BLOCK 45
UST SITE ASSESSMENT REPORT
SEATTLE, WASHINGTON

HWA PROJECT NO. 2012 048

Prepared for
City Place VII, LLC

March 20, 2014

HWA GEOSCIENCES INC.
• Geotechnical Engineering
• Hydrogeology
• Geoenvironmental Services
• Inspection & Testing

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CITY PLACE VII, LLC
BLOCK 45
UST SITE ASSESSMENT REPORT

1.0 INTRODUCTION

City Place VII, LLC (City Place) contracted HWA GeoSciences Inc. (HWA) to provide underground storage tank (UST) environmental consulting services at the Block 45 Development Project (the 'Site') located at 400 9th Avenue North in Seattle, Washington (Figure 1). The approximate location of the USTs had been determined during prior Phase II Environmental Site Assessments at the site (Hart Crowser, 1994; GeoEngineers, 2011; HWA, 2012).

The USTs were encountered during construction activities and preparation for soldier pile installation. This report describes the site assessment conducted during removal of two USTs removed from the site on January 21, 2014. HWA performed the UST site assessments per Washington Department of Ecology guidance documents (Ecology, 2003) and regulations (Chapter 173-360 WAC).

1.1 PROJECT BACKGROUND/SITE DESCRIPTION

The Site is currently undergoing redevelopment, and City Place's contractors were preparing the site for mass-excavation activities in preparation for construction of a multi-story, mixed-use building with multiple levels of underground parking. The USTs were removed during these activities. Figure 1 shows the subject property and surrounding areas.

The Site includes the west half of the block bounded on the north by Republican Street, on the east by Westlake Avenue North, on the south by Harrison Street, and on the west by 9th Avenue North. Figures 2 and 3 show the site plan and UST locations.

Information and data from Hart Crowser (1994) indicates that two underground storage tanks (USTs) were located in the alley near the southeast corner of the Site. The larger (south) UST was an active heating-oil UST, and the smaller (north) UST was an inactive UST. Investigation of the soils near the USTs by Hart Crowser revealed diesel and oil-range petroleum hydrocarbon concentrations in soil beneath the sidewalk and Harrison Street south of the alley. The horizontal and vertical extent of petroleum impacts was not determined by previous studies.

HWA conducted a site assessment to observe and document environmental conditions after removal of the USTs on January 21, 2014.

1.2 SCOPE OF WORK

HWA's scope of work for the UST site assessment included the following tasks:

- Inspect the USTs and observe the excavation of petroleum-affected soils;
- Collect post-excavation soil samples;
- Submit samples to an Ecology accredited analytical laboratory for petroleum hydrocarbon and other associated analyses; and,
- Prepare this UST Site Assessment report per Washington regulations at Chapter 173-360 WAC and make recommendations based on the results.

2.0 FINDINGS

The following sections describe site conditions, UST removal, and soil sampling activities conducted at 400 9th Avenue North in Seattle, Washington.

2.1 SITE GEOLOGY

Background geologic information for the subject property was obtained from a map entitled *Composite Geologic Map of the Sno-King Area, Central Puget Lowland, Washington* (Booth, et al., 2004). According to that map, surficial soils in the vicinity of the subject property are primarily modified land sourced from re-graded lake deposits and ice-contact deposits (a combination of till and coarser outwash materials).

Recent soil borings advanced by GeoEngineers in 2011 and HWA in 2012 indicate that the north portion of the Site is underlain by fill deposits from ground surface to a depth of approximately 12 feet below ground surface (bgs). The fill generally consisted of very loose to medium dense silty sand with variable gravel content, and gravel with varying amounts of sand and fines. Fill deposits overlie deposits of glacially consolidated soils (glacial till) in the north portion of the Site. In the central and south portions of the Site where fill deposits are not present, glacial till is encountered at ground surface and extends to depths ranging from 30 to 40 feet bgs. Glacial till deposits are underlain by sand and gravel deposits (glacial outwash) that appear to be laterally contiguous beneath the Site.

Excavation at the UST location (approximately 12 feet bgs at adjoining street level) indicated site soils generally consist of up to three feet of silty sand fill overlying native soils. Deeper soils (greater than 3 feet bgs) observed in the UST excavation consisted of very dense silty sand.

2.2 GROUND WATER/SURFACE WATER

HWA did not encounter significant ground water to a depth of 12 feet bgs, the maximum depth of UST excavation. Construction dewatering for mass-excavation had not yet commenced at the site.

Ground water was encountered in previous HWA borings and on-site monitoring wells at depths ranging from approximately 25 to 45 feet bgs. The depth to ground water generally increased to the south (HWA, 2012).

Based on survey information for monitoring wells located on the site and adjoining parcels (Blocks 43 and 44 , to the north), the inferred direction of shallow ground water flow over the three block area is generally to the east, with localized gradients from south to northeast (HWA, 2012). The inferred direction of shallow ground water flow on Block 43 is generally to the north-northeast.

Based on local topography the ground water gradient would be expected to be to the northeast, towards Lake Union. The measured gradients may be a function of local variations in ground water flow patterns resulting from recent construction in the area, which included installation of

numerous new underground utilities along Mercer Street as well as construction of underground parking facilities for many of the new buildings in the South Lake Union neighborhood.

2.3 UST REMOVAL

On January 21, 2014, Northwest Construction, the project excavation subcontractor, removed the USTs under the supervision of a representative of Marine Vacuum Services, Inc. (Mar-Vac), a licensed decommissioning supervisor. An HWA Washington Licensed Geologist/Certified UST Site Assessor was on site on January 21 and observed the UST removal and condition of soils adjacent to the former UST locations after removal. Site photographs of the USTs after removal are included as Appendix A.

The USTs were located in the southeast corner of the parcel. The tops of two USTs (one 2,750 gallon tank and one 350 gallon tank) were encountered at approximately three feet below the adjacent sidewalk grade. A marine chemist inerted the USTs and a Seattle Fire Department representative approved the removal permit. Documentation regarding the UST cleanout and permitting is included in Appendix B.

Following UST removal from the excavation, the area around the USTs was overexcavated to provide access to the two USTs. Soils associated with the USTs were temporarily stockpiled on site pending laboratory analytical results and disposal authorization from a licensed disposal facility.

The USTs were welded steel construction. Rust was observed on the surface of the USTs, however, no corrosion holes or other significant damage was noted. Fill and distribution lines associated with the USTs were present at the time of the UST removal. The lines were found to be stubbed off, and no dispensers or other appurtenances were present. All lines were removed during the tank removal.

After removal Mar-Vac transported the tanks off-site for final cleaning and preparation for disposal at a metal recycling facility. Appendix B contains documentation of UST disposal.

2.4 UST EXCAVATION SOIL SAMPLING & ANALYSIS

HWA preformed a UST Site Assessment after the UST removals, and observed the soil conditions. Petroleum staining and odors were noted in the soils underlying the USTs at the time of the assessment. Soils adjacent to the USTs were removed and stockpiled in order to excavate and remove the USTs (Figure 3). HWA collected six initial soil samples along the excavation sidewalls and base upon removal of the USTs (Figure 3). All excavated soils were temporarily backfilled within the tank excavation pending commencement of soil mass-excavation and export activities at the site.

Fremont Analytical, of Seattle, Washington, a Washington Department of Ecology (Ecology) accredited analytical laboratory analyzed samples for the following analytes:

- Total petroleum hydrocarbons (TPH) as Diesel and Oil by Washington Method NWTPH-Dx

- Total RCRA Metals by EPA Method 6000/7041A

HWA collected one soil samples from beneath each UST as well as four sidewall samples to evaluate the presence and type of contamination (Figure 3). Table 1 presents the analytical results. Appendix C presents copies of the laboratory reports.

Laboratory results indicated the presence of diesel-range petroleum hydrocarbons in four of the six samples collected adjacent to the USTs. The concentrations did not exceed the Ecology Model Toxics Control Act (MTCA) Cleanup Regulation Method A soil cleanup level (Ecology, 2007). Method A cleanup levels are employed in routine cleanups of UST sites. However, all petroleum-affected soils required segregation and removal prior to general mass-excavation at the location, as the project's clean soil receiving site, Allied Waste, could not accept soils with detectable concentrations of petroleum.

On January 27, 2014, Northwest Construction removed temporary backfill soils from the excavation and excavated the tank location to approximately 10 feet bgs. HWA collected additional soil samples of backfilled excavated soil and confirmation samples after additional excavation at the site. Based on site observations and initial assessment laboratory results, the excavation was completed to the east and south of the USTs (Figure 3).

Based on field observations and potential former tank contents, subsequent samples were also analyzed for:

- Total petroleum hydrocarbons (TPH) as Gasoline by Washington Method NWTPH-Gx
- Aromatic Hydrocarbons by EPA Method 8021B/5035A
- Total MTCA Metals by EPA Method 6000/7041A

Gasoline, diesel, and the aromatic hydrocarbon benzene exceeded the Method A soil cleanup level in three samples. Diesel-range petroleum hydrocarbons were also detected in five samples, but at concentrations below MTCA method A cleanup levels. The metals arsenic, chromium and lead were also detected in selected samples, but did not exceed cleanup levels.

On January 29, 2014, Northwest Construction excavated laterally and vertically an additional two to three feet of soils at the former tanks location (up to 13 feet bgs) (Figure 3). HWA collected an additional six sidewall and base confirmation samples. Petroleum hydrocarbons were not detected at reporting limits in any of the samples with the exception of the south sidewall. Diesel was detected in this sample, but at concentrations below MTCA cleanup levels. The soils represented by this sample (T4-S-13') are to be left in place outside of the project shoring, and HWA did not recommend any additional sampling or contaminated soil excavation.

Excavated soils were transported and disposed of at Allied Waste. A total of 145.76 tons of soil were exported. Soil disposal documentation is included in Appendix B.

TABLE 1
UST EXCAVATION
SOIL ANALYTICAL RESULTS
(All results in milligrams per kilogram (mg/kg))

Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Location	Total Petroleum Hydrocarbons by WDOE NWTPH Methods			Aromatic Petroleum Hydrocarbons by EPA Method 8260				Total RCRA Metals by EPA 6010/7471A [1] (mg/kg)			
				Gasoline	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic	Barium	Chromium	Lead
T1-E-6	6	Jan, 21, 2014	East end of 2750-gal UST		<19.6	<48.9					**1.44**	**37.2**	**29.6**	**1.94**
T1-W-6	6	Jan, 21, 2014	West end of 2750-gal UST		**23.1**	<53.1					**1.43**	**35**	**23.3**	**6.03**
T1-B-8	8	Jan, 21, 2014	Below 2750-gal UST		**550**	<54.8					**1.34**	**42.8**	**32.7**	**3.24**
T2-E-4	4	Jan, 21, 2014	East end of 350-gal UST		**36.6**	<51.5					**1.32**	**33.2**	**26.8**	**4.22**
T2-W-4	4	Jan, 21, 2014	West end of 350-gal UST		<20.9	<52.2					**1.24**	**38.2**	**31.1**	**1.62**
T2-B-6	6	Jan, 21, 2014	Below 350-gal UST		**1,870**	<50.8					**1.4**	**42.4**	**30.4**	**2.13**
T3-W-2'	2	Jan. 27, 2014	Southwest of USTs, initial excavation, shallow fill	<3.1	**252**	<44	<0.0124	<0.0124	<0.0186	<0.0124	**1.82**		**26**	**10.7**
T3-N-2'	2	Jan. 27, 2014	North sidewall, 350-gal UST	**1,490**	**20,000**	<56.3	**0.282**	**0.0659**	**2.39**	**1.165**	**1.11**		**24.9**	**27.1**
T3-Bottom	1	Jan. 27, 2014	Sample from backfill soils	<2.36	**166**	<54.1	<0.00944	<0.00944	<0.0142	<0.00944	**1.52**		**22.8**	**7.08**
T3-Bottom-2'	2	Jan. 27, 2014	Sample from backfill soils	<3.47	**183**	<46.8	<0.0139	<0.0139	<0.0208	<0.0139	**2.25**		**32.1**	**11.2**
T3-Bottom-4'	4	Jan. 27, 2014	Undisturbed soils, between USTs	<2.49	**1,280**	<46.3	<0.00995	<0.00995	0.0177	<0.00995	**0.915**		**16.8**	**1.62**
T3-Bottom-10'	10	Jan. 27, 2014	Base of initial excavation below 2750-gal UST	**828**	**7,030**	<55.8	**0.146**	**0.0651**	**1.69**	1.195	**1.19**		**28.7**	**1.71**
T3-E-8'	8	Jan. 27, 2014	East sidewall initial excavation, 2750-gal UST	<3.86	**654**	<49.9	<0.0154	<0.0154	<0.0231	<0.0154	**1.14**		**26.2**	**1.61**
T4-S-11'	11	Jan. 29, 2014	South sidewall, along shoring	<3.07	<20.8	<51.9	<0.0123	<0.0123	<0.0184	<0.0123	**1.1**		**34.4**	**1.61**
T4-S-13'	13	Jan. 29, 2014	South sidewall, along shoring	<3.87	**253**	<51.7	<0.0155	<0.0155	<0.0232	<0.0155	**1.73**		**45.8**	**1.82**
T4-N-11'	11	Jan. 29, 2014	North sidewall after overexcavation	<2.59	<21.0	<52.5	<0.0104	<0.0104	<0.0155	<0.0104	**6.6**		**38.2**	**2.34**
T4-E-10'	10	Jan. 29, 2014	East sidewall after overexcavation	<3.69	<20.6	<51.6	<0.0148	<0.0148	<0.0221	<0.0148	**1.42**		**36.1**	**1.6**
T4-Bottom-12'	12	Jan. 29, 2014	Base of excavation below 2750-gal UST	<2.28	<20.2	<50.5	<0.00912	<0.00912	<0.0137	<0.00912	**1.11**		**27.1**	**1.22**
T4-W-11'	11	Jan. 29, 2014	West sidewall after overexcavation	<2.72	<19.8	<49.5	<0.0109	<0.0109	<0.0163	<0.0109	**1.52**		**40.7**	**1.87**
MTCA Method A/B Cleanup Level [2,3]				**100/30 [4]**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**20**	**16,000 (B)**	**19/2,000 [5]**	**250**

Notes:
feet bgs – feet below ground surface
Bold – Analyte detected
Bold/underlined – Analyte exceeding cleanup level
Shaded – Soils associated with this sample were subsequently removed remedial excavation activities.
< – Not detected at given reporting limits
Blank – not analyzed
1. Only detected analytes shown; see laboratory reports for complete list of compounds analyzed. See Appendix C for a complete list of compounds analyzed2. Washington Model Toxics Control Act Method A (Table 740-1) soil cleanup level for unrestricted land use, shown for reference only
3. Washington Model Toxics Control Act Method B (CLARC) soil cleanup level, shown for reference only
These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.
4. The MTCA Method A soil cleanup level for gasoline mixtures without benzene and if the total of ethylbenzene, toluene, plus xylenes is less than 1% of the gasoline mixture is 100 mg/kg. The soil cleanup level for all other gasoline mixtures is 30
5. The Method A soil cleanup levels for Chromium are 19 mg/kg for Cr VI and 2000 mg/kg for Cr III. Analyses are for total chromium. Geochemical conditions on site would not likely cause oxidation to hexavalent chromium having a cleanup level of 19 mg/kg

2.5 QUALITY CONTROL REVIEW

HWA reviewed quality control results of the analytical data. Surrogate recoveries, method blanks, laboratory duplicates, matrix spikes, and matrix spike duplicates were all within control limits.

The analyses of the soil samples collected on January 21, 27, and 29, 2014 were determined to be acceptable for their intended use.

3.0 CONCLUSIONS / RECOMMENDATIONS

Based on these findings, a release associated with the former USTs has occurred at the Site. Concentrations of petroleum hydrocarbons and aromatic hydrocarbons in exceedance of MTCA cleanup levels were identified in soils surrounding the former UST locations.

3.1 SOILS

Subsequent soil excavation activities at the site removed all petroleum-affected soils surrounding and below the UST locations, to depths of up to 13 feet. Soils containing detectable petroleum at concentrations below MTCA Method A cleanup levels remain in place along the south sidewall below sidewalks and the street surface, but are outside of structural piles installed along the City Place Block 45 property line to support the mass excavation. Exposure to these soils is not anticipated; however, if any subsurface activity is planned in the area, such as utility installation, contractors should be notified of the presence of petroleum-contaminated soils for health and safety and soil handling purposes.

3.2 GROUND WATER

Ground water was not encountered during the UST and soils excavations. Ground water sampling and analysis is not recommended.

3.3 REGULATORY COMPLIANCE

The Ecology UST regulations, Chapter 173-360 WAC, address reporting, closure and corrective action requirements for USTs.

To certify that (1) the UST site was properly investigated for the presence of a release, and (2) the closure was appropriately conducted in accordance with the Washington Administrative Code 173-360, a Site Assessment Checklist and Permanent Closure Checklist was completed. These checklists are included with this report as Appendix B. Following delivery of the excavated tanks to the disposal facility, a "disposal certification" was issued verifying the date of final destruction (as scrap steel).

To satisfy Ecology reporting requirements for site assessment checklists and results, a copy of this report should be forwarded to the local Ecology office:

Washington State Department of Ecology
Northwest Regional Office
3190 160th Ave. SE
Bellevue, WA 98008-5452
(425) 649-7000

4.0 REFERENCES

Booth et al., 2004, *Composite Geologic Map of the Sno-King Area, Central Puget Lowland, Washington,* Published by the Seattle-Area Geologic Mapping Project.

GeoEngineers, 2011, *Limited Subsurface Characterization Block 45 – South Lake Union Development*, Southeast Corner of Republican Street and 9th Avenue North, Seattle, Washington, June 1, 2011.

Hart Crowser, 1994, *Environmental Assessment, Appliance Parts Property, 400 Ninth Avenue North, Seattle, Washington*, July 28, 1994.

HWA GeoSciences, 2012, *Phase II Environmental Site Assessment Report, Block 45Development Project South Lake Union Neighborhood, Seattle, Washington*, dated June 14, 2012.

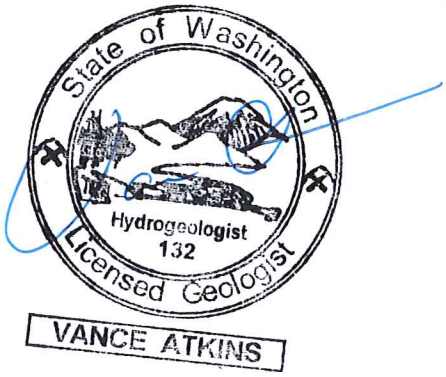
Washington State Department of Ecology, 2007, *Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC,* Publication No. 94-06, dated November.

Washington Department of Ecology, 2003, Guidance for Site Checks and Site Assessments of Underground Storage Tanks, dated April.

5.0 LIMITATIONS

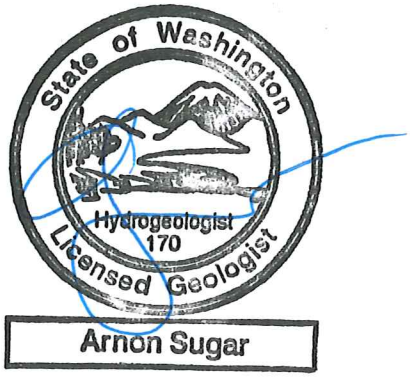
The conclusions expressed by HWA are based solely on material referenced in this report. Observations were made under the conditions stated. Within the limitations of scope, schedule and budget, HWA attempted to execute these services in accordance with generally accepted professional principles and practices in the area at the time the report was prepared. No warranty, expressed or implied, is made. Experience has shown that subsurface soil and ground water conditions can vary significantly over small distances. It is always possible that contamination may exist in areas that were not sampled. HWA's findings and conclusions must not be considered as scientific or engineering certainties, but rather as our professional opinion concerning the significance of the limited data gathered and interpreted during the course of the assessment.

This study and report have been prepared on behalf of City Place, LLC, for the specific application to the subject property. This report and the findings contained herein shall not, in whole or part, be disseminated or conveyed to any other party without prior written consent of HWA. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.



3/20/14

Vance Atkins, LG, LHG
Senior Hydrogeologist
Washington Certified UST Site Assessor



3.20.14

Arnie Sugar, LG, LHG
President

Date: 6/9/2012 Source: King County iMAP - Property Information (http://www.metrokc.gov/GIS/iMAP)

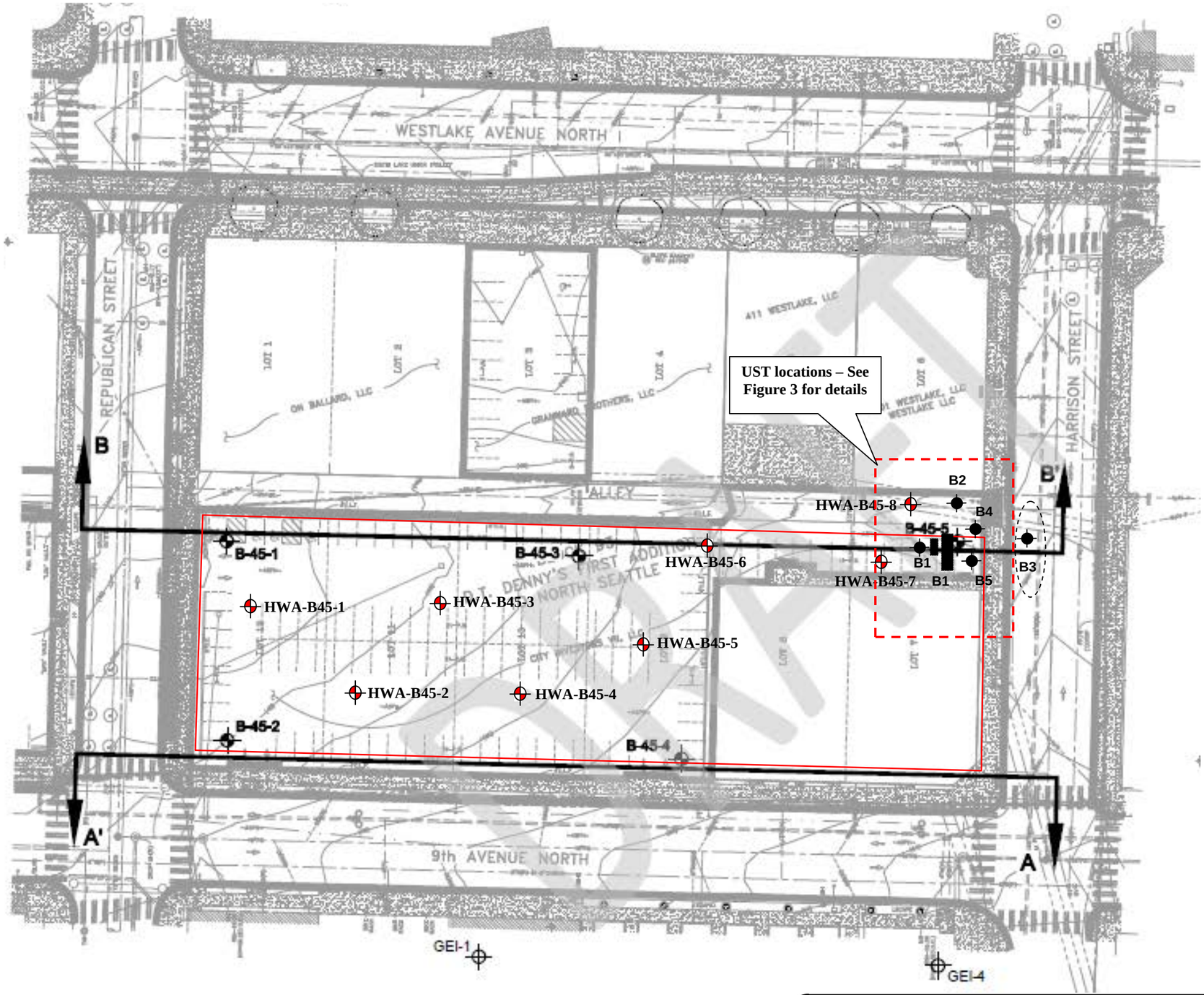
HWA GEOSCIENCES INC.

VICINITY MAP

UST SITE ASSESSMENT REPORT
BLOCK 45 - SOUTH LAKE UNION DEVELOPMENT
SEATTLE, WASHINGTON

FIGURE NO.
1

PROJECT NO.
2012-048-22



Legend

- B-45-1 — Geotechnical boring (GeoEngineers, 2011)
- GEI-1 — Geotechnical boring (GeoEngineers, 2005)
- Boring (Hart Crowser, 1994)
- HWA-B45-1 — HWA boring location, 2012
- UST location (Hart Crowser, 1994)
- Site boundary
- Location of petroleum-impacted soil (Hart Crowser, 1994)

N W S

60 0 60
Feet

Figure modified from GeoEngineers, Inc. (draft April 2011).
Locations of all features shown are approximate.

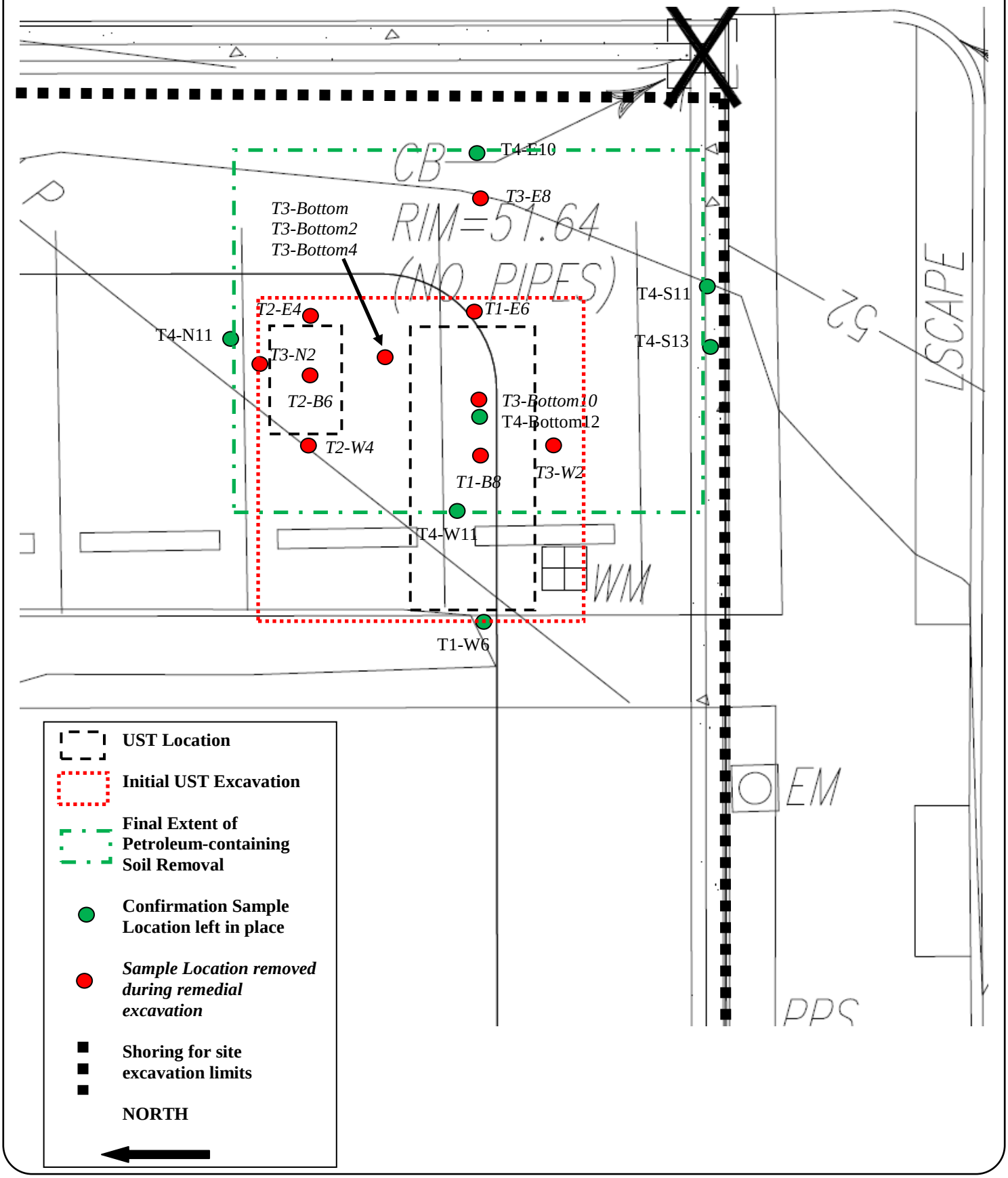
HWA GEOSCIENCES INC.

SITE PLAN

UST SITE ASSESSMENT REPORT
BLOCK 45 – SOUTH LAKE UNION DEVELOPMENT
CITY INVESTORS XX, LLC

FIGURE NO. 2

PROJECT NO. 2012-048-22



HWA GeoSciences Inc.

SAMPLE LOCATION MAP

UST SITE ASSESSMENT REPORT
BLOCK 45 - SOUTH LAKE UNION DEVELOPMENT
SEATTLE, WASHINGTON

FIGURE NO. 3

PROJECT NO. 2012-048-22

APPENDIX A

Site Photographs

2,750 gallon UST exposed for cleaning and inerting

Inerting 2,750 gallon UST

Cleaning out 350 gallon UST

2,750 gallon UST after inerting

2,750 gallon UST after removal

2,750 gallon UST after removal

Soils adjacent to 2,750 gallon UST exposed for removal

350 gallon UST exposed for removal

350 gallon UST after removal

350 gallon UST excavation, water from tank cleaning

UST area after shoring installation

Subsequent UST soil excavation area after shoring installation

APPENDIX B

UST Site Assessment Forms/
Certification of UST Disposal/
Certification of Soil Disposal

TUE 01/21/14
11AM SK

Your Seattle Fire Department

RECEIVED
JAN 17 2014
PERMIT SECTION

APPLICATION FOR TEMPORARY PERMIT

Code 7908 Commercial Tank Removal/Decommissioning

Permit Fee: $208.00

Date Issued: 1-21-2014

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Construction Group International LLC		
MAILING ADDRESS	19407 144th Ave NE, Bldg D		SUITE
CITY	Woodinville	STATE WA	ZIP 98072
JOBSITE ADDRESS	400 9th Ave N		
CONTACT PERSON	Elsa Tibbits	PHONE NUMBER	(206) 462-0380

Number of Tank(s): 2 EVH Tank Size(s): #(1) 500-1000 #(2) 350 ☐ Aboveground tank

Product(s) Previously Contained: Heating Oil xx Underground tank

XX Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)

☐ Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)

Hot work being conducted: x No ☐ Yes (If yes, a separate hot work permit is required)

Permit applications may be submitted in person weekdays from 8:00 a.m. to 5:00 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office – Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: ***Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)***

Follow all permit conditions

FMO USE:
Check No.: 0000022601171 4
Receipt No.: 5-226465
Application ID#: 95676

APPROVED BY:
Inspector:
Name of Marine Chemist Phillip
Date: 01-21-2014

SFD ID# 1082
Certificate # 67-01357

(01/13)

COMMERCIAL TANK REMOVAL/DECOMMISSIONING PERMIT CONDITIONS

1. Two (2) portable fire extinguishers each having a minimum rating of 40 BC shall be on site within 50 feet of the operation. Fire extinguishers shall be inspected, approved and certified annually.

2. Rope or ribbon barricades located at least 10 feet from the tank shall surround every outdoor storage tank removal or decommissioning operation or the operation shall be enclosed in a fenced yard.

3. "No Smoking" signs shall be posted in readily visible locations.

4. No hot work is allowed on a tank system prior to issuance of this permit and the tank is certified "Safe for Hot Work" by a Certified Marine Chemist. Hot work means any activities involving riveting, welding, burning, brazing, soldering, heating, chopping, grinding, ripping, drilling, cutting with a chop saw or "Sawzall", abrasive blasting, use of powder-actuated tools or similar spark-producing operations, crushing or mechanically shearing to facilitate opening for cleaning, disposal, scrapping for recycling purposes.

5. A separate temporary Seattle Fire Department permit (Code 4913) or a validation number assigned in conjunction with an annual hot work permit (Code 4911 or 4912) is required prior to any hot work operations.

6. Permits may cover multiple tanks located at the same address. If additional tanks are to be removed or abandoned at later dates, separate permits shall be obtained. Each address location requires a separate permit application regardless of whether multiple address locations are physically next to one another.

7. Additional fees will be charged if inspectors are required to work other than normal business hours. (Normal business hours are Monday through Friday, 8:00 a.m. to 4:30 p.m.)

8. No excavation of an underground tank is permitted prior to inspection by the Seattle Fire Marshal's Office.
   Exception: Removal of the top layer of asphalt or concrete only with no removal of dirt, pea gravel or soil over the underground storage tank. Further excavation may be allowed by a Seattle Fire Department Special Hazards Unit Inspector prior to the initial inspection depending on conditions and if the tank has been inerted by a Marine Chemist who is present on site. The name of the inspector and the time permission was given shall be made available at time of inspection.

9. Prior to inspection, to ensure tanks and connected piping are completely free of all flammable or combustible liquids, a receipt or certificate must be on site indicating the tanks have been pumped and rinsed by an approved company. Product and rinse water must be disposed of in an approved manner.

10. For tanks being decommissioned in place that previously contained Class I liquids, a Certified Marine Chemist certificate must be issued and available on site for inspection certifying that the tank has been properly inerted prior to filling.

11. No tank shall be filled prior to an inspection by the Seattle Fire Marshal's Office.

12. Tanks being decommissioned in place must be filled with a lean concrete mixture. Filling with foam is prohibited.

13. A Marine Chemist's certificate verifying the tank has been properly inerted or is otherwise certified "Safe for Hot Work" shall be issued and available on site for inspection for each underground and aboveground tank being removed regardless of the product previously contained.

14. If tanks are being removed, the tanks' atmosphere must be inert using one of the following approved methods:
    - Dry ice (pellets or chunks of solid CO_2). Minimum 40 lbs per 1000 gallons of tank capacity is recommended.
    - Compressed CO_2 gas in cylinders (Note: This method may only be performed by a Certified Marine Chemist).
    - Purging with air (gas-freeing) using Venturi tube apparatus, with proper bonding and grounding and after the tank has been pumped and rinsed by an approved company.

15. A maximum reading of less than 6% of oxygen must be obtained prior to the removal of the tanks if CO_2 or another inert gas, as approved by the Marine Chemist, is used to inert the tank or, a reading of 0% LEL must be obtained prior to removal of the tank if the air-purging (Venturi air moving devices) method is used.

16. All local, state and federal regulations for confined space entry shall be complied with prior to entering an underground storage tank.

17. Tanks with baffles to prevent movement of liquid must be certified gas-freed or inerted by a Certified Marine Chemist or a Petroleum Industry Safety Engineer regularly engaged in that business prior to removal.

18. Tanks being removed must be removed from the site and relocated to a remote, approved facility on the same day that the permit is issued.

19. During the hot work operations, digging, excavating, hauling or transport of petroleum storage tanks that have not been cleaned and gas-freed, tanks must be inerted to less than 6% oxygen. All openings are to be cap closed and secured except for one 1/8" hole drilled through a cap. These tanks are to be sprayed painted with "INERTED, DO NOT ENTER" or "INERTED WITH CO_2, NOT SAFE FOR WORKERS".

U.S. MARINE CHEMISTS & ENGINEERING -
Philip Dovinh, P.O. Box 63, Mukilteo, WA 98275
Office: (206) 200-6912 Fax: (206) 763-8084
Cell: (206) 200-6912 Email: pdovinh@comcast.net

MARINE CHEMIST CERTIFICATE

Serial 667-01357

Elsa/George Blair/ESI	ESI	Jan 21, 2014
Survey Requested by	Vessel Owner Agent	Date
UST	Underground Storage Tank (UST)	400 9th Ave N., Seattle, Washington
Vessel	Type of Vessel	Specific Location of Vessel
Diesel Fuel Oil (3x)	O_2, LEL, Visual	10:19
Last Three 3 Loadings	Tests Performed	Time Survey Completed

Inspected Spaces:

Group 1.
—ONE (1) APPROXIMATELY 2500 GALLON UST

Safety Designations:

INERTED

Inert Medium: —*Carbon Dioxide (CO2)*

Method for maintaining safe conditions: —*Keep All Inerted Spaces Closed & Secured During Excavation & Transport Operations.*

Measures for safe disposal of inert gas: —*Keep Inerted Spaces Closed, Secured As A Means Of Inert Gas Disposal.*

Other instructions: —*Excavation & Transport of Tank To MarVac (1516 S Graham St, Seattle, WA) Authorized.*

Test Results	% O_2	% LEL
Inspected spaces group 1	3%	0%

Limits of Detection

0.5% O2, 1% LEL, 0.1 ppm H2S, 1 ppm CO, 0.1 ppm Benzene, 0.1 ppm THCs/VOCs w/PID, 0.1 ppb THCs/VOCs w/PPB PID

In the event of physical or atmospheric changes affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, this certificate is voided; spaces not listed on the Certificate are not to be entered unless authorized on another Certificate and/or maintained in accordance with OSHA 29 CFR 1915; or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist. Unless otherwise stated on the Certificate, all spaces and affected adjacent spaces are to be reinspected daily or more often as necessary by the competent person or the authority having jurisdiction as applicable in support of work prior to entry or recommencement of work.

QUALIFICATIONS: Transfer of ballast, cargo, fuel or manipulation of valves or closure equipment tending to alter conditions in pipelines, tanks, or compartments subject to gas accumulation, unless specifically approved on this Certificate, requires inspection and a new Certificate for spaces so affected. All lines, vents, heating coils, valves, and similar enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated. Movement of the vessel from its specific location voids the Certificate unless shifting of the vessel within the facility has been specifically authorized on this certificate.

STANDARD SAFETY DESIGNATIONS: (partial list, paraphrased from NFP 306, Subsections 4.3.1 through 4.3.6)

ATMOSPHERE SAFE FOR WORKERS: In the compartment or space so designated (a) the oxygen content of the atmosphere shall be at least 19.5 percent and not greater than 22 percent by volume; (b) the concentration of flammable materials is below 10 percent of the lower explosive limit; (c) any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, inerting mediums, or fumigants are within permissible concentrations at the time of the inspection.

NOT SAFE FOR WORKERS: In the compartment or space so designated, entry shall not be permitted.

ENTER WITH RESTRICTIONS: In the compartment or space so designated, entry for work is permitted only if conditions of proper protective equipment, or clothing, or time, or all of the aforementioned, as appropriate, are as specified.

SAFE FOR HOT WORK: In the compartment or space so designated (a) the oxygen content of the atmosphere is not greater than 22 percent by volume; (b) the concentration of flammable materials in the atmosphere is less than 10 percent of the lower explosive limit; (c) the residues, scale, or preservative coatings are cleaned sufficiently to prevent the spread of fire and are not be capable of producing a higher concentration than permitted by (a) or (b); (d) all adjacent spaces, containing or having contained flammable or combustible materials shall be sufficiently cleaned of residues, scale, or preservative coatings to prevent the spread of fire; or they are inerted. Ship's fuel tanks, lube tanks, or engine room or fire room bilges, or other machinery spaces, are treated in accordance with the Marine Chemist's requirements.

SAFE FOR LIMITED HOT WORK: In the compartment or space so designated (a) portions of the space meet the requirements Safe for Hot Work and Partial Cleaning, as applicable, or (b) the space is inerted, adjacent spaces meet the requirements for Safe for Hot Work, and hot work is restricted to specific locations; (c) portions of the space shall meet the requirements for Safe for Hot Work, as applicable; and the nature or type of hot work shall be limited or restricted.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot is not permitted.

CHEMISTS ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under NFPA 306 and understands conditions and limitations under which it was issued, and the requirements for maintaining its validity."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Jan 21, 2014 ESI 667

U.S. MARINE CHEMISTS & ENGINEERING -
Philip Dovinh, P.O. Box 63, Mukilteo, WA 98275
Office: (206) 200-6912 Fax: (206) 763-8084
Cell: (206) 200-6912 Email: pdovinh@comcast.net

MARINE CHEMIST CERTIFICATE

Serial 667-01358

Elsa/George Blair/ESI	ESI	Jan 21, 2014
Survey Requested by	Vessel Owner Agent	Date
UST	Underground Storage Tank (UST)	400 9th Ave N., Seattle, Washington
Vessel	Type of Vessel	Specific Location of Vessel
Diesel Fuel Oil (3x)	O_2, LEL, Visual	13:18
Last Three 3 Loadings	Tests Performed	Time Survey Completed

Inspected Spaces:
Group 1.
—ONE (1) APPROXIMATELY 350 GALLON UST

Safety Designations:
SAFE FOR HOT WORK

Instructions
—Excavation & Transport to MarVac (1516 S Graham Street) Authorized.

Test Results	**% O_2**	**% LEL**
Inspected spaces group 1	20.9%	0%

Limits of Detection
0.5% O2, 1% LEL, 0.1 ppm H2S, 1 ppm CO, 0.1 ppm Benzene, 0.1 ppm THCs/VOCs w/PID, 0.1 ppb THCs/VOCs w/PPB PID

In the event of physical or atmospheric changes affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, this certificate is voided; spaces not listed on the Certificate are not to be entered unless authorized on another Certificate and/or maintained in accordance with OSHA 29 CFR 1915; or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist. Unless otherwise stated on the Certificate, all spaces and affected adjacent spaces are to be reinspected daily or more often as necessary by the competent person or the authority having jurisdiction as applicable in support of work prior to entry or recommencement of work.

QUALIFICATIONS: Transfer of ballast, cargo, fuel or manipulation of valves or closure equipment tending to alter conditions in pipelines, tanks, or compartments subject to gas accumulation, unless specifically approved on this Certificate, requires inspection and a new Certificate for spaces so affected. All lines, vents, heating coils, valves, and similar enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated. Movement of the vessel from its specific location voids the Certificate unless shifting of the vessel within the facility has been specifically authorized on this certificate.

STANDARD SAFETY DESIGNATIONS: (partial list, paraphrased from NFP 306, Subsections 4.3.1 through 4.3.6)

ATMOSPHERE SAFE FOR WORKERS: In the compartment or space so designated (a) the oxygen content of the atmosphere shall be at least 19.5 percent and not greater than 22 percent by volume; (b) the concentration of flammable materials is below 10 percent of the lower explosive limit; (c) any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, inerting mediums, or fumigants are within permissible concentrations at the time of the inspection.

NOT SAFE FOR WORKERS: In the compartment or space so designated, entry shall not be permitted.

ENTER WITH RESTRICTIONS: In the compartment or space so designated, entry for work is permitted only if conditions of proper protective equipment, or clothing, or time, or all of the aforementioned, as appropriate, are as specified.

SAFE FOR HOT WORK: In the compartment or space so designated (a) the oxygen content of the atmosphere is not greater than 22 percent by volume; (b) the concentration of flammable materials in the atmosphere is less than 10 percent of the lower explosive limit; (c) the residues, scale, or preservative coatings are cleaned sufficiently to prevent the spread of fire and are not be capable of producing a higher concentration than permitted by (a) or (b); (d) all adjacent spaces, containing or having contained flammable or combustible materials shall be sufficiently cleaned of residues, scale, or preservative coatings to prevent the spread of fire; or they are inerted. Ship's fuel tanks, lube tanks, or engine room or fire room bilges, or other machinery spaces, are treated in accordance with the Marine Chemist's requirements.

SAFE FOR LIMITED HOT WORK: In the compartment or space so designated (a) portions of the space meet the requirements Safe for Hot Work and Partial Cleaning, as applicable, or (b) the space is inerted, adjacent spaces meet the requirements for Safe for Hot Work, and hot work is restricted to specific locations; (c) portions of the space shall meet the requirements for Safe for Hot Work, as applicable; and the nature or type of hot work shall be limited or restricted.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot is not permitted.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under NFPA 306 and understands conditions and limitations under which it was issued, and the requirements for maintaining its validity."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Authorized Representative	Jan 21, 2014 Date	ESI Company	Signed Marine Chemist	667 CMC No.

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR

CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 3500

Last Contents Diesel

Tank Location: 400 9th Ave N
Seattle

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: City Investors

Contractor: & CGI

M.V.S. Representative: Sallie

Date: 1-21-14

Notes:

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR

CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 350 Gallon

Last Contents Diesel / Water

Tank Location: 400 9th Ave N.

SEATTLE

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: City Investors

Contractor: CGI CONSTRUCTION

M.V.S. Representative: Sokha

Date: 1.21.14

Notes:

Detail Contract Activity Report

All Ticket Types

January 01, 2014 to February 03, 2014

History and Waiting

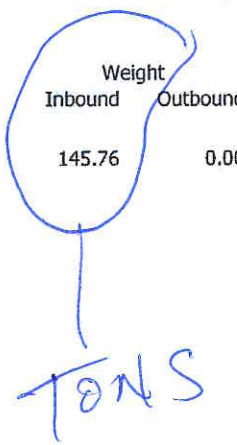
Specific Contract: TB-11444

TB-11444

Ticket Date	Customer	Material	Billing Quantity
01/24/2014	903795 014682 - NW Construction Bellevue	SW-CONT SOIL	18.51 TN
01/24/2014	903800 014682 - NW Construction Bellevue	SW-CONT SOIL	19.23 TN
01/24/2014	903810 014682 - NW Construction Bellevue	SW-CONT SOIL	20.84 TN
01/24/2014	903817 014682 - NW Construction Bellevue	SW-CONT SOIL	16.48 TN
01/28/2014	903888 014682 - NW Construction Bellevue	SW-CONT SOIL	19.37 TN
01/28/2014	903891 014682 - NW Construction Bellevue	SW-CONT SOIL	16.62 TN
01/28/2014	903895 014682 - NW Construction Bellevue	SW-CONT SOIL	18.34 TN
01/29/2014	903910 014682 - NW Construction Bellevue	SW-CONT SOIL	16.37 TN

Tickets Items Reported: 8

Material	Weight Inbound	Outbound	
VH - SW-	145.76	0.00	T



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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE	TICKET #	CELL
01	903800	

WEIGHMASTER: IN - JAMIE B. OUT - Kim L.
DATE/TIME IN: 01-24-2014 9:36 am
DATE/TIME OUT: 01-24-2014 9:43 am
VEHICLE: SOIL
CONTAINER:
REFERENCE: 71 NW CONSTRUCTION INVOICE
BILL OF LADING:

SCALE IN GROSS WEIGHT 68,680 NET TONS 19.23
SCALE OUT TARE WEIGHT 30,220 NET WEIGHT 38,460 INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
19.23	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) 2/21

SIGNATURE

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE	TICKET #	CELL
01	903795	

WEIGHMASTER: IN - Kim L. OUT - Drinda L.
DATE/TIME IN: 01-24-2014 8:33 am
DATE/TIME OUT: 01-24-2014 8:48 a
VEHICLE: SOIL
CONTAINER:
REFERENCE: 71/NW CONST INVOICE
BILL OF LADING:

SCALE IN GROSS WEIGHT 66,540 NET TONS 18.51
SCALE OUT TARE WEIGHT 29,520 NET WEIGHT 37,020 INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE	TICKET #	CELL
01	903817	

WEIGHMASTER: IN - Kim L. OUT - Drinda L.

DATE/TIME IN	DATE/TIME OUT
01-24-2014 12:04 pm	01-24-2014 12:14 pm

VEHICLE	CONTAINER
SOIL	

REFERENCE: 71/NW CONST — INVOICE

BILL OF LADING:

SCALE IN — GROSS WEIGHT 60,520 — NET TONS 16.48
SCALE OUT — TARE WEIGHT 27,560 — NET WEIGHT 32,960 — INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE	TICKET #	CELL
01	903810	

WEIGHMASTER: IN - Drinda L. OUT - JAMIE B.

DATE/TIME IN	DATE/TIME OUT
01-24-2014 10:46 am	01-24-2014 11:16 am

VEHICLE	CONTAINER
SOIL	

REFERENCE: 71 NW — INVOICE

BILL OF LADING:

SCALE IN — GROSS WEIGHT 69,280 — NET TONS 20.84
SCALE OUT — TARE WEIGHT 27,600 — NET WEIGHT 41,680 — INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE: 01 | TICKET #: 903891 | CELL:
WEIGHMASTER: IN - Drinda L. OUT - Kim L.
DATE/TIME IN: 01-28-2014 11:32 am | DATE/TIME OUT: 01-28-2014 11:42 am
VEHICLE: SOIL | CONTAINER:
REFERENCE: JS NW | INVOICE
BILL OF LADING:

SCALE IN GROSS WEIGHT 63,200 NET TONS 16.62
SCALE OUT TARE WEIGHT 29,960 NET WEIGHT 33,240 INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE Jerry S

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE: 01 | TICKET #: 903888 | CELL:
WEIGHMASTER: IN - Drinda L. OUT - Kim L.
DATE/TIME IN: 01-28-2014 10:42 am | DATE/TIME OUT: 01-28-2014 10:56 am
VEHICLE: SOIL | CONTAINER:
REFERENCE: JS NW | INVOICE
BILL OF LADING:

SCALE IN GROSS WEIGHT 68,940 NET TONS 19.37
SCALE OUT TARE WEIGHT 30,200 NET WEIGHT 38,740 INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE Jerry S

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE: 01 | TICKET #: 903910 | CELL:
WEIGHTMASTER: IN - Kim L. OUT - Drinda L.
DATE/TIME IN: 01-29-2014 8:42 am | DATE/TIME OUT: 01-29-2014 8:50 am
VEHICLE: SOIL | CONTAINER:
REFERENCE: 42/NW CONST | INVOICE
BILL OF LADING:

SCALE IN / SCALE OUT | GROSS WEIGHT 60,020 | TARE WEIGHT 27,280 | NET TONS 16.37 | NET WEIGHT 32,740 | INBOUND

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

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE

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

CUSTOMER
014682
NW Construction Bellevue
1408 140th PL NE
Suite 101
TB-11444

SITE: 01 | TICKET #: 903895 | CELL:
WEIGHTMASTER: Kim L.
DATE/TIME IN: 01-28-2014 12:26 pm | DATE/TIME OUT: 01-28-2014 12:32 pm
VEHICLE: SOIL | CONTAINER:
REFERENCE: 39/NW CONST | INVOICE
BILL OF LADING:

SCALE IN / SCALE OUT | GROSS WEIGHT 66,600 | TARE WEIGHT 29,920 | NET TONS 18.34 | NET WEIGHT 36,680 | INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	TRACKING QTY				
18.34	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) 2/21

SIGNATURE

APPENDIX C

Analytical Laboratory Reports

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

HWA GeoSciences, Inc.
Vance Atkins
21312 30th Drive SE, Ste 110
Bothell, WA 98021

RE: Block 45
Lab ID: 1401177

January 22, 2014

Attention Vance Atkins:

Fremont Analytical, Inc. received 6 sample(s) on 1/21/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Mercury by EPA Method 7471
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020

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:
Arnie Sugar
Shomari Anderson

Date: *01/22/2014*

CLIENT: HWA GeoSciences, Inc.
Project: Block 45
Lab Order: 1401177

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1401177-001	T2-E-4	01/21/2014 2:00 PM	01/21/2014 3:55 PM
1401177-002	T2-W-4	01/21/2014 2:10 PM	01/21/2014 3:55 PM
1401177-003	T2-B-6	01/21/2014 2:20 PM	01/21/2014 3:55 PM
1401177-004	T1-E-6	01/21/2014 3:00 PM	01/21/2014 3:55 PM
1401177-005	T1-W-6	01/21/2014 3:10 PM	01/21/2014 3:55 PM
1401177-006	T1-B-8	01/21/2014 3:20 PM	01/21/2014 3:55 PM

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

Case Narrative

WO#: **1401177**
Date: **1/22/2014**

CLIENT: HWA GeoSciences, Inc.
Project: Block 45

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.

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 2:00:00 PM
Project: Block 45
Lab ID: 1401177-001
Matrix: Soil
Client Sample ID: **T2-E-4**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	36.6	20.6		mg/Kg-dry	1	1/22/2014 1:43:00 AM
Heavy Oil	ND	51.5		mg/Kg-dry	1	1/22/2014 1:43:00 AM
Surr: 2-Fluorobiphenyl	105	50-150		%REC	1	1/22/2014 1:43:00 AM
Surr: o-Terphenyl	116	50-150		%REC	1	1/22/2014 1:43:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.254		mg/Kg-dry	1	1/22/2014 2:32:02 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.32	0.0895		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Barium	33.2	0.447		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Cadmium	ND	0.179		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Chromium	26.8	0.0895		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Lead	4.22	0.179		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Selenium	ND	0.447		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Silver	ND	0.0895		mg/Kg-dry	1	1/22/2014 11:49:08 AM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	10.6			wt%	1	1/21/2014 4:18:52 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

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 2:10:00 PM
Project: Block 45
Lab ID: 1401177-002
Matrix: Soil
Client Sample ID: **T2-W-4**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	ND	20.9		mg/Kg-dry	1	1/22/2014 2:10:00 AM
Heavy Oil	ND	52.2		mg/Kg-dry	1	1/22/2014 2:10:00 AM
Surr: 2-Fluorobiphenyl	103	50-150		%REC	1	1/22/2014 2:10:00 AM
Surr: o-Terphenyl	103	50-150		%REC	1	1/22/2014 2:10:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.243		mg/Kg-dry	1	1/22/2014 2:38:31 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.24	0.0865		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Barium	38.2	0.432		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Cadmium	ND	0.173		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Chromium	31.1	0.0865		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Lead	1.62	0.173		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Selenium	ND	0.432		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Silver	ND	0.0865		mg/Kg-dry	1	1/22/2014 12:00:27 PM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	8.20			wt%	1	1/21/2014 4:18:52 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

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 2:20:00 PM
Project: Block 45
Lab ID: 1401177-003
Matrix: Soil
Client Sample ID: **T2-B-6**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	1,870	20.3		mg/Kg-dry	1	1/22/2014 2:38:00 AM
Heavy Oil	ND	50.8		mg/Kg-dry	1	1/22/2014 2:38:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	1/22/2014 2:38:00 AM
Surr: o-Terphenyl	106	50-150		%REC	1	1/22/2014 2:38:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.243		mg/Kg-dry	1	1/22/2014 2:40:07 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.40	0.0865		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Barium	42.4	0.432		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Cadmium	ND	0.173		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Chromium	30.4	0.0865		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Lead	2.13	0.173		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Selenium	ND	0.432		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Silver	ND	0.0865		mg/Kg-dry	1	1/22/2014 12:11:47 PM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	9.63			wt%	1	1/21/2014 4:18:52 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

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 3:00:00 PM
Project: Block 45
Lab ID: 1401177-004
Matrix: Soil
Client Sample ID: **T1-E-6**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	ND	19.6		mg/Kg-dry	1	1/22/2014 3:06:00 AM
Heavy Oil	ND	48.9		mg/Kg-dry	1	1/22/2014 3:06:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	1/22/2014 3:06:00 AM
Surr: o-Terphenyl	105	50-150		%REC	1	1/22/2014 3:06:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.262		mg/Kg-dry	1	1/22/2014 2:41:42 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.44	0.0820		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Barium	37.2	0.410		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Cadmium	ND	0.164		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Chromium	29.6	0.0820		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Lead	1.94	0.164		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Selenium	ND	0.410		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Silver	ND	0.0820		mg/Kg-dry	1	1/22/2014 12:23:09 PM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	8.30			wt%	1	1/21/2014 4:18:52 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

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 3:10:00 PM
Project: Block 45
Lab ID: 1401177-005
Matrix: Soil
Client Sample ID: **T1-W-6**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	23.1	21.2		mg/Kg-dry	1	1/22/2014 3:34:00 AM
Heavy Oil	ND	53.1		mg/Kg-dry	1	1/22/2014 3:34:00 AM
Surr: 2-Fluorobiphenyl	103	50-150		%REC	1	1/22/2014 3:34:00 AM
Surr: o-Terphenyl	104	50-150		%REC	1	1/22/2014 3:34:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.262		mg/Kg-dry	1	1/22/2014 2:43:18 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.43	0.0841		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Barium	35.0	0.421		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Cadmium	ND	0.168		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Chromium	23.3	0.0841		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Lead	6.03	0.168		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Selenium	ND	0.421		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Silver	ND	0.0841		mg/Kg-dry	1	1/22/2014 12:34:29 PM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	9.95			wt%	1	1/21/2014 4:18:52 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

Analytical Report

WO#: **1401177**
Date Reported: **1/22/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/21/2014 3:20:00 PM
Project: Block 45
Lab ID: 1401177-006
Matrix: Soil
Client Sample ID: **T1-B-8**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6401		Analyst: BR
Diesel (Fuel Oil)	550	21.9		mg/Kg-dry	1	1/22/2014 4:02:00 AM
Heavy Oil	ND	54.8		mg/Kg-dry	1	1/22/2014 4:02:00 AM
Surr: 2-Fluorobiphenyl	100	50-150		%REC	1	1/22/2014 4:02:00 AM
Surr: o-Terphenyl	103	50-150		%REC	1	1/22/2014 4:02:00 AM
Mercury by EPA Method 7471				Batch ID: 6406		Analyst: MC
Mercury	ND	0.265		mg/Kg-dry	1	1/22/2014 2:48:09 PM
Total Metals by EPA Method 6020				Batch ID: 6405		Analyst: MC
Arsenic	1.34	0.0868		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Barium	42.8	0.434		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Cadmium	ND	0.174		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Chromium	32.7	0.0868		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Lead	3.24	0.174		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Selenium	ND	0.434		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Silver	ND	0.0868		mg/Kg-dry	1	1/22/2014 12:45:49 PM
Sample Moisture (Percent Moisture)				Batch ID: R12135		Analyst: KZ
Percent Moisture	12.7			wt%	1	1/21/2014 4:18:52 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

Work Order: 1401177
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **MB-6405** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **MBLKS** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Barium	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	0.100									
Lead	ND	0.200									
Selenium	ND	0.500									
Silver	ND	0.100									

Sample ID: **LCS-6405** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **LCSS** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	93.2	0.200	102.0	0	91.4	83.4	116				
Barium	730	1.00	795.0	0	91.8	84.1	116				
Cadmium	85.8	0.400	86.30	0	99.4	81.2	116				
Chromium	199	0.200	208.0	0	95.9	86.5	118				
Lead	63.5	0.400	71.80	0	88.4	84.3	116				
Selenium	176	1.00	165.0	0	107	78.8	121				
Silver	31.5	0.200	31.30	0	101	79.9	120				

Sample ID: **1401114-015ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	24.6	0.0954						25.58	3.84	30	
Barium	127	0.477						133.8	4.93	30	
Cadmium	ND	0.191						0		30	
Chromium	22.9	0.0954						24.34	6.13	30	

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

Work Order: 1401177
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **1401114-015ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	41.8	0.191						44.08	5.25	30	
Selenium	ND	0.477						0		30	
Silver	0.108	0.0954						0.1194	10.0	30	

Sample ID: **1401114-015AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242836**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	76.2	0.0991	49.56	25.58	102	75	125				
Barium	155	0.496	49.56	133.8	42.4	75	125				S
Cadmium	2.56	0.198	2.478	0.1530	97.2	75	125				
Chromium	74.5	0.0991	49.56	24.34	101	75	125				
Lead	68.4	0.198	24.78	44.08	98.1	75	125				
Selenium	4.06	0.496	4.956	0.09903	79.9	75	125				
Silver	12.5	0.0991	12.39	0.1194	100	75	125				

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **1401114-015AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	78.6	0.101	50.34	25.58	105	75	125	76.24	3.08	30	
Barium	161	0.503	50.34	133.8	55.0	75	125	154.9	4.19	30	S
Cadmium	2.70	0.201	2.517	0.1530	101	75	125	2.562	5.21	30	
Chromium	77.2	0.101	50.34	24.34	105	75	125	74.51	3.50	30	
Lead	69.9	0.201	25.17	44.08	103	75	125	68.39	2.23	30	
Selenium	4.36	0.503	5.034	0.09903	84.7	75	125	4.058	7.22	30	

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

Work Order: 1401177
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **1401114-015AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	13.5	0.101	12.59	0.1194	107	75	125	12.54	7.59	30	

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **1401114-015APDS** SampType: **PDS** Units: **mg/Kg-dry** Prep Date: **1/22/2014** RunNo: **12158**
Client ID: **BATCH** Batch ID: **6405** Analysis Date: **1/22/2014** SeqNo: **242838**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	151	0.496	49.6	134	35.4	75	125				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a matrix effect.

Work Order: 1401177
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Mercury by EPA Method 7471

Sample ID: **MB-6406**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/22/2014**		RunNo: **12153**		
Client ID: **MBLKS**	Batch ID: **6406**					Analysis Date: **1/22/2014**		SeqNo: **242732**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.250									

Sample ID: **LCS-6406**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/22/2014**		RunNo: **12153**		
Client ID: **LCSS**	Batch ID: **6406**					Analysis Date: **1/22/2014**		SeqNo: **242733**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.514	0.250	0.5000	0	103	80	120				

Sample ID: **1401177-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/22/2014**		RunNo: **12153**		
Client ID: **T2-E-4**	Batch ID: **6406**					Analysis Date: **1/22/2014**		SeqNo: **242735**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.264						0		20	

Sample ID: **1401177-001AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **1/22/2014**		RunNo: **12153**		
Client ID: **T2-E-4**	Batch ID: **6406**					Analysis Date: **1/22/2014**		SeqNo: **242736**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.561	0.254	0.5083	0.01850	107	70	130				

Sample ID: **1401177-001AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **1/22/2014**		RunNo: **12153**		
Client ID: **T2-E-4**	Batch ID: **6406**					Analysis Date: **1/22/2014**		SeqNo: **242737**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.506	0.241	0.4820	0.01850	101	70	130	0.5612	10.3	20	

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: *1/22/2014*

Work Order: 1401177
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **LCS-6401**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/21/2014**		RunNo: **12139**			
Client ID: **LCSS**	Batch ID: **6401**					Analysis Date: **1/21/2014**		SeqNo: **242447**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	476	20.0	500.0	0	95.3	65	135				
Surr: 2-Fluorobiphenyl	21.1		20.00		105	50	150				
Surr: o-Terphenyl	20.7		20.00		104	50	150				

Sample ID: **MB-6401**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/21/2014**		RunNo: **12139**			
Client ID: **MBLKS**	Batch ID: **6401**					Analysis Date: **1/21/2014**		SeqNo: **242448**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	21.0		20.00		105	50	150				
Surr: o-Terphenyl	20.0		20.00		99.8	50	150				

Sample ID: **1401177-006ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/21/2014**		RunNo: **12139**			
Client ID: **T1-B-8**	Batch ID: **6401**					Analysis Date: **1/22/2014**		SeqNo: **242782**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	543	22.6						550.4	1.37	30	
Heavy Oil	ND	56.6						0		30	
Surr: 2-Fluorobiphenyl	22.5		22.63		99.6	50	150		0		
Surr: o-Terphenyl	23.5		22.63		104	50	150		0		

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

Sample Log-In Check List

Client Name:	**HWA**	Work Order Number:	**1401177**
Logged by:	**Chelsea Ward**	Date Received:	**1/21/2014 3:55:00 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 ☐
	Samples received straight from field			
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

Chain of Custody

Page _____ of _____

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

FREMONT

Company: HWA
Project Number: 2012-048
Project Name: BLOCK 45
Project Manager: ATKINS
Sampled by: II

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☒ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 1401177

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	% Moisture
	T2-E-4	1/21/14	1400	S	1				X									X				
	T2-W-4		1410																			
	T2-B-6		1420																			
	T1-E-6		1500																			
	T1-W-6		1510																			
	T1-B-8		1520																			

	Signature	Company	Date	Time
Relinquished		HWA	1/24/14	1535
Received		FAI	1/24/14	1535
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

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

HWA GeoSciences, Inc.
Arnie Sugar
21312 30th Drive SE, Ste 110
Bothell, WA 98021

RE: Block 45
Lab ID: 1401208

January 27, 2014

Attention Arnie Sugar:

Fremont Analytical, Inc. received 7 sample(s) on 1/24/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Mercury by EPA Method 7471
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

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:
Shomari Anderson
Vance Atkins

Date: *01/27/2014*

CLIENT: HWA GeoSciences, Inc.
Project: Block 45
Lab Order: 1401208

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1401208-001	T3-W-2'	01/24/2014 9:50 AM	01/24/2014 11:15 AM
1401208-002	T3-N-2'	01/24/2014 10:00 AM	01/24/2014 11:15 AM
1401208-003	T3-Bottom	01/24/2014 10:05 AM	01/24/2014 11:15 AM
1401208-004	T3-Bottom-2'	01/24/2014 10:10 AM	01/24/2014 11:15 AM
1401208-005	T3-Bottom-4'	01/24/2014 10:15 AM	01/24/2014 11:15 AM
1401208-006	T3-Bottom-10'	01/24/2014 10:20 AM	01/24/2014 11:15 AM
1401208-007	T3-E-8'	01/24/2014 10:40 AM	01/24/2014 11:15 AM

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

Case Narrative

WO#: **1401208**
Date: **1/27/2014**

CLIENT: HWA GeoSciences, Inc.
Project: Block 45

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.

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 9:50:00 AM
Project: Block 45
Lab ID: 1401208-001
Matrix: Soil
Client Sample ID: **T3-W-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	252	17.6		mg/Kg-dry	1	1/24/2014 7:30:00 PM
Heavy Oil	ND	44.0		mg/Kg-dry	1	1/24/2014 7:30:00 PM
Surr: 2-Fluorobiphenyl	102	50-150		%REC	1	1/24/2014 7:30:00 PM
Surr: o-Terphenyl	102	50-150		%REC	1	1/24/2014 7:30:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	ND	3.10		mg/Kg-dry	1	1/25/2014 6:42:00 PM
Surr: 4-Bromofluorobenzene	107	65-135		%REC	1	1/24/2014 5:42:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	1/24/2014 5:42:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	ND	0.0124		mg/Kg-dry	1	1/24/2014 5:42:00 PM
Toluene	ND	0.0124		mg/Kg-dry	1	1/24/2014 5:42:00 PM
Ethylbenzene	ND	0.0186		mg/Kg-dry	1	1/24/2014 5:42:00 PM
m,p-Xylene	ND	0.0124		mg/Kg-dry	1	1/24/2014 5:42:00 PM
o-Xylene	ND	0.0124		mg/Kg-dry	1	1/24/2014 5:42:00 PM
Surr: Dibromofluoromethane	96.1	63.7-129		%REC	1	1/24/2014 5:42:00 PM
Surr: Toluene-d8	99.2	61.4-128		%REC	1	1/24/2014 5:42:00 PM
Surr: 1-Bromo-4-fluorobenzene	97.9	63.1-141		%REC	1	1/24/2014 5:42:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.224		mg/Kg-dry	1	1/24/2014 2:34:05 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	1.82	0.0798		mg/Kg-dry	1	1/24/2014 2:38:48 PM
Cadmium	ND	0.160		mg/Kg-dry	1	1/24/2014 2:38:48 PM
Chromium	26.0	0.0798		mg/Kg-dry	1	1/24/2014 2:38:48 PM
Lead	10.7	0.160		mg/Kg-dry	1	1/24/2014 2:38:48 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 9:50:00 AM
Project: Block 45
Lab ID: 1401208-001
Matrix: Soil
Client Sample ID: **T3-W-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	9.88			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc. **Collection Date:** 1/24/2014 10:00:00 AM
Project: Block 45
Lab ID: 1401208-002 **Matrix:** Soil
Client Sample ID: **T3-N-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	20,000	113	D	mg/Kg-dry	5	1/27/2014 11:58:00 AM
Heavy Oil	ND	56.3		mg/Kg-dry	1	1/24/2014 8:26:00 PM
Surr: 2-Fluorobiphenyl	148	50-150		%REC	1	1/24/2014 8:26:00 PM
Surr: o-Terphenyl	125	50-150		%REC	1	1/24/2014 8:26:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	1,490	135	D	mg/Kg-dry	50	1/25/2014 7:37:00 PM
Surr: 4-Bromofluorobenzene	103	65-135	D	%REC	50	1/25/2014 7:37:00 PM
Surr: Toluene-d8	111	65-135		%REC	1	1/24/2014 7:04:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	0.282	0.0108		mg/Kg-dry	1	1/24/2014 7:04:00 PM
Toluene	0.0659	0.0108		mg/Kg-dry	1	1/24/2014 7:04:00 PM
Ethylbenzene	2.39	0.807	D	mg/Kg-dry	50	1/25/2014 7:37:00 PM
m,p-Xylene	0.802	0.0108		mg/Kg-dry	1	1/24/2014 7:04:00 PM
o-Xylene	0.363	0.0108		mg/Kg-dry	1	1/24/2014 7:04:00 PM
Surr: Dibromofluoromethane	97.4	63.7-129		%REC	1	1/24/2014 7:04:00 PM
Surr: Toluene-d8	105	61.4-128		%REC	1	1/24/2014 7:04:00 PM
Surr: 1-Bromo-4-fluorobenzene	128	63.1-141		%REC	1	1/24/2014 7:04:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.229		mg/Kg-dry	1	1/24/2014 2:35:43 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	1.11	0.0907		mg/Kg-dry	1	1/24/2014 2:49:12 PM
Cadmium	ND	0.181		mg/Kg-dry	1	1/24/2014 2:49:12 PM
Chromium	24.9	0.0907		mg/Kg-dry	1	1/24/2014 2:49:12 PM
Lead	27.1	0.181		mg/Kg-dry	1	1/24/2014 2:49:12 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:00:00 AM
Project: Block 45
Lab ID: 1401208-002
Matrix: Soil
Client Sample ID: **T3-N-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	13.2			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:05:00 AM
Project: Block 45
Lab ID: 1401208-003
Matrix: Soil
Client Sample ID: **T3-Bottom**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	166	21.7		mg/Kg-dry	1	1/24/2014 8:54:00 PM
Heavy Oil	ND	54.1		mg/Kg-dry	1	1/24/2014 8:54:00 PM
Surr: 2-Fluorobiphenyl	99.7	50-150		%REC	1	1/24/2014 8:54:00 PM
Surr: o-Terphenyl	100	50-150		%REC	1	1/24/2014 8:54:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	ND	2.36		mg/Kg-dry	1	1/24/2014 6:09:00 PM
Surr: 4-Bromofluorobenzene	110	65-135		%REC	1	1/24/2014 6:09:00 PM
Surr: Toluene-d8	99.8	65-135		%REC	1	1/24/2014 6:09:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	ND	0.00944		mg/Kg-dry	1	1/24/2014 6:09:00 PM
Toluene	ND	0.00944		mg/Kg-dry	1	1/24/2014 6:09:00 PM
Ethylbenzene	ND	0.0142		mg/Kg-dry	1	1/24/2014 6:09:00 PM
m,p-Xylene	ND	0.00944		mg/Kg-dry	1	1/24/2014 6:09:00 PM
o-Xylene	ND	0.00944		mg/Kg-dry	1	1/24/2014 6:09:00 PM
Surr: Dibromofluoromethane	98.2	63.7-129		%REC	1	1/24/2014 6:09:00 PM
Surr: Toluene-d8	97.6	61.4-128		%REC	1	1/24/2014 6:09:00 PM
Surr: 1-Bromo-4-fluorobenzene	101	63.1-141		%REC	1	1/24/2014 6:09:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.280		mg/Kg-dry	1	1/24/2014 2:37:21 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	1.52	0.0881		mg/Kg-dry	1	1/24/2014 2:59:37 PM
Cadmium	ND	0.176		mg/Kg-dry	1	1/24/2014 2:59:37 PM
Chromium	22.8	0.0881		mg/Kg-dry	1	1/24/2014 2:59:37 PM
Lead	7.08	0.176		mg/Kg-dry	1	1/24/2014 2:59:37 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:05:00 AM
Project: Block 45
Lab ID: 1401208-003
Matrix: Soil
Client Sample ID: **T3-Bottom**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	10.6			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:10:00 AM
Project: Block 45
Lab ID: 1401208-004
Matrix: Soil
Client Sample ID: **T3-Bottom-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	183	18.7		mg/Kg-dry	1	1/24/2014 9:22:00 PM
Heavy Oil	ND	46.8		mg/Kg-dry	1	1/24/2014 9:22:00 PM
Surr: 2-Fluorobiphenyl	102	50-150		%REC	1	1/24/2014 9:22:00 PM
Surr: o-Terphenyl	99.0	50-150		%REC	1	1/24/2014 9:22:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	ND	3.47		mg/Kg-dry	1	1/24/2014 6:36:00 PM
Surr: 4-Bromofluorobenzene	110	65-135		%REC	1	1/24/2014 6:36:00 PM
Surr: Toluene-d8	103	65-135		%REC	1	1/24/2014 6:36:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	ND	0.0139		mg/Kg-dry	1	1/24/2014 6:36:00 PM
Toluene	ND	0.0139		mg/Kg-dry	1	1/24/2014 6:36:00 PM
Ethylbenzene	ND	0.0208		mg/Kg-dry	1	1/24/2014 6:36:00 PM
m,p-Xylene	ND	0.0139		mg/Kg-dry	1	1/24/2014 6:36:00 PM
o-Xylene	ND	0.0139		mg/Kg-dry	1	1/24/2014 6:36:00 PM
Surr: Dibromofluoromethane	99.5	63.7-129		%REC	1	1/24/2014 6:36:00 PM
Surr: Toluene-d8	99.5	61.4-128		%REC	1	1/24/2014 6:36:00 PM
Surr: 1-Bromo-4-fluorobenzene	101	63.1-141		%REC	1	1/24/2014 6:36:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.217		mg/Kg-dry	1	1/24/2014 2:38:56 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	2.25	0.0854		mg/Kg-dry	1	1/24/2014 3:10:03 PM
Cadmium	ND	0.171		mg/Kg-dry	1	1/24/2014 3:10:03 PM
Chromium	32.1	0.0854		mg/Kg-dry	1	1/24/2014 3:10:03 PM
Lead	11.2	0.171		mg/Kg-dry	1	1/24/2014 3:10:03 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:10:00 AM
Project: Block 45
Lab ID: 1401208-004
Matrix: Soil
Client Sample ID: **T3-Bottom-2'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	9.91			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:15:00 AM
Project: Block 45
Lab ID: 1401208-005
Matrix: Soil
Client Sample ID: **T3-Bottom-4'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	1,280	18.5		mg/Kg-dry	1	1/24/2014 5:09:00 PM
Heavy Oil	ND	46.3		mg/Kg-dry	1	1/24/2014 5:09:00 PM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	1/24/2014 5:09:00 PM
Surr: o-Terphenyl	105	50-150		%REC	1	1/24/2014 5:09:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	ND	2.49		mg/Kg-dry	1	1/24/2014 3:53:00 PM
Surr: 4-Bromofluorobenzene	110	65-135		%REC	1	1/24/2014 3:53:00 PM
Surr: Toluene-d8	103	65-135		%REC	1	1/24/2014 3:53:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	ND	0.00995		mg/Kg-dry	1	1/24/2014 3:53:00 PM
Toluene	ND	0.00995		mg/Kg-dry	1	1/24/2014 3:53:00 PM
Ethylbenzene	0.0177	0.0149		mg/Kg-dry	1	1/24/2014 3:53:00 PM
m,p-Xylene	ND	0.00995		mg/Kg-dry	1	1/24/2014 3:53:00 PM
o-Xylene	ND	0.00995		mg/Kg-dry	1	1/24/2014 3:53:00 PM
Surr: Dibromofluoromethane	97.1	63.7-129		%REC	1	1/24/2014 3:53:00 PM
Surr: Toluene-d8	100	61.4-128		%REC	1	1/24/2014 3:53:00 PM
Surr: 1-Bromo-4-fluorobenzene	100	63.1-141		%REC	1	1/24/2014 3:53:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.221		mg/Kg-dry	1	1/24/2014 2:40:32 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	0.915	0.0779		mg/Kg-dry	1	1/24/2014 2:07:33 PM
Cadmium	ND	0.156		mg/Kg-dry	1	1/24/2014 2:07:33 PM
Chromium	16.8	0.0779		mg/Kg-dry	1	1/24/2014 2:07:33 PM
Lead	1.62	0.156		mg/Kg-dry	1	1/24/2014 2:07:33 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:15:00 AM
Project: Block 45
Lab ID: 1401208-005
Matrix: Soil
Client Sample ID: **T3-Bottom-4'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	4.19			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc. **Collection Date:** 1/24/2014 10:20:00 AM
Project: Block 45
Lab ID: 1401208-006 **Matrix:** Soil
Client Sample ID: **T3-Bottom-10'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	7,030	22.3		mg/Kg-dry	1	1/24/2014 5:37:00 PM
Heavy Oil	ND	55.8		mg/Kg-dry	1	1/24/2014 5:37:00 PM
Surr: 2-Fluorobiphenyl	126	50-150		%REC	1	1/24/2014 5:37:00 PM
Surr: o-Terphenyl	118	50-150		%REC	1	1/24/2014 5:37:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	828	156	D	mg/Kg-dry	50	1/25/2014 8:04:00 PM
Surr: 4-Bromofluorobenzene	105	65-135	D	%REC	50	1/25/2014 8:04:00 PM
Surr: Toluene-d8	108	65-135		%REC	1	1/24/2014 4:47:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	0.146	0.0125		mg/Kg-dry	1	1/24/2014 4:47:00 PM
Toluene	0.0651	0.0125		mg/Kg-dry	1	1/24/2014 4:47:00 PM
Ethylbenzene	1.69	0.0187		mg/Kg-dry	1	1/24/2014 4:47:00 PM
m,p-Xylene	0.912	0.0125		mg/Kg-dry	1	1/24/2014 4:47:00 PM
o-Xylene	0.283	0.0125		mg/Kg-dry	1	1/24/2014 4:47:00 PM
Surr: Dibromofluoromethane	99.4	63.7-129		%REC	1	1/24/2014 4:47:00 PM
Surr: Toluene-d8	111	61.4-128		%REC	1	1/24/2014 4:47:00 PM
Surr: 1-Bromo-4-fluorobenzene	124	63.1-141		%REC	1	1/24/2014 4:47:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.244		mg/Kg-dry	1	1/24/2014 2:42:09 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	1.19	0.0840		mg/Kg-dry	1	1/24/2014 2:17:59 PM
Cadmium	ND	0.168		mg/Kg-dry	1	1/24/2014 2:17:59 PM
Chromium	28.7	0.0840		mg/Kg-dry	1	1/24/2014 2:17:59 PM
Lead	1.71	0.168		mg/Kg-dry	1	1/24/2014 2:17:59 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:20:00 AM
Project: Block 45
Lab ID: 1401208-006
Matrix: Soil
Client Sample ID: **T3-Bottom-10'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	11.8			wt%	1	1/24/2014 12:38:11 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:40:00 AM
Project: Block 45
Lab ID: 1401208-007
Matrix: Soil
Client Sample ID: **T3-E-8'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6435		Analyst: JY
Diesel (Fuel Oil)	654	20.0		mg/Kg-dry	1	1/24/2014 6:06:00 PM
Heavy Oil	ND	49.9		mg/Kg-dry	1	1/24/2014 6:06:00 PM
Surr: 2-Fluorobiphenyl	99.7	50-150		%REC	1	1/24/2014 6:06:00 PM
Surr: o-Terphenyl	101	50-150		%REC	1	1/24/2014 6:06:00 PM
Gasoline by NWTPH-Gx				Batch ID: R12196		Analyst: EM
Gasoline	ND	3.86		mg/Kg-dry	1	1/24/2014 4:20:00 PM
Surr: 4-Bromofluorobenzene	106	65-135		%REC	1	1/24/2014 4:20:00 PM
Surr: Toluene-d8	103	65-135		%REC	1	1/24/2014 4:20:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6431		Analyst: EM
Benzene	ND	0.0154		mg/Kg-dry	1	1/24/2014 4:20:00 PM
Toluene	ND	0.0154		mg/Kg-dry	1	1/24/2014 4:20:00 PM
Ethylbenzene	ND	0.0231		mg/Kg-dry	1	1/24/2014 4:20:00 PM
m,p-Xylene	ND	0.0154		mg/Kg-dry	1	1/24/2014 4:20:00 PM
o-Xylene	ND	0.0154		mg/Kg-dry	1	1/24/2014 4:20:00 PM
Surr: Dibromofluoromethane	97.6	63.7-129		%REC	1	1/24/2014 4:20:00 PM
Surr: Toluene-d8	102	61.4-128		%REC	1	1/24/2014 4:20:00 PM
Surr: 1-Bromo-4-fluorobenzene	98.4	63.1-141		%REC	1	1/24/2014 4:20:00 PM
Mercury by EPA Method 7471				Batch ID: 6425		Analyst: MC
Mercury	ND	0.271		mg/Kg-dry	1	1/24/2014 2:43:45 PM
Total Metals by EPA Method 6020				Batch ID: 6434		Analyst: MC
Arsenic	1.14	0.0816		mg/Kg-dry	1	1/24/2014 2:28:24 PM
Cadmium	ND	0.163		mg/Kg-dry	1	1/24/2014 2:28:24 PM
Chromium	26.2	0.0816		mg/Kg-dry	1	1/24/2014 2:28:24 PM
Lead	1.61	0.163		mg/Kg-dry	1	1/24/2014 2:28:24 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

Analytical Report

WO#: **1401208**
Date Reported: **1/27/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/24/2014 10:40:00 AM
Project: Block 45
Lab ID: 1401208-007
Matrix: Soil
Client Sample ID: **T3-E-8'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12190		Analyst: KZ
Percent Moisture	7.91			wt%	1	1/24/2014 12:38:11 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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **MB-6434**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/24/2014**		RunNo: **12197**		
Client ID: **MBLKS**	Batch ID: **6434**					Analysis Date: **1/24/2014**		SeqNo: **243553**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Cadmium	ND	0.200									
Chromium	ND	0.100									
Lead	ND	0.200									

Sample ID: **LCS-6434**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/24/2014**		RunNo: **12197**		
Client ID: **LCSS**	Batch ID: **6434**					Analysis Date: **1/24/2014**		SeqNo: **243554**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	94.8	0.100	102.0	0	93.0	83.4	116				
Cadmium	81.9	0.200	86.30	0	94.8	81.2	116				
Chromium	192	0.100	208.0	0	92.3	86.5	118				
Lead	65.0	0.200	71.80	0	90.5	84.3	116				

Sample ID: **1401203-005ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2014**		RunNo: **12197**		
Client ID: **BATCH**	Batch ID: **6434**					Analysis Date: **1/24/2014**		SeqNo: **243588**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4.92	0.104						4.972	1.12	30	
Cadmium	ND	0.209						0		30	
Chromium	64.0	0.104						64.80	1.24	30	
Lead	5.30	0.209						5.320	0.391	30	

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **1401203-005AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/24/2014** RunNo: **12197**
Client ID: **BATCH** Batch ID: **6434** Analysis Date: **1/24/2014** SeqNo: **243590**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	55.8	0.103	51.35	4.972	98.9	75	125				
Cadmium	2.86	0.205	2.568	0.1661	105	75	125				
Chromium	133	0.103	51.35	64.80	132	75	125				S
Lead	28.5	0.205	25.68	5.320	90.1	75	125				

Sample ID: **1401203-005AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/24/2014** RunNo: **12197**
Client ID: **BATCH** Batch ID: **6434** Analysis Date: **1/24/2014** SeqNo: **243591**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.2	0.104	51.76	4.972	91.2	75	125	55.77	6.61	30	
Cadmium	2.73	0.207	2.588	0.1661	99.1	75	125	2.859	4.59	30	
Chromium	122	0.104	51.76	64.80	111	75	125	132.7	8.09	30	
Lead	27.2	0.207	25.88	5.320	84.5	75	125	28.45	4.56	30	

Sample ID: **1401203-005APDS** SampType: **PDS** Units: **mg/Kg-dry** Prep Date: **1/24/2014** RunNo: **12197**
Client ID: **BATCH** Batch ID: **6434** Analysis Date: **1/24/2014** SeqNo: **243592**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	116	0.102	51.0	64.8	99.8	75	125				

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

Date: *1/27/2014*

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Mercury by EPA Method 7471

Sample ID: **MB-6425**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/23/2014**		RunNo: **12195**		
Client ID: **MBLKS**	Batch ID: **6425**					Analysis Date: **1/24/2014**		SeqNo: **243488**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.250									

Sample ID: **LCS-6425**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/23/2014**		RunNo: **12195**		
Client ID: **LCSS**	Batch ID: **6425**					Analysis Date: **1/24/2014**		SeqNo: **243489**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.475	0.250	0.5000	0	95.0	80	120				

Sample ID: **1401196-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/23/2014**		RunNo: **12195**		
Client ID: **BATCH**	Batch ID: **6425**					Analysis Date: **1/24/2014**		SeqNo: **243491**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.325						0		20	

Sample ID: **1401196-001AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **1/23/2014**		RunNo: **12195**		
Client ID: **BATCH**	Batch ID: **6425**					Analysis Date: **1/24/2014**		SeqNo: **243492**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.637	0.309	0.6172	0.05073	95.0	70	130				

Sample ID: **1401196-001AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **1/23/2014**		RunNo: **12195**		
Client ID: **BATCH**	Batch ID: **6425**					Analysis Date: **1/24/2014**		SeqNo: **243493**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.660	0.309	0.6172	0.05073	98.8	70	130	0.6370	3.62	20	

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1401208-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2014**		RunNo: **12199**		
Client ID: **T3-W-2'**	Batch ID: **6435**					Analysis Date: **1/24/2014**		SeqNo: **243627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	266	20.7						252.3	5.12	30	
Heavy Oil	ND	51.7						0		30	
Surr: 2-Fluorobiphenyl	20.6		20.68		99.6	50	150		0		
Surr: o-Terphenyl	21.1		20.68		102	50	150		0		

Sample ID: **LCS-6435**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/24/2014**		RunNo: **12199**		
Client ID: **LCSS**	Batch ID: **6435**					Analysis Date: **1/24/2014**		SeqNo: **243633**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	482	20.0	500.0	0	96.4	65	135				
Surr: 2-Fluorobiphenyl	20.5		20.00		103	50	150				
Surr: o-Terphenyl	20.5		20.00		102	50	150				

Sample ID: **MB-6435**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/24/2014**		RunNo: **12199**		
Client ID: **MBLKS**	Batch ID: **6435**					Analysis Date: **1/24/2014**		SeqNo: **243634**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	21.1		20.00		105	50	150				
Surr: o-Terphenyl	21.3		20.00		107	50	150				

Sample ID: **CCV-C-DX-6435**	SampType: **CCV**			Units: **mg/Kg**		Prep Date: **1/27/2014**		RunNo: **12199**		
Client ID: **CCV**	Batch ID: **6435**					Analysis Date: **1/27/2014**		SeqNo: **243724**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	498	20.0	500.0	0	99.5	80	120				

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **CCV-C-DX-6435** SampType: **CCV** Units: **mg/Kg** Prep Date: **1/27/2014** RunNo: **12199**
Client ID: **CCV** Batch ID: **6435** Analysis Date: **1/27/2014** SeqNo: **243724**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	19.8		20.00		99.1	50	150				
Surr: o-Terphenyl	20.4		20.00		102	50	150				

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **1401199-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2014**	RunNo: **12196**
Client ID: **BATCH**	Batch ID: **R12196**		Analysis Date: **1/24/2014**	SeqNo: **243512**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.94						0		30	
Surr: Toluene-d8	3.07		2.971		103	65	135		0		
Surr: 4-Bromofluorobenzene	3.26		2.971		110	65	135		0		

Sample ID: **LCS-R12196**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2014**	RunNo: **12196**
Client ID: **LCSS**	Batch ID: **R12196**		Analysis Date: **1/24/2014**	SeqNo: **243515**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	24.9	5.00	25.00	0	99.6	65	135				
Surr: Toluene-d8	2.62		2.500		105	65	135				
Surr: 4-Bromofluorobenzene	2.58		2.500		103	65	135				

Sample ID: **MB-R12196**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2014**	RunNo: **12196**
Client ID: **MBLKS**	Batch ID: **R12196**		Analysis Date: **1/24/2014**	SeqNo: **243516**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	2.58		2.500		103	65	135				
Surr: 4-Bromofluorobenzene	2.72		2.500		109	65	135				

Sample ID: **CCV-R12196C**	SampType: **CCV**	Units: **mg/Kg**	Prep Date: **1/25/2014**	RunNo: **12196**
Client ID: **CCV**	Batch ID: **R12196**		Analysis Date: **1/25/2014**	SeqNo: **243615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	564	5.00	500.0	0	113	80	120				
Surr: Toluene-d8	51.6		50.00		103	65	135				
Surr: 4-Bromofluorobenzene	57.3		50.00		115	65	135				

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

Date: *1/27/2014*

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **CCV-R12196C**	SampType: **CCV**			Units: **mg/Kg**		Prep Date: **1/25/2014**		RunNo: **12196**		
Client ID: **CCV**	Batch ID: **R12196**					Analysis Date: **1/25/2014**		SeqNo: **243615**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1401199-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/24/2014** RunNo: **12193**
Client ID: **BATCH** Batch ID: **6431** Analysis Date: **1/24/2014** SeqNo: **243398**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0238						0		30	
Toluene	ND	0.0238						0		30	
Ethylbenzene	ND	0.0357						0		30	
m,p-Xylene	ND	0.0238						0		30	
o-Xylene	ND	0.0238						0		30	
Surr: Dibromofluoromethane	2.90		2.971		97.5	63.7	129		0		
Surr: Toluene-d8	2.81		2.971		94.5	61.4	128		0		
Surr: 1-Bromo-4-fluorobenzene	2.98		2.971		100	63.1	141		0		

Sample ID: **1401199-003BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/24/2014** RunNo: **12193**
Client ID: **BATCH** Batch ID: **6431** Analysis Date: **1/24/2014** SeqNo: **243400**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.36	0.0219	1.094	0	124	63.5	133				
Toluene	1.26	0.0219	1.094	0	116	63.4	132				
Ethylbenzene	1.27	0.0328	1.094	0	116	54.5	134				
m,p-Xylene	2.53	0.0219	2.189	0	115	53.1	132				
o-Xylene	1.24	0.0219	1.094	0	113	53.3	139				
Surr: Dibromofluoromethane	2.67		2.736		97.6	63.7	129				
Surr: Toluene-d8	2.71		2.736		99.0	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.64		2.736		96.3	63.1	141				

Sample ID: **LCS-6431** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/24/2014** RunNo: **12193**
Client ID: **LCSS** Batch ID: **6431** Analysis Date: **1/24/2014** SeqNo: **243402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.06	0.0200	1.000	0	106	74.6	124				
Toluene	0.956	0.0200	1.000	0	95.6	80.9	124				

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

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **LCS-6431** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/24/2014** RunNo: **12193**
Client ID: **LCSS** Batch ID: **6431** Analysis Date: **1/24/2014** SeqNo: **243402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	1.05	0.0300	1.000	0	105	74	129				
m,p-Xylene	2.11	0.0200	2.000	0	106	79.8	128				
o-Xylene	1.02	0.0200	1.000	0	102	72.7	124				
Surr: Dibromofluoromethane	2.44		2.500		97.4	63.7	129				
Surr: Toluene-d8	2.34		2.500		93.7	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.52		2.500		101	63.1	141				

Sample ID: **MB-6431** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/24/2014** RunNo: **12193**
Client ID: **MBLKS** Batch ID: **6431** Analysis Date: **1/24/2014** SeqNo: **243403**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0200									
Toluene	ND	0.0200									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Surr: Dibromofluoromethane	2.52		2.500		101	63.7	129				
Surr: Toluene-d8	2.42		2.500		96.7	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.49		2.500		99.4	63.1	141				

Sample ID: **CCV-6431B** SampType: **CCV** Units: **µg/L** Prep Date: **1/25/2014** RunNo: **12193**
Client ID: **CCV** Batch ID: **6431** Analysis Date: **1/25/2014** SeqNo: **243625**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.8	0.0300	20.00	0	104	80	120				
Surr: Dibromofluoromethane	47.9		50.00		95.8	63.7	129				
Surr: Toluene-d8	48.2		50.00		96.4	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	48.9		50.00		97.9	63.1	141				

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

Date: *1/27/2014*

Work Order: 1401208
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **CCV-6431B**	SampType: **CCV**			Units: **µg/L**		Prep Date: **1/25/2014**			RunNo: **12193**			
Client ID: **CCV**	Batch ID: **6431**					Analysis Date: **1/25/2014**			SeqNo: **243625**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

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

Sample Log-In Check List

Client Name:	**HWA**	Work Order Number:	**1401208**
Logged by:	**Chelsea Ward**	Date Received:	**1/24/2014 11:15:00 AM**

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	4.4	Good
Sample	6.1	Good

Chain of Custody Record

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1401208

Date: 1-24-14

Page: 1 of: 1

Client: HWA

Project Name: Block 45

Address:

Location:

City, State, Zip

Tel:

Collected by: S. Anderson

Reports To (PM): Arnie Sugar

Fax:

Email:

Project No:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals* (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)**	Comments/Depth
1	T3-W-2'	1-24-14	9:50	Soil		X				X			X				
2	T3-N-2'		10:00														
3	T3-Bottom		10:05														
4	T3-Bottom-2'		10:10														
*5	T3-Bottom-4'		10:15														
*6	T3-Bottom-10'		10:20														
*7	T3-E-8'		10:40														
8																	
9																	
10																	

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:

Relinquished	Date/Time	Received	Date/Time
x [signature]	1-24-14 11:15	x [signature]	1/24/14 11:15
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT --> SameDay NextDay 2 Day 3 Day STD

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

www.fremontanalytical.com

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

HWA GeoSciences, Inc.
Arnie Sugar
21312 30th Drive SE, Ste 110
Bothell, WA 98021

RE: Block 45
Lab ID: 1401230

January 29, 2014

Attention Arnie Sugar:

Fremont Analytical, Inc. received 6 sample(s) on 1/28/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Mercury by EPA Method 7471
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

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:
Shomari Anderson
Vance Atkins

Date: *01/29/2014*

CLIENT: HWA GeoSciences, Inc.
Project: Block 45
Lab Order: 1401230

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1401230-001	T4-S-11'	01/28/2014 11:30 AM	01/28/2014 2:35 PM
1401230-002	T4-S-13'	01/28/2014 11:35 AM	01/28/2014 2:35 PM
1401230-003	T4-N-11'	01/28/2014 11:45 AM	01/28/2014 2:35 PM
1401230-004	T4-E-10'	01/28/2014 11:40 AM	01/28/2014 2:35 PM
1401230-005	T4-Bottom-12'	01/28/2014 11:50 AM	01/28/2014 2:35 PM
1401230-006	T4-W-11'	01/28/2014 12:00 PM	01/28/2014 2:35 PM

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

Case Narrative

WO#: **1401230**
Date: **1/29/2014**

CLIENT: HWA GeoSciences, Inc.
Project: Block 45

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.

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:30:00 AM
Project: Block 45
Lab ID: 1401230-001
Matrix: Soil
Client Sample ID: **T4-S-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	ND	20.8		mg/Kg-dry	1	1/29/2014 2:29:00 AM
Heavy Oil	ND	51.9		mg/Kg-dry	1	1/29/2014 2:29:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	1/29/2014 2:29:00 AM
Surr: o-Terphenyl	104	50-150		%REC	1	1/29/2014 2:29:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	3.07		mg/Kg-dry	1	1/29/2014 8:00:00 AM
Surr: 4-Bromofluorobenzene	93.3	65-135		%REC	1	1/29/2014 8:00:00 AM
Surr: Toluene-d8	100	65-135		%REC	1	1/29/2014 8:00:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.0123		mg/Kg-dry	1	1/29/2014 8:00:00 AM
Toluene	ND	0.0123		mg/Kg-dry	1	1/29/2014 8:00:00 AM
Ethylbenzene	ND	0.0184		mg/Kg-dry	1	1/29/2014 8:00:00 AM
m,p-Xylene	ND	0.0123		mg/Kg-dry	1	1/29/2014 8:00:00 AM
o-Xylene	ND	0.0123		mg/Kg-dry	1	1/29/2014 8:00:00 AM
Surr: Dibromofluoromethane	99.9	63.7-129		%REC	1	1/29/2014 8:00:00 AM
Surr: Toluene-d8	102	61.4-128		%REC	1	1/29/2014 8:00:00 AM
Surr: 1-Bromo-4-fluorobenzene	98.9	63.1-141		%REC	1	1/29/2014 8:00:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.271		mg/Kg-dry	1	1/29/2014 2:34:23 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	1.10	0.0829		mg/Kg-dry	1	1/29/2014 12:04:07 AM
Cadmium	ND	0.166		mg/Kg-dry	1	1/29/2014 12:04:07 AM
Chromium	34.4	0.0829		mg/Kg-dry	1	1/29/2014 12:04:07 AM
Lead	1.61	0.166		mg/Kg-dry	1	1/29/2014 12:04:07 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:30:00 AM
Project: Block 45
Lab ID: 1401230-001
Matrix: Soil
Client Sample ID: **T4-S-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	7.91			wt%	1	1/28/2014 3:59:40 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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:35:00 AM
Project: Block 45
Lab ID: 1401230-002
Matrix: Soil
Client Sample ID: **T4-S-13'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	253	20.7		mg/Kg-dry	1	1/29/2014 2:57:00 AM
Heavy Oil	ND	51.7		mg/Kg-dry	1	1/29/2014 2:57:00 AM
Surr: 2-Fluorobiphenyl	96.6	50-150		%REC	1	1/29/2014 2:57:00 AM
Surr: o-Terphenyl	100	50-150		%REC	1	1/29/2014 2:57:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	3.87		mg/Kg-dry	1	1/29/2014 8:27:00 AM
Surr: 4-Bromofluorobenzene	92.6	65-135		%REC	1	1/29/2014 8:27:00 AM
Surr: Toluene-d8	102	65-135		%REC	1	1/29/2014 8:27:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.0155		mg/Kg-dry	1	1/29/2014 8:27:00 AM
Toluene	ND	0.0155		mg/Kg-dry	1	1/29/2014 8:27:00 AM
Ethylbenzene	ND	0.0232		mg/Kg-dry	1	1/29/2014 8:27:00 AM
m,p-Xylene	ND	0.0155		mg/Kg-dry	1	1/29/2014 8:27:00 AM
o-Xylene	ND	0.0155		mg/Kg-dry	1	1/29/2014 8:27:00 AM
Surr: Dibromofluoromethane	98.6	63.7-129		%REC	1	1/29/2014 8:27:00 AM
Surr: Toluene-d8	103	61.4-128		%REC	1	1/29/2014 8:27:00 AM
Surr: 1-Bromo-4-fluorobenzene	98.2	63.1-141		%REC	1	1/29/2014 8:27:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.267		mg/Kg-dry	1	1/29/2014 2:35:59 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	1.73	0.0813		mg/Kg-dry	1	1/29/2014 12:14:33 AM
Cadmium	ND	0.163		mg/Kg-dry	1	1/29/2014 12:14:33 AM
Chromium	45.8	0.0813		mg/Kg-dry	1	1/29/2014 12:14:33 AM
Lead	1.82	0.163		mg/Kg-dry	1	1/29/2014 12:14:33 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:35:00 AM
Project: Block 45
Lab ID: 1401230-002
Matrix: Soil
Client Sample ID: **T4-S-13'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	8.24			wt%	1	1/28/2014 3:59:40 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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:45:00 AM
Project: Block 45
Lab ID: 1401230-003
Matrix: Soil
Client Sample ID: **T4-N-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	ND	21.0		mg/Kg-dry	1	1/29/2014 3:25:00 AM
Heavy Oil	ND	52.5		mg/Kg-dry	1	1/29/2014 3:25:00 AM
Surr: 2-Fluorobiphenyl	105	50-150		%REC	1	1/29/2014 3:25:00 AM
Surr: o-Terphenyl	105	50-150		%REC	1	1/29/2014 3:25:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	2.59		mg/Kg-dry	1	1/29/2014 8:55:00 AM
Surr: 4-Bromofluorobenzene	92.6	65-135		%REC	1	1/29/2014 8:55:00 AM
Surr: Toluene-d8	101	65-135		%REC	1	1/29/2014 8:55:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.0104		mg/Kg-dry	1	1/29/2014 8:55:00 AM
Toluene	ND	0.0104		mg/Kg-dry	1	1/29/2014 8:55:00 AM
Ethylbenzene	ND	0.0155		mg/Kg-dry	1	1/29/2014 8:55:00 AM
m,p-Xylene	ND	0.0104		mg/Kg-dry	1	1/29/2014 8:55:00 AM
o-Xylene	ND	0.0104		mg/Kg-dry	1	1/29/2014 8:55:00 AM
Surr: Dibromofluoromethane	99.0	63.7-129		%REC	1	1/29/2014 8:55:00 AM
Surr: Toluene-d8	101	61.4-128		%REC	1	1/29/2014 8:55:00 AM
Surr: 1-Bromo-4-fluorobenzene	97.4	63.1-141		%REC	1	1/29/2014 8:55:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.270		mg/Kg-dry	1	1/29/2014 2:37:35 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	6.60	0.0819		mg/Kg-dry	1	1/29/2014 12:24:57 AM
Cadmium	ND	0.164		mg/Kg-dry	1	1/29/2014 12:24:57 AM
Chromium	38.2	0.0819		mg/Kg-dry	1	1/29/2014 12:24:57 AM
Lead	2.34	0.164		mg/Kg-dry	1	1/29/2014 12:24:57 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:45:00 AM
Project: Block 45
Lab ID: 1401230-003
Matrix: Soil
Client Sample ID: **T4-N-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	7.47			wt%	1	1/28/2014 3:59:40 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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:40:00 AM
Project: Block 45
Lab ID: 1401230-004
Matrix: Soil
Client Sample ID: **T4-E-10'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	ND	20.6		mg/Kg-dry	1	1/29/2014 3:53:00 AM
Heavy Oil	ND	51.6		mg/Kg-dry	1	1/29/2014 3:53:00 AM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	1/29/2014 3:53:00 AM
Surr: o-Terphenyl	105	50-150		%REC	1	1/29/2014 3:53:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	3.69		mg/Kg-dry	1	1/29/2014 9:23:00 AM
Surr: 4-Bromofluorobenzene	97.2	65-135		%REC	1	1/29/2014 9:23:00 AM
Surr: Toluene-d8	103	65-135		%REC	1	1/29/2014 9:23:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.0148		mg/Kg-dry	1	1/29/2014 9:23:00 AM
Toluene	ND	0.0148		mg/Kg-dry	1	1/29/2014 9:23:00 AM
Ethylbenzene	ND	0.0221		mg/Kg-dry	1	1/29/2014 9:23:00 AM
m,p-Xylene	ND	0.0148		mg/Kg-dry	1	1/29/2014 9:23:00 AM
o-Xylene	ND	0.0148		mg/Kg-dry	1	1/29/2014 9:23:00 AM
Surr: Dibromofluoromethane	97.0	63.7-129		%REC	1	1/29/2014 9:23:00 AM
Surr: Toluene-d8	99.8	61.4-128		%REC	1	1/29/2014 9:23:00 AM
Surr: 1-Bromo-4-fluorobenzene	103	63.1-141		%REC	1	1/29/2014 9:23:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.245		mg/Kg-dry	1	1/29/2014 2:42:26 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	1.42	0.0836		mg/Kg-dry	1	1/29/2014 12:35:22 AM
Cadmium	ND	0.167		mg/Kg-dry	1	1/29/2014 12:35:22 AM
Chromium	36.1	0.0836		mg/Kg-dry	1	1/29/2014 12:35:22 AM
Lead	1.60	0.167		mg/Kg-dry	1	1/29/2014 12:35:22 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:40:00 AM
Project: Block 45
Lab ID: 1401230-004
Matrix: Soil
Client Sample ID: **T4-E-10'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	7.27			wt%	1	1/28/2014 3:59:40 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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:50:00 AM
Project: Block 45
Lab ID: 1401230-005
Matrix: Soil
Client Sample ID: **T4-Bottom-12'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	ND	20.2		mg/Kg-dry	1	1/29/2014 4:21:00 AM
Heavy Oil	ND	50.5		mg/Kg-dry	1	1/29/2014 4:21:00 AM
Surr: 2-Fluorobiphenyl	106	50-150		%REC	1	1/29/2014 4:21:00 AM
Surr: o-Terphenyl	106	50-150		%REC	1	1/29/2014 4:21:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	2.28		mg/Kg-dry	1	1/29/2014 9:51:00 AM
Surr: 4-Bromofluorobenzene	90.0	65-135		%REC	1	1/29/2014 9:51:00 AM
Surr: Toluene-d8	99.8	65-135		%REC	1	1/29/2014 9:51:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.00912		mg/Kg-dry	1	1/29/2014 9:51:00 AM
Toluene	ND	0.00912		mg/Kg-dry	1	1/29/2014 9:51:00 AM
Ethylbenzene	ND	0.0137		mg/Kg-dry	1	1/29/2014 9:51:00 AM
m,p-Xylene	ND	0.00912		mg/Kg-dry	1	1/29/2014 9:51:00 AM
o-Xylene	ND	0.00912		mg/Kg-dry	1	1/29/2014 9:51:00 AM
Surr: Dibromofluoromethane	97.2	63.7-129		%REC	1	1/29/2014 9:51:00 AM
Surr: Toluene-d8	101	61.4-128		%REC	1	1/29/2014 9:51:00 AM
Surr: 1-Bromo-4-fluorobenzene	95.1	63.1-141		%REC	1	1/29/2014 9:51:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.227		mg/Kg-dry	1	1/29/2014 2:44:03 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	1.11	0.0804		mg/Kg-dry	1	1/29/2014 12:45:46 AM
Cadmium	ND	0.161		mg/Kg-dry	1	1/29/2014 12:45:46 AM
Chromium	27.1	0.0804		mg/Kg-dry	1	1/29/2014 12:45:46 AM
Lead	1.22	0.161		mg/Kg-dry	1	1/29/2014 12:45:46 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 11:50:00 AM
Project: Block 45
Lab ID: 1401230-005
Matrix: Soil
Client Sample ID: **T4-Bottom-12'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	5.05			wt%	1	1/28/2014 3:59:40 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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 12:00:00 PM
Project: Block 45
Lab ID: 1401230-006
Matrix: Soil
Client Sample ID: **T4-W-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6457		Analyst: BR
Diesel (Fuel Oil)	ND	19.8		mg/Kg-dry	1	1/29/2014 4:49:00 AM
Heavy Oil	ND	49.5		mg/Kg-dry	1	1/29/2014 4:49:00 AM
Surr: 2-Fluorobiphenyl	105	50-150		%REC	1	1/29/2014 4:49:00 AM
Surr: o-Terphenyl	105	50-150		%REC	1	1/29/2014 4:49:00 AM
Gasoline by NWTPH-Gx				Batch ID: R12240		Analyst: EM
Gasoline	ND	2.72		mg/Kg-dry	1	1/29/2014 10:18:00 AM
Surr: 4-Bromofluorobenzene	92.2	65-135		%REC	1	1/29/2014 10:18:00 AM
Surr: Toluene-d8	103	65-135		%REC	1	1/29/2014 10:18:00 AM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 6458		Analyst: EM
Benzene	ND	0.0109		mg/Kg-dry	1	1/29/2014 10:18:00 AM
Toluene	ND	0.0109		mg/Kg-dry	1	1/29/2014 10:18:00 AM
Ethylbenzene	ND	0.0163		mg/Kg-dry	1	1/29/2014 10:18:00 AM
m,p-Xylene	ND	0.0109		mg/Kg-dry	1	1/29/2014 10:18:00 AM
o-Xylene	ND	0.0109		mg/Kg-dry	1	1/29/2014 10:18:00 AM
Surr: Dibromofluoromethane	95.7	63.7-129		%REC	1	1/29/2014 10:18:00 AM
Surr: Toluene-d8	99.6	61.4-128		%REC	1	1/29/2014 10:18:00 AM
Surr: 1-Bromo-4-fluorobenzene	97.8	63.1-141		%REC	1	1/29/2014 10:18:00 AM
Mercury by EPA Method 7471				Batch ID: 6462		Analyst: MC
Mercury	ND	0.227		mg/Kg-dry	1	1/29/2014 2:45:41 PM
Total Metals by EPA Method 6020				Batch ID: 6459		Analyst: MC
Arsenic	1.52	0.0811		mg/Kg-dry	1	1/29/2014 1:33:56 AM
Cadmium	ND	0.162		mg/Kg-dry	1	1/29/2014 1:33:56 AM
Chromium	40.7	0.0811		mg/Kg-dry	1	1/29/2014 1:33:56 AM
Lead	1.87	0.162		mg/Kg-dry	1	1/29/2014 1:33:56 AM

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

Analytical Report

WO#: **1401230**
Date Reported: **1/29/2014**

Client: HWA GeoSciences, Inc.
Collection Date: 1/28/2014 12:00:00 PM
Project: Block 45
Lab ID: 1401230-006
Matrix: Soil
Client Sample ID: **T4-W-11'**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R12235		Analyst: KAS
Percent Moisture	5.12			wt%	1	1/28/2014 3:59:40 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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **MB-6459**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12238**		
Client ID: **MBLKS**	Batch ID: **6459**					Analysis Date: **1/28/2014**		SeqNo: **244284**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Cadmium	ND	0.200									
Chromium	ND	0.100									
Lead	ND	0.200									

Sample ID: **LCS-6459**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12238**		
Client ID: **LCSS**	Batch ID: **6459**					Analysis Date: **1/28/2014**		SeqNo: **244285**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	105	0.100	102.0	0	103	83.4	116				
Cadmium	89.6	0.200	86.30	0	104	81.2	116				
Chromium	230	0.100	208.0	0	111	86.5	118				
Lead	71.8	0.200	71.80	0	100	84.3	116				

Sample ID: **1401226-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12238**		
Client ID: **BATCH**	Batch ID: **6459**					Analysis Date: **1/28/2014**		SeqNo: **244287**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.82	0.0883						2.235	23.1	30	
Cadmium	ND	0.177						0		30	
Chromium	68.3	0.0883						66.22	3.15	30	
Lead	2.16	0.177						2.154	0.465	30	

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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **1401226-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/28/2014** RunNo: **12238**
Client ID: **BATCH** Batch ID: **6459** Analysis Date: **1/28/2014** SeqNo: **244291**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.3	0.0870	43.48	2.235	101	75	125				
Cadmium	2.51	0.174	2.174	0.1275	110	75	125				
Chromium	109	0.0870	43.48	66.22	99.5	75	125				
Lead	23.1	0.174	21.74	2.154	96.6	75	125				

Sample ID: **1401226-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/28/2014** RunNo: **12238**
Client ID: **BATCH** Batch ID: **6459** Analysis Date: **1/28/2014** SeqNo: **244292**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.8	0.0856	42.82	2.235	116	75	125	46.30	11.2	30	
Cadmium	2.85	0.171	2.141	0.1275	127	75	125	2.511	12.6	30	S
Chromium	106	0.0856	42.82	66.22	93.1	75	125	109.5	3.12	30	
Lead	25.7	0.171	21.41	2.154	110	75	125	23.15	10.6	30	

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed and was within range (see MS).

Sample ID: **1401226-001A-PDS** SampType: **PDS** Units: **mg/Kg-dry** Prep Date: **1/28/2014** RunNo: **12238**
Client ID: **BATCH** Batch ID: **6459** Analysis Date: **1/28/2014** SeqNo: **244293**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	2.53	0.171	2.14	0.128	112	75	125				

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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Mercury by EPA Method 7471

Sample ID: **MB-6462**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12253**			
Client ID: **MBLKS**	Batch ID: **6462**					Analysis Date: **1/29/2014**		SeqNo: **244633**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.250									

Sample ID: **LCS-6462**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12253**			
Client ID: **LCSS**	Batch ID: **6462**					Analysis Date: **1/29/2014**		SeqNo: **244634**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.508	0.250	0.5000	0	102	80	120				

Sample ID: **1401226-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12253**			
Client ID: **BATCH**	Batch ID: **6462**					Analysis Date: **1/29/2014**		SeqNo: **244636**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.277						0		20	

Sample ID: **1401226-001AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12253**			
Client ID: **BATCH**	Batch ID: **6462**					Analysis Date: **1/29/2014**		SeqNo: **244637**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.666	0.272	0.5435	0.09714	105	70	130				

Sample ID: **1401226-001AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12253**			
Client ID: **BATCH**	Batch ID: **6462**					Analysis Date: **1/29/2014**		SeqNo: **244638**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.682	0.283	0.5652	0.09714	103	70	130	0.6663	2.28	20	

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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1401227-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12239**			
Client ID: **BATCH**	Batch ID: **6457**					Analysis Date: **1/28/2014**		SeqNo: **244318**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	22.0						0		30	
Heavy Oil	ND	54.9						0		30	
Surr: 2-Fluorobiphenyl	22.6		21.97		103	50	150		0		
Surr: o-Terphenyl	22.5		21.97		103	50	150		0		

Sample ID: **LCS-6457**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12239**			
Client ID: **LCSS**	Batch ID: **6457**					Analysis Date: **1/28/2014**		SeqNo: **244336**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	490	20.0	500.0	0	98.1	65	135				
Surr: 2-Fluorobiphenyl	20.4		20.00		102	50	150				
Surr: o-Terphenyl	20.5		20.00		103	50	150				

Sample ID: **MB-6457**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12239**			
Client ID: **MBLKS**	Batch ID: **6457**					Analysis Date: **1/28/2014**		SeqNo: **244337**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	20.6		20.00		103	50	150				
Surr: o-Terphenyl	21.0		20.00		105	50	150				

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: *1/29/2014*

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **LCS-R12240**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **1/29/2014**		RunNo: **12240**		
Client ID: **LCSS**	Batch ID: **R12240**					Analysis Date: **1/29/2014**		SeqNo: **244353**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	29.8	5.00	25.00	0	119	65	135				
Surr: Toluene-d8	2.56		2.500		102	65	135				
Surr: 4-Bromofluorobenzene	2.41		2.500		96.5	65	135				

Sample ID: **MB-R12240**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/28/2014**		RunNo: **12240**		
Client ID: **MBLKS**	Batch ID: **R12240**					Analysis Date: **1/28/2014**		SeqNo: **244354**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	2.54		2.500		102	65	135				
Surr: 4-Bromofluorobenzene	2.39		2.500		95.5	65	135				

Sample ID: **1401230-006BDUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/28/2014**		RunNo: **12240**		
Client ID: **T4-W-11'**	Batch ID: **R12240**					Analysis Date: **1/29/2014**		SeqNo: **244605**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	2.72						0		30	
Surr: Toluene-d8	1.37		1.360		101	65	135		0		
Surr: 4-Bromofluorobenzene	1.29		1.360		94.8	65	135		0		

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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1401226-002BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/28/2014** RunNo: **12241**
Client ID: **BATCH** Batch ID: **6458** Analysis Date: **1/29/2014** SeqNo: **244358**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.05	0.0197	0.9869	0	107	63.5	133				
Toluene	1.05	0.0197	0.9869	0	107	63.4	132				
Ethylbenzene	1.00	0.0296	0.9869	0	101	54.5	134				
m,p-Xylene	2.01	0.0197	1.974	0	102	53.1	132				
o-Xylene	0.953	0.0197	0.9869	0	96.6	53.3	139				
Surr: Dibromofluoromethane	2.55		2.467		104	63.7	129				
Surr: Toluene-d8	2.58		2.467		104	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.45		2.467		99.3	63.1	141				

Sample ID: **LCS-6458** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/28/2014** RunNo: **12241**
Client ID: **LCSS** Batch ID: **6458** Analysis Date: **1/28/2014** SeqNo: **244372**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.987	0.0200	1.000	0	98.7	74.6	124				
Toluene	1.01	0.0200	1.000	0	101	80.9	124				
Ethylbenzene	0.991	0.0300	1.000	0	99.1	74	129				
m,p-Xylene	2.01	0.0200	2.000	0	101	79.8	128				
o-Xylene	0.933	0.0200	1.000	0	93.3	72.7	124				
Surr: Dibromofluoromethane	2.47		2.500		98.7	63.7	129				
Surr: Toluene-d8	2.53		2.500		101	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.48		2.500		99.1	63.1	141				

Sample ID: **MB-6458** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/28/2014** RunNo: **12241**
Client ID: **MBLKS** Batch ID: **6458** Analysis Date: **1/28/2014** SeqNo: **244373**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0200									
Toluene	ND	0.0200									

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

Work Order: 1401230
CLIENT: HWA GeoSciences, Inc.
Project: Block 45

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **MB-6458** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/28/2014** RunNo: **12241**
Client ID: **MBLKS** Batch ID: **6458** Analysis Date: **1/28/2014** SeqNo: **244373**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Surr: Dibromofluoromethane	2.49		2.500		99.5	63.7	129				
Surr: Toluene-d8	2.45		2.500		97.9	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.53		2.500		101	63.1	141				

Sample ID: **1401230-006BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/28/2014** RunNo: **12241**
Client ID: **T4-W-11'** Batch ID: **6458** Analysis Date: **1/29/2014** SeqNo: **244569**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0109						0		30	
Toluene	ND	0.0109						0		30	
Ethylbenzene	ND	0.0163						0		30	
m,p-Xylene	ND	0.0109						0		30	
o-Xylene	ND	0.0109						0		30	
Surr: Dibromofluoromethane	1.36		1.360		100	63.7	129		0		
Surr: Toluene-d8	1.38		1.360		101	61.4	128		0		
Surr: 1-Bromo-4-fluorobenzene	1.37		1.360		101	63.1	141		0		

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

Sample Log-In Check List

Client Name:	**HWA**	Work Order Number:	**1401230**
Logged by:	**Clare Griggs**	Date Received:	**1/28/2014 2:35:00 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	6.2	Good
Sample	7.0	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 149230

Date: 1-28-14

Page: 1 of: 1

Client: HWA

Address:

City, State, Zip

Tel:

Project Name: Block 45

Location:

Collected by: S. Andersen

Reports To (PM): Arnie Sugar

Fax:

Email:

Project No:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals* (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)**	Comments/Depth
1	T4-S-11'	1-28-14	11:30	Soil													
2	T4-S-13'		11:35														
3	T4-N-11'		11:45														
4	T4-E-10'		11:40														
5	T4-Bottom-12'		11:50														
6	T4-W-11'		12:00														
7																	
8																	
9																	
10																	

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:

Relinquished	Date/Time	Received	Date/Time
x [signature]	1-28-14 2:35	x [signature]	1/28/14 1435
x		x	

TAT --> SameDay NextDay 2 Day 3 Day STD

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

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