavation and/or UST excavation.

Approximate Scale: 1"=20'

0 10 20 40

N

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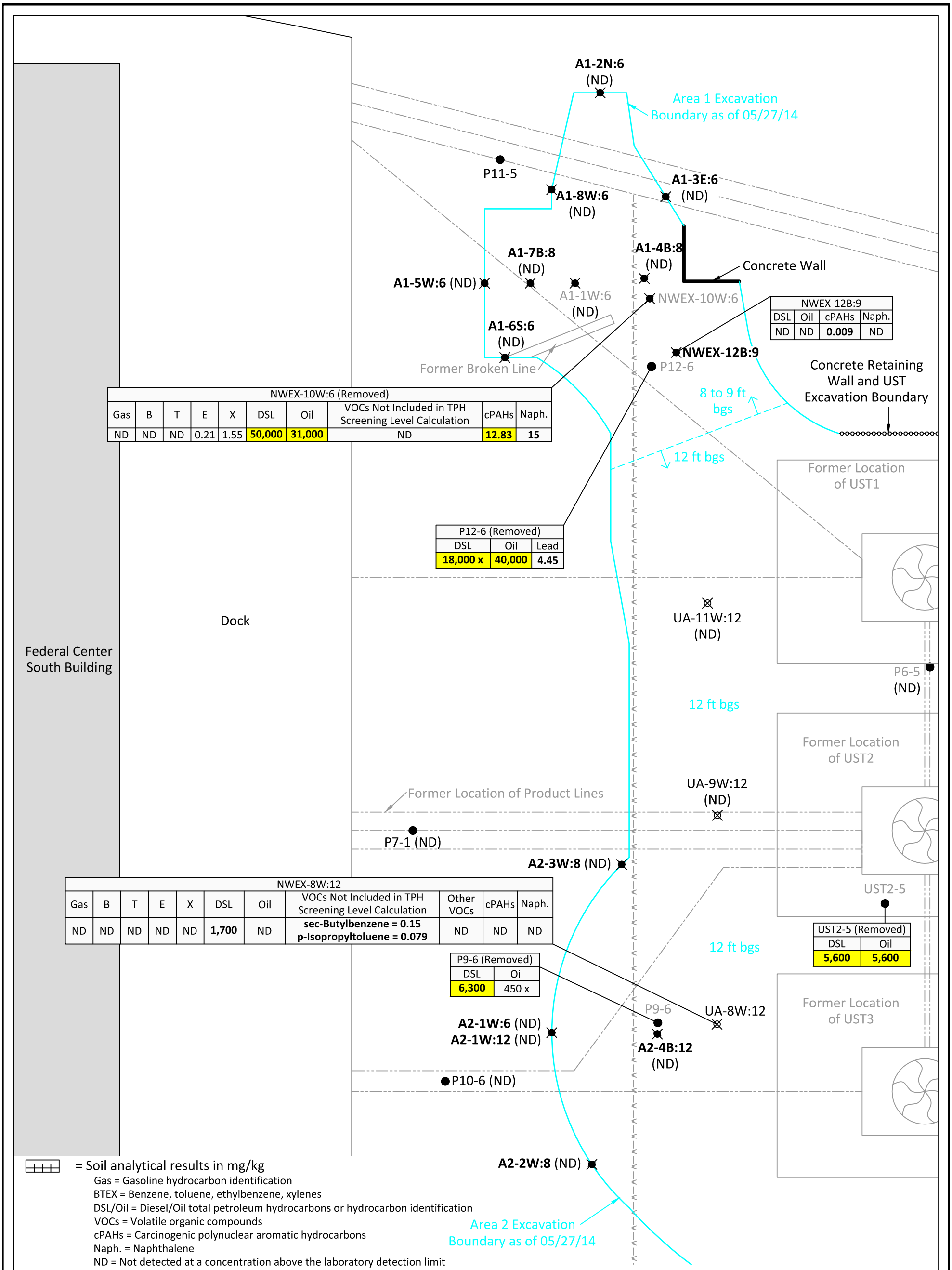
GSA Federal Center South Building | Figure 3

RGI Project Number 2013-364 | Site Plan Showing Sample Locations and Analytical Data for UST Assessment and Soil Characterization Samples | Date Drawn: 07/2014

Address: 4735 East Marginal Way South, Seattle, Washington 98134



NWEX-10W:6 (Removed)									
Gas	B	T	E	X	DSL	Oil	VOCs Not Included in TPH Screening Level Calculation	cPAHs	Naph.
ND	ND	ND	0.21	1.55	**50,000**	**31,000**	ND	**12.83**	**15**

NWEX-12B:9			
DSL	Oil	cPAHs	Naph.
ND	ND	**0.009**	ND

P12-6 (Removed)		
DSL	Oil	Lead
18,000 x	**40,000**	**4.45**

NWEX-8W:12										
Gas	B	T	E	X	DSL	Oil	VOCs Not Included in TPH Screening Level Calculation	Other VOCs	cPAHs	Naph.
ND	ND	ND	ND	ND	**1,700**	ND	**sec-Butylbenzene = 0.15** **p-Isopropyltoluene = 0.079**	ND	ND	ND

P9-6 (Removed)	
DSL	Oil
6,300	450 x

UST2-5 (Removed)	
DSL	Oil
5,600	**5,600**

= Soil analytical results in mg/kg
Gas = Gasoline hydrocarbon identification
BTEX = Benzene, toluene, ethylbenzene, xylenes
DSL/Oil = Diesel/Oil total petroleum hydrocarbons or hydrocarbon identification
VOCs = Volatile organic compounds
cPAHs = Carcinogenic polynuclear aromatic hydrocarbons
Naph. = Naphthalene
ND = Not detected at a concentration above the laboratory detection limit
Bold and yellow highlighted result indicates concentration exceeds the MTCA Method A Soil Cleanup Level.

(ND) = Contaminants of concern not detected at a concentration above the laboratory method detection limit.

= Performance soil sample location by RGI (03/2014 and 05/2014). Bold black ID indicates final performance sample.

= UST assessment soil sample by RGI (03/2014)

= Soil characterization sample location by RGI (12/2013)

= (in gray) Former concrete vault with valve

= (in gray) Former product line

= (in gray) Former water line

Note: Gray sample ID indicates sample removed as part of remedial excavation and/or UST excavation.

Approximate Scale: 1"=5'

0 2.5 5 10

N

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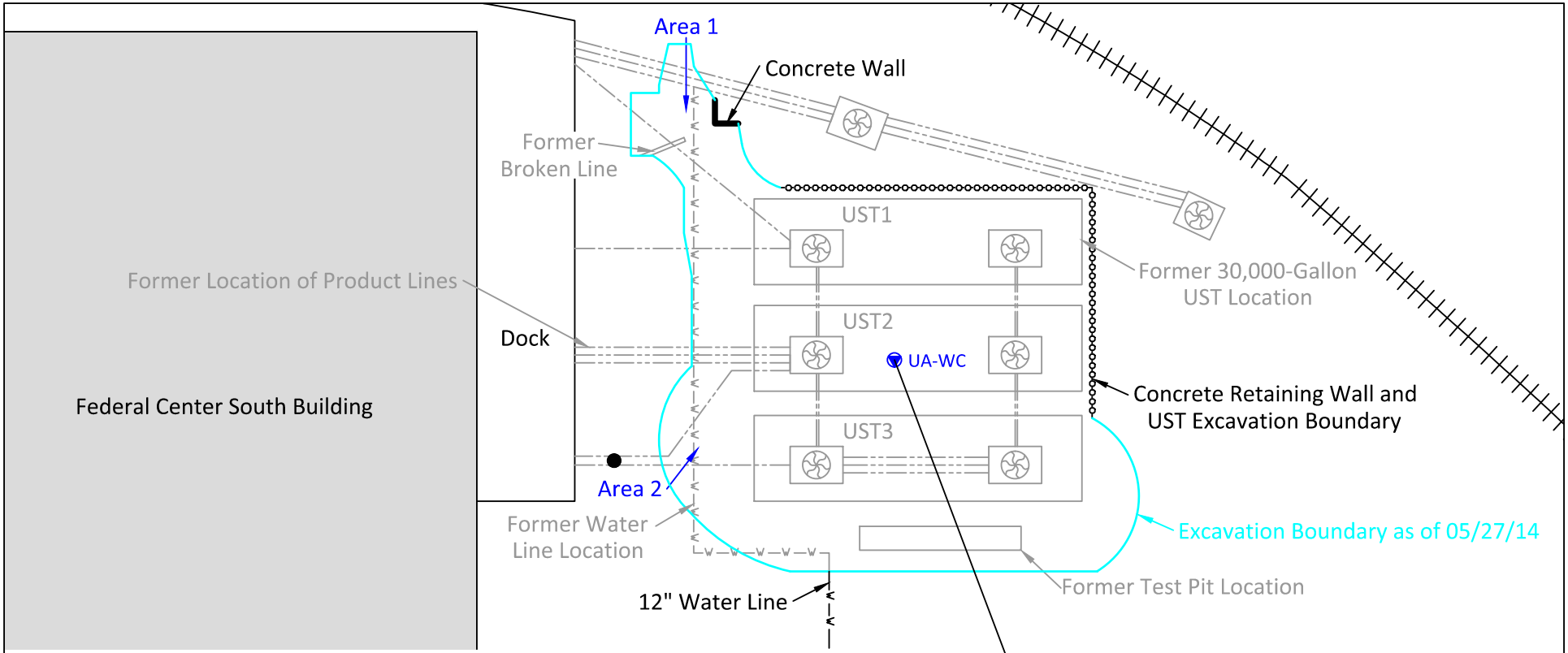
17522 Bothell Way Northeast
Bothell, Washington 98011
Phone: 425.415.0551
Fax: 425.415.0311

GSA Federal Center South Building | Figure 4

RGI Project Number 2013-364 | Site Plan with Excavation Areas 1 and 2 and Soil Analytical Results | Date Drawn: 07/2014

Address: 4735 East Marginal Way South, Seattle, Washington 98134



UA-WC						
Date	Depth to Water	Gas	BTEX	Total DSL/Oil	cPAHS	Other VOCs
05/16/14	~10	----	----	**1,800**	ND	----
03/18/14	~13	ND	ND	**530**	----	ND

= Excavation water analytical results in ug/L

Gas = Gasoline hydrocarbon identification
BTEX = Benzene, toluene, ethylbenzene, xylenes
DSL/Oil = Diesel/Oil total petroleum hydrocarbons
cPAHs = Carcinogenic polynuclear aromatic hydrocarbons
VOCs = Volatile organic compounds
ND = Not detected at a concentration above the laboratory detection limit
---- = Not analyzed
Bold and yellow highlighted result indicates concentration exceeds the MTCA Method A Cleanup Level for Ground Water.

= (in blue) Excavation water sample location by RGI (03/2014 and 05/2014)

* = Sample UA-WC was collected at time of removal of UST 2 while the other two USTs remained in place. The estimated depth to water was not consistent with the depth observed after removal of all the USTs (approximately 10 feet bgs).

= (in gray) Former concrete vault with valve

= (in gray) Former product line

= (in gray) Former water line

Approximate Scale: 1"=20'

0 10 20 40

N

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GSA Federal Center South Building		Figure 5
RGI Project Number 2013-364	Site Plan Showing Excavation Water Sample Locations	Date Drawn: 07/2014
Address: 4735 East Marginal Way South, Seattle, Washington 98134		

Tables

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Table 1. Summary of Soil Sample Analytical Laboratory Results
GSA Federal Center South Building - UST Site Assessment
4735 East Marginal Way, Seattle, Washington 98134
The Riley Group, Inc. Project No. 2013-364

Sample Number[3]	Sample Date	Sample Depth	Status	BTEX				Diesel TPH	Oil TPH	Total Diesel and Oil TPH	HCID			VOCs Included in the TPH Screening Level Calculation[5]	Other VOCs	cPAHs	Naph.	Lead
				B	T	E	X				Gasoline	Diesel	Heavy Oil					
Soil Characterization Samples Collected Outside of Areas 1 and 2																		
P11-5	12/19/13	5	in-situ	ND<0.03	ND<0.05	ND<0.05	ND<0.1	---	---	---	---	---	---	ND	**Methylene Chloride = 0.58**	---	ND<0.05	---
P10-6	12/19/13	6	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UST2-5	12/17/13	5	excavated	---	---	---	---	**5,600**	**5,600**	**11,200**	---	---	---	---	---	---	---	---
P7-1	12/17/13	1	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
P6-5	12/12/13	5.5	excavated	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
P5-5	12/12/13	5	excavated	---	---	---	---	**81**	ND<250	---	---	---	---	---	---	---	---	---
Vault-5	12/12/13	5	in-situ	ND<0.03	ND<0.05	ND<0.05	ND<0.1	---	---	---	---	---	---	ND	ND	---	ND<0.05	---
P4-6	12/11/13	6	excavated	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
P3-4	12/11/13	4	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
P2-6	12/11/13	6	excavated	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
P1-6	12/11/13	6	excavated	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
SSW-16'	12/11/13	16	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UST Assessment Samples																		
UA-1B:14	03/20/14	14	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-2B:14	03/20/14	14	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-3B:14	03/20/14	14	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-4E:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-5E:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-6S:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-7S:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
UA-8W:12	03/18/14	12	in-situ	ND<0.03	ND<0.05	ND<0.05	ND<0.1	**1,700**	ND<250	---	ND<20	D	ND<250	**sec-Butylbenzene = 0.15** **p-Isopropyltoluene = 0.079**	ND	ND<0.01	ND<0.1	---
UA-9W:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---			---	---	---
UA-11W:12	03/18/14	12	in-situ	---	---	---	---	ND<50	ND<250	---	---	---	---			---	---	---
Area 1																		
P12-6	12/20/13	6	excavated	---	---	---	---	18,000 x	**40,000**	---	---	---	---	---	---	---	---	**4.45**
NWEX-10:6	03/18/14	6	excavated	ND<0.03	ND<0.05	**0.21**	**1.55**	**50,000**	**31,000**	**81,000**	ND<20	D	D	**Isopropylbenzene = 0.079** **n-Propylbenzene = 0.12** **1,3,5,-Trimethylbenzene = 0.61** **1,2,4-Trimethylbenzene = 1.7** **sec-Butylbenzene = 0.052** **p-Isopropyltoluene = 0.27**	ND	**12.83**	15	---
NWEX-12B:9	03/18/14	9	in-situ	---	---	---	---	ND<50	ND<250		---	---	---	---	---	**0.009**	ND<0.01	---
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses				**0.03**	**7**	**6**	**9**	**2,000**		**2,000**	**100/30[1]**	**2,000**		**Not Applicable**	**Analyte Specific**	**Tox Eq = 0.1[6]**	**5**	**250**
Category 1 Soil Ranges[1]				**<0.005**	**<0.005**	**<0.005**	**<0.015**	**<25**	**<25**	**<25**	**<5**	**<25**	**<25**	**----**	**----**	**<0.05**	**<0.05**	**<17**
Category 2 Soil Ranges[1]				**0.005 to 0.03**	**0.005 to 6**	**0.005 to 7**	**0.015 to 9**	**25 to 200**	**25 to 200[2]**	**25 to 200[2]**	**5 to 30**	**25 to 200**	**25 to 200[2]**	**----**	**----**	**0.05 to 0.1**	**0.05 to 5**	**17 to 50**
Category 3 Soil Ranges[1]				**0.03 or less**	**6 or less**	**7 or less**	**9 or less**	**200 to 500**	**200 to 500**	**200 to 500**	**30 to 100**	**200 to 500**	**200 to 500**	**----**	**----**	**0.1 to 2**	**5 or less**	**50 to 220**
Category 4 Soil Ranges[1]				**----[4]**	**>6**	**>7**	**>9**	**>500**	**>500**	**>500**	**>100**	**>500**	**>500**	**----**	**----**	**>2**	**>5**	**----[4]**

Table 1 Continued. Summary of Soil Sample Analytical Laboratory Results
GSA Federal Center South Building - UST Site Assessment
4735 East Marginal Way, Seattle, Washington 98134
The Riley Group, Inc. Project No. 2013-364

Sample Number[3]	Sample Date	Sample Depth	Status	BTEX				Diesel TPH	Oil TPH	Total Diesel and Oil TPH	HCID			VOCs Included in the TPH Screening Level Calculation[5]	Other VOCs	cPAHs	Naph.	Lead
				B	T	E	X				Gasoline	Diesel	Heavy Oil					
Area 1																		
A1-1W:6	05/27/14	6	excavated	---	---	---	---	ND<25	**22,400**	---	---	---	---	---	---	---	---	---
A1-2N:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A2-3E:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A1-4B:8	05/27/14	8	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	ND	---	---	---
A1-5W:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	ND	---	---	---
A1-6S:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A1-7B:8	05/27/14	8	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A1-8W:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
Area 2																		
P9-6	12/19/13	6	excavated	---	---	---	---	**6,300**	450 x	---	---	---	---	---	---	---	---	---
A2-1W:6	05/27/14	6	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A2-1W:12	05/27/14	12	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A2-2W:8	05/27/14	8	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A2-3W:8	05/27/14	8	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
A2-4B:12	05/27/14	12	in-situ	---	---	---	---	ND<25	ND<40	---	---	---	---	---	---	---	---	---
Drum Sample																		
Tank Fill Soil	12/11/13	Sludge/Drum	N/A	---	---	---	---	**140,000**	54,000 x	---	---	---	---	---	---	---	---	---
Soil Stockpile Samples																		
Category 4 Soil Stockpiles SS1 And SS2																		
SS1-M	12/16/13	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
SS1-C	12/16/13	Stockpile	N/A	---	---	---	---	**2,600**	**1,000**	**3,600**	---	---	---	---	---	---	---	---
SS2-C	12/16/13	Stockpile	N/A	---	---	---	---	**53,000**	**28,000**	**81,000**	---	---	---	---	---	---	---	**11.1**
Category 2 Soil Stockpile SSC																		
SSC-1	03/03/14	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
SSC-2	03/03/14	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
SSC-3	03/03/14	Stockpile	N/A	---	---	---	---	**120**	ND<250	---	---	---	---	---	---	---	---	---
SSC-4	03/03/14	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
SSC-5	03/18/14	Stockpile	N/A	---	---	---	---	**83**	ND<250	---	---	---	---	---	---	---	---	---
SSC-6	03/18/14	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
Clean Overburden (SSC)	12/19/13	Stockpile	N/A	---	---	---	---	ND<50	ND<250	---	---	---	---	---	---	---	---	---
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses				**0.03**	**7**	**6**	**9**	**2,000**		**2,000**	**100/30[1]**	**2,000**		**Not Applicable**	**Analyte Specific**	**Tox Eq = 0.1[6]**	**5**	**250**
Category 1 Soil Ranges[1]				**<0.005**	**<0.005**	**<0.005**	**<0.015**	**<25**	**<25**	**<25**	**<5**	**<25**	**<25**	**----**	**----**	**<0.05**	**<0.05**	**<17**
Category 2 Soil Ranges[1]				**0.005 to 0.03**	**0.005 to 6**	**0.005 to 7**	**0.015 to 9**	**25 to 200**	**25 to 200[2]**	**25 to 200[2]**	**5 to 30**	**25 to 200**	**25 to 200[2]**	**----**	**----**	**0.05 to 0.1**	**0.05 to 5**	**17 to 50**
Category 3 Soil Ranges[1]				**0.03 or less**	**6 or less**	**7 or less**	**9 or less**	**200 to 500**	**200 to 500**	**200 to 500**	**30 to 100**	**200 to 500**	**200 to 500**	**----**	**----**	**0.1 to 2**	**5 or less**	**50 to 220**
Category 4 Soil Ranges[1]				**----[4]**	**>6**	**>7**	**>9**	**>500**	**>500**	**>500**	**>100**	**>500**	**>500**	**----**	**----**	**>2**	**>5**	**----[4]**

Table 1 Continued. Summary of Soil Sample Analytical Laboratory Results
GSA Federal Center South Building - UST Site Assessment
4735 East Marginal Way, Seattle, Washington 98134
The Riley Group, Inc. Project No. 2013-364

Notes:

All results and detection limits are given in milligrams per kilogram (mg/kg); equivalent to parts per million (ppm).

Sample Depth = Soil sample depth interval in feet below ground surface (bgs).

BTEX (benzene, toluene, ethylbenzene, and xylenes) determined using EPA Test Method 8260C.

Diesel and Oil TPH (total petroleum hydrocarbons) determined using Ecology Test Method NWTPH Dx.

Gasoline, Diesel, and Oil HCID (Hydrocarbon Identification) determined using Ecology Test Method NWTPH-HCID.

VOCs (Volatile Organic Compounds) determined using EPA Test Method 8260C.

cPAHs (carcinogenic Polynuclear Aromatic Hydrocarbons) determined using EPA Test Method 8270D SIM.

Naph. (naphthalene) determined using EPA Test Method 8270D or 8260C. Most conservative value listed.

Total lead determined using EPA Method 200.8.

ND = Not detected above noted analytical detection limit.

D = Detected.

NVE = No value established.

---- = Not analyzed.

x = The sample chromatographic pattern does not resemble the fuel standard used for quantification

[1] Values obtained from Ecology's Guidance for Remediation of Petroleum Contaminated Sites dated September, 2011.

[2] For heavy oils (diesel-range TPH in the C12-C34 range), the Category 1 range is <100 and the Category 2 range is 100-200. The remaining categories are the same. Does not include waste oil contaminated soils, which should be disposed of in a landfill.

[3] Shade color in sample number column indicates soil category designation.

[4] Toxic characteristic leaching procedure (TCLP) testing must be conducted for soil containing concentrations of lead and benzene exceeding 220 mg/kg and 0.03 mg/kg, respectively. Soils that fail the TCLP test must be disposed of as hazardous waste unless exempt under WAC 173-303-071(3)(t).

[5] It is not necessary to evaluate these compounds for screening level exceedances due to the fact that they are factored into the TPH screening level calculations.

[6] The calculated total cPAHS (TEF modfied) is compared to the MTCA Method A Soil Cleanup Level for benzo(a)pyrene.

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340-900, Table 740-1).

Bold results indicated concentrations above laboratory detection limits.

Bold and yellow highlighted results indicate concentrations (if any) that exceed the MTCA Method A Soil Cleanup Level

Bold and brown highlighted sample indicates concentrations (if any) that deem soil a Category 2 petroleum contaminated soil.

Bold and green highlighted sample indicates concentrations (if any) that deem soil a Category 3 petroleum contaminated soil.

Bold and blue highlighted sample indicates concentrations (if any) that deem soil a Category 4 petroleum contaminated soil.

Table 2. Summary of Excavation Water Sample Analytical Laboratory Results
GSA Federal Center South Building - UST Site Assessment
4735 East Marginal Way, Seattle, Washington 98134
The Riley Group, Inc. Project No. 2013-364

Sample Number	Sample Date	Depth to Water (bgs)	BTEX				HCID			Diesel TPH	Oil TPH	Diesel TPH[2]	Oil TPH[2]	Total Diesel and Oil TPH[2]	cPAHs	Other VOCs
			B	T	E	X	Gasoline	Diesel	Heavy Oil							
UA-WC-2	05/16/14	~10*	----	----	----	----	----	----	----	**700**	**1,100**	----	----	**1,800**	ND	----
UA-WC	03/18/14	~13	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	D	620 x	**500**	**230**	**300**	**530**	----	ND
MTCA Method A Cleanup Levels for Ground Water			**5**	**1,000**	**700**	**1,000**	**800/1,000[1]**	**500**	**500**	**500**		**500**		**500**	**Analyte Specific**	**Analyte Specific**

Samples collected by RGI field staff using a bailer.

Unless otherwise noted, all analytical results are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

BTEX (Benzene, Toluene, Ethyl Benzene, and Xylenes) determined using EPA Test Method 8260C.

Diesel and Oil TPH (total petroleum hydrocarbons) determined using Ecology Test Method NWTPH Dx.

Gasoline, Diesel, and Oil HCID (Hydrocarbon Identification) determined using Ecology Test Method NWTPH-HCID.

VOCs (Volatile Organic Compounds) determined using EPA Test Method 8260C.

ND = Not detected above noted analytical detection limit.

D = Detected.

---- = Not analyzed or not applicable.

x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

[1] The higher cleanup level is applicable if no benzene is detected in groundwater.

[2] Sample extracts passed through a silica gel column prior to analysis to remove naturally occurring biogenic material.

* Sample UA-WC was collected at time of removal of UST 2 while the other two USTs remained in place. The estimated depth to water was not consistent with the depth observed after removal of all the USTs (approximately 10 feet bgs).

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for Ground Water (WAC 173-340-900, Table 720-1).

Bold results indicate concentrations detected above the laboratory method detection limit.

Bold and yellow highlighted results indicate concentrations (if any) that exceed MTCA Method A Cleanup Levels for Ground Water.

Appendix A

RILEYGROUP

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

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Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 17, 2013

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on December 12, 2013 from the GSA-FedSouth, F&BI 312181 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1217R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 12, 2013 by Friedman & Bruya, Inc. from the The Riley Group GSA-FedSouth, F&BI 312181 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
312181 -01	P1-6
312181 -02	P2-6
312181 -03	P3-4
312181 -04	P4-6
312181 -05	SSW-16'
312181 -06	Tank Fill Soil

All quality control requirements were acceptable.

Date of Report: 12/17/13
Date Received: 12/12/13
Project: GSA-FedSouth, F&BI 312181
Date Extracted: 12/13/13
Date Analyzed: 12/13/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
P1-6 312181-01	<50	<250	86
P2-6 312181-02	<50	<250	87
P3-4 312181-03	<50	<250	88
P4-6 312181-04	<50	<250	87
SSW-16' 312181-05	<50	<250	89
Tank Fill Soil 312181-06 1/100	140,000	54,000 x	ip
Method Blank 03-2560 MB2	<50	<250	90

Date of Report: 12/17/13
Date Received: 12/12/13
Project: GSA-FedSouth, F&BI 312181

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 312167-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	97	96	63-146	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	99	79-144

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312181

ME 12-12-13 003 C01

SAMPLE CHAIN OF CUSTODY

Send Report To Richard Simpson
Company RGI
Address 17522 Bothell Way NE
City, State, ZIP Bothell
Phone # 425 698-5834 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. BSA-Fed South 1
PO #
REMARKS

Page # 1 of 1

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
P1-6	01	12.11.13	1140		1	X												
P2-6	02		1215		1	X												
P3-4	03		1230		1	X												
P4-6	04		1421		1	X												
SSW-16'	05	↓	1440		1	X												
* Tank Fill Soil	06	12.11.13	1300		1	X												

ANALYSES REQUESTED

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RGI	12.12.13	953
Received by:		Nhan Phan	FEBI	12/12/13	953
Relinquished by:					
Received by:			Samples received at 6 °C		

x very hot!

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 26, 2013

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on December 19, 2013 from the 2013-364, F&BI 312328 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1226R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 19, 2013 by Friedman & Bruya, Inc. from the The Riley Group 2013-364, F&BI 312328 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
312328 -01	Clean Overburden
312328 -02	P9-6
312328 -03	P10-6
312328 -04	P11-5

Several compounds in the 8260C laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/26/13
Date Received: 12/19/13
Project: 2013-364, F&BI 312328
Date Extracted: 12/20/13
Date Analyzed: 12/20/13 and 12/23/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
Clean Overburden 312328-01	<50	<250	86
P9-6 312328-02	6,300	450 x	86
P10-6 312328-03	<50	<250	88
Method Blank 03-2628 MB	<50	<250	91

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P11-5	Client:	The Riley Group
Date Received:	12/19/13	Project:	2013-364, F&BI 312328
Date Extracted:	12/20/13	Lab ID:	312328-04
Date Analyzed:	12/23/13	Data File:	122320.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	0.58	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05 jl
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05 jl
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2013-364, F&BI 312328
Date Extracted:	12/20/13	Lab ID:	03-2606 mb
Date Analyzed:	12/23/13	Data File:	122307.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05 jl
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05 jl
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Date of Report: 12/26/13
Date Received: 12/19/13
Project: 2013-364, F&BI 312328

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 312325-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	8,100	180 b	196 b	63-146	9 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	108	79-144

Date of Report: 12/26/13
Date Received: 12/19/13
Project: 2013-364, F&BI 312328

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 312303-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	16	16	10-56	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	45	40	10-90	12
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	48	44	10-91	9
Bromomethane	mg/kg (ppm)	2.5	<0.5	70	59	10-110	17
Chloroethane	mg/kg (ppm)	2.5	<0.5	59	52	10-101	13
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	47	45	10-95	4
Acetone	mg/kg (ppm)	12.5	<0.5	72	72	11-141	0
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	52	52	11-103	0
Methylene chloride	mg/kg (ppm)	2.5	1.4	52 b	50 b	14-128	4 b
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	74	75	17-134	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	62	62	13-112	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	69	68	23-115	1
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	72	18-117	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	69	69	25-120	0
Chloroform	mg/kg (ppm)	2.5	0.11	67	68	29-117	1
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	74	76	20-133	3
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	70	70	22-124	0
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	63	65	27-112	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	59	60	26-107	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	63	64	22-115	2
Benzene	mg/kg (ppm)	2.5	<0.03	63	65	26-114	3
Trichloroethene	mg/kg (ppm)	2.5	<0.03	62	64	30-112	3
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	69	71	31-119	3
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	63	66	31-131	5
Dibromomethane	mg/kg (ppm)	2.5	<0.05	70	70	27-124	0
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	83	87	16-147	5
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	65	68	28-137	5
Toluene	mg/kg (ppm)	2.5	<0.05	65	66	34-112	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	62	66	30-136	6
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	71	74	32-126	4
2-Hexanone	mg/kg (ppm)	12.5	<0.5	79	83	17-147	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	67	70	29-125	4
Tetrachloroethene	mg/kg (ppm)	2.5	0.057	55	56	27-110	2
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	57	61	32-143	7
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	67	68	32-126	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	67	68	37-113	1
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	61	63	38-111	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	67	68	35-126	1
m,p-Xylene	mg/kg (ppm)	5	<0.1	61	62	38-112	2
o-Xylene	mg/kg (ppm)	2.5	<0.05	66	65	38-113	2
Styrene	mg/kg (ppm)	2.5	<0.05	65	66	38-118	2
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	64	65	37-114	2
Bromoform	mg/kg (ppm)	2.5	<0.05	50	54	18-155	8
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	60	62	36-114	3
Bromobenzene	mg/kg (ppm)	2.5	<0.05	62	65	40-115	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	58	60	35-116	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	67	68	33-128	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	65	66	33-123	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	59	60	39-110	2
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	58	60	39-111	3
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	60	62	36-116	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	61	62	35-116	2
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	57	59	33-118	3
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	58	60	32-119	3
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	61	63	38-111	3
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	61	63	39-109	3
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	64	65	40-111	2
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	63	67	34-134	6
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	65	68	31-117	5
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	69	72	25-122	4
Naphthalene	mg/kg (ppm)	2.5	<0.05	77	78	39-120	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	68	71	35-117	4

Date of Report: 12/26/13
Date Received: 12/19/13
Project: 2013-364, F&BI 312328

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	38	10-76
Chloromethane	mg/kg (ppm)	2.5	59	34-98
Vinyl chloride	mg/kg (ppm)	2.5	69	42-107
Bromomethane	mg/kg (ppm)	2.5	84	46-113
Chloroethane	mg/kg (ppm)	2.5	79	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	73	53-112
Acetone	mg/kg (ppm)	12.5	105	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	72	65-110
Methylene chloride	mg/kg (ppm)	2.5	89	62-119
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	91	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	88	76-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	93	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	77-110
Chloroform	mg/kg (ppm)	2.5	87	78-108
2-Butanone (MEK)	mg/kg (ppm)	12.5	98	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	90	80-109
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	84	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	80	77-108
Carbon tetrachloride	mg/kg (ppm)	2.5	85	67-123
Benzene	mg/kg (ppm)	2.5	83	75-107
Trichloroethene	mg/kg (ppm)	2.5	84	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	90	78-111
Bromodichloromethane	mg/kg (ppm)	2.5	86	75-126
Dibromomethane	mg/kg (ppm)	2.5	92	80-111
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	105	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	90	71-138
Toluene	mg/kg (ppm)	2.5	86	79-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	85	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	91	84-115
2-Hexanone	mg/kg (ppm)	12.5	97	71-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	82-113
Tetrachloroethene	mg/kg (ppm)	2.5	79	77-110
Dibromochloromethane	mg/kg (ppm)	2.5	77	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	91	83-116
Chlorobenzene	mg/kg (ppm)	2.5	88	82-113
Ethylbenzene	mg/kg (ppm)	2.5	82	81-114
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	88	76-125
m,p-Xylene	mg/kg (ppm)	5	83	82-115
o-Xylene	mg/kg (ppm)	2.5	87	81-116
Styrene	mg/kg (ppm)	2.5	86	81-118
Isopropylbenzene	mg/kg (ppm)	2.5	87	81-117
Bromoform	mg/kg (ppm)	2.5	69	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	83	82-116
Bromobenzene	mg/kg (ppm)	2.5	85	82-118
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	83	83-120
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	83	83-125
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	81	79-116
2-Chlorotoluene	mg/kg (ppm)	2.5	79 vo	80-114
4-Chlorotoluene	mg/kg (ppm)	2.5	80 vo	82-114
tert-Butylbenzene	mg/kg (ppm)	2.5	83	82-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	86	82-116
sec-Butylbenzene	mg/kg (ppm)	2.5	81	81-123
p-Isopropyltoluene	mg/kg (ppm)	2.5	84	82-124
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	84	80-118
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	82	79-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	87	80-118
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	87	71-131
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	99	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	94	74-130
Naphthalene	mg/kg (ppm)	2.5	104	83-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	103	80-126

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312328

SAMPLE CHAIN OF CUSTODY

ME 12/19/13 DO/VS

The Riley Group, Inc.
www.riley-group.com

Corporate Office
17522 Bothell Way Northeast
Bothell, Washington 98011

Phone: 425.415.0551
Fax: 425.415.0311
Cell: 425.698.5834

rsimpson@riley-group.com

Richard Simpson, LG, LHG
Senior Hydrogeologist

SAMPLERS (signature)

PROJECT NAME/NO. Fed 5 2013-364

PO#

REMARKS

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel DX	NWTPH-Gx/BTEX	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	Total Pb	Dissolved Pb	HCID	MTCA 5	PCBs			Notes
clean overburden	01	12.19.13	1400	Soil	1	X												
P9-6	02	"	1455	Soil	1	X												
P10-6	03	"	1500	Soil	1	X			*									
P11-5	04/DUP	12.19.13	1610	Soil	4				X									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	12.19.13	1715
Received by:	VINH	RGI	12/19/13	1715
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

13 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

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(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 26, 2013

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on December 13, 2013 from the Federal Bldg S, F&BI 312212 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1226R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2013 by Friedman & Bruya, Inc. from the The Riley Group Federal Bldg S, F&BI 312212 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
312212 -01	P6-5
312212 -02	P5-5
312212 -03	Vault-5

All quality control requirements were acceptable.

Date of Report: 12/26/13
Date Received: 12/13/13
Project: Federal Bldg S, F&BI 312212
Date Extracted: 12/16/13
Date Analyzed: 12/16/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
P6-5 312212-01	<50	<250	79
P5-5 312212-02	81	<250	90
Method Blank 03-2582 MB	<50	<250	95

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Vault-5	Client:	The Riley Group
Date Received:	12/13/13	Project:	Federal Bldg S, F&BI 312212
Date Extracted:	12/13/13	Lab ID:	312212-03
Date Analyzed:	12/13/13	Data File:	121333.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	Federal Bldg S, F&BI 312212
Date Extracted:	12/13/13	Lab ID:	03-2524 mb
Date Analyzed:	12/13/13	Data File:	121332.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Date of Report: 12/26/13
Date Received: 12/13/13
Project: Federal Bldg S, F&BI 312212

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 312219-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	103	100	73-135	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	74-139

Date of Report: 12/26/13
Date Received: 12/13/13
Project: Federal Bldg S, F&BI 312212

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 312212-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	25	22	10-56	13
Chloromethane	mg/kg (ppm)	2.5	<0.5	51	47	10-90	8
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	51	48	10-91	6
Bromomethane	mg/kg (ppm)	2.5	<0.5	61	74	10-110	19
Chloroethane	mg/kg (ppm)	2.5	<0.5	63	60	10-101	5
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	57	55	10-95	4
Acetone	mg/kg (ppm)	12.5	<0.5	77	73	11-141	5
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	62	59	11-103	5
Methylene chloride	mg/kg (ppm)	2.5	<0.5	74	71	14-128	4
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	75	72	17-134	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	68	13-112	3
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	75	72	23-115	4
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	68	18-117	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	73	25-120	3
Chloroform	mg/kg (ppm)	2.5	<0.05	75	70	29-117	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	80	72	20-133	11
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	75	72	22-124	4
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	73	71	27-112	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	72	70	26-107	3
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	75	72	22-115	4
Benzene	mg/kg (ppm)	2.5	<0.03	73	71	26-114	3
Trichloroethene	mg/kg (ppm)	2.5	<0.03	76	74	30-112	3
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	77	73	31-119	5
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	76	72	31-131	5
Dibromomethane	mg/kg (ppm)	2.5	<0.05	78	74	27-124	5
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	89	82	16-147	8
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	80	75	28-137	6
Toluene	mg/kg (ppm)	2.5	<0.05	76	74	34-112	3
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	78	74	30-136	5
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	79	76	32-126	4
2-Hexanone	mg/kg (ppm)	12.5	<0.5	81	75	17-147	8
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	78	74	29-125	5
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	75	72	27-110	4
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	74	70	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	79	75	32-126	5
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	78	76	37-113	3
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	74	73	38-111	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	75	75	35-126	0
m,p-Xylene	mg/kg (ppm)	5	<0.1	75	73	38-112	3
o-Xylene	mg/kg (ppm)	2.5	<0.05	76	74	38-113	3
Styrene	mg/kg (ppm)	2.5	<0.05	76	74	38-118	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	76	75	37-114	1
Bromoform	mg/kg (ppm)	2.5	<0.05	74	70	18-155	6
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	81	77	36-114	5
Bromobenzene	mg/kg (ppm)	2.5	<0.05	81	77	40-115	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	76	74	35-116	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	76	71	33-128	7
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	75	74	33-123	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	74	72	39-110	3
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	75	72	39-111	4
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	76	74	36-116	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	77	75	35-116	3
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	73	33-118	3
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	75	73	32-119	3
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	77	74	38-111	4
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	75	72	39-109	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	73	40-111	4
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	81	74	34-134	9
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	81	75	31-117	8
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	80	76	25-122	5
Naphthalene	mg/kg (ppm)	2.5	<0.05	91	85	39-120	7
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	91	85	35-117	7

Date of Report: 12/26/13
Date Received: 12/13/13
Project: Federal Bldg S, F&BI 312212

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	10-76
Chloromethane	mg/kg (ppm)	2.5	66	34-98
Vinyl chloride	mg/kg (ppm)	2.5	70	42-107
Bromomethane	mg/kg (ppm)	2.5	66	46-113
Chloroethane	mg/kg (ppm)	2.5	83	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	77	53-112
Acetone	mg/kg (ppm)	12.5	89	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	77	65-110
Methylene chloride	mg/kg (ppm)	2.5	85	62-119
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	83	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	84	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	87	76-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	84	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	88	77-110
Chloroform	mg/kg (ppm)	2.5	85	78-108
2-Butanone (MEK)	mg/kg (ppm)	12.5	83	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	84	80-109
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	86	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	84	77-108
Carbon tetrachloride	mg/kg (ppm)	2.5	88	67-123
Benzene	mg/kg (ppm)	2.5	83	75-107
Trichloroethene	mg/kg (ppm)	2.5	84	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	86	78-111
Bromodichloromethane	mg/kg (ppm)	2.5	84	75-126
Dibromomethane	mg/kg (ppm)	2.5	85	80-111
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	94	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	87	71-138
Toluene	mg/kg (ppm)	2.5	87	79-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	86	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	88	84-115
2-Hexanone	mg/kg (ppm)	12.5	88	71-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	86	82-113
Tetrachloroethene	mg/kg (ppm)	2.5	85	77-110
Dibromochloromethane	mg/kg (ppm)	2.5	84	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	86	83-116
Chlorobenzene	mg/kg (ppm)	2.5	89	82-113
Ethylbenzene	mg/kg (ppm)	2.5	85	81-114
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	90	76-125
m,p-Xylene	mg/kg (ppm)	5	87	82-115
o-Xylene	mg/kg (ppm)	2.5	88	81-116
Styrene	mg/kg (ppm)	2.5	87	81-118
Isopropylbenzene	mg/kg (ppm)	2.5	88	81-117
Bromoform	mg/kg (ppm)	2.5	86	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	90	82-116
Bromobenzene	mg/kg (ppm)	2.5	89	82-118
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	87	83-120
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	85	83-125
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	83	79-116
2-Chlorotoluene	mg/kg (ppm)	2.5	83	80-114
4-Chlorotoluene	mg/kg (ppm)	2.5	85	82-114
tert-Butylbenzene	mg/kg (ppm)	2.5	87	82-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	88	82-116
sec-Butylbenzene	mg/kg (ppm)	2.5	86	81-123
p-Isopropyltoluene	mg/kg (ppm)	2.5	86	82-124
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	87	80-118
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	84	79-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	86	80-118
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	91	71-131
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	100	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	97	74-130
Naphthalene	mg/kg (ppm)	2.5	121	83-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	123	80-126

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312212

SAMPLE CHAIN OF CUSTODY

ME 12-13-13

COI/WSI

Page # 1 of 1

Send Report To Richard Simpson

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone # _____ Fax # _____

SAMPLERS (signature)

PROJECT NAME/NO. Federal Bldg S. I

PO #

REMARKS

TURNAROUND TIME
- ☐ ~~Standard~~ (2 Weeks)
- ☐ RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
P6-5	01	12.12.13	1200	Soil	1	X												
P5-5	02	↓	1030	Soil	1	X												
Vault-5	03 A-D	12.12.13	1500	Soil	4				X									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RGI	12/13/13	1455
Received by:		DdW	FRB	11	11
Relinquished by:					
Received by:			Samples received at 11 °C		

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 27, 2013

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on December 20, 2013 from the FedS 2013-364, F&BI 312357 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1227R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 20, 2013 by Friedman & Bruya, Inc. from the The Riley Group FedS 2013-364, F&BI 312357 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
312357 -01	P12-6

All quality control requirements were acceptable.

Date of Report: 12/27/13
Date Received: 12/20/13
Project: FedS 2013-364, F&BI 312357
Date Extracted: 12/23/13
Date Analyzed: 12/23/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
P12-6 312357-01 1/10	18,000 x	40,000	89
Method Blank 03-2637 MB	<50	<250	80

Analysis For Total Metals By EPA Method 200.8

Client ID:	P12-6	Client:	The Riley Group
Date Received:	12/20/13	Project:	FedS 2013-364, F&BI 312357
Date Extracted:	12/24/13	Lab ID:	312357-01
Date Analyzed:	12/24/13	Data File:	312357-01.009
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	4.45

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	FedS 2013-364, F&BI 312357
Date Extracted:	12/24/13	Lab ID:	I3-872 mb2
Date Analyzed:	12/24/13	Data File:	I3-872 mb2.008
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Date of Report: 12/27/13
Date Received: 12/20/13
Project: FedS 2013-364, F&BI 312357

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 312350-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	34,000	35 b	175 b	73-135	133 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	74-139

Date of Report: 12/27/13
Date Received: 12/20/13
Project: FedS 2013-364, F&BI 312357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 312336-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	25.4	98 b	97 b	59-148	1 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	97	80-120

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312357

The Riley Group, Inc.
www.riley-group.com

Corporate Office
17522 Bothell Way Northeast
Bothell, Washington 98011

Phone: 425.415.0551
Fax: 425.415.0311
Cell: 425.698.5834

rsimpson@riley-group.com

Richard Simpson, LG, LHG
Senior Hydrogeologist

SAMPLE CHAIN OF CUSTODY

ME 12/20/13

Page # 1 of 1

SAMPLERS (signature)

PROJECT NAME/NO.: fed S 2013-364

PO#:

REMARKS:

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel DX	NWTPHGX/BTEX	BTEX by 8021B	VOCs by8260	SVOCs by 8270	Total Pb	Dissolved Pb	HCID	MTCA 5	PCBs			Notes
P12-6	01	12.20.13	1415	Soil	1	X					X							mod-high petrol.

Samples received at 10 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	12.20.13	1530
Received by:	Nhan Phan	FCRT	12/20/13	1530
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 27, 2013

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on December 17, 2013 from the GSA South, PO 2013-364, F&BI 312281 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1227R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 17, 2013 by Friedman & Bruya, Inc. from the The Riley Group GSA South, PO 2013-364, F&BI 312281 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
312281-01	P7-1
312281-02	SS1-M
312281-03	SS1-C
312281-04	UST2-5
312281-05	SS2-C

The NWTPH-Dx motor oil range exceeded the calibration range of the instrument in sample SS2-C. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/27/13
Date Received: 12/17/13
Project: GSA South, PO 2013-364, F&BI 312281
Date Extracted: 12/19/13
Date Analyzed: 12/19/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
P7-1 312281-01	<50	<250	98
SS1-M 312281-02	<50	<250	99
SS1-C 312281-03	2,600	1,000	107
UST2-5 312281-04	5,600	5,600	83
SS2-C 312281-05	53,000	28,000 ve	ip
Method Blank 03-2619 MB2	<50	<250	98

Analysis For Total Metals By EPA Method 200.8

Client ID:	SS-C Composite	Client:	The Riley Group
Date Received:	12/17/13	Project:	GSA South, PO 2013-364
Date Extracted:	12/23/13	Lab ID:	312281-03,05 comp.
Date Analyzed:	12/23/13	Data File:	312281-03,05 comp..013
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	11.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	GSA South, PO 2013-364
Date Extracted:	12/23/13	Lab ID:	I3-872 mb
Date Analyzed:	12/23/13	Data File:	I3-872 mb.008
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	100	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Date of Report: 12/27/13
Date Received: 12/17/13
Project: GSA South, PO 2013-364, F&BI 312281

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 312287-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	103	102	63-146	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	79-144

Date of Report: 12/27/13
Date Received: 12/17/13
Project: GSA South, PO 2013-364, F&BI 312281

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 312336-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	25.4	98 b	97 b	59-148	1 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	97	80-120

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312281

The Riley Group, Inc.
www.riley-group.com

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rsimpson@riley-group.com

Richard Simpson, LG, LHG
Senior Hydrogeologist

SAMPLE CHAIN OF CUSTODY ME 12/17/13

Page # 1 of 1

SAMPLERS (signature)

PROJECT NAME/NO.: GSA South

PO#: 2013-364 per RS 12/6/13

REMARKS: combine SS1-C, SS2-C for Pb

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel DX	NWTPH-Gx/BTEX	BTEX by 8021B	VOCs by8260	SVOCs by 8270	Total Pb	Dissolved Pb	HCID	MTCA 5	PCBs			Notes
P7-1	01	12.17.13	1400	Soil	1	X												
SS1-M	02	12.16.13	1245	↓	↓	X												
SS1-C	03	12.16.13	1345			X					C							Composite
UST2-S1	04	12.17.13	1515			X												
SS2-C	05	12.16.13	1400	Soil	1	X					C							
													Samples received at					10 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	12.17.13	1620
Received by:	DO VO	F+BI	11	11
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
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FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

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fbi@isomedia.com
www.friedmanandbruya.com

March 10, 2014

Jerry Sawetz, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Sawetz:

Included are the results from the testing of material submitted on March 3, 2014 from the GSA Tank Removal, PO 2013-364, F&BI 403017 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Paul Riley
TRG0310R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 3, 2014 by Friedman & Bruya, Inc. from the The Riley Group GSA Tank Removal, PO 2013-364, F&BI 403017 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
403017-01	SSC-1
403017-02	SSC-2
403017-03	SSC-3
403017-04	SSC-4

All quality control requirements were acceptable.

Date of Report: 03/10/14
Date Received: 03/03/14
Project: GSA Tank Removal, PO 2013-364, F&BI 403017
Date Extracted: 03/06/14
Date Analyzed: 03/06/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
SSC-1 403017-01	<50	<250	118
SSC-2 403017-02	<50	<250	122
SSC-3 403017-03	120	<250	122
SSC-4 403017-04	<50	<250	120
Method Blank 04-471 MB	<50	<250	119

Date of Report: 03/10/14
Date Received: 03/03/14
Project: GSA Tank Removal, PO 2013-364, F&BI 403017

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 403053-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	94	84	64-133	11

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	58-147

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

403017

SAMPLE CHAIN OF CUSTODY

ME DO3 3/3/14

Page # 1 of 1

Send Report To Jerry Sawetz
Company The Riley Group
Address 17522 Bothell Way NE
City, State, ZIP Bothell, WA 98011
Phone # _____ Fax # _____

SAMPLERS *(signature)* Jerry Sawetz
PROJECT NAME/NO. GSA Tank Removal
PO# 2013-364
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by _____

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
SSC-1	-01	3-3-14	810	Soil	1	X												
SSC-2	-02	"	815	"	1	X												
SSC-3	-03	"	820	"	1	X												
SSC-4	-04	"	825	"	1	X												

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Jerry Sawetz	Jerry Sawetz	RGI	3-3-14	1332
Received by: [signature]	Robert Martinez	Postal Ex	3-3-14	1332
Relinquished by:				
Received by: [signature]	Michael Erdahl	PSBm	3/3/14	15:40

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 26, 2014

Jerry Sawetz, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Sawetz:

Included are the results from the testing of material submitted on March 18, 2014 from the 2013-364, F&BI 403230 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0326R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 18, 2014 by Friedman & Bruya, Inc. from the 2013-364, F&BI 403230 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
403230 -01	UA-4E:12
403230 -02	UA-5E:12
403230 -03	UA-6S:12
403230 -04	UA-7S:12
403230 -05	UA-8W:12
403230 -06	UA-9W:12
403230 -07	UA-11W:12
403230 -08	NWEX-10:6
403230 -09	NWEX-12B:9
403230 -10	UA-WC
403230 -11	SSC-5
403230 -12	SSC-6

The 8260C calibration standard failed the acceptance criteria for bromomethane. The data were flagged accordingly.

Several compounds in the 8260C matrix spike, laboratory control sample and laboratory control sample duplicate exceeded the acceptance criteria. The analytes were not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/19/14
Date Analyzed: 03/19/14

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 47-140)
UA-WC 403230-10	ND	ND	D	96
Method Blank 04-551 MB2	ND	ND	ND	87

ND - Material not detected at or above 0.2 mg/L gas, 0.5 mg/L diesel and 0.5 mg/L heavy oil.

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/19/14
Date Analyzed: 03/19/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
UA-8W:12 403230-05	ND	D	ND	93
NWEX-10:6 403230-08 1/10	ND	D	D	ip
Method Blank 04-552 MB2	ND	ND	ND	88

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/20/14
Date Analyzed: 03/20/14

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
UA-WC 403230-10	230	300	98
Method Blank 04-551 MB2	<50	<250	103

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/19/14
Date Analyzed: 03/19/14

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
UA-WC 403230-10	620 x	500	96
Method Blank 04-551 MB2	<50	<250	87

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/18/14
Date Analyzed: 03/18/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
UA-4E:12 403230-01	<50	<250	102
UA-5E:12 403230-02	<50	<250	99
UA-6S:12 403230-03	<50	<250	101
UA-7S:12 403230-04	<50	<250	105
UA-8W:12 403230-05	1,700	<250	105
UA-9W:12 403230-06	<50	<250	95
UA-11W:12 403230-07	<50	<250	105
NWEX-10:6 403230-08 1/10	50,000	31,000	ip
NWEX-12B:9 403230-09	<50	<250	103
SSC-5 403230-11	83	<250	103

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230
Date Extracted: 03/18/14
Date Analyzed: 03/18/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
SSC-6 403230-12	<50	<250	104
Method Blank 04-554 MB	<50	<250	106

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	UA-WC	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	403230-10
Date Analyzed:	03/20/14	Data File:	032012.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1 ca	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	04-0513 mb
Date Analyzed:	03/20/14	Data File:	032011.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1 ca	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	UA-8W:12	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/19/14	Lab ID:	403230-05
Date Analyzed:	03/19/14	Data File:	031910.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	95	51	121
4-Bromofluorobenzene	96	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5 ca	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	0.15
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	0.079
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	NWEX-10:6	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/19/14	Lab ID:	403230-08
Date Analyzed:	03/19/14	Data File:	031911.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	62	142
Toluene-d8	94	51	121
4-Bromofluorobenzene	91	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5 ca	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.21
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.77
Methylene chloride	<0.5	o-Xylene	0.78
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	0.079
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	0.12
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	0.61
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	1.7
Trichloroethene	<0.03	sec-Butylbenzene	0.052
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	0.27
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	1.4
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2013-364, F&BI 403230
Date Extracted:	03/19/14	Lab ID:	04-0512 mb
Date Analyzed:	03/19/14	Data File:	031908.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	98	51	121
4-Bromofluorobenzene	97	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5 ca	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	UA-8W:12	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	403230-05 1/5
Date Analyzed:	03/21/14	Data File:	032112.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	50	150
Benzo(a)anthracene-d12	88	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	0.072
Fluorene	0.22
Phenanthrene	0.52
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.029
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	NWEX-10:6	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	403230-08 1/250
Date Analyzed:	03/21/14	Data File:	032134.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77 ds	50	150
Benzo(a)anthracene-d12	155 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	15
Acenaphthylene	<0.5
Acenaphthene	29
Fluorene	34
Phenanthrene	89 ve
Anthracene	26
Fluoranthene	6.7
Pyrene	43
Benz(a)anthracene	18
Chrysene	23
Benzo(a)pyrene	10
Benzo(b)fluoranthene	3.3
Benzo(k)fluoranthene	0.64
Indeno(1,2,3-cd)pyrene	2.4
Dibenz(a,h)anthracene	1.6
Benzo(g,h,i)perylene	6.3

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	NWEX-10:6	Client:	The Riley Group
Date Received:	03/18/14	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	403230-08 1/2500
Date Analyzed:	03/24/14	Data File:	032405.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	8 ds	50	150
Benzo(a)anthracene-d12	162 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	16
Acenaphthylene	<5
Acenaphthene	30
Fluorene	39
Phenanthrene	110
Anthracene	39
Fluoranthene	8.2
Pyrene	49
Benz(a)anthracene	22
Chrysene	31
Benzo(a)pyrene	13
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenz(a,h)anthracene	<5
Benzo(g,h,i)perylene	7.5

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2013-364, F&BI 403230
Date Extracted:	03/20/14	Lab ID:	04-578 mb 1/5
Date Analyzed:	03/20/14	Data File:	032004.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	50	150
Benzo(a)anthracene-d12	97	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	97	98	61-133	1

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	86	88	58-134	2

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 403186-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	102	102	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	74-139

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 403245-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	135	10-172
Chloromethane	ug/L (ppb)	50	<10	113	25-166
Vinyl chloride	ug/L (ppb)	50	0.62	118	36-166
Bromomethane	ug/L (ppb)	50	<1	384 vo	47-169
Chloroethane	ug/L (ppb)	50	<1	198 vo	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	131	44-165
Acetone	ug/L (ppb)	250	<10	102	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	103	60-136
Methylene chloride	ug/L (ppb)	50	<5	94	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	101	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	98	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	97	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	9.3	100	71-127
Chloroform	ug/L (ppb)	50	<1	100	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	108	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	104	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	102	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	106	56-152
Benzene	ug/L (ppb)	50	<0.35	99	76-125
Trichloroethene	ug/L (ppb)	50	5.6	96	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	101	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	107	61-150
Dibromomethane	ug/L (ppb)	50	<1	104	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	101	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	105	72-132
Toluene	ug/L (ppb)	50	<1	95	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	100	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	93	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	99	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	117	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	99	69-134
Chlorobenzene	ug/L (ppb)	50	<1	94	77-122
Ethylbenzene	ug/L (ppb)	50	<1	93	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	105	73-137
m,p-Xylene	ug/L (ppb)	100	<2	94	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140
Styrene	ug/L (ppb)	50	<1	94	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	95	65-142
Bromoform	ug/L (ppb)	50	<1	117	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	95	58-144
Bromobenzene	ug/L (ppb)	50	<1	99	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	97	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	103	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	99	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	96	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	94	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	102	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	95	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	95	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	101	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	95	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	92	60-143
Naphthalene	ug/L (ppb)	50	<1	94	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	90	69-148

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	124	128	25-158	3
Chloromethane	ug/L (ppb)	50	108	113	45-156	5
Vinyl chloride	ug/L (ppb)	50	112	113	50-154	1
Bromomethane	ug/L (ppb)	50	363 vo	364 vo	55-143	0
Chloroethane	ug/L (ppb)	50	193 vo	190 vo	58-146	2
Trichlorofluoromethane	ug/L (ppb)	250	124	125	50-150	1
Acetone	ug/L (ppb)	250	103	103	53-131	0
1,1-Dichloroethene	ug/L (ppb)	50	100	101	67-136	1
Methylene chloride	ug/L (ppb)	50	95	93	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	101	101	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	97	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	101	100	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	97	96	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	99	100	80-123	1
Chloroform	ug/L (ppb)	50	100	99	80-121	1
2-Butanone (MEK)	ug/L (ppb)	250	107	105	57-149	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	103	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	100	100	83-130	0
1,1-Dichloropropene	ug/L (ppb)	50	100	100	77-129	0
Carbon tetrachloride	ug/L (ppb)	50	102	104	75-158	2
Benzene	ug/L (ppb)	50	98	98	69-134	0
Trichloroethene	ug/L (ppb)	50	97	97	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	100	100	77-123	0
Bromodichloromethane	ug/L (ppb)	50	105	106	81-133	1
Dibromomethane	ug/L (ppb)	50	103	102	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	101	99	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	50	105	103	82-132	2
Toluene	ug/L (ppb)	50	94	94	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	100	99	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	96	96	75-124	0
2-Hexanone	ug/L (ppb)	250	93	90	60-136	3
1,3-Dichloropropane	ug/L (ppb)	50	98	98	76-126	0
Tetrachloroethene	ug/L (ppb)	50	93	94	76-121	1
Dibromochloromethane	ug/L (ppb)	50	113	114	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	99	98	82-125	1
Chlorobenzene	ug/L (ppb)	50	94	93	83-114	1
Ethylbenzene	ug/L (ppb)	50	92	92	77-124	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	102	103	84-127	1
m,p-Xylene	ug/L (ppb)	100	93	93	83-125	0
o-Xylene	ug/L (ppb)	50	94	94	81-121	0
Styrene	ug/L (ppb)	50	93	93	84-119	0
Isopropylbenzene	ug/L (ppb)	50	93	94	85-117	1
Bromoform	ug/L (ppb)	50	114	115	74-136	1
n-Propylbenzene	ug/L (ppb)	50	93	93	74-126	0
Bromobenzene	ug/L (ppb)	50	98	97	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	96	95	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	99	97	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	97	96	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	94	94	77-127	0
4-Chlorotoluene	ug/L (ppb)	50	93	92	78-128	1
tert-Butylbenzene	ug/L (ppb)	50	98	98	80-123	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	94	92	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	95	94	80-125	1
p-Isopropyltoluene	ug/L (ppb)	50	93	93	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	50	94	94	85-116	0
1,4-Dichlorobenzene	ug/L (ppb)	50	91	91	84-121	0
1,2-Dichlorobenzene	ug/L (ppb)	50	94	93	85-116	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	97	96	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	94	93	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	90	91	53-141	1
Naphthalene	ug/L (ppb)	50	90	90	64-133	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	88	88	65-136	0

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 403243-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	26	27	10-142	4
Chloromethane	mg/kg (ppm)	2.5	<0.5	53	53	10-126	0
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	54	55	10-138	2
Bromomethane	mg/kg (ppm)	2.5	<0.5	66	70	10-163	6
Chloroethane	mg/kg (ppm)	2.5	<0.5	60	64	10-176	6
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	62	63	10-176	2
Acetone	mg/kg (ppm)	12.5	<0.5	82	82	10-163	0
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	61	62	10-160	2
Methylene chloride	mg/kg (ppm)	2.5	<0.5	67	67	10-156	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	81	81	21-145	0
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	65	65	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	75	75	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	76	76	10-158	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	76	25-135	0
Chloroform	mg/kg (ppm)	2.5	<0.05	79	79	21-145	0
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	86	85	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	80	80	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	76	76	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	71	17-140	0
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	74	74	9-164	0
Benzene	mg/kg (ppm)	2.5	<0.03	73	73	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	<0.03	71	71	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	78	78	30-135	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	82	80	23-155	2
Dibromomethane	mg/kg (ppm)	2.5	<0.05	78	79	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	82	81	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	79	77	28-144	3
Toluene	mg/kg (ppm)	2.5	<0.05	73	73	35-130	0
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	78	76	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	79	79	10-205	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	79	77	15-166	3
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	79	78	31-137	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	70	70	20-133	0
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	88	85	28-150	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	78	77	28-142	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	75	75	32-129	0
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	73	74	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	83	84	31-143	1
m,p-Xylene	mg/kg (ppm)	5	<0.1	75	75	34-136	0
o-Xylene	mg/kg (ppm)	2.5	<0.05	77	77	33-134	0
Styrene	mg/kg (ppm)	2.5	<0.05	77	76	35-137	1
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	78	78	31-142	0
Bromoform	mg/kg (ppm)	2.5	<0.05	87	83	21-156	5
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	73	72	23-146	1
Bromobenzene	mg/kg (ppm)	2.5	<0.05	77	76	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	75	75	18-149	0
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	82	80	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	79	79	25-144	0
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	75	74	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	74	73	31-136	1
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	79	79	30-137	0
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	74	73	10-182	1
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	76	76	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	76	75	21-149	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	77	76	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	75	29-129	1
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	78	77	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	77	74	11-161	4
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	77	76	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	76	75	10-142	1
Naphthalene	mg/kg (ppm)	2.5	<0.05	75	75	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	75	74	20-144	1

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	60	10-146
Chloromethane	mg/kg (ppm)	2.5	74	27-133
Vinyl chloride	mg/kg (ppm)	2.5	82	22-139
Bromomethane	mg/kg (ppm)	2.5	76	38-114
Chloroethane	mg/kg (ppm)	2.5	71	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	90	10-196
Acetone	mg/kg (ppm)	12.5	102	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	84	47-128
Methylene chloride	mg/kg (ppm)	2.5	88	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	99	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	84	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	95	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	94	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	95	72-113
Chloroform	mg/kg (ppm)	2.5	97	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	108	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	98	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	96	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	89	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	96	60-139
Benzene	mg/kg (ppm)	2.5	90	68-114
Trichloroethene	mg/kg (ppm)	2.5	88	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	101	72-130
Dibromomethane	mg/kg (ppm)	2.5	97	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	104	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	98	75-136
Toluene	mg/kg (ppm)	2.5	90	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	95	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	96	75-113
2-Hexanone	mg/kg (ppm)	12.5	97	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	96	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	87	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	110	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	95	74-132
Chlorobenzene	mg/kg (ppm)	2.5	91	76-111
Ethylbenzene	mg/kg (ppm)	2.5	90	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	104	69-135
m,p-Xylene	mg/kg (ppm)	5	91	78-122
o-Xylene	mg/kg (ppm)	2.5	94	77-124
Styrene	mg/kg (ppm)	2.5	93	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	95	76-127
Bromoform	mg/kg (ppm)	2.5	114	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	89	74-124
Bromobenzene	mg/kg (ppm)	2.5	93	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	92	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	101	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	98	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	92	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	89	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	96	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	90	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	93	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	92	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	92	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	91	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	94	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	99	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	93	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	90	50-153
Naphthalene	mg/kg (ppm)	2.5	93	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	91	63-138

Date of Report: 03/26/14
Date Received: 03/18/14
Project: 2013-364, F&BI 403230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: 403267-07 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	<0.01	86	84	44-129	2
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	91	90	52-121	1
Acenaphthene	mg/kg (ppm)	0.17	<0.01	87	86	51-123	1
Fluorene	mg/kg (ppm)	0.17	<0.01	89	88	37-137	1
Phenanthrene	mg/kg (ppm)	0.17	<0.01	88	87	45-124	1
Anthracene	mg/kg (ppm)	0.17	<0.01	87	85	32-124	2
Fluoranthene	mg/kg (ppm)	0.17	<0.01	87	88	50-125	1
Pyrene	mg/kg (ppm)	0.17	<0.01	89	85	41-135	5
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	83	82	23-144	1
Chrysene	mg/kg (ppm)	0.17	<0.01	87	87	45-122	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	92	85	31-144	8
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	83	83	45-130	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	87	81	39-128	7
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	82	84	28-146	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	77	78	46-129	1
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	77	76	37-133	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	89	58-121
Acenaphthylene	mg/kg (ppm)	0.17	92	54-121
Acenaphthene	mg/kg (ppm)	0.17	89	54-123
Fluorene	mg/kg (ppm)	0.17	91	56-127
Phenanthrene	mg/kg (ppm)	0.17	88	55-122
Anthracene	mg/kg (ppm)	0.17	85	50-120
Fluoranthene	mg/kg (ppm)	0.17	90	54-129
Pyrene	mg/kg (ppm)	0.17	88	53-127
Benz(a)anthracene	mg/kg (ppm)	0.17	86	51-115
Chrysene	mg/kg (ppm)	0.17	91	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	95	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	89	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	85	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	96	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	89	50-141
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	88	52-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

403230

SAMPLE CHAIN OF CUSTODY

ME 3/18/14 E03 / VS3 / V1

Page # 1 of 2

Send Report To: Jerry Sawetz
Company: RGI
Address: 17522 Bothell Way NE
City, State, ZIP: Bothell, WA 98011
Phone #: 425-415-0551 Fax #:

SAMPLERS (signature): [signature]
PROJECT NAME/NO.: 2013-364
PO#:
REMARKS: Archive samples for potential followup analyses

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 3/19 am
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	PAHs	Dw/SG				Notes
UA-4E:12	01 A-E	3/18/14	900	Soil	5	X												(X)-per JS 3/19/14 ME
UA-5E:12	02		1230		5	X												
UA-6S:12	03		1240		5	X												X-per JS 3/19/14 ME
UA-7S:12	04		1250		5	X												
UA-8W:12	05		1300		5	X			(X)			(X)	(X)					
UA-9W:12	06		920		5	X												
UA-11W:12	07		1010		5	X												
NWEX-10:6	08		1000		5	X			(X)			(X)	(X)					
NWEX-12B:9	09		1040		5	X												
UA-WC	10 A-F		830		6	(X)			(X)			(X)		★				~~Hold~~

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Jerry Sawetz	RGI	3/18/14	
Received by:	[signature]	David	F&BI	11	15:3[illegible]
Relinquished by:					
Received by:					

Samples received at 5 °C

403230

SAMPLE CHAIN OF CUSTODY

ME 3/18/14

E03/VS3/V1

Page # 2 of 2

Send Report To Jerry Sawetz

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone # 425-415-0551 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 2013-364

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH 3/19 am

Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
SSC-5	11	3/18/14	1405	Soil	1	X												
SSC-6	12	3/18/14	1410	Soil	1	X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Jerry Sawetz	RGI	3/18/14	
Received by:		DOW	F&BI	11	15:20
Relinquished by:					
Received by:					

Samples received at 5 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 25, 2014

Jerry Sawetz, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Sawetz:

Included are the results from the testing of material submitted on March 20, 2014 from the 2013-364, F&BI 403274 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0325R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 20, 2014 by Friedman & Bruya, Inc. from the The Riley Group 2013-364, F&BI 403274 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
403274-01	UA-1B:14
403274-02	UA-2B:14
403274-03	UA-3B:14

All quality control requirements were acceptable.

Date of Report: 03/25/14
Date Received: 03/20/14
Project: 2013-364, F&BI 403274
Date Extracted: 03/20/14
Date Analyzed: 03/20/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
UA-1B:14 403274-01	<50	<250	87
UA-2B:14 403274-02	<50	<250	85
UA-3B:14 403274-03	<50	<250	83
Method Blank 04-557 MB	<50	<250	110

Date of Report: 03/25/14
Date Received: 03/20/14
Project: 2013-364, F&BI 403274

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 403222-35 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	105	105	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	104	74-139

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

403274 [redacted]

SAMPLE CHAIN OF CUSTODY

ME 03-20-14 [redacted] E02 / VS1

[redacted] Page # ________ of ________

Send Report To Jerry Sawetz

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone # 425-415-0551 Fax # ________

SAMPLERS (*signature*) [signature]	
PROJECT NAME/NO. 2013-364	PO#
REMARKS	

TURNAROUND TIME
- ☒ Standard (2 Weeks)
- ☒ RUSH ________
- Rush charges authorized by ________

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
						ANALYSES REQUESTED												
UA-1B:14	01 A-E	3/20/14	1130	Soil		X												
UA-2B:14	02	3/20/14	1135	Soil		X												
UA-3B:14	03	3/20/14	1145	Soil		X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Jerry Sawetz	RGI	3/20/14	
Received by: [signature]	D d W	FrBr	〃	13:15
Relinquished by:				
Received by:		Samples received at 6 °C		

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
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fbi@isomedia.com
www.friedmanandbruya.com

May 20, 2014

Jerry Sawetz, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Sawetz:

Included are the results from the testing of material submitted on May 16, 2014 from the 2013-364, F&BI 405315 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0520R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 16, 2014 by Friedman & Bruya, Inc. from the The Riley Group 2013-364, F&BI 405315 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
405315 -01	UA-WC-2

The 8270D laboratory control sample and laboratory control sample duplicate failed the relative percent difference for indeno(1,2,3-cd)pyrene. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 05/20/14
Date Received: 05/16/14
Project: 2013-364, F&BI 405315
Date Extracted: 05/16/14
Date Analyzed: 05/16/14

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
UA-WC-2 405315-01	700	1,100	98
Method Blank 04-979 MB2	<50	<250	86

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	UA-WC-2	Client:	The Riley Group
Date Received:	05/16/14	Project:	2013-364, F&BI 405315
Date Extracted:	05/16/14	Lab ID:	405315-01 1/2
Date Analyzed:	05/16/14	Data File:	051617.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	112	50	150
Benzo(a)anthracene-d12	98	50	129

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2013-364, F&BI 405315
Date Extracted:	05/16/14	Lab ID:	04-983 mb
Date Analyzed:	05/16/14	Data File:	051616.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	50	150
Benzo(a)anthracene-d12	101	50	129

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Date of Report: 05/20/14
Date Received: 05/16/14
Project: 2013-364, F&BI 405315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	97	95	61-133	2

Date of Report: 05/20/14
Date Received: 05/16/14
Project: 2013-364, F&BI 405315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	1	98	95	60-118	3
Chrysene	ug/L (ppb)	1	93	92	66-125	1
Benzo(b)fluoranthene	ug/L (ppb)	1	92	95	55-135	3
Benzo(k)fluoranthene	ug/L (ppb)	1	85	91	62-125	7
Benzo(a)pyrene	ug/L (ppb)	1	88	86	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	92	74	36-142	22 vo
Dibenz(a,h)anthracene	ug/L (ppb)	1	86	71	37-133	19

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

405315

MC 5/16/14 CO1

SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Jerry Sawetz

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone # 425-415-0551 Fax #

SAMPLERS *(signature)*

PROJECT NAME/NO. 2013-364

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH ASAP

Rush charges authorized by Jerry Sawetz

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	cPAHs						Notes
UA-WC-2	-01 A-B	5/16/14	820	water		X						X						
																	Samples received at 4 °C	
																	Samples received at °C	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Jerry Sawetz	RGI	5/16/14	0930
Received by:	Michael Erdahl	FB	↓	↓
Relinquished by:				
Received by:				

Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

June 3, 2014

Jerry Sawetz
The Riley Group
17522 Bothell Way NE
Suite A
Bothell, WA 98011

Dear Mr. Sawetz:

Please find enclosed the analytical data report for the GSA Project located in Seattle, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, and Polyaromatic Hydrocarbons (PAH) by EPA Method 8270 SIM on May 27 & 28, 2014.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. All soil samples are reported on a dry weight basis. An invoice for this analytical work is enclosed.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Jamie L. Deyman
President
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

www.LibbyEnvironmental.com

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GSA PROJECT
The Riley Group
Seattle, Washington
Libby Project # L140527-20
Client Project # 2013-364

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/27/14	96	nd	nd
A1-1W:6	5/27/14	int	nd	22400
A1-1W:6 Dup	5/27/14	int	nd	25200
A1-2N:6	5/27/14	101	nd	nd
A1-3E:6	5/27/14	107	nd	nd
A1-4B:8	5/27/14	99	nd	nd
A2-1W:6	5/27/14	103	nd	nd
A2-1W:12	5/27/14	99	nd	nd
A2-2W:8	5/27/14	104	nd	nd
A2-3W:8	5/27/14	99	nd	nd
A1-5W:6	5/27/14	102	nd	nd
A1-6S:6	5/27/14	97	nd	nd
A1-7B:8	5/27/14	107	nd	nd
A1-8W:6	5/27/14	103	nd	nd
A1-8W:6 Dup	5/27/14	96	nd	nd
A2-4B:12	5/27/14	105	nd	nd
Practical Quantitation Limit			25	40

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kyle Williams

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Jamie Deyman
4139 Libby Rd. NE
Olympia, WA 98506

RE: GSA
Lab ID: 1405243

May 28, 2014

Attention Jamie Deyman:

Fremont Analytical, Inc. received 3 sample(s) on 5/27/2014 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

CC:
Jerry Sawetz

Fremont Analytical

Date: *05/28/2014*

CLIENT: Libby Environmental
Project: GSA
Lab Order: 1405243

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1405243-001	A1-4B:8	05/27/2014 7:50 AM	05/27/2014 1:15 PM
1405243-002	A1-5W:6	05/27/2014 10:25 AM	05/27/2014 1:15 PM
1405243-003	A1-7B:8	05/27/2014 10:35 AM	05/27/2014 1:15 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Fremont Analytical

Case Narrative

WO#: **1405243**
Date: **5/28/2014**

CLIENT: Libby Environmental
Project: GSA

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Fremont Analytical

Analytical Report

WO#: **1405243**
Date Reported: **5/28/2014**

CLIENT: Libby Environmental
Project: GSA

Lab ID: 1405243-001 **Collection Date:** 5/27/2014 7:50:00 AM
Client Sample ID: **A1-4B:8** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7650		Analyst: MD
Benz(a)anthracene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Chrysene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Benzo(b)fluoranthene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Benzo(k)fluoranthene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Benzo(a)pyrene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Indeno(1,2,3-cd)pyrene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Dibenz(a,h)anthracene	ND	46.3		µg/Kg	1	5/28/2014 4:17:00 PM
Surr: 2-Fluorobiphenyl	113	50.4-142		%REC	1	5/28/2014 4:17:00 PM
Surr: Terphenyl-d14 (surr)	133	48.8-157		%REC	1	5/28/2014 4:17:00 PM

Lab ID: 1405243-002 **Collection Date:** 5/27/2014 10:25:00 AM
Client Sample ID: **A1-5W:6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7650		Analyst: MD
Benz(a)anthracene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Chrysene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Benzo(b)fluoranthene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Benzo(k)fluoranthene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Benzo(a)pyrene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Indeno(1,2,3-cd)pyrene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Dibenz(a,h)anthracene	ND	48.7		µg/Kg	1	5/28/2014 6:44:00 PM
Surr: 2-Fluorobiphenyl	111	50.4-142		%REC	1	5/28/2014 6:44:00 PM
Surr: Terphenyl-d14 (surr)	136	48.8-157		%REC	1	5/28/2014 6:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *5/28/2014*

Work Order: 1405243
CLIENT: Libby Environmental
Project: GSA

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-7650**	SampType: **MBLK**			Units: **µg/Kg**		Prep Date: **5/27/2014**		RunNo: **14509**		
Client ID: **MBLKS**	Batch ID: **7650**					Analysis Date: **5/28/2014**		SeqNo: **299262**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Surr: 2-Fluorobiphenyl	503		500.0		101	50.4	142				
Surr: Terphenyl-d14 (surr)	677		500.0		135	48.8	157				

Sample ID: **LCS-7650**	SampType: **LCS**			Units: **µg/Kg**		Prep Date: **5/27/2014**		RunNo: **14509**		
Client ID: **LCSS**	Batch ID: **7650**					Analysis Date: **5/28/2014**		SeqNo: **299263**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	789	50.0	1,000	0	78.9	41.9	136				
Chrysene	704	50.0	1,000	0	70.4	51.4	135				
Benzo(b)fluoranthene	658	50.0	1,000	0	65.8	39.7	137				
Benzo(k)fluoranthene	611	50.0	1,000	0	61.1	45.7	138				
Benzo(a)pyrene	624	50.0	1,000	0	62.4	45.3	135				
Indeno(1,2,3-cd)pyrene	581	50.0	1,000	0	58.1	45.4	137				
Dibenz(a,h)anthracene	633	50.0	1,000	0	63.3	45.8	134				
Surr: 2-Fluorobiphenyl	539		500.0		108	50.4	142				
Surr: Terphenyl-d14 (surr)	626		500.0		125	48.8	157				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: 5/28/2014

Work Order: 1405243
CLIENT: Libby Environmental
Project: GSA

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1405224-012ADUP**	SampType: **DUP**			Units: **µg/Kg-dry**		Prep Date: **5/27/2014**		RunNo: **14509**			
Client ID: **BATCH**	Batch ID: **7650**					Analysis Date: **5/28/2014**		SeqNo: **299268**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	54.0						0		30	
Chrysene	ND	54.0						0		30	
Benzo(b)fluoranthene	ND	54.0						0		30	
Benzo(k)fluoranthene	ND	54.0						0		30	
Benzo(a)pyrene	ND	54.0						0		30	
Indeno(1,2,3-cd)pyrene	ND	54.0						0		30	
Dibenz(a,h)anthracene	ND	54.0						0		30	
Surr: 2-Fluorobiphenyl	589		540.4		109	50.4	142		0		
Surr: Terphenyl-d14 (surr)	689		540.4		128	48.8	157		0		

Sample ID: **1405224-014AMS**	SampType: **MS**			Units: **µg/Kg-dry**		Prep Date: **5/27/2014**		RunNo: **14509**			
Client ID: **BATCH**	Batch ID: **7650**					Analysis Date: **5/28/2014**		SeqNo: **299270**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	860	56.8	1,137	0	75.7	57.5	169				
Chrysene	686	56.8	1,137	0	60.3	45.2	146				
Benzo(b)fluoranthene	666	56.8	1,137	0	58.6	42.2	168				
Benzo(k)fluoranthene	661	56.8	1,137	0	58.2	48	161				
Benzo(a)pyrene	641	56.8	1,137	0	56.4	34.4	179				
Indeno(1,2,3-cd)pyrene	556	56.8	1,137	0	48.9	41.1	165				
Dibenz(a,h)anthracene	595	56.8	1,137	0	52.4	38.1	166				
Surr: 2-Fluorobiphenyl	650		568.3		114	50.4	142				
Surr: Terphenyl-d14 (surr)	722		568.3		127	48.8	157				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**1405243**
Logged by:	**Clare Griggs**	Date Received:	**5/27/2014 1:15:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp °C	Condition
Cooler	7.0	Good
Sample	9.1	Good

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 5-27-14 Page: 1 of 1

Client: The Riley Group

Project Manager: Jerry Sawetz

Address: ~~4735 E Marginal Way S~~ 17522 Bothell Way NE Suite A

Project Name: GSA

City: ~~Seattle~~ Bothell State: WA Zip: 98011

Location: 4735 E Marginal Way S City, State: Seattle, WA

Phone: 425-415-0551 Fax:

Collector: Jerry Sawetz Date of Collection: 5/27/14

Client Project # 2013-364

Email: jsawetz@riley-group.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-Dx Ext.	PAH 8270	PCB's 8082	MTCA 5 Metals			Field Notes
1	A1-1W:6		0740	soil	4oz							X							
2	A1-2N:6		800									X							
3	A1-3E:6		745									X							
4	A1-4B:8		750									X	X						
5	A2-1W:6		845									X							
6	A2-1W:12		850									X							
7	A2-2W:8		900									X							
8	A2-3W:8		905									X							
9	A1-5W:6		1025									X	X						
10	A1-6S:6		1030									X							
11	A1-7B:8		1035									X	X						Hold PAHs
12	A1-8W:6		1040									X							
13	A2-4B:12		1220									X							
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
Jerry Sawetz	5/27/14 1350		5-27-14 1350
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt:

Good Condition?	
Cold?	
Seals Intact?	
Total Number of Containers	

Remarks:

ML

RUSH PAH

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

Appendix B

RILEYGROUP

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

FOR OFFICE USE ONLY
Site #:_____
Facility Site ID #:_____

INSTRUCTIONS

When a release has not been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person certified by ICC or a Washington registered professional engineer who is competent, by means of examination, experience, or education, to perform site assessments. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This information must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
PO Box 47655
Olympia WA 98504-7655

SITE INFORMATION

Site ID Number (Available from Ecology if the tanks are registered): _____

Site/Business Name: GSA Federal Center South

Site Address: 4735 East Marginal Way South (Street) Telephone: (253) 397-6862

Seattle (City) Washington (State) 98124 (Zip Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
UST 1	30,000-gallons	Bunker C / Diesel
UST 2	30,000-gallons	Bunker C / Diesel
UST 3	30,000-gallons	Bunker C / Diesel

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

___ Investigate suspected release due to on-site environmental contamination.
___ Investigate suspected release due to off-site environmental contamination.
___ Extend temporary closure of UST system for more than 12 months.
___ UST system undergoing change-in-service.
X UST system permanently closed with tank removed.
___ Abandoned tank containing product.
___ Required by Ecology or delegated agency for UST system closed before 12/22/88.
___ Other (describe): _____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.	YES	NO
1. The location of the UST site is shown on a vicinity map.	JS	
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	JS	
3. A summary of UST system data is provided. (see Section 3.1.)	JS	
4. The soils characteristics at the UST site are described. (see Section 5.2)	JS	
5. Is there any apparent groundwater in the tank excavation?	JS	
6. A brief description of the surrounding land use is provided. (see Section 3.1)	JS	
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	JS	
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	JS	
- groundwater samples distinguished from soil samples (if applicable)	JS	
- samples collected from stockpiled excavated soil	JS	
- tank and piping locations and limits of excavation pit	JS	
- adjacent structures and streets	JS	
- approximate locations of any on-site and nearby utilities		JS
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	JS	
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	JS	
11. Any factors that may have compromised the quality of the data or validity of the results are described.	JS	

12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.	JS	

SITE ASSESSOR INFORMATION

Jeremy Sawetz
Person registered with Ecology

The Riley Group
Firm Affiliated with

Business Address: 17522 Bothell Way NE
Street

Telephone: (425) 415-0551

Bothell
City

WA
State

98011
Zip Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

5/14/14
Date

Signature of Person Registered with Ecology

If you need this publication in an alternate format, please contact Toxics Cleanup Program at (360) 407-7170. For persons with a speech or hearing impairment call 711 for relay service or 800-833-6388 for TTY.

Appendix C

RILEYGROUP

SITE	TICKET #	CELL
01	909138	

SITE
REGIONAL DISPOSAL INTERMODAL
3rd and lander
Seattle, WA --

CUSTOMER
013213
Saybr Construciton Inc
3852 S 66th Street
Tacoma, WA 98409
LW-14143

213/083.2020 M
CM
*CONTAMINATED TMS

WEIGHMASTER: IN - Drinda L. OUT - Leslie U.

DATE/TIME IN	DATE/TIME OUT
06-04-2014 2:31 pm	06-4-2014 2:48 pm

VEHICLE	CONTAINER
SOIL	

REFERENCE: 122 MAR VAC INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	81,400	NET TONS	20.83	
SCALE OUT	TARE WEIGHT	39,740	NET WEIGHT	41,660	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
20.83	TN	SW-CONT SOIL W/FUEL SEATTLE/KING				

NET AMOUNT
TENDERED
CHANGE
CHECK#

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

RS-F042UPR (07/12)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL
3rd and lander
Seattle, WA --

CUSTOMER
013213
Saybr Construciton Inc
3852 S 66th Street
Tacoma, WA 98409
LW-14143

SITE	TICKET #	CELL
01	909138	

WEIGHMASTER: IN - Drinda L. OUT - Leslie U.

DATE/TIME IN	DATE/TIME OUT
06-04-2014 2:31 pm	06-4-2014 2:48 pm

VEHICLE	CONTAINER
SOIL	

REFERENCE: 122 MAR VAC INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	81,400	NET TONS	20.83	
SCALE OUT	TARE WEIGHT	39,740	NET WEIGHT	41,660	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
20.83	TN	SW-CONT SOIL W/FUEL SEATTLE/KING				

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL
3rd and lander
Seattle, WA --

CUSTOMER
013213
Saybr Construciton Inc
3852 S 66th Street
Tacoma, WA 98409
LW-14143

213163, 2020 M
TMB
* CONTAMINATION *

SITE	TICKET #	CELL
01	909157	

WEIGHMASTER: Leslie U.

DATE/TIME IN	DATE/TIME OUT
06-04-2014 4:05 pm	06-4-2014 4:25 pm

VEHICLE	CONTAINER
SOIL	

REFERENCE: 122 mar INVOICE

BILL OF LADING

SCALE IN	GROSS WEIGHT	94,780	NET TONS	27.37	
SCALE OUT	TARE WEIGHT	40,040	NET WEIGHT	54,740	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
27.37	TN	SW-CONT SOIL W/FUEL SEATTLE/KING				

NET AMOUNT
TENDERED
CHANGE
CHECK#

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

RS-F042UPR (07/12)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL
3rd and lander
Seattle, WA --

CUSTOMER
013213
Saybr Construciton Inc
3852 S 66th Street
Tacoma, WA 98409
LW-14143

SITE	TICKET #	CELL
01	909157	

WEIGHMASTER: Leslie U.

DATE/TIME IN	DATE/TIME OUT
06-04-2014 4:05 pm	06-4-2014 4:25 pm

VEHICLE	CONTAINER
SOIL	

REFERENCE: 122 mar INVOICE

BILL OF LADING

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QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
27.37	TN	SW-CONT SOIL W/FUEL SEATTLE/KING				

NET AMOUNT
TENDERED
CHANGE
CHECK#

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

RS-F042UPR (07/12)

SIGNATURE _____

Certification No. LW-14143
Billing Acct No 13213
Product Code VH

BILL OF LADING

Contaminated Soil

REGIONAL DISPOSAL COMPANY
54 S Dawson Street
Seattle, WA 98134
Telephone (206) 332-7700 / Fax: (206) 332-7600

This Bill of Lading augments the Master Service Agreement ("Agreement") entered into by Saybr Contractors Inc (Generator/Agent) and Regional Disposal Company ("RDC") on 6/3/2014 (date). The terms herein are made a part of the Agreement. In the event of conflict between this Bill of Lading and the Agreement, the terms of the Agreement prevail.

RDC hereby authorizes the Wastes ("Waste") described in Certification No. LW-14143 signed by Generator/Agent on 6/3/2014 (date), for disposal at Roosevelt Regional Landfill. Contractor shall present a copy of this Bill of Lading with each shipment delivered.

Location of Waste: 4735 E Marginal Way South Seattle 98134

Method of Shipment: Customer

Additional Fees (e.g., laboratory fees, transportation fees, special handling fees, etc. If none, so state):

NA

PERFORMANCE DATE

FOR RDC TRANSPORTATION: Generator shall make the Waste available for shipment no later than _____ (date). RDC shall transport the Waste no later than _____ (date), unless RDC notifies the Generator in writing that Waste transport shall be suspended or canceled due to RDC's exercise of its right to inspect or analyze the Waste (as provided in the Agreement)

FOR GENERATOR TRANSPORTATION: Agent shall begin delivery of the Waste at [*check one*]:

☐ Roosevelt Regional Landfill. ■ Seattle Transfer Station located at Third and Lander.

Waste delivery shall begin no later than 6/3/2014 (date), and shall complete delivery of the Waste no later than 12/27/2014 (date), unless RDC notifies Generator/Agent in writing to suspend or cancel the waste delivery due to RDC's exercise of its right to inspect or analyze the Waste (As provided in the Agreement).

GENERATOR / AGENT

Signature

MICHAEL Mc ALEER PM
Printed Name and Title

6-3-14
Date

REGIONAL DISPOSAL COMPANY

Leslie Whiteman
Signature

Leslie Whiteman SW Sales
Printed Name and Title

6/4/2014
Date