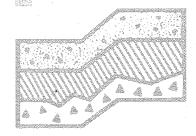
JUL 25 2013 DEPT OF ECOLOGY TCP - NWRO

Environmental Services
Remedial Investigation/
Feasibility Study/Remedial Action Summary
5221 Ballard Avenue NW
Seattle, Washington
VCP NW2496

Project No. T-6552



Terra Associates, Inc.

Prepared for:

HALCO PROPERTIES, LLC Seattle, Washington

July 24, 2013



TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

> July 24, 2013 Project No. T-6552

HALCO PROPERTIES, LLC Mr. Brett Cowman c/o Mr. Livingston Wernecke Betts, Patterson & Mines, P.S. 701 Pike Street, Suite 1400 Seattle, Washington 98101-3927

Subject:

Environmental Services

Remedial Investigation/Feasibility Study/Remedial Action Summary

5221 Ballard Avenue NW Seattle, Washington VCP NW2496

Dear Mr. Cowman:

This report documents our observations and the results of analytical testing of representative soil and vapor samples on the subject site. We have provided environmental services on this project starting since 2011.

The attached report describes the evaluation of the site and remedial measures in detail. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call. We will request that the Washington State Department of Ecology review the report and offer their opinion of the proposed remedial action.

Sincerely yours,

TERRA ASSOCIATES, INC.

Charles R. Lie, L.E.G., L.H.G.

Project Manager

cc:

Mr. Livingston Wernecke, BP and M Ms. Heather Vick, WDOE NWRO

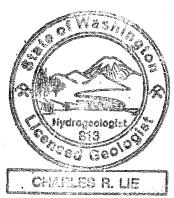


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Environmental Services Remedial Investigation/Feasibility Study/Remedial Action Summary 5221 Ballard Avenue NW Seattle, Washington VCP NW2496

1.0 INTRODUCTION

This report presents a summary of our environmental services at 5221 Ballard Avenue NW. The site has been accepted into the voluntary cleanup program and is a portion of a larger site listed under the name of C and C Paints. The voluntary cleanup number for the site is NW2496.

Site Name:

A portion of the former C and C Paint site

Site Address:

5221 Ballard Avenue NW

Seattle Washington 98199

Tax Parcel:

2767702565

Owner:

HALCO PROPERTIES, LLC

Mr. Brett Cowman

c/o Mr. Livingston Wernecke Betts, Patterson & Mines, P.S. 701 Pike Street, Suite 1400

Seattle, Washington 98101-3927

Consultant:

Terra Associates, Inc.

12525 Willows Road, Suite 101 Kirkland, Washington 98034

Mr. Charles R. Lie, L.E.G., L.H.G. (425) 821-7777

A Phase II ESA for the site was prepared by Terra Associates Inc. Prior to our involvement with the site, UST assessments and closure observations had been done by others. A list of the prior reports is presented in Appendix A attached to this report. The results of the prior assessments and of our Phase II ESA showed that there had been releases from one or more of the USTs on-site that were used to store paint thinner. The paint thinner was used in an adjacent building that fronts on Shilshole Avenue NW to mix paints. No actual paint mixing occurred on the site at 5221 Ballard Avenue NW.

Tables attached to this report summarize all soils, groundwater, VES exhaust samples, and sub slab vapor samples taken by Terra Associates, Inc. on or immediately adjacent to 5221 Ballard Avenue NW.

Interim Remedial Action

As summarized in our Phase II ESA for the site, the residual contamination was found to be primarily in the capillary fringe zone alongside the UST cavities. The initial interim remedial action was intended to consist of enhanced in situ bio remediation through the use of calcium peroxide injected into the capillary fringe. One episode of the injections occurred in November of 2011. Subsequently, dewatering of a construction site north of the site lowered the groundwater by about 20 to 25 feet beneath the property. This left the former capillary fringe zone within the new vadose zone. The interim remedial action was changed to consist of a vacuum extraction system that would both remove the paint thinner through volatilization and enhance natural in place degradation by increasing the active flow of air with oxygen through the zone of contaminated soils. The vacuum system has operated since May of 2012 and remains in operation at this time. One set of performance soil samples has been taken since the initial operation of the vacuums system. The testing is discussed in more detail in the body of this report.

Scope of Work

Our scope of our work for this project included:

- Review of the Ecology file for the project site.
- Review of prior work by others on-site.
- Preparation of a Phase II ESA.
- Assistance in joining the Voluntary Cleanup Program.
- Development of an injection program and coordination of the injection with the Underground Injection Control office of Ecology.
- Observation of the injection of calcium peroxide in November of 2011.
- Development of an alternate interim action plan using vacuum extraction.
- Observation and field screening of soils during supplemental performance soil sampling.
- Collection of representative samples from supplemental explorations analytical testing.
- Monthly sampling of vapors from the Vacuum System.
- Preparation of periodic technical memos documenting project progress.
- Preparation of this report.

The following sections of this report detail our site observations and the results of analytical testing.

2.0 SITE DESCRIPTION

2.1 Surface

The site is located at 5221 Ballard Avenue NW in Seattle, Washington. The site location is shown on Figures 1 and 2. Figure 3 is an ALTA map prepared for the site and adjacent parcels that comprise the C and C Paint facility. Figure 4 shows former groundwater conditions beneath the site. Figure 5 is a generalized geologic section through the site. Figure 6 shows the locations of the former USTs.

In general, the site consists of two elements, the parking lot and the building. The parking lot is relatively level at an elevation close to the elevation of Ballard Avenue NW. The building is a two-story brick building with a full basement. The basement level is about nine feet below the level of Ballard Avenue NW. There is a catch basin in the parking lot that drains to the combined stormwater/sewer system present in Ballard Avenue NW. There are no plumbing fixtures in the basement of the building. The plumbing fixtures in the building on-site all drain towards the sanitary sewer in Ballard Avenue NW. The sewer extends out through the northern wall of the building.

The USTs are present in the parking area. A pipe chase extends from the USTs towards the south and enters the northern retaining wall that forms the northern wall of the building north of the site. No pump islands or other dispensers for the USTs are present on the site. The distribution pipes are about one-foot below the ground surface in the parking lot adjacent to the USTs.

The site is completely covered with impervious surfaces consisting of either roof or paved surface. There are no surface water bodies on the site.

The adjacent land uses are all commercial and retail in nature. There are apartments located above the street level retail spaces in the buildings located north of the site across Ballard Avenue NW from the site.

2.2 Subsurface

Subsurface conditions at the site consist of glacially derived sediments. Soil conditions have been explored and documented by Terra Associates, Inc. through explorations. The upper nine to ten feet of the soils consist of fills placed to raise site grades to match Ballard Avenue NW. Beneath the fills, our explorations encountered and were terminated within sands that appear to be till-like in nature or is an intercalated till. Deeper borings for an adjacent construction boring encountered and were terminated within soils that appear to be Advance outwash present beneath the till. Figure 5 is a generalized geologic cross section that extends through the site.

2.3 Geology

The site is located in a glacial drift upland area. The Geologic Map of Northwest I, 2005, by Booth D. B. et al, shows the site as being underlain by map unit Qvt, till. The cross section for the Geologic Map shows the till being underlain by Advance outwash. This is consistent with our on-site observations.

2.4 Groundwater

Groundwater was present beneath the site at a depth of about ten feet below existing grade with a gradient towards Salmon Bay. Static water levels that have been measured on-site are presented in Table 1. Table 1 follows the text of this report. The current groundwater gradient is currently towards the north-east, inconsistent with the previous measurements. The gradient has reversed due to active dewatering at a new construction project northeast of the site. The dewatering at the new construction project is reported to consist of a permanent dewatering sump. It is not expected that the groundwater beneath the site will return to the prior conditions. The former groundwater conditions are illustrated on Figures 4 and 5.

3.0 PRIOR REPORTS BY OTHERS

Appendix A lists prior reports that cover the C and C Paints facility. As discussed earlier, the former C and C Paint facility included additional parcels that front on Shilshole Avenue NW. The reports that specifically address 5221 Ballard Avenue NW are identified in the summary table. The following reports address 5221 Ballard Avenue NW specifically.

3.1 Ballard Avenue Landmark Letter, dated April 17, 1991

This letter prepared by the Ballard Avenue Landmarks District Board discusses the landmark status of the buildings. This letter reports that no permit from the board is needed to remove the USTs; however, if the UST removal operations were to damage or require changes to the buildings, the board approval would be needed.

3.2 Buried Tanks in Alley, dated April 19, 1991

This letter prepared by Pacific Testing Laboratories suggested that the USTs should be closed in place to avoid damage to the existing adjacent Ballard hardware building. No copy of this letter has been found in the current files at Terra Associates, Inc.

3.3 UST Closure in Place Letter, dated November 3, 1992

This letter prepared by Bison Environmental discusses the closure in place of the northern two USTs on-site. The USTs are identified as UST 6-P and 8-P, both reported to have contained mineral spirits. An assessment was done on November 5, 1992 using a drill rig to obtain soil sample from alongside UST 6-P. A total petroleum hydrocarbon content of 2,600 parts per million (ppm) was reported at a depth of 12 feet below existing grade. No groundwater was reported to have been present at the time of drilling. The report identified a release from a leaking seal of a turbine pump manifold in UST 8-P. The USTs were filled with controlled density fill (CDF).

3.4 UST Closure Letter, dated February 10, 1998

This letter prepared by Nowicki and Associates discusses the closure in place of the southern UST on-site. Samples were taken from holes cut into the base of the UST. No release was documented in the samples taken through the sample ports cut into the base of the UST. The samples taken from the access ports were all below the MTCA cleanup levels.

4.0 EXPOSURE ROUTE ANALYSIS-EXISTING CONDITIONS

4.1 Terrestrial Ecological Evaluation

The site is located in a densely developed commercial area adjacent to a water body. The adjacent parcels south of the site are industrial in nature. No undeveloped land is present within a 500-foot radius. Thus, as allowed in WAC 173-340-7491 (1)I (i) the site is excluded from a terrestrial ecological evaluation. The impacts to surface water are discussed later in the groundwater element of the site.

4.2 Direct Contact

Direct contact was the exposure route for soils.

4.3 Vapor Pathway

The chemical of greatest concern with gasoline is benzene. While the paint thinner did not contain benzene as an intentional constituent, incidental levels of benzene may have been present within the paint thinner. As shown in the data collected on-site, the vapor pathway is being addressed by the vacuum extraction operations.

4.4 Groundwater

The groundwater pathway did not include any drinking water resources. The groundwater beneath the site discharges to Salmon Bay through the adjacent basement dewatering sump. Salmon Bay is not considered a potential drinking water resource. Salmon Bay is part of the Lake Union body of water.

5.0 CLEANUP OPTIONS

5.1 General

It is the goal of HALCO to obtain a No Further Action Determination for the site. The purpose of the NFA is to allow conventional bank financing of the real estate. The current analytical data shows that the soils that exceeded MTCA cleanup levels were addressed through the operation of the VES. Three samples exceeded the MTCA cleanup requirements. This is discussed in Section 5.2.1. The points of compliance for soils are at all locations on-site. The points of compliance for the groundwater are the northern end of the proposed mixing zone that is discussed in Section 5.2.2 of this report.

The contaminants of concern are total petroleum hydrocarbons in the gasoline range, paint thinner. It appears that benzene was a contaminant of the paint thinner and was formerly present slightly above the cleanup values. Polycyclic aromatic hydrocarbons (PAHs) were also part of the initial analysis to assist in evaluating site specific cleanup calculations. The PAHs did not exceed MTCA Method A cleanup values.

5.2 Remediation/Cleanup Levels

5.2.1 Soils

The remediation and cleanup goal of the remedial action is the Method A cleanup values of the MTCA for BETX and poly cyclic aromatic hydrocarbons (PAHs). The only analyte that has been found to exceed the MTCA Method A cleanup value in final confirmation samples has been TPH in the gasoline range. We propose the use of a site specific cleanup value for gasoline range TPH. Method B levels for soil cleanup are shown in parenthesis for BETX and cPAHs. These values are shown in the following table:

Table 5.2.1
Soil Remediation/Cleanup Levels
5221 Ballard Avenue NW

Compounds of Concern	MTCA Cleanup Level parts per million (ppm)	Notes
TPH gasoline range	2,000	Site Specific Value for direct
		contact from MTCA TPH macro
Benzene	0.03 (18)	Method A value (Method B value)

Table 5.2.1 Soil Remediation/Cleanup Levels 5221 Ballard Avenue NW

Compounds of Concern	MTCA Cleanup Level parts per million (ppm)	Notes
Ethyl Benzene	6.0 (8,000)	Method A value (Method B value)
Toluene	7.0 (640)	Method A value (Method B value)
Xylenes	9.0 (1,600)	Method A value (Method B value)
cPAHs	0.1 (0.14)	See Table 708-2 in the MTCA for
		TEF values (Method B value)

5.2.2 Groundwater

The remediation and cleanup goal for the remediation action are surface water quality standards. The groundwater beneath the site is being withdrawn through a dewatering system installed on a neighboring property. The dewatering system discharges to the municipal stormwater drainage system and then to Salmon Bay. The site is not in an area that influences drinking water resources. Salmon Bay is not considered to be a drinking water resource.

Table 5.2.2
Groundwater Remediation/Cleanup Levels
5221 Ballard Avenue NW

Compounds of Concern	MTCA Cleanup Level parts per million (ppm)	Notes
TPH gasoline range	No visible sheen	Surface water standards (no MTCA Method B value published)

Table 5.2.2 (continued) Groundwater Remediation/Cleanup Levels 5221 Ballard Avenue NW

Compounds of Concern	MTCA Cleanup Level parts per million (ppm)	Notes
Benzene	23 (1.2)	MTCA B surface water ((National Toxics Rule)
Ethyl Benzene	6,900	MTCA B surface water
Toluene	19,000	MTCA B surface water
Xylenes	1,600	MTCA B surface water

5.2.3 Sub Slab Vapor

The remediation and cleanup goal for sub slab vapors is for the basement areas of the two adjacent buildings. The adjacent warehouse building is not continuously occupied, has large doors that are usually open to the ambient air, and forklifts powered by internal combustion engines are used in the warehouses. The proposed cleanup goals are taken from the existing draft guidance for vapor intrusion.

The vacuum system was shut off 3 full days prior to the sampling on January 29, 2013 to allow the sub slab vapor conditions to equalize prior to sampling. No negative pressures were present in the sub slab vapor points at the time the samples were taken on January 29, 2013.

Table 5.2.3
Sub Slab Vapor Remediation/Cleanup Values

Compounds of Concern	MTCA Cleanup Level Micro Grams per cubic meter (μg/M³)	Notes
TPHv (C5-C8) Aliphatic	27,000	Ecology Draft Publication Guidance
TPHv (C9-C12) Aliphatic	1,400	For Evaluating Soil Vapor Intrusion in Washington State, Ecology
TPHv (C9-C10) Aromatic	1,800	Publication 09-09-047
Benzene	3.2	
Ethyl Benzene	4,600	
Toluene	22,000	
m,p Xylene	460	
o-Xylene	460	
Methylene Chloride	53	1

5.3 Options Reviewed For This Project

We have reviewed the following options for remedial action at this site:

Table 5.3 Remedial Options

Option	Advantage	Disadvantage
1. Capping	Expedient and least expensive solution.	Will require institutional controls and a restrictive covenant. A disproportionate cost analysis would be required.
2. In situ treatment with oxidizing agents	Reduces the quantity of waste generated.	With the loss of the groundwater as a media to deliver increased oxygen to the capillary fringe, this option became unsuitable for the site.
3. In situ enhanced bio degradation	Reduces the quantity of waste generated.	This option is partially in use in combination with vacuum extraction, Option 5.
4. Bio venting	Reduces the quantity of waste generated.	This option is partially in use in combination with vacuum extraction, Option 5.
5. Vapor extraction	Reduces the quantity of waste generated.	A vacuum extraction system has been used on site since May of 2012. The VES system is also working as bio venting and in situ enhanced bio degradation.
6. Excavation and off-site disposal or treatment	Provides a permanent solution.	This option was not feasible due to the limited work space on-site, the presence of three USTS that are within the zone that requires remediation, and the presence of historic structures on the west and east sides of the contamination zone.
7. Excavation and on-site treatment	Reuses material and reduces export of wastes.	There is insufficient room on-site or the neighborhood to perform land farming. Costs would exceed the cost of excavation and off-site treatment. Would require closing traffic lanes and sidewalks and the shoring of the temporary excavation. Not considered to be viable for this site.
8. No action	No immediate costs.	Will require cleanup at a later date. Will not satisfy the owners need for a No Further Action Determination. Will not allow conventional financing of the real estate.

5.4 Enhanced Bio Degradation/Bio Venting/Vacuum Extraction Option – Expanded Discussion

The initial interim remedial effort for enhanced biodegradation is summarized in our letter dated December 11, 2011. The subsequent change in static water levels required that the interim remedial operation switch to an active Vapor Extraction System that would physically remove paint thinner through volatilization as well as enhance bio degradation through the creation of air flows through the subsurface soils. The VES operation is outlined in our report dated May 3, 2012. The initial operation of the VES unit was focused on Monitoring Well 101. On June 14, 2012, the valves were turned on to draw from all 3 of the monitoring wells. The system operated in this manner until January 26, 2013. On January 26, 2013, the vacuum system was turned off. After sub slab sampling on January 29, 2013, the system was turned back on.

Based on the results of the performance soils sampling summarized in Table 2F, on January 13, 2013, the valve to Monitoring Well MW-101 was shut off. The system operated with a vacuum on Monitoring Wells MW-101 and MW-102 until February 28, 2013. Two new vapor extraction wells were built to enhance the recovery of vapors from the location of confirmation sample exploration DPT-4 at a depth of 9 feet. The new wells were plumbed into the existing system and turned on February 28, 2013. The system has operated drawing a vacuum on MW-101, MW-102, MW-105, and MW-106 since February 28, 2013.

The vacuum operated with a vacuum of 40 to 50 inches of water and a flow of about 80 cubic feet per minute. Due to Seattle Noise Ordinance requirements, the system operates 12 hours per day. The exhaust is sampled on a monthly basis. The lab reports are attached in Appendix E. Chart 1 attached to Appendix E shows the estimated total amount of paint thinner that has been removed. The prominent break in slope in early July of 2012 reflects the change in operating time from 24 hours a day to 12 hours per day. The monthly recovery data for the VES system is shown on Chart 2. Based on the data from the VES unit, about 180 gallons of paint thinner have been removed from the subsurface.

6.0 DISCUSSION/CONCLUSIONS

Based on the performance soil sampling and the sub slab vapor readings, the interim remedial option chosen for this site is effective at reducing the contaminant levels in the site soils and has been chosen as the final remedial action. Additional soil and sub slab vapor performance samples will be taken to verify the system. The results of groundwater sampling prior to the enhanced bio degradation showed that the groundwater met the cleanup requirements proposed for this site. The letter from Ecology dated February 12, 2012 stated that Benzene would be a contaminant of concern. However, no subsequent testing has found benzene in soils from this site.

Based on our observations and performance testing documented in this report, it is our opinion that the project may be given a No Further Action Determination when the sub slab vapor samples and performance soil samples demonstrate that the target TPH in soils and subs slab air and benzene levels in sub slab air have been reached. Based on the performance testing done in 2013, there is no indication that any measurable levels of hydrocarbons were transported down as the static water level decreased as a result of the adjacent dewatering project. With the residual soil contamination remaining well above the static water level, it is our opinion that the proposed remediation level that is suitable for direct contact is the appropriate cleanup level. Even in the time prior to the decreased static water level when the groundwater was in contact with the residual contamination in the capillary fringe, the groundwater generally met Method A cleanup criteria for groundwater. Hence, it is our opinion that the leaching pathway can be ignored for this project. The groundwater is not expected to return to its former levels in the foreseeable future. Ongoing degradation of the residual paint thinner will continue into the future even after the vacuum system is removed.

7.0 LIMITATIONS

The findings, conclusions, and recommendations presented in this report are based on our documented site observations, review of historical and regulatory information, interviews, and review of the referenced historic resources. Other information related to past site uses or current site conditions may exist. Our conclusions in part are based on information provided or prepared by others.

If the existing site uses change, or if further information on the site becomes available, Terra Associates, Inc. should review the information, as it may affect our conclusions.

We prepared our conclusions and recommendations in accordance with generally accepted professional engineering practices. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the 5221 Ballard Avenue Northwest project in Seattle, Washington. This report is for the exclusive use of HALCO PROPERTIES, LLC and their authorized representatives.

Table 1
Groundwater Measurements

Monitoring	Surface	face MP 5/6/2011 5/10/2011		2011	6/29/2011		9/29/2011			
Well	Elev.	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	36.77	36.37	10.3	26.07	10.45	25.92	10.78	25.59	11.63	24.74
MW-102	36.35	35.93	10.25	25.68	9.81	26.12	10.08	25.85	11	24.93
MW-103	36.13	35.79	10.25	25.54	9.38	26.41	9.74	26.05	10.86	24.93
MW-104	28.23	27.98					2.76	25.22	3.55	24.43

Table 1 (continued)
Groundwater Measurements

Monitoring	Surface MP		10/17/2011		11/18/2011		11/29/2011		5/2/2012	
Well	Elev.	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	36.77	36.37	11.50	24.87	15.68	20.69	17.19	19.18	>20	<16.37
MW-102	36.35	35.93	10.86	25.07	15.78	20.15	17.32	18.61	>20	<15.93
MW-103	36.13	35.79	10.54	25.25	16.83	18.96	18.54	17.25	>20	<15.79
MW-104	28.23	27.98			6.83	21.15			>15	<12.98
MW-8	27.97	27.51			5.22	22.29			>8	<18.60
MW-9	30.24	29.99			7.39	22.60	-	-	>8	<19.51

Table 1 (continued) Groundwater Measurements

Monitoring	Surface	MP	8/22/2012		
Well	Elev.	Elev.	Depth	Elev.	
MW-101	36.77	36.37	NM	N/A	
MW-102	36.35	35.93	NM	N/A	
MW-103	36.13	35.79	NM	N/A	
MW-104	28.23	27.98	>15	<12.98	
MW-8	27.97	27.51	>8	<18.60	
MW-9	30.24	29.99	>8	<19.51	

Notes: MP is the north side of the top of the PVC casing within the surface monument.

Ground surface elevations are from a survey by Jim Hart and Associates.

NM indicates the well was not measured due to the use of the well in the VES system on-site.

Table 2A
Petroleum Hydrocarbons
Soil-Initial Samples

Well	Date	Depth (feet)	TPH Gasoline Range
B-101	5/6/11	9.0	82
(MW-101)	3/0/11	14	4.8U
B-102	5/6/11	10	3,900
(MW-102)	3/0/11	15	5.7U
B-103	5/6/11	10	1,400
(MW-103)	3/0/11	15	5.1U
B-104	6/13/11	2.5	15
(MW-104)	0/13/11	5	10
VP-1	6/13/11	1.5	5.8U
VP-2	6/13/11	1.5	140
	0/13/11	3.5	9.7
VP-3	6/13/11	1.5	5.5U
	100		
Si	te Specific Value		2,000

Table 2B Volatile Organic Compounds Soil-Initial Samples 2011

Well Number	Depth	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o-Xylene
B-101	9	0.0012U	0.0012U	0.006U	0.0024U	0.0012U
(MW-101)	14	0.00083U	0.00083U	0.0042U	0.0017U	0.00083U
B-102	10	0.058U	0.058U	0.29U	0.12U	0.058U
(MW-102)	15	0.00095U	0.00095U	0.0047U	0.0019U	0.00095U
B-103	10	0.056U	0.056U	0.28U	0.11U	0.056U
(MW-103)	15	0.00092U	0.00092U	0.0046U	0.0018U	0.00092U
B-104 (MW-104)	2.5	0.0013U	0.0013U	0.0065U	0.0026U	0.0013U
MTC	AA	0.03	6.0	7.0	9	.0
MTC	CA B	18	8,000	6,400	16,	000

Table 2B (continued) Volatile Organic Compounds Soil-Initial Samples 2011

Well Number	Well Number Depth		isopropyl benzene	n-Propylbenzene	Sec-Butyl benzene
B-101	9	0.022	0.0035	0.0049	0.0012U
(MW-101)	14	0.013	0.00083U	0.00083U	0.00083U
B-102	10	0.29U	0.058U	0.058U	0.058U
(MW-102)	15	0.0084	0.00095U	0.00095U	0.00095U
B-103	10	0.28U	0.056U	0.056U	0.056U
(MW-103)	15	0.0082	0.0092U	0.0092U	0.0092U
B-104 (MW-104)	2.5	0.037	0.0013U	0.0013U	0.0013U
VP-2	1.5	0.0056	0.0034	0.0040	0.0048
MTCA		(72,000)	np	(8,000)	np

Notes for Tables 1 and 2:

All levels are reported in parts per million (ppm).

Modifier of U indicates that the compound was not present at the numerical PQL value.

PQL varies with the moisture content of the sample.

PQL in bold for benzene exceeds Method A cleanup value.

PQL elevated due to elevated TPH in the individual samples.

MTCA Method A cleanup values are shown for reference purposes.

Values in parenthesis are Method B cleanup values.

Table 2C cPAH Summary Soil Samples-Initial Sampling MW-102 at 10 Feet

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.014	1	0.014
benzo(a)anthracene	0.0093	0.1	0.00093
benzo(b)fluoranthene	0.0084	0.1	0.00084
benzo(k)fluoranthene	0.0087	0.1	0.00087
chrysene	0.011	0.01	0.00011
dibenz(a,h)anthracene	0.0078	0.1	0.00078
indeno(1,2,3-cd)pyrene	0.0078	0.1	0.00078
TOTAL CPAH	0.067		0.01831

Table 2C (continued) cPAH Summary MW-102 at 8 Feet

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.067	1	0.067
benzo(a)anthracene	0.035	0.1	0.0035
benzo(b)fluoranthene	0.039	0.1	0.0039
benzo(k)fluoranthene	0.035	0.1	0.0035
chrysene	0.046	0.01	0.00046
dibenz(a,h)anthracene	0.0092	0.1	0.00092
indeno(1,2,3-cd)pyrene	0.0.3	0.1	0.003
TOTAL CPAH	0.2612		0.08228

Notes: All units are parts per million (ppm).

TEF is from Table 708-2.

MTCA Method A cleanup value is 0.1 ppm for the sum of the cPAHs.

MTCA Method B cleanup value is 0.14 for Benzo (a) Pyrene and for the sum of the cPAHs.

Table 2D
Petroleum Hydrocarbons and BETX
Soil-Performance Samples 2013

Exploration Number	Depth	Total Petroleum Hydrocarbons- Gasoline Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o-Xylene
DPT 1	14	7.7U	0.02U	0.077U	0.077U	0.077U	0.077U
DFTT	19	5.4U	0.02U	0.054U	0.054U	0.054U	0.054U
DPT 2	14	4.8U	0.02U	0.048U	0.048U	0.048U	0.048U
Driz	19	4.9U	0.02U	0.049U	0.049U	0.049U	0.049U
	9	250	0.02U	0.065U	0.065U	0.093	0.065U
DPT 3	14	5.6	0.02U	0.051U	0.051U	0.051U	0.051U
	19	4.8U	0.02U	0.048U	0.048U	0.048U	0.048U
	9	5,100	0.022U	0.11U	0.11U	0.6	0.55U
DPT 4	14	5.5U	0.02U	0.055U	0.055U	0.055U	0.055U
	19	4.5U	0.02U	0.045U	0.045U	0.045U	0.045U
DPT 5	9	37	0.02U	0.045U	0.045U	0.045U	0.045U
Dr 1 3	14	4.8	0.02U	0.048U	0.048U	0.048U	0.048U
	9	5.3U	0.02U	0.053U	0.053U	0.053U	0.053U
DPT 6	14	11	0.02U	0.057U	0.057U	0.057U	0.057U
	19	5.7U	0.02U	0.057U	0.057U	0.057U	0.057U

Table 2D (continued) Petroleum Hydrocarbons and BETX Soil-Performance Samples 2013

	T^{-}	T		1		T	
Exploration	Depth	Total Petroleum Hydrocarbons- Gasoline Range	Benzene	Ethyl Benzene	Toluene	m,p Xylene	o-Xylene
	9	920	0.02U	0.059U	0.059U	0.059U	0.059U
DPT 7	14	5.1U	0.02U	0.051U	0.051U	0.051U	0.051U
	19	5.3U	0.02U	0.053U	0.053U	0.053U	0.053U
DPT 8	9	6.1U	0.02U	0.061U	0.061U	0.061U	0.061U
DI 1 0	14	4.7U	0.02U	0.047U	0.047U	0.047U	0.047U
	9	5.6U	0.02U	0.056U	0.056U	0.056U	0.056U
DPT 9	14	5.2U	0.02U	0.052U	0.052U	0.052U	0.052U
	19	4.9U	0.02U	0.049U	0.049U	0.049U	0.049U
	9	5.4U	0.2U	0.054U	0.054U	0.054U	0.054U
DPT 10	14	4.7U	0.02U	0.047U	0.047U	0.047U	0.047U
	19	5.4U	0.02U	0.054U	0.054U	0.054U	0.054U
DPT 11	4	4.9U	0.02U	0.049U	0.049U	0.049U	0.049U
	5	7,300	0.03U	0.23	0.15U	1.3	0.39
MW-105	10	1,000	0.02U	0.1U	0.1U	0.15	0.1U
1 41 W -105	15	4.8U	0.02U	0.048U	0.048U	0.048U	0.048U
·	20	14	0.02U	0.056U	0.056U	0.056U	0.056U
	7.5	3,300	0.02U	0.15U	0.15U	0.65	0.27
MW-106	12.5	5.6U	0.02U	0.056U	0.056U	0.056U	0.056U
	17.5	5.5U	0.02U	0.055U	0.055U	0.055U	0.055U
	4	1,000	0.02U	0.38	0.051U	2.5	0.051U
25-14	11	67	0.02U	0.049U	0.049U	0.049U	0.049U
	14	4.8U	0.02U	0.048U	0.048U	0.048U	0.048U
Cleanup Goa	ls	2,000	18	8,000	6,400	16,	000

Table 3
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Gas Range	TPH Diesel Range	TPH Oil Range
MW-101	5/10/11	0.16	0.26U	0.41U
	9/29/11	0.29	0.26U	0.42U
MW-102	5/10/11	0.5U	0.27U	0.41U
	9/29/11	0.59	0.26U	0.41U
MW-103	5/10/11	0.94	0.7U	0.42U
·	9/29/11	0.27	0.26U	0.41U
MW-104	6/29/11	0.1U	0.41U	0.26U
	9/29/11	0.1U	0.26U	0.41U
MTCA Meth	od A	0.8 (1.0)	0.5	0.5
Surface Water	er Standard		No visible sheet	

Notes: All units are ppm.

U modifier indicates that the compound was not present at the PQL.

Cleanup value of 1.0 for TPHG is applicable when no BETX is present.

Table 4
Volatile Organic Compounds
Groundwater

						
Well Number	Date	Benzene	Ethyl benzene	Toluene	m,p-Xylene	o-Xylene
MW-101	5/10/11	1.3	0.95	1.0U	1.5	0.2U
	9/29/11	2.8	1.2	1.0U	0.4U	0.2U
MW-102	5/10/11	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.2U	0.2U	1.0U	0.4U	0.2U
MW-103	5/10/11	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.2U	0.2U	1.0U	0.4U	0.2U
MW-104	6/29/11	0.27	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.21	0.2U	1.0U	0.4U	0.2U
MTC	CAA	5.0	700	1,000	1,0	000
1	Method B Surface Water		6,900	19,000	16,	

Table 4 (continued) Volatile Organic Compounds Groundwater

Well Number	Date	Vinyl Chloride	1,1-Dichlroethane	(cis) 1,2- Dichloroehtene	Trichloroethylene	Tetrachloroethylene
MW-101	5/10/11	0.2U	0.49	0.39	0.2U	0.2U
	9/29/11	0.2U	0.46	0.31	0.2U	0.2U
MW-102	5/10/11	0.2U	0.2U	0.2U	0.2U	0.2U
	9/29/11	0. 2 U	0.2U	0.2U	0.2U	0.2U
MW-103	5/10/11	0.2U	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U	0.2U
MW-104	6/29/11	0.2U	0.23	0.2U	0.2U	0.2U
,	9/29/11	0.2U	0.2U	0.2U	0.2U	0.2U
MTCA	Method A	0.2	1,600	16	5.0	5.0

Well Number	Date	Isopropyl benzene	n-Propylbenzene	1,3,5- Trimehylbenzene	1,2,4- Trimethylbenzene
MW-101	5/10/11	1.1	1.1	0.77	5.2
W - 101	9/29/11	3.2	3.4	0.2U	0.9
MW-102	5/10/11	0.2U	0.2U	0.2U	0.2U
1V1 W -102	9/29/11	0.22	0.2U	0.2U	0.2U
MW-103	5/10/11	0.2U	0.2U	0.2U	0.2U
WI W -103	9/29/11	0.2U	0.2U	0.2U	0.2U
MW-104	6/29/11	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U
MTCA		NP	800	80	15

Notes: All units are parts per billion, ppb.

Cleanup values are Method A; values in italics are Method B groundwater or EPA PRG Region 9 values.

U modifier indicates that the analyte was not present at the numerical practical quantitation limit.

NP indicates that there is no screening level of cleanup level posted for the individual compound.

Table 5
Vapor Samples
TPH Results

Sample Designation	Date Sampled	TPHv (C5-C8) Aliphatic	TPHv (C9-C12) Aliphatic	TPHv (C9-C10) Aromatic
VP-1	1/29/13	150,000	520	100U
VP-2	6/29/11	5,500	90.000	500U
VF-Z	1/29/13	4,600	120	100U
VP-3	6/29/11	2,200	55,000	500U
VI-3	1/29/13	2,400	180	100U
Ambient Basement Air	6/29/11	560	710	100U
Method B Sub slab Cleanup Value		27,000	1,400	1,800
Method B Indoor Air Cleanup Value		2,700	140	180

Table 6
Vapor Samples
Volatile Organic Compound Results

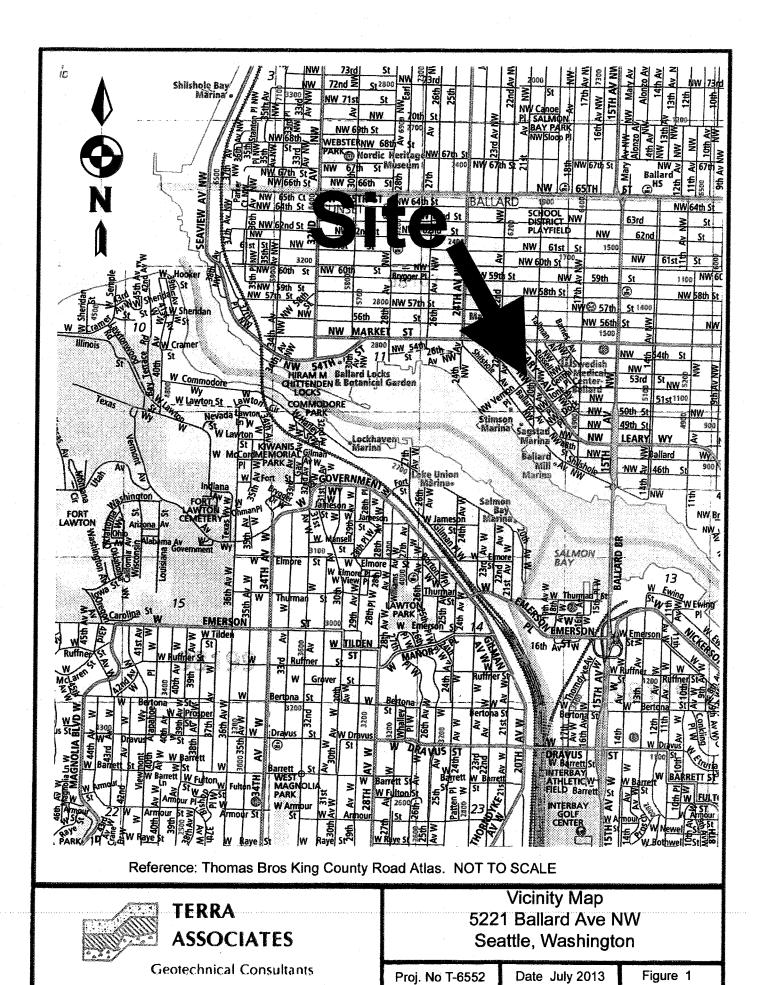
Sample Designation	Date	Acetone	Methylene Chloride	Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-xylene	Styrene	1,2,4- Trimethylbenzene	Chloroform
VP-1	1/29/13	24U	4.4	4.3	4.8	62	15	5.2	4.3U	5.0U	4.9U
VP-2	6/29/11	850	18U	16U	23	67	51	25	22 U	25U	25U
V1-2	1/29/13	24U	5.1	3.2U	4.4U	47	12	4.4U	4.3U	5.0U	8.6
VP-3	6/29/11	- 570	18U	16U	22 U	48	44U	22 U	22 U	25U	25U
	1/29/13	24U	5.2U	3.2U	4.4U	47	12	4.4U	4.3U	5.0U	4.9U
Ambient Basement Air	6/29/11	40	10	4.5	14	48	36	13	4.7	13	
Method B S Cleanup		NP	53	3.2	4,600	22,000	460	460	44	NP	1.1
Method B In Cleanup		NP	5.3	0.32	460	2,200	46	46	4.4	NP	0.11

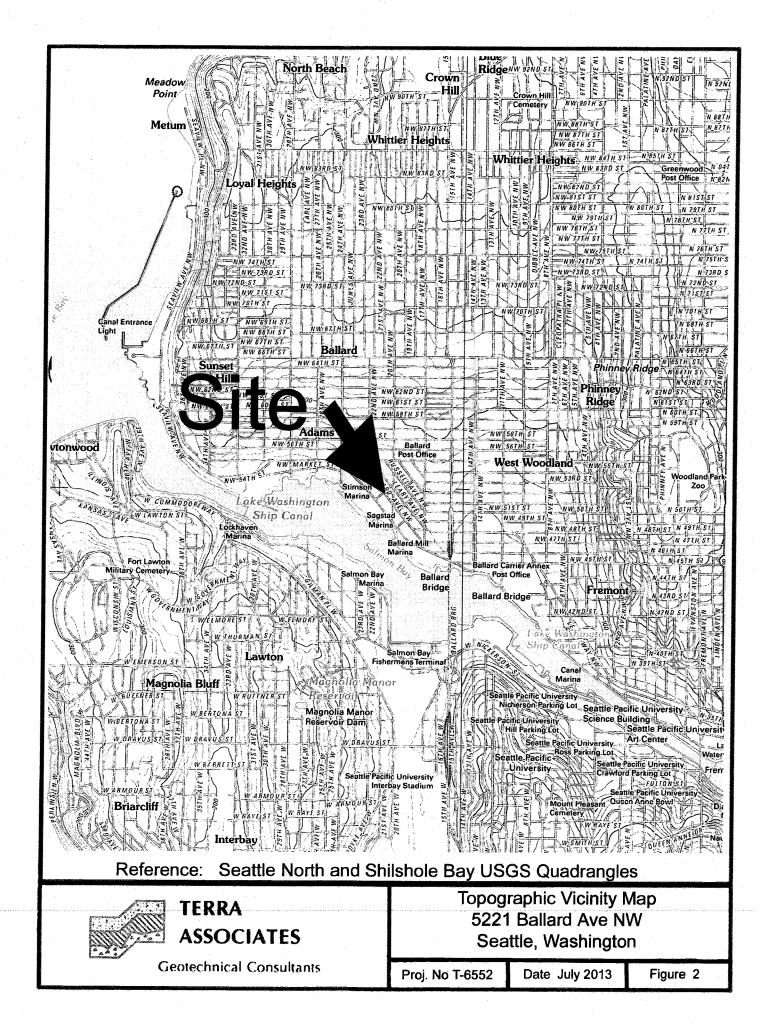
Notes for Table 5 and 6:

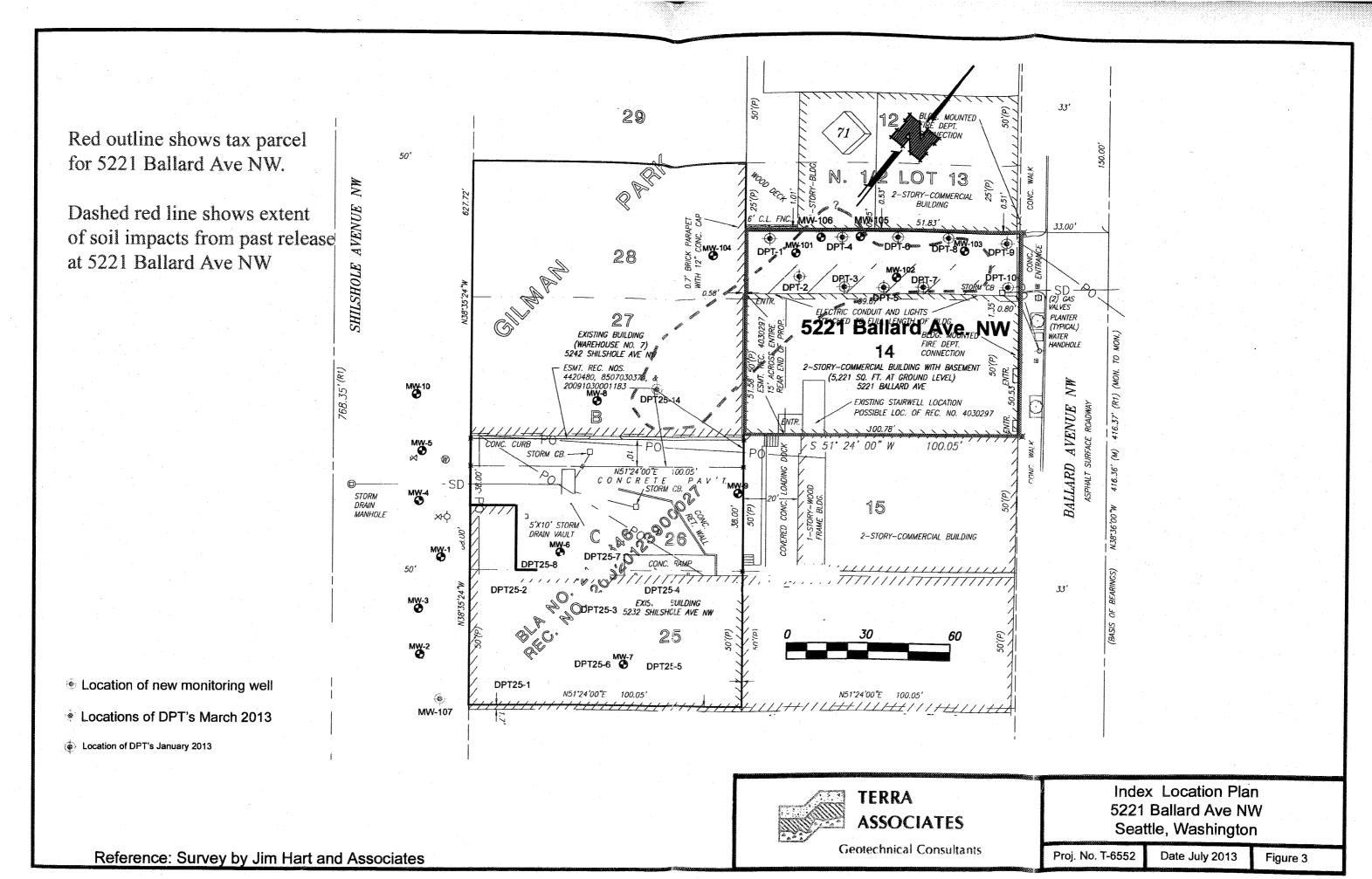
All values are $\mu g/m^3$.

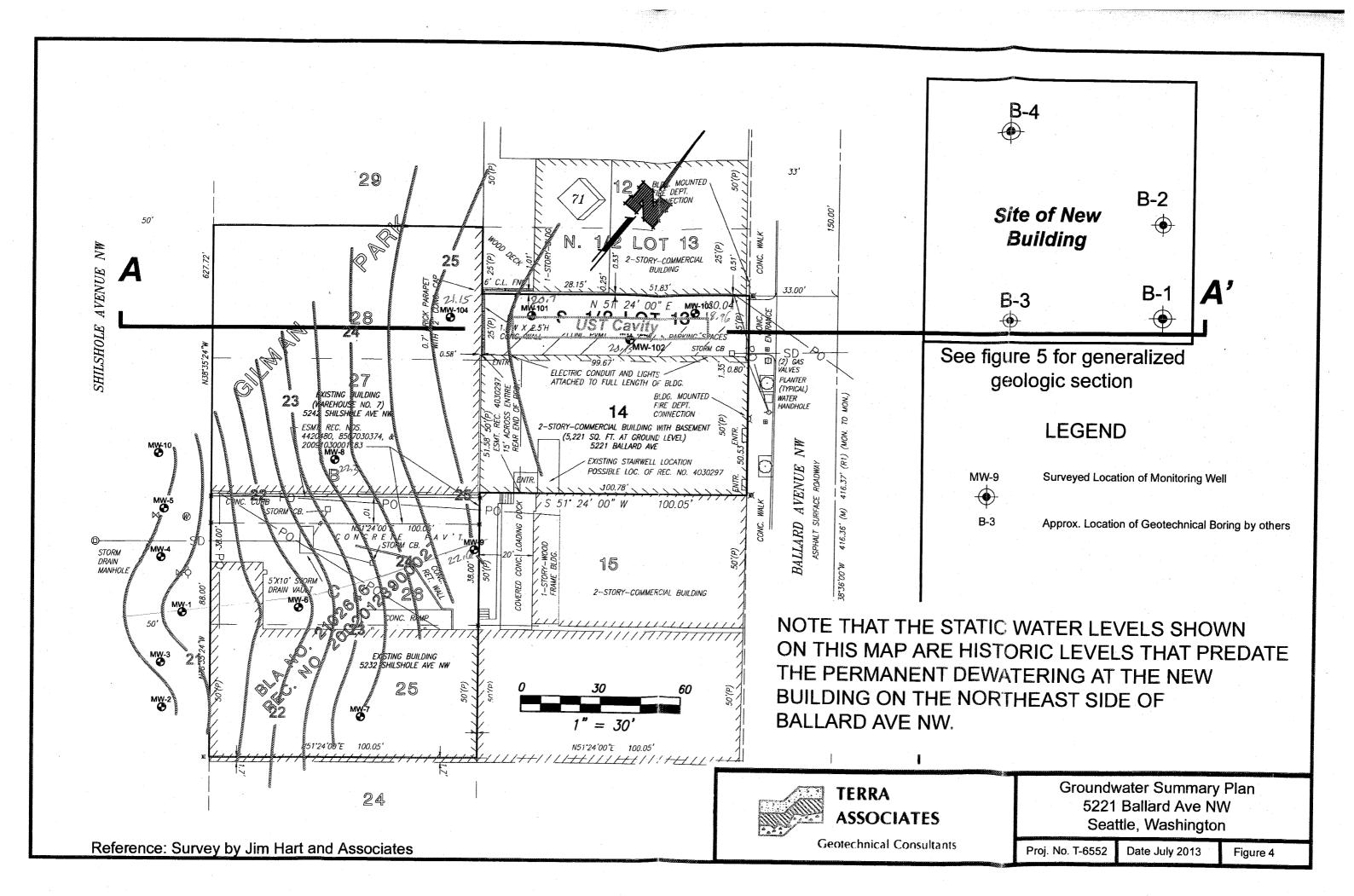
U indicates that the analyte was not present at the numerical reporting limit. Cleanup levels are from Ecology draft publication No. 09-09-047, dated October 2009.

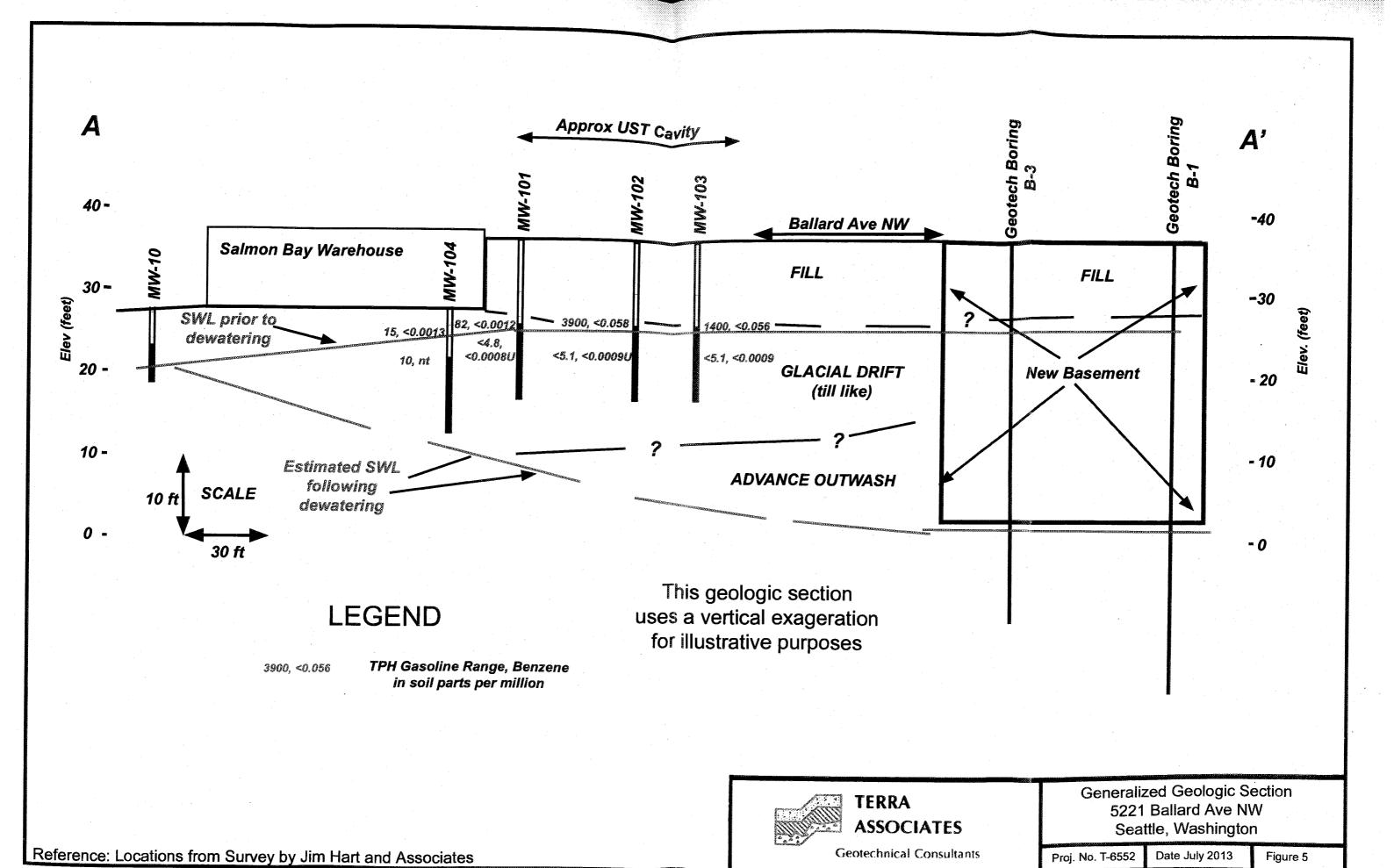
Chloroform is attributed to leaks from city water supply system.

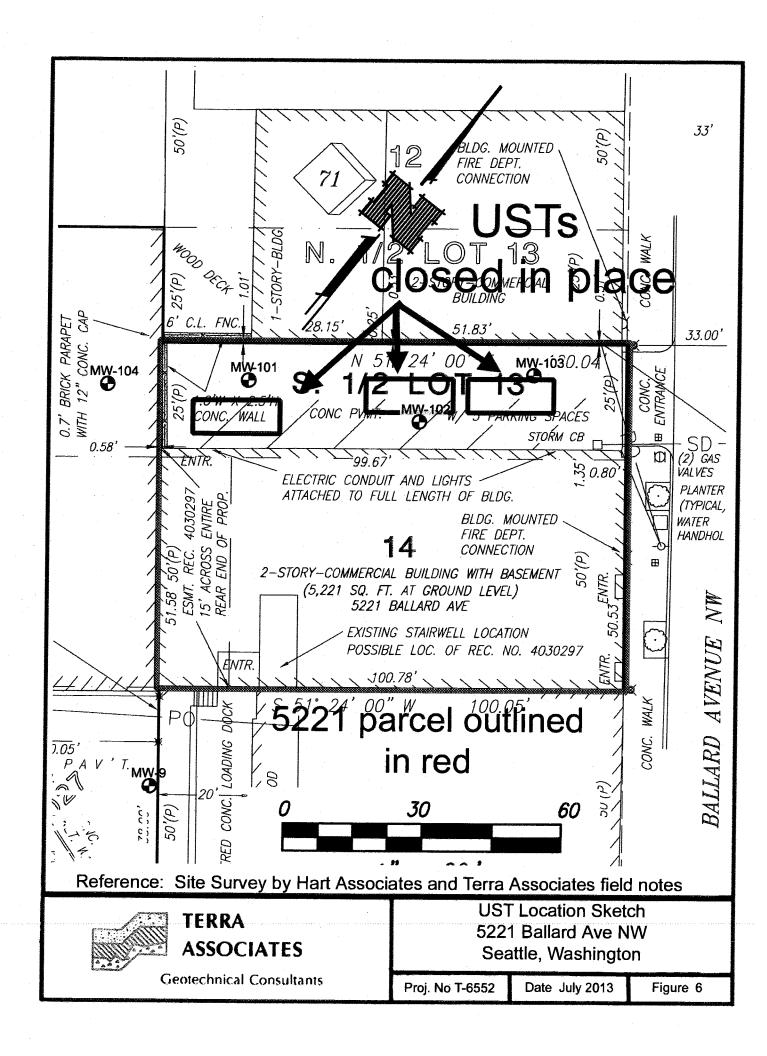












APPENDIX A

PRIOR REPORT LIST

APPENDIX A – PRIOR REPORTS WITH SAMPLING BY OTHERS

Title	Author	Date	Property Covered
Site Assessment C&C Paint Company Report	Bison Environmental Northwest, Inc.	2/19/91	Shilshole
Ballard Avenue Landmark Letter	Ballard Avenue Landmark District Board	4/17/91	5221
Buried Tanks in Alley – Cracks in Ballard Hardware South Wall Letter	Pacific Testing Laboratories	4/19/91	5221
Underground Storage Tank Closure In Place Site Assessment Report C&C Paint Company	Bison Environmental Northwest, Inc.	11/30/92	5221
Groundwater Survey and Monitoring Well Installation – C&C Paint Company Property	Columbia Environmental, Inc.	12/11/95	Shilshole
Phase 2 Environmental Site Assessment – C&C Paint Company Property	Columbia Environmental, Inc.	2/12/96	Shilshole
Cleanup Proposal – C&C Paint Company Property	ВРМ	5/17/96	Shilshole
Quarterly Groundwater Monitoring Report – C&C Paint Company Property	ВРМ	7/26/96	Shilshole
Quarterly Groundwater Monitoring Report – C&C Paint Company Property	ВРМ	10/15/96	Shilshole
Quarterly Groundwater Monitoring Report – C&C Paint Company Property	Betts, Patterson & Mines, PS	1/21/97	Shilshole
Quarterly Groundwater Monitoring Report – C&C Paint Company Property	Betts, Patterson & Mines, PS	5/25/97	Shilshole
UST Closure in Place Site Assessment Report – C&C Paints	Nowicki & Aassociates	2/10/98	5221

Title	Author	Date	Property Covered
October 2000 Annual Groundwater Monitoring – C&C Paints Site	Nowicki & Aassociates	10/28/00	Shilshole
300-Gallon Diesel Heating Oil UST Closure Site Assessment Report – C&C Paint	Nowicki & Aassociates	11/28/00	Shilshole
September 2002 Groundwater Annual Monitoring – C&C Paints Site	Nowicki & Aassociates	9/26/02	Shilshole
Ground Water Monitoring Quarterly Report 2ndQTR06	Morse Environmental	6/28/06	Shilshole
Ground Water Monitoring Quarterly Report 3rdQTR06	Morse Environmental	8/31/06	Shilshole
Ground Water Monitoring Quarterly Report 4thQTR06	Morse Environmental	12/12/06	Shilshole
Ground Water Monitoring Quarterly Report 1stQTR07	Morse Environmental	1/2007	Shilshole
Ground Water Monitoring Quarterly Report 2ndQTR07	Morse Environmental	7/7/07	Shilshole
Ground Water Monitoring Quarterly Report 4thQTR07	Morse Environmental	11/9/07	Shilshole
Ground Water Monitoring Quarterly Report 1stQTR08	Morse Environmental	3/27/08	Shilshole
Ground Water Monitoring Quarterly Report 2ndQTR08	Morse Environmental	7/9/08	Shilshole
Ground Water Monitoring Quarterly Report 3rdQTR08	Morse Environmental	11/13/08	Shilshole
Ground Water Monitoring Quarterly Report 4thQTR08 Ground Water Monitoring Quarterly	Morse Environmental Morse	1/20/09	Shilshole
Report 1stQTR09 Ground Water Monitoring Quarterly	Environmental Morse	3/24/09	Shilshole
Report 2ndQTR09 Ground Water Monitoring Quarterly	Environmental Morse	7/2009	Shilshole
Report 3rdQTR09 Ground Water Monitoring Quarterly	Environmental Morse	10/2009	Shilshole
Report 4thQTR09 Ground Water Monitoring Quarterly	Environmental Morse	1/2010	Shilshole
Report 1stQTR10 Ground Water Monitoring Quarterly	Environmental Morse	3/2010	Shilshole
Report 3rdQTR10	Environmental	8/19/10	Shilshole

These reports include information regarding the adjacent parcel identified as Shilshole Parcel.

APPENDIX B SUBSURFACE EXPLORATION/FIELD SAMPLING

5221 Ballard Avenue NW Seattle, Washington

Explorations MW-101, MW-102, and MW-103 were advanced using a drill rig owned and operated by Cascade Drilling. MW-104 was drilled using a limited access drill rig owned and operated by BoreTech. All drilling was done using hollow stem augers. In MW-101, MW-102, and MW-103, the samples were taken using a 2-inch ID sampler driven using a 300 pound hammer dropping 30 inches. Due to low overhead in the warehouse, the boom could not be raised to allow SPT samples to be taken. Soil samples were taken from the open hole using a hand auger at selected depths. Prior to taking soil samples, the drill tools were removed from the hole.

The test pits in the basement of 5221 were hand excavated using a post hole digger and a hand auger.

Explorations DPT 1 through 11 were advanced using a Geoprobe Rig owned and operated by Cascade Drilling. The sampling system consists of steel rods that are driven into the ground using a pneumatic hammer. The rods have a length of five feet and are provided with a PVC liner to contain the soil sample within the tooling. In each Geo Probe, the lower one-foot of the recovered core was sampled for analytical testing. The new vacuum extraction wells, MW-105 and MW-106 were drilled using hollow stem augers and a drill rig owned and operated by Cascade Drilling. Samples were taken on five-foot intervals.

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross contamination.

A representative of our firm continuously monitored the drilling and kept a detailed log of each test exploration. Samples recovered during drilling were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.

Samples were screened in the field using the headspace and sheen methods. For the headspace screening, a sub sample of the soil is placed in a plastic bag and allowed to reach ambient temperatures. The probe from a handheld Photo Ionization Device is then inserted to measure the air in the headspace of the bag. The sheen test consists of placing a subsample into a pan with clean water to see if sheen develops.

Groundwater monitoring wells were constructed in each of the borings conducted for this study. The wells are built with two-inch diameter PVC well materials. The screens are factory slotted with 0.01 inch openings. The screen segments were backfilled with silica sand. All wells were constructed in accordance with Washington State well construction requirements. The vapor probes were hand excavated. The logs for the vapor probes are below in Table B-1.

		MAJOR DIVISIONS	}	LETTER SYMBOL	TYPICAL DESCRIPTION	
		GRAVELS	Clean Gravels (less	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.	
Sign	arger e	More than 50% of coarse fraction	than 5% fines)	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.	
08 0	erial l	is larger than No.	Gravels with	GM	Slity gravels, gravel-sand-slit mixtures, non-plastic fines.	
AINE	6 mata 30 sie	4 0,040	fines	GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.	
COARSE GRAINED SOILS	n 50% No. 20	SANDS	Clean Sands (less than	SW	Well-graded sands, sands with gravel, little or no fines.	
DARS	More than 50% material larger than No. 200 sieve size	More than 50% of coarse fraction	5% fines)	SP	Poorly-graded sands, sands with gravel, little or no fines.	
8		is smaller than No. 4 sieve	Sands with fines	SM	Silty sands, sand-silt mixtures, non-plastic fines.	
				sc	Clayey sands, sand-clay mixtures, plastic fines.	
	aller	SILTS AND Liquid Limit is les		ML	Inorganic silts, rock flour, clayey silts with slight plasticity.	
OILS	ial smg re size			CL	Inorganic clays of low to medium plasticity. (Lean clay)	
FINE GRAINED SOILS	More than 50% material smaller than No. 200 sieve size				Organic silts and organic clays of low plasticity.	
KAIN	50% lo. 20			МН	Inorganic silts, elastic.	
NE G	than han N	SILTS AND CLAYS Liquid Limit is greater than 50%	СН	Inorganic clays of high plasticity. (Fat clay)		
L.	More t			ОН	Organic clays of high plasticity.	
		HIGHLY ORG	SANIC SOILS	PT	Peat.	
DEFINITION OF TEDMS AND SYMBOLS						

DEFINITION OF TERMS AND SYMBOLS

					. •	
ESS	Density	Standard Penetration Resistance in Blows/Foot	I	2" OUTSI	DE DIAMETER SPILT	SPOON SAMPLER
COHESIONLESS	Very Loose 0-4 Loose 4-10			DE DIAMETER RING TUBE SAMPLER	SAMPLER OR	
품	Medium Dense Dense	10-30 30-50	▼	WATER L	.EVEL (Date)	
Ö	Very Dense	>50	Tr	TORVAN	E READINGS, tsf	
	Standard Penetration		Pp	PENETRO	OMETER READING, (sf
Ę	Consistancy Resistance in Blows/Foot	DD	DRY DEN	ISITY, pounds per cub	ic foot	
COHESIVE	Very Soft Soft	0-2 2-4	LL	LIQUID LI	MIT, percent	
8	Medium Stiff Stiff	4-8 8-16	Pi	PLASTIC	INDEX	
	Very Stiff Hard	▼		STANDAR	RD PENETRATION, b	lows per foot
Terra Associates, Inc.			5	Soil Classification 221 Ballard Ave N Seattle, Washingto	w	
	Consultants In Geotechnical Éngineering Geology and Environmental Earth Sciences		Proj. No	. T-6552	Date May 2013	Figure B-1

LOG OF DPT NO. DPT-1

Figure No. B-2

Project: 5221 Ballard Avenue

Project No: T-6552 Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

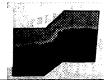
Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 120	PID (PPM)	Observ. Well
	П	(4 inches CONCRETE SLAB)				
1-		4 inches SAND, moist. (Fill)				
2						
3-		Gray and dark brown silty SAND with	No/No	50	0.0	
4-		organics, moist.				
5-						
6-						
7-						
8-			No/No			
9-		Gray and brown silty SAND, fine grained, moist. (SM)		80		
10-		, , ,			3.2	
11-			Light Odor		14.4	
12- -		·	·			
13-						
14-				80	0.0	
15-		Gray and brown SAND with gravel and	No/No			
16- -		medium to fine grained SAND, moist. (SP)				
17 <i>-</i>		` ´				
18-						
19 <u> </u>				80		
20-					0.0	
21-		Probe terminated at 20 feet. All collected from the lower foot of				
22-		recovered sample.				
23-						
24						
25-						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.
Consultants in Geotechnical Engineering, Geology

and Environmental Earth Sciences

LOG OF DPT NO. DPT-2

Figure No. B-3

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

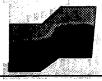
Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 120	PID (PPM)	Observ. Well
	П	(4 inches CONCRETE SLAB)				
1-						
2-		FILL: brown silty sand with gravel, moist, occasional brick chunks.				
3-			No/No			
4-	Ш			30	0.0	
5-						
6~- 7-						
8-						
9-				40	56.0	
10-			Light Odor/ Light Sheen		415.0	
11-		Brown becoming gray silty SAND, moist. (SM)	Light Oncon		410.0	
12-		,				
13-		Mottled in places.				
- 14-			No/No			
- 15-	₽	Occasional gravel.		100	0.0	
16-					3.1	
17-						
18-						
19-		Gray fine grained SAND, moist. (SP)		100		
20	4	Oray line granieu OAND, Illoist. (OF)	No/No	1	0.0	
21-		Probe terminated at 20 feet. All samples collected from lower foot of				
22-		recovered sample.				
23						
24						
25-						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

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LOG OF DPT NO. DPT-3

Figure No. B-4

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1		(5 inches CONCRETE SLAB, sand, moist. (Fill) FILL: gray and brown silty sand, moist, mottled, occasional brick chunks.	No/No	50	0.0	
9		Gray silty SAND, fine grained, moist. (SM)	Moderate Odor and Sheen	100	1067.0	
14 - 15 - 16 - 17 - 18 -		Gray SAND with gravel, fine grained, moist. (SP) Becomes medium grained.	Light Odor		160	
19- 20- 21- 22- 23- 24- 25-		Probe terminated at 20 feet. All samples collected from lower foot of recovered sample.	No/No	80	0.0	

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



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Figure No. B-5

Project: 5221 Ballard Avenue

Project No: T-6552 Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1-		(4 inches CONCRETE SLAB)	No/No			
- 2-		FILL: gray and brown silty sand with				
3		some organics, moist.				
4-		Occasional brick chunks.	Light Odor/ No Sheen	70	23.5	
5_	+		No Sneen			
6						
7-			Moderate Sheen			
8- 9-						
9- 10-				80	289	
11 –						
12 <u>-</u>		Gray silty SAND with gravel, moist.				
13-		(SM)	No/No			
14 –				100		
15-					0.0	
16-						
17 - 18-			No/No			
19-		Gray SAND, fine to medium grained, moist. (SP)	140/140			
20-				100	0.0	
21 –		Probe terminated at 20 feet.				
22 -		All samples collected from lower foot of recovered sample.				
23						
24						
25 –						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-6

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

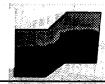
Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1- 2- 3- 4- 5- 6-		FILL: gray, black, and brown silty sand, small brick chunks, moist.	No/No	60	0.0	
8- 9- 10- 11- 12-		Gray silty SAND, moist. (SM)	Light Odor/ No Sheen	80	153	
13- 14- 15- 16- 17- 18-		Gray SAND, medium grained, moist. (SP)	No/No	100	3.4	
19- 20- 21- 22- 23- 24- 25-		Probe terminated at 20 feet. All samples taken from lower foot of recovered sample.		100	0.0	

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas



Terra Associates, Inc.

Figure No. B-7

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 120	PID (PPM)	Observ. Well
1- 2- 3- 4- 5- 6- 7-		(4 inches CONCRETE SLAB) 3 inches SAND, moist. (Fill) FILL: gray and brown silty sand/sandy silt, moist.	No/No	80	0.0	
8- 9- 10- 11- 12- 13-		SAND with silt, fine grained, moist. (SP-SM)	No/No	80	0.0	
14- 15- 16 17-			No/No	100	0.0	
18- 19- 20- 21- 22-		Gray SAND, fine to medium grained, moist. (SP) Probe terminated at 20 feet. All samples taken from lower foot of recovered sample.	No/No	50	11.5	
23 <u>-</u> 24 <u>-</u> 25 <u>-</u>						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Associates, Inc.

Figure No. B-8

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1- 2- 3- 4- 5-	FILL: gray and brown silty sand, brick chunks, moist.	No/No	60	0.0	
7- 8- 9- 10- 11- 12- 13-	Gray silty SAND, moist. (SM)	Light Odor/ Sheen	80	969	
13- 14- 15- 16- 17- 18-	Gray SAND, moist, medium grained with small gravel. (SP)	No/No	60	2.1	
19 - 20 - 21 - 22 - 23 - 24 -	Probe terminated at 20 feet. All samples taken from lower foot of recovered sample.	No/No	100	0.0	

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-9

Project: 5221 Ballard Avenue

Project No: T-6552 Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1-		(4 inches CONCRETE SLAB)				
2-		FILL: gray and brown silty sand, brick				
- 3		chunks, moist.				
4-			No/No			
5-				60	0.0	
6						
7-			,			
8-						
9-		Gray silty SAND with gravel, moist.	No/No	100		
10 -	Ħ	(SM)			15.0	
11-						
12- 13-						
14-						
15—	╝		No/No	80	0.0	
16		Gray SAND, fine to medium grained, moist. (SP)			0.0	
17-						
18			No/No			
19				100		
20		-		100	0.0	
21-		Probe terminated at 20 feet. All samples taken from lower foot of				
22		recovered sample.				
23				1		
24						
25-						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-10

Project: 5221 Ballard Avenue

Project No: <u>T-6552</u> **Date Drilled:** <u>1/28/13</u>

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1- 2- 3- 4- 5- 6- 7-		(4 inches CONCRETE SLAB) FILL: gray and brown silty sand with gravel, brick chunks, moist.	No/No	90	0.0	
8- 9- 10- 11- 12- 13-		Gray silty SAND with gravel, moist. (SM) Gray SAND, fine to medium grained, moist. (SP)	No/No No/No	60	0.0	
14 – 15 – 16 – 17 –		Becomes fine grained.		80	0.0	
18- 19- 20- 21- 22- 23-		Probe terminated at 20 feet. All samples taken from lower foot of recovered sample.	No/No	60	0.0	
24- 25-						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-11

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Ballard, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
_						
1-						
2-						
3-		FILL: brown silty sand with gravel, brick chunks, moist.				
4-			No/No	40		
5-					0.0	
6- -						
7-						
8-		Gray SAND with silt, medium to fine				
9-		grained, moist. (SP-SM)	No/No	70		
10-					0.0	
11-		Gray SAND, medium to coarse				
12		grained. (SP)				
13- -						
14- -			No/No	70		
- 10				•	0.0	
16						
17-		Becomes fine grained.				
18-		Mottled				
19-	Ш	-	No/No	100		
20		Probe terminated at 20 feet.			0.0	
21		All samples taken from lower foot of recovered sample.				
22		recovereu sample.				
23-						
24						
25-		Parameter and the second secon				

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-12

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery %	PID (PPM)	Observ. Well
1-		(10 inches CONCRETE SLAB)				
2-		Brown SILT, moist. (ML)				
3- 4-		Gray silty SAND, moist. (SM)	Light Odor/ Light Sheen			
5- 6-		Probe terminated at 5 feet due to equipment access restrictions.		100	514	
7-						
8-						
9						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-13

Project: 5221 Ballard Avenue North Project No: T-6552 Date Drilled: 5/6/11

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp x WI 10 30 50 70 90	Pocket Penetrometer △ TSF △ 1 2 3 4 SPT (N) ● Blows/ft ● 10 20 30 40	Observ. Well
1- 2- 3-		(3.5 inches ASPHALT SLAB) Brown silty SAND/sandy SILT, moist. (Fill)	Soft			
4 5 6		Dark gray sandy SILT, moist, light hydrocarbon odor. Mottled discoloration. (FIII)	Soft		6	
7- 8- 9- 10-		Becomes sandier, occasional small chunks of brick, copper. Moderate hydrocarbon odor.	Medium Dense		17	
11- 12- 13-		Constant CAND with a second and the	Dense		51	
14		Gray silty SAND with gravel, moist, becomes wet by 13 feet. (Till)	Dense		49	
20 - 21 - 22 - 23 -		Boring terminated at 20 feet. 2-inch PVC monitoring well installed as shown using 0.010 slotted screen from 10 to 20 feet.				
24 - 25 -						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-14

Project: 5221 Ballard Avenue North Project No: T-6552 Date Drilled: 5/6/11

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

			<u> </u>			-
Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp x WI 10 30 50 70 90	Pocket Penetrometer △ TSF △ 1 2 3 4 SPT (N) ● Blows/ft ● 10 20 30 40	Observ. Well
1 - 1 - 2 - 3 - 4 - 5 - 6 - 1		(7 inches ASPHALT) Brown silty SAND with gravel, moist. (Till)	Loose/Soft		4	
7- 8- 9-		Pea gravel with silt and brick bits, moderate hydrocarbon odor. (Fill)	Loose		17	
10- 11- 12-		Gray silty SAND with gravel, moist, becomes wet by 12.5 feet. (Till)	Medium Dense		50	
13- 14- 15- 16-		Minor amount of silt by 15 feet.	Dense		50	
17- 18- 19-			Dense		50	
20 21- 22- 23- 24- 25-		Boring terminated at 20 feet. 2-inch PVC monitoring well installed as shown using 0.010 slotted screen from 10 to 20 feet.				

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-15

Project: 5221 Ballard Avenue North

Project No: T-6552

Date Drilled: 5/6/11

Client: HALCO PROPERTIES, LLC

Driller: Cascade Drilling

Logged By: NRH

Location: Seattle, Washington

Approx. Elev:

N/A

Locali		Seattle, washington		Approx. Elev: _	N/A			
Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp x WI 10 30 50 70 90	1 1	et Penetro TSF 2 3 SPT (N) Blows/ft 20 30	4 	Observ. Well
1 2- 3- 4 5- 6-		(5 inches ASPHALT SLAB) Brown silty SAND/sandy SILT, small brick bits, moist. (Fill) Light hydrocarbon odor.	Loose/Soft		5.			
8- 9- 10- 11-			Medium Dense			25 •		
11 – 12 – 13 – 14 – 15 – 16 –		Gray silty SAND, moist, wet by 12.5 feet, light to moderate hydrocarbon odor, slight sheen from 10 to 14 feet. (TIII)	Dense				40 50	
17 - 18 - 19 - 20 - 21 -		Boring terminated at 20 feet. 2-inch PVC monitoring well installed as					5(
22 – 23 – 24 – 25 –		shown using 0.010 slotted screen from 10 to 20 feet.						

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-16

Project: 5221 Ballard Avenue North

Project No: T-6552

Date Drilled: 6/13/11

Client: HALCO PROPERTIES, LLC

___ Driller: Boretec

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

					Approx. Elev. 14/		
	Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 100	PID (PPM)	Observ. Well
			7-inch thick concrete slab.				
Y -	1- 2- 3- 4-		Dark brown sandy SILT, moist. Becomes gray.	Light Odor/No	98.0	0.0	
					100.0		l 22
	5-			No/No		0.0	
	6- 7-					0.0	
	4					0.0	
	8-						
	9-						
	4			No/No			
	10-						
	11						
	12-		Saturated gray silty SAND/sandy SILT. (SM-ML)				
	13						
	"					0.0	
	14				100.0		
	15			No/No	* * * * * * * * * * * * * * * * * * *		
		-	Terminated at 15 feet.				
	16- 17-		2-inch PVC monitoring well with .10 screen from 5 to 15 feet constructed as shown.				
	4						
•	18						
	19						
	4						
2	20-			_			

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra Associates, Inc.

Figure No. B-17

Project:5221 Ballard AvenueProject No:T-6552Date Drilled:2/18/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Logged By: NRH

Location: Ballard, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 100	PID (PPM)	Observ Well
1- 2- 3- 4- 5-		(2 inches ASPHALT) FILL: brown sand, moist.	Light Odor on Lower 8 Feet	100.0	711	
6- 7- 8- 9-		FILL: gray and dark brown silty sand with gravel, moist, occasional brick chunks. 3/3/4	Moderate Odor	100.0	474	
11 – 12 – 13 – 14 –		Occasional organics. 9/18/44 Gray silty SAND with gravel, fine grained, moist, slightly mottled. (SM)		100.0		
15		33/50 for 6 Gray SAND, fine grained, moist. (SP)	No/No	*	10.1	
20 - 21 - 22 - 23 - 24 -		Boring terminated at 21.5 feet. 2-inch PVC monitoring well constructed with 20 slot screen from 10 to 20 feet.	No/No	100.0	9.0	

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Terra
Associates, Inc.

Figure No. B-18

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 2/18/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

		Coatto, trasmigton		_ Approx. Elev. 14/7		
Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % 20 40 60 80 100	PID (PPM)	Observ. Well
1- 2- 3- 4-		(2 inches ASPHALT) FILL: brown sand and silty sand with gravel, moist.				
5- 6- 7- 8- 9- 10- 11-		FILL: gray and dark brown silt and silty sand with gravel, moist, mottled, occasional brick chunks.	Light Odor	100.0	655	
12 – 13 – 14 – 15 – 16 –		Gray and brown silty SAND with gravel, moist, mottled. (SM)	No/No	50.0 ×	1.6	
18- 19- 20-		Gray SAND with gravel, moist. (SP)	No/No	33.0 *	0.0	
21 – 22 – 23 – 24 – 25 –		Boring terminated at 20 feet. 2-inch PVC monitoring well constructed with 20 slot screen from 10 to 20 feet. 300 ib hammer.				

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site.



Associates, Inc.
Consultants in Geotechnical Engineering, Geology

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TABLE B-1 Vapor Probe Logs VP-1

Depth (Below Top of Slab)	Soils Encountered	Sheen/Odor/PID
0-4"	Concrete slab	
4-12"	1-inch minus clean round rock	No/No/0.0
12-18"	Mottled gray and brown silty sand with gravel, moist, loose to medium dense. (SM)	No//No/0.0
18-54"	Brown silty sand with gravel sandy gravels lenses. (SM) Seepage at 3 feet.	No/No/0.0

VP-2

Depth (Below Top of Slab)	Soils Encountered	Sheen/Odor/PID
0-4"	Concrete slab	
4-12"	Brown sandy gravel, moist.	Light odor
12-48"	Gray/brown sandy silt with	659 ppm @ 18"
	gravel, wet by 3.5 feet.	45.4 ppm @ 4'

VP-3

Depth (Below Top of Slab)	Soils Encountered	Sheen/Odor/PID
0-5"	Concrete slab	
5-13"	Brown gravelly sand, moist.	No/No/0.0
13-54"	Gray silty sand with gravel,	Light odor
	moist becoming wet with depth.	24.7ppm @ 18"
	(SM)	0.0 ppm @ 48"

During groundwater sampling, some basic parameters were monitored. The recent and archived groundwater parameters are summarized below in Table B-2.

Table B-2 Groundwater Parameters

Well Number	Date	Hd	Conductivity	DO	ORP	Temp.
	5/10/11	NM	NM	NM	NM	15.3
MW-101	7/6/11	6.55	148	0.32	-10	16.0
	9/29/11	6.4	699	3.84	-115	16.7
	11/18/11	7.28	929	5.09	-65	15.19

Table B-2 (continued)
Groundwater Parameters

Well Number	Date	Нd	Conductivity	DO	ORP	Temp.
	5/10/11	NM	NM	NM	NM	15.2
MW-102	9/29/11	6.44	483	1.7	-117	17.4
	11/18/11	7.09	889	1.59	-62.6	15.23
	5/10/11	NM	NM	NM	NM	16.1
MW-103	7/6/11	6.49	113	0.3	-45	16.6
1V1 W -1U3	9/29/11	6.39	455	1.8	-120	18
	11/18/11	6.34	962	6.32	59.4	15.53
MW-104	9/29/11	6.35	794	1.7	-99	17.4
	11/18/11	7.11	941	4.93	-37.5	14.44

Notes:

DO is measured in ppm.

ORP is measured in mille volts.

Conductivity is measured in micro Siemens.

pH is in standard units.

Temperature is in degrees Celsius.

Readings for MW-101 on November 18, 2011 are prior to full purging of well, well MW-101 pumped dry

due to decreased water level in well.



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

February 19, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1301-194

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 29, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Project: 6552

Case Narrative

Samples were collected on January 28, 2013 and received by the laboratory on January 29, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples DPT-3 5-10, DPT-3 10-15, DPT-4 5-10, DPT-5 5-10, DPT-6 10-15 and DPT-7 5-10 are similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Volatile Petroleum Hydrocarbons Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Onits: mg/kg (ppm)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-1 10-15					
Laboratory ID:	01-194-03					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.077	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.077	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.077	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.077	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	7.7	NWTPH-Gx	1-30-13	<u>2-1-13</u>	
Surrogate:	Percent Recovery	Control Limits			•	
Fluorobenzene	120	70-132				
Client ID:	DPT-1 15-20					
Laboratory ID:	01-194-04					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.054	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.054	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.054	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.054	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	5.4	NWTPH-Gx	1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	70-132				
Client ID:	DPT-2 10-15					
Laboratory ID:	01-194-07					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	4.8	NWTPH-Gx	1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	70-132				
гиогорепzепе	99	10-132				

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Elec-
Client ID:	DPT-2 15-20	F 98 60	Meniod	Lichaten	Analyzeu	Flags
Laboratory ID:	01-194-08					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	-
Toluene	ND	0.049	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.049	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.049	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.049	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	4.9	NWTPH-Gx	1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits		1-00-10	2-1-13	·
Fluorobenzene	102	70-132				
Client ID:	DPT-3 5-10					
Laboratory ID:	01-194-10					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-4-13	
Toluene	ND	0.065	EPA 8021B	1-30-13	2-4-13	
Ethyl Benzene	NO	0.065	EPA 8021B	1-30-13	2-4-13	
m,p-Xylene	0.093	0.065	EPA 8021B	1-30-13	2-4-13	
o-Xylene	ND	0.065	EPA 8021B	1-30-13	2-4-13	
Gasoline	250	13	NWTPH-Gx	1-30-13	2-1-13	Z
Surrogate:	Percent Recovery	Control Limits			21.10	
Fluorobenzene	93	70-132				
Client ID:	DPT-3 10-15					
_aboratory ID:	01-194-11					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.051	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.051	EPA 8021B	1-30-13	2-1-13	
n,p-Xylene	ND	0.051	EPA 8021B	1-30-13	2-1-13	
-Xylene	ND	0.051	EPA 8021B	1-30-13	2-1-13	
3asoline	5.6	5.1	NWTPH-Gx	1-30-13	2-1-13	Z
Surrogate:	Percent Recovery	Control Limits			- 1 10	
Fluorobenzene	99	70-132				

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

			Date	Date	
Result	PQL	Method	Prepared	Analyzed	Flags
DPT-3 15-20					
01-194-12					
ND	0.020	EPA 8021B	1-30-13		
ND	0.048	EPA 8021B	1-30-13		
ND	0.048	EPA 8021B	1-30-13		
ND	0.048	EPA 8021B	1-30-13	_ : : : :	
ND	0.048	EPA 8021B	1-30-13		
ND	4.8	NWTPH-Gx	1-30-13	2-1-13	
Percent Recovery	Control Limits				
94	70-132				
DPT-4 5-10					
01-194-14					
ND	0.022	EPA 8021B	1-30-13	2-1-13	
ND	0.11	EPA 8021B	1-30-13	2-1-13	
ND	0.11	EPA 8021B	1-30-13	2-1-13	
0.60	0.11	EPA 8021B	1-30-13	2-1-13	
ND	0.55	EPA 8021B	1-30-13	2-1-13	U1
5100	280	NWTPH-Gx	1-30-13	2-4-13	Z
Percent Recovery	Control Limits				
104	70-132				
DPT-4 10-15					
01-194-15					
ND	0.020	EPA 8021B	2-1-13	2-1-13	
ND	0.055	EPA 8021B	2-1-13	2-1-13	
ND	0.055	EPA 8021B	2-1-13	2-1-13	
ND	0.055	EPA 8021B	2-1-13	2-1-13	
ND	0.055	EPA 8021B	2-1-13	2-1-13	
ND	5.5	NWTPH-Gx	2-1-13	2-1-13	
Percent Recovery	Control Limits				
104	70-132				
	DPT-3 15-20 01-194-12 ND ND ND ND ND ND ND Percent Recovery 94 DPT-4 5-10 01-194-14 ND ND ND 0.60 ND 5100 Percent Recovery 104 DPT-4 10-15 01-194-15 ND	DPT-3 15-20	DPT-3 15-20	Result PQL Method Prepared DPT-3 15-20 01-194-12 01-194-12 ND 0.020 EPA 8021B 1-30-13 ND 0.048 EPA 8021B 1-30-13 ND 4.8 NWTPH-Gx 1-30-13 ND 4.8 NWTPH-Gx 1-30-13 DPT-4 5-10 01-194-14 ND 0.01 EPA 8021B 1-30-13 ND 0.11 EPA 8021B 1-30-13 ND 0.11 EPA 8021B 1-30-13 ND 0.55 EPA 8021B 1-30-13 Percent Recovery Control Limits ND 0.055 EPA 8021B 2-1-13 ND 0.055 EPA 8021B 2-1-13 ND 0.055 EPA 8021B 2-1-13 ND 0.055 EPA 8021B	Result PQL Method Prepared Analyzed

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Analyte	F6 04			Date	Date	
Cilent ID:	Result	PQL	Method	Prepared	Analyzed	Flags
	DPT-4 15-20					
Laboratory ID:	01-194-16					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.045	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.045	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.045	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.045	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	4.5	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				****
Fluorobenzene	97	70-132				
Client ID:	DPT-5 5-10					
Laboratory ID:	01-194-18					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	**************************************
Toluene	ND	0.058	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.058	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.058	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.058	EPA 8021B	1-30-13	2-1-13 2-1-13	
Gasoline	37	5.8	NWTPH-Gx	1-30-13		7
Surrogate:	Percent Recovery	Control Limits		1-30-13	2-1-13	Z
Fluorobenzene	94	70-132				
Client ID:	DPT-5 10-15					
Laboratory ID:	01-194-19					
Benzene	ND	0.020	EPA 8021B	1-30-13	0.4.40	
Toluene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.048	EPA 8021B		2-1-13	
o-Xylene	ND	0.048	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	4.8		1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits	NWTPH-Gx	1-30-13	2-1-13	
Fluorobenzene	99					
· · · · · · · · · · · · · · · · · · ·	33	70-132				

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Units: mg/kg (ppm)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-6 5-10					
Laboratory ID:	01-194-22					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.053	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.053	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.053	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.053	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	5.3	NWTPH-Gx	1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	70-132				
Client ID:	DPT-6 10-15					
Laboratory ID:	01-194-23					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND ·	0.057	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.057	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.057	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.057	EPA 8021B	1-30-13	2-1-13	
Gasoline	11	5.7	NWTPH-Gx	1-30-13	2-1-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	108	70-132				
Client ID:	DPT-6 15-20					
Laboratory ID:	01-194-24					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.057	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.057	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.057	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.057	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	5.7	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	70-132				

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Analyte	Result	POL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	DPT-7 5-10		nas as por sale sa	, sebased	ruisiyasu	riags
Laboratory ID:	01-194-26					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.059	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.059	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.059	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.059	EPA 8021B	2-1-13	2-1-13	
Gasoline	920	59	NWTPH-Gx	2-1-13	2-4-13	Z
Surrogate:	Percent Recovery	Control Limits			= 110	
Fluorobenzene	112	70-132				
Client ID:	DPT-7 10-15					
Laboratory ID:	01-194-27					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.051	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.051	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.051	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.051	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	5.1	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	70-132				
Client ID:	DPT-7 15-20					
_aboratory ID:	01-194-28					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.053	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.053	EPA 8021B	2-1-13	2-1-13	
n,p-Xylene	ND	0.053	EPA 8021B	2-1-13	2-1-13	
-Xylene	ND	0.053	EPA 8021B	2-1-13	2-1-13	
3asoline	ND	5.3	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits			& I IV	
Fluorobenzene	98	70-132				

NWTPH-Gx/BTEX

Matrix: Soil

omio. mg/kg (ppm)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-8 5-10					
Laboratory ID:	01-194-30					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.061	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.061	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.061	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.061	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	6.1	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	107	70-132				
Client ID:	DPT-8 10-15					
Laboratory ID:	01-194-31					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	4.7	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	70-132				
Client ID:	DPT-9 5-10					
Laboratory ID:	01-194-34					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.056	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.056	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.056	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.056	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	5.6	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	70-132				

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Client ID: DPT-9 10-15 Laboratory ID: 01-194-35 Benzene ND 0.020 EPA 80218 Toluene ND 0.052 EPA 80218 Ethyl Benzene ND 0.052 EPA 80218 m,p-Xylene ND 0.052 EPA 80218 o-Xylene ND 0.052 EPA 80218 Gasoline ND 5.2 NWTPH-G Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 80218 Toluene ND 0.049 EPA 80218		Analyzed	Flags
Benzene ND 0.020 EPA 80218 Toluene ND 0.052 EPA 80218 Ethyl Benzene ND 0.052 EPA 80218 m,p-Xylene ND 0.052 EPA 80218 o-Xylene ND 0.052 EPA 80218 Gasoline ND 5.2 NWTPH-G) Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 80218 Toluene ND 0.049 EPA 80218		0.4.40	
Toluene ND 0.052 EPA 8021E Ethyl Benzene ND 0.052 EPA 8021E m,p-Xylene ND 0.052 EPA 8021E o-Xylene ND 0.052 EPA 8021E Gasoline ND 5.2 NWTPH-G) Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		0.4.40	
Toluene ND 0.052 EPA 8021E Ethyl Benzene ND 0.052 EPA 8021E m,p-Xylene ND 0.052 EPA 8021E o-Xylene ND 0.052 EPA 8021E Gasoline ND 5.2 NWTPH-G) Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		2-1-13	
m,p-Xylene ND 0.052 EPA 8021E o-Xylene ND 0.052 EPA 8021E Gasoline ND 5.2 NWTPH-G Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B	⊃ Z-1-13	2-1-13	
ND 0.052 EPA 8021E Gasoline ND 5.2 NWTPH-G Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		2-1-13	
Gasoline ND 5.2 NWTPH-G Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		2-1-13	
Surrogate: Percent Recovery Control Limits Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		2-1-13	
Fluorobenzene 96 70-132 Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B		2-1-13	
Client ID: DPT-9 15-20 Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B			
Laboratory ID: 01-194-36 Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B			
Benzene ND 0.020 EPA 8021B Toluene ND 0.049 EPA 8021B			
Toluene ND 0.049 EPA 8021B			
0.040 EFA 0021B	3 2-1-13	2-4-13	······································
PALLED		2-4-13	
Ethyl Benzene ND 0.049 EPA 8021B		2-4-13	
m,p-Xylene ND 0.049 EPA 8021B		2-4-13	
o-Xylene ND 0.049 EPA 8021B	2-1-13	2-4-13	
Gasoline ND 4.9 NWTPH-Gx		2-4-13	
Surrogate: Percent Recovery Control Limits			
Fluorobenzene 96 70-132			
Client ID: DPT-10 5-10			
aboratory ID: 01-194-38			
Benzene ND 0.020 EPA 8021B	2-1-13	2-1-13	Mary to the second of the seco
Foluene ND 0.054 EPA 8021B	5.00 · (G	2-1-13	
Ethyl Benzene ND 0.054 EPA 8021B		2-1-13	
n,p-Xylene ND 0.054 EPA 8021B		2-1-13	
-Xylene ND 0.054 EPA 8021B		2-1-13	
Gasoline ND 5.4 NWTPH-Gx	·	2-1-13	
Surrogate: Percent Recovery Control Limits		E-1-10	
Fluorobenzene 103 70-132			

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Analysis	Decult	DOI		Date	Date	Flores
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-10 10-15					
Laboratory ID:	01-194-39					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.047	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	4.7	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	70-132				
Client ID:	DPT-10 15-20					
Laboratory ID:	01-194-40					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.054	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.054	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.054	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.054	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	5.4	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	104	70-132				
Client ID:	DPT-11 0-5					
Laboratory ID:	01-194-41					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Toluene	ND	0.049	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.049	EPA 8021B	2-1-13	2-1-13	
m,p-Xylene	ND	0.049	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.049	EPA 8021B	2-1-13	2-1-13	
Gasoline	ND	4.9	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	104	70-132				

Project: 6552

NWTPH-Gx/BTEX METHOD BLANK QUALITY CONTROL

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0130S1					
Benzene	ND	0.020	EPA 8021B	1-30-13	1-30-13	According to the Control of the Cont
Toluene	ND	0.050	EPA 8021B	1-30-13	1-30-13	
Ethyl Benzene	ND	0.050	EPA 8021B	1-30-13	1-30-13	
m,p-Xylene	ND	0.050	EPA 8021B	1-30-13	1-30-13	
o-Xylene	ND	0.050	EPA 8021B	1-30-13	1-30-13	
Gasoline	ND	5.0	NWTPH-Gx	1-30-13	1-30-13	
Surrogate:	Percent Recovery	Control Limits				*******
Fluorobenzene	102	70-132				
Laboratory ID:	MB0130S2					
Benzene	ND	0.020	EPA 8021B	1-30-13	2-1-13	
Toluene	ND	0.050	EPA 8021B	1-30-13	2-1-13	
Ethyl Benzene	ND	0.050	EPA 8021B	1-30-13	2-1-13	
m,p-Xylene	ND	0.050	EPA 8021B	1-30-13	2-1-13	
o-Xylene	ND	0.050	EPA 8021B	1-30-13	2-1-13	
Gasoline	ND	5.0	NWTPH-Gx	1-30-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	70-132				
Laboratory ID:	MB0201S1					
3enzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
Foluene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
Ethyl Benzene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
n,p-Xylene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
o-Xylene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
3asoline	ND	5.0	NWTPH-Gx	2-1-13	2-1-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	70-132				
aboratory ID:	MB0201S2					
Benzene	ND	0.020	EPA 8021B	2-1-13	2-1-13	
oluene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
thyl Benzene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
1,p-Xylene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
-Xylene	ND	0.050	EPA 8021B	2-1-13	2-1-13	
Basoline	ND	5.0	NWTPH-Gx	2-1-13	2-1-13	
Gurrogate:	Percent Recovery	Control Limits			The second of th	
luorobenzene	103	70-132				

NWTPH-Gx/BTEX DUPLICATE QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

Analyte	··/ Res	sul4	Snika	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE	I/C:		Spine	LEVE	Nesun	Recovery	Limito	111111	E.11111	- lugo
Laboratory ID:	01-20	.7₋01								
Laboratory ID.	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA NA	NA	30	
	ND	ND	NA	NA		NA NA	NA NA	NA	30	
m,p-Xylene	ND	ND	NA NA	NA NA		NA	NA NA	NA	30	
o-Xylene	ND	ND	NA NA	NA NA		NA NA	NA NA	NA	30	
Gasoline	שא	ND	INA	INA		INA	INA	INA	30	
Surrogate:						105 105	70-132			
Fluorobenzene						105 105	0 10-132			
Laboratory ID:	01-19	94-03								
	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	ND	ND	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						120 114	70-132			
Laboratory ID:	01-19	94-41								
<u>Laboratory</u> IE.	ORIG	DUP				<u></u>				
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	ND	ND	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						104 100	70-132			
i idolopelizelle						707 700	, ,,,,,,			
Laboratory ID:	01-22	20-01								
	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	ND	ND	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						100 93	70-132			
, laciobolizone										

OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

Project: 6552

NWTPH-Gx/BTEX SB/SBD QUALITY CONTROL

Matrix: Soil

					Source	Per	cent	Recovery		RPD	
Analyte	Re	suit	Spike	Level	Result	Rec	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS						**************************************					
Laboratory ID:	SB0	130S1									
	SB	SBD	SB	SBD		SB	SBD	· · · · · · · · · · · · · · · · · · ·		****	
Benzene	0.977	1.00	1.00	1.00	~~	98	100	71-125	2	11	
Toluene	1.01	1.03	1.00	1.00		101	103	77-125	2	11	
Ethyl Benzene	0.990	0.991	1.00	1.00		99	99	76-125	0	10	
m,p-Xylene	0.999	0.987	1.00	1.00		100	99	78-124	1	9	
o-Xylene	0.955	0.914	1.00	1.00		96	91	77-123	4	9	
Surrogate:											
Fluorobenzene						97	100	70-132			
Laboratory ID:	SB02	01S1									
	SB	SBD	SB	SBD		SB	SBD				
Benzene	0.949	0.966	1.00	1.00	***	95	97	71-125	2	11	
Toluene	0.979	0.992	1.00	1.00		98	99	77-125	1	11	
Ethyl Benzene	0.981	0.967	1.00	1.00		98	97	76-125	1	10	
m,p-Xylene	0.985	0.971	1.00	1.00		99	97	78-124	1	9	
o-Xylene	0.957	0.914	1.00	1.00		96	91	77-123	5	9	
Surrogate:								,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Fluorobenzene						98	97	70-132			

Project: 6552

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil

Units: mg/Kg (ppm)

Office. Hightig (ppin)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-3 5-10					
Laboratory ID:	01-194-10					
Aliphatic C5-C6	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C6-C8	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C8-C10	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C10-C12	200	5.0	NWTPH-VPH	1-30-13	2-11-13	
Total Aliphatic:	200		NWTPH-VPH	1-30-13	2-11-13	
Aromatic C8-C10	20	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C10-C12	85	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C12-C13	9.7	5.0	NWTPH-VPH	1-30-13	2-11-13	
Total Aromatic:	110		NWTPH-VPH	1-30-13	2-11-13	
Methyl t-butyl ether	ND	0.026	EPA 8021B	1-30-13	2-11-13	

Surrogate: Percent Recovery Control Limits Fluorobenzene 84 70-132

Project: 6552

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-4 5-10				***************************************	
Laboratory ID:	01-194-14					
Aliphatic C5-C6	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	-
Aliphatic C6-C8	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C8-C10	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C10-C12	4600	14	NWTPH-VPH	1-30-13	2-11-13	
Total Aliphatic:	4600		NWTPH-VPH	1-30-13	2-11-13	
Aromatic C8-C10	360	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C10-C12	2100	14	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C12-C13	100	5.0	NWTPH-VPH	1-30-13	2-11-13	
Total Aromatic:	2600		NWTPH-VPH	1-30-13	2-11-13	
Methyl t-butyl ether	ND	0.056	EPA 8021B	1-30-13	2-11-13	

Surrogate:

Percent Recovery

Control Limits

Fluorobenzene

99

70-132

Project: 6552

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil

Units: mg/Kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-7 5-10					
Laboratory ID:	01-194-26					
Aliphatic C5-C6	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C6-C8	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C8-C10	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C10-C12	640	5.0	NWTPH-VPH	2-1-13	2-11-13	
Total Aliphatic:	640		NWTPH-VPH	2-1-13	2-11-13	
Aromatic C8-C10	40	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aromatic C10-C12	330	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aromatic C12-C13	62	5.0	NWTPH-VPH	2-1-13	2-11-13	
Total Aromatic:	430		NWTPH-VPH	2-1-13	2-11-13	
Methyl t-butyl ether	ND	0.059	EPA 8021B	2-1-13	2-11-13	

Surrogate: Percent Recovery Control Limits Fluorobenzene 90 70-132

Project: 6552

VOLATILE PETROLEUM HYDROCARBONS METHOD BLANK QUALITY CONTROL

Matrix: Soil

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0130S1					
Aliphatic C5-C6	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C6-C8	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C8-C10	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aliphatic C10-C12	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Total Aliphatic:	NA		NWTPH-VPH	1-30-13	2-11-13	
Aromatic C8-C10	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C10-C12	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Aromatic C12-C13	ND	5.0	NWTPH-VPH	1-30-13	2-11-13	
Total Aromatic:	NA		NWTPH-VPH	1-30-13	2-11-13	
Methyl t-butyl ether	ND	0.050	EPA 8021B	1-30-13	2-11-13	
Surrogate:	Percent Recovery	Control Limits				·
Fluorobenzene	104	70-132				
Laboratory ID:	MB0201S1					
Aliphatic C5-C6	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C6-C8	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C8-C10	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aliphatic C10-C12	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Total Aliphatic:	NA		NWTPH-VPH	2-1-13	2-11-13	
Aromatic C8-C10	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aromatic C10-C12	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Aromatic C12-C13	ND	5.0	NWTPH-VPH	2-1-13	2-11-13	
Total Aromatic:	NA		NWTPH-VPH	2-1-13	2-11-13	
Methyl t-butyl ether	ND	0.050	EPA 8021B	2-1-13	2-11-13	
Surrogate:	Percent Recovery	Control Limits				· · · · · · · · · · · · · · · · · · ·
luorobenzene	104	70-132				

Project: 6552

VOLATILE PETROLEUM HYDROCARBONS DUPLICATE QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

ome. mg/ng (pp)					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE										
Laboratory ID:	01-19	94-03								
	ORIG	DUP								
Aliphatic C5-C6	ND	ND	NA	NA		NA	NA	NA	30	
Aliphatic C6-C8	ND	ND	NA	NA		NA	NA	NA	30	
Aliphatic C8-C10	ND	ND	NA	NA		NA	NA	NA	30	
Aliphatic C10-C12	ND	ND	NA	NA		NA	NA	NA	30	
Total Aliphatic:	NA	NA	NA	NA		NA	NA	NA	30	
Aromatic C8-C10	ND	ND	NA	NA		NA	NA	NA	30	
Aromatic C10-C12	ND	ND	NA	NA		NA	NA	NA	30	
Aromatic C12-C13	ND	ND	NA	NA		NA	NA	NA	30	
Total Aromatic:	NA	NA	NA	NA		NA	NA	NA	30	
МТВЕ	ND	ND	NA	NA		NA	NA	NA	30	
Surrogate:							-			

Surrogate:

Fluorobenzene

113 112 70-132

Laboratory ID:	01-194-41							
	ORIG	DUP						
Aliphatic C5-C6	ND	ND	NA	NA	NA	NA	NA	30
Aliphatic C6-C8	ND	ND	NA	NA	NA	NA	NA	30
Aliphatic C8-C10	ND	ND	NA	NA	NA	NA	NA	30
Aliphatic C10-C12	ND	ND	NA	NA	NA	NA	NA	30
Total Aliphatic:	NA	NA	NA	NA	NA	NA	NA	30
Aromatic C8-C10	ND	ND	NA	NA	NA	NA	NA	30
Aromatic C10-C12	ND	ND	NA	NA	NA	NA	NA	30
Aromatic C12-C13	ND	ND	NA	NA	NA	NA	NA	30
Total Aromatic:	NA	NA	NA	NA	NA	NA	NA	30
MTBE	ND	ND	NA	NA	NA	NA	NA	30

Surrogate:

Fluorobenzene

89 90 70-132

Project: 6552

TOC by EPA 9060

Matrix: Soil Units: % Carbon

# 9 4				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	DPT-1 5-10					
Laboratory ID:	01-194-02	_				
Total Organic Carbon	2.9	0.076	EPA 9060	2-11-13	2-11-13	
Client ID:	DPT-9 5-10					
Laboratory ID:	01-194-34					
Total Organic Carbon	0.066	0.044	EPA 9060	2-11-13	2-11-13	
Client ID:	DPT-10 5-10					
Laboratory ID:	01-194-38					
Total Organic Carbon	0.094	0.042	EPA 9060	2-11-13	2-11-13	

Date of Report: February 19, 2013 Samples Submitted: January 29, 2013 Laboratory Reference: 1301-194 Project: 6552

TOC by EPA 9060 QUALITY CONTROL

Matrix: Soil Units: % Carbon

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0211S1			-		
Total Organic Carbon	ND	0.042	EPA 9060	2-11-13	2-11-13	

Analyte	Res	sult	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	01-20	07-01							
	ORIG	DUP							
Total Organic Carbon	ND	ND	NA	NA	NA	NA	NA	20	
SPIKE BLANK									
Laboratory ID:	SB02	11S1							
	S	В	SB		SB				
Total Organic Carbon	48	3.2	42.1	NA	114	80-120	NA	NA	

Date of Report: February 19, 2013 Samples Submitted: January 29, 2013 Laboratory Reference: 1301-194

Project: 6552

% MOISTURE

Date Analyzed: 2-1-13

Client ID	Lab ID	% Moisture
DPT-1 10-15	01-194-03	24
DPT-1 15-20	01-194-04	7
DPT-2 10-15	01-194-07	10
DPT-2 15-20	01-194-08	8
DPT-3 5-10	01-194-10	14
DPT-3 10-15	01-194-11	6
DPT-3 15-20	01-194-12	8
DPT-4 5-10	01-194-14	15
DPT-4 10-15	01-194-15	15
DPT-4 15-20	01-194-16	4
DPT-5 5-10	01-194-18	15
DPT-5 10-15	01-194-19	5
DPT-6 5-10	01-194-22	13
DPT-6 10-15	01-194-23	15
DPT-6 15-20	01-194-24	13
DPT-7 5-10	01-194-26	14
DPT-7 10-15	01-194-27	6
DPT-7 15-20	01-194-28	9
DPT-8 5-10	01-194-30	17
DPT-8 10-15	01-194-31	8
DPT-9 5-10	01-194-34	13
DPT-9 10-15	01-194-35	10
DPT-9 15-20	01-194-36	de de la constante de la const
DPT-10 5-10	01-194-38	CO CO
DPT-10 10-15	01-194-39	9
DPT-10 15-20	01-194-40	8
DPT-11 0-5	01-194-41	9



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



February 18, 2013

Mr. David Baumeister OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052

Dear Mr. Baumeister,

On February 6th, 3 samples were received by our laboratory and assigned our laboratory project number EV13020024. The project was identified as your Lab Ref #01-194 / Proj #6552. The sample identification and requested analyses are outlined on the attached chain of custody record.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan

Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

Lab Ref #01-194 / Proj #6552

David Baumeister

CLIENT CONTACT: CLIENT PROJECT:

Sautemaniste

ALS JOB#: WDOE ACCREDITATION: 2/18/2013 EV13020024

C601

DATE:

CASE NARRATIVE

No sample abnormalities were qualified in this report.



PROBLEM AND ADDRESS.

CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

CLIENT CONTACT:

David Baumeister

CLIENT PROJECT:

CLIENT SAMPLE ID

HALMAN TOTAL

Lab Ref #01-194 / Proj #6552

DPT-3 5-10

DATE:

2/18/2013

ALS JOB#:

EV13020024

ALS SAMPLE#:

-01

DATE RECEIVED:

2/6/2013

COLLECTION DATE:

1/28/2013 10:12:00 AM

WDOE ACCREDITATION: C601

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	5 2 3 12 Com	ANALYSIS . DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	89	5.0	1	UNITS MG/KG		
>C10-C12 Aliphatics	NWEPH	430	5.0	4	MG/KG	02/11/2013	EBS
>C12-C16 Aliphatics	NWEPH	44	5.0	4	MG/KG	02/11/2013 02/11/2013	EBS
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS EBS
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C21-C34 Aromatics	NWEPH	<u> </u>	5.0	1	MG/KG	02/09/2013	EBS
SURROGATE	METHOD	WOEA				ANALYSIS A	NALYSIS BY
025	NWEPH	%REC				era i E	91
p-Terphenyl	NWEPH	77.0				02/11/2013	EBS
> rospitosty:	IAAACHU	105				02/09/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

CLIENT CONTACT: CLIENT PROJECT: **David Baumeister**

CLIENT SAMPLE ID

Lab Ref #01-194 / Proj #6552

DPT-4 5-10

DATE:

2/18/2013 EV13020024

ALS JOB#: ALS SAMPLE#:

-02

DATE RECEIVED:

2/6/2013

COLLECTION DATE:

1/28/2013 10:58:00 AM

C601 WDOE ACCREDITATION:

		DA	TA RESULTS				
ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS A	ANALYSIS By
>C8-C10 Aliphatics	NWEPH	11	5.0	1	MG/KG	02/11/2013	EBS
>C10-C12 Aliphatics	NWEPH	320	5.0	1	MG/KG	02/11/2013	EBS
>C12-C16 Aliphatics	NWEPH	71	5.0	1	MG/KG	02/11/2013	EBS
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C10-C12 Aromatics	NWEPH	15	5.0	1	MG/KG	02/09/2013	EBS
>C12-C16 Aromatics	NWEPH	9.3	5.0	1	MG/KG	02/09/2013	EBS
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
						ANALYSIS A	ANALYSIS
SURROGATE	METHOD	%REC				DATE	BY

			ANAL 1919 AN	IAL I GIG
SURROGATE	METHOD	%REC	DATE	BY
C25	NWEPH	104	02/11/2013	EBS
p-Terphenyl	NWEPH	126	02/09/2013	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



GET BELLA E OF ANALYSIS

CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

CLIENT CONTACT: **CLIENT PROJECT:**

David Baumeister

Lab Ref #01-194 / Proj #6552 **CLIENT SAMPLE ID** DPT-7 5-10

DATE:

2/18/2013

ALS JOB#:

EV13020024

ALS SAMPLE#:

-03 DATE RECEIVED:

2/6/2013

COLLECTION DATE:

1/28/2013 12:45:00 PM

WDOF ACCREDITATION:

C601

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS A	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	9.4	5.0	1	MG/KG	02/11/2013	EBS
>C10-C12 Aliphatics	NWEPH	370	5.0	1	MG/KG	02/11/2013	EBS
>C12-C16 Aliphatics	NWEPH	95	5.0	1	MG/KG	02/11/2013	EBS
C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
C21-C34 Aliphatics	NWEPH	U	5.0	4	MG/KG	02/11/2013	EBS
C8-C10 Aromatics	NWEPH	U	5.0	· ·	MG/KG	02/09/2013	EBS
C10-C12 Aromatics	NWEPH	12	5.0	1	MG/KG	02/09/2013	EBS
C12-C16 Aromatics	NWEPH	7.0	5.0	1	MG/KG	02/09/2013	EBS
C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS
URROGATE	METHOD	%REC				ANALYSIS A	NALYSIS BY
25	NWEPH	97.0					
-Terphenyi	NWEPH	108				02/11/2013 02/09/2013	EBS EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

ALS SDG#:

DATE:

2/18/2013 EV13020024

WDOE ACCREDITATION:

C601

CLIENT CONTACT:

David Baumeister

CLIENT PROJECT:

Lab Ref #01-194 / Proj #6552

LABORATORY BLANK RESULTS

MBLK-2112013 - Batch R80236 - Soil by NWEPH

			REPORTING	DILUTION		ANALYSIS A	ANALYSIS
ANALYTE	METHOD	RESULTS	LIMITS	FACTOR	UNITS	DATE	BY
>C8-C10 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	02/11/2013	EBS

MBLK-292013 - Batch R80237 - Soil by NWEPH

			REPORTING	DILUTION	ANALYSIS ANALYSIS			
ANALYTE	METHOD	RESULTS	LIMITS	FACTOR	UNITS	DATE	BY	
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS	
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS	
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS	
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS	
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	02/09/2013	EBS	



CLIENT:

OnSite Environmental Inc.

14648 NE 95th Street

Redmond, WA 98052

DATE: ALS SDG#: WDOE ACCREDITATION: 2/18/2013 EV13020024

C601

CLIENT CONTACT:

David Baumeister

CLIENT PROJECT:

Lab Ref #01-194 / Proj #6552

JABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R80236 - Soil by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics - BS	NWEPH	90.0			02/11/2013	EBS
>C8-C10 Aliphatics - BSD	NWEPH	74.0	20		02/11/2013	EBS
>C10-C12 Aliphatics - BS	NWEPH	94.0			02/11/2013	EBS
>C10-C12 Aliphatics - BSD	NWEPH	79.0	17		02/11/2013	
>C12-C16 Aliphatics - BS	NWEPH	94.0	**			EBS
>C12-C16 Aliphatics - BSD	NWEPH	81.0	15		02/11/2013	EBS
>C16-C21 Aliphatics - BS	NWEPH	94.0	5 ♥		02/11/2013	EBS
•					02/11/2013	EBS
>C16-C21 Aliphatics - BSD	NWEPH	82.0	14		02/11/2013	EBS
>C21-C34 Aliphatics - BS	NWEPH	89.0			02/11/2013	EBS
>C21-C34 Aliphatics - BSD	NWEPH	73.0	20		02/11/2013	EBS

ALS Test Batch ID: R80237 - Soil by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aromatics - BS	NWEPH	98.0			02/09/2013	EBS
>C8-C10 Aromatics - BSD	NWEPH	90.0	9		02/09/2013	EBS
>C10-C12 Aromatics - BS	NWEPH	98.0			02/09/2013	EBS
>C10-C12 Aromatics - BSD	NWEPH	91.0	7		02/09/2013	EBS
>C12-C16 Aromatics - BS	NWEPH	100			02/09/2013	EBS
>C12-C16 Aromatics - BSD	NWEPH	93.0	7		02/09/2013	EBS
>C16-C21 Aromatics - BS	NWEPH	100	-		02/09/2013	
>C16-C21 Aromatics - BSD	NWEPH	95.0	5			EBS
>C21-C34 Aromatics - BS	NWEPH	82.0	•		02/09/2013	EBS
>C21-C34 Aromatics - BSD	NWEPH		-		02/09/2013	EBS
	IANAELU	78.0	5		02/09/2013	EBS

APPROVED BY

Laboratory Director

	1		1	
Page	ı	of	J	



14648 NE 95th Street, Redmond, WA 98052 - (425) 683-3881		Laboratory Reference #: 01-194
Subcontract Laboratory: ALS Environmental	Turnaround Request:	Project Manager: David Baumeister
Attention: Rick Bagan	1 Day 2 Day 3 Day	email: dbaumeister@onsite-env.com
8620 Holly Drive Everett, WA 98208	Standard	Project Number: <u>4552</u>
Phone Number: (425) 356-2600	Other:	Project Name:
Date/Time:		

Lab ID		Sample identification	Date Sampled	Time Sampled	Matrix	#of Cont		Requested Analysis	
1	DPT-3	5-10	1/28/13		5	1	EPH		
2	DPT-4	5-10	1	1058	1				
3	DPT-7	5-10	<u> </u>	1245	J_	T	<u> </u>		
<u></u>									
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2000000000			* ***********************					Comments/Special Instruction	
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1	uished by:		SPEEDY			2-6-13	180 P		
Receiv	ed by:	awn Robenson	ALS	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		3/6/13	1.00 p.		
Reling	uished by:						<u>'</u>		
Receiv	red by:								

2000000				
	OnSite			
	6060L 694		.00 00	
***************************************	Caviro	ame:	mai	a G

Page of 5

Phone: (425) 883-38	et • Radmond WA 98052	en vandades presidential de ann	impround for his working of	198)		Lee	abo	rator	yN	umi)er:				Minorata pipo		W########	NAMES AND ASSOCIATION OF THE PARTY OF THE PA	0	4920	8	94	area carresson and a sec	TTS FISH # F O HIGH COMMON	ererekannanan
Phone: (425) 883-38 Company: Q. ((o. A) Project Number: Project Manager: Sampled by:	181 · www.onsite-env.com SSOCIATAS Inc. 12 Hoffman Beriffication 0 - 5	☐ san	(Check One me Day ays ays ndard (7 Days) H analysis 5 D (other)) 1 Day	S Sentiment of Continuents	NWTPH-HGID	/втех	NWTPH-Gx NWTPH-Dx	200	Halogenated Volatiles 8260C		PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8278D/SIN/	Citlorinated Acid Herbicides 8151A	Total HCRA Metals/ MTCA Metals (orcle one)	TOLP Metals	HEM (oil and grease) 1664A	8	T. Carlo	3 *			% Moisture
La De Tra-La	5-10		8:25	<u> </u>							ON STREET LINESPORE	N KIPTI International	***************************************										Q	1	***************************************
8.6	10-15		8:30				X									M. William Bridge Barge	***************************************	WF 1012 34189		***************************************		PP COLUMN		SECOND SOLVEN	M
4 DPT-1	15-20	900.000 TOO; TOO DO NOT THE REAL PROPERTY AND THE REAL PROPERTY AN	8:45				X							***************************************	CONTRA CAMERICA	***************************************	***************************************						***************************************	1	d
S OPT-2	0-5		9:25									***************************************		***************************************			THE REAL PROPERTY CANAGE	Milmandaci dan menjung			***************************************		*******	***************************************	+
6 OPT-2	5-10		9:30					*************	*YESTE CHEMICAL AND	*****************							***************************************	***************************************		The same of the sa	***************************************		***************************************		
7 DPT-2	10-15	MA CO A HAT MANUEL PROPERTY AND THE CO.	9:45			61818/90/4/4/A 2380/	X	***************************************		-				NI Principal parties				***************************************				\dashv	_	+	
8 007-2	15-20	APPENDING THE PROPERTY AND ASSOCIATE	9:55	STEELS STATE		***************************************		EPATER FAMOUR PRODUCES AND ASSESSMENT												PF07011E02					K
9 DPT-3	0-5	COLORES PROPERTY SPECIAL SPECI	10:05					**********	-					1									-	PO d Carbon insight assume	M
10 OPT-3	5-10	\overline{V}	10:12	V					-			K	N	, 0	,						$\frac{1}{2}$		*************	MANAGEMENT CONTRACTOR	
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Page 2 of 5

Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052	Turneround Request (in working days)	Laboratory I	Number:	01-194	
Phone: (425) 883-3881 • www.onsite-env.com Company:	(Check One)				
Jama Associates Inc	Same Day 1 Day			u e e e e e e e e e e e e e e e e e e e	
Project Number: 6552	2 Days 3 Days		81B	1151A	
Project Name:	Standard (7 Days) (TPH analysis 5 Days)		B260C	Cides B	
Project Manager: Clwck Lia			Statiles (270D/S PAHs) IM (low	id Herbi	
Sampled by: Nicolas R. Haffman	(other)	Number of Centainers NWTPH-Gx/BTEX NWTPH-Gx NWTPH-Gx	Volatiles & 2500C Halogenated Volatiles & 2500C Semivolatiles & 270D/SIM (with low-level PAHs) PAHs & 270D/SIM (low-level) PCBs & 8082A Organochlorine Pesticides & 8081B	Chlorinated Acid Herbicides 8151A Total RCRA Metals/ MTCA Metals (circle one) TCLP Metals HEM (oil and grease) 1664A EPH VPH	sture
ab ID Sample Identification	Date Time Sampled Sampled Matrix	NWTPH-GD NWTPH-GD NWTPH-GX/B NWTPH-GX/B NWTPH-GX/B NWTPH-GX	Volatiles & 260C Halogenated Volatiles & 27 Bernivolatiles & 270D/SIM (with low-level PAHs) PAHs & 270D/SIM (low-ler PCBs & 80&2A Organochlorine Pesticide	Chlorinated P Total RCRA I TOLP Metals HEM (oil and YPY	% Moisture
11 DPT-3 10-15	V28/12 10:20 Sal	3 X			
12 DPT-3 15-20	10:30) ý
13 OPT-4 0-5	16:50				
14 DPT-4 5-10	10:58		MA MA	(8)	
S DPT-4 10-15	11:06	×			
16 DPT-4 15-20	11:15				19
17 DPT-5 0-5	11'.30				
18 DPT-5 5-10	11:38				
18 DPT-5 5-10 19 DPT-5 10-15 20 DPT-5 15-20	11:45				
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Signature	Company	Date	Time Comments/Spec	cial Instructions	
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Page 3 of 5

Analytical Laboratory Testing Services 14648 NE 95th Street ∘ Redmond, W Phone: (425) 883-3881 ∘ www.onsite	/A 98052 env.com	Surnamund Hennen: (in working down)		Labc	rato	ry N	lumi	er:	TO A STATE OF THE						0	ele elec	1	9	4		WARRING GOVERNORS
Project Number: Project Number: 655 2 Project Manager:		(Check One) Same Day 1 Day 2 Days 3 Days Standard (7 Days) (TPH analysis 5 Days)	4.0				s 8260C	SIM	w-level)		cides 8081B	Siloides 8270D/SIM	fotal RCRA Metals' MTGA Metals (circle ans)	Shared and print 2 and	1664A		200			Territoria di Grandi di Anglia di Sanda	
capte identification	May Sang	A STATE OF THE PARTY OF THE PAR	figuration of Contolners	NWTPH-GX/BTEX	NWTPH-Gx	Volatiles 82600	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (Io	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesifoides 8270D/SIM Chloringted April Herbindes 8151 b	Total RORA Metals/ N	TCLP Metals	HEM (oil and grease) 1664A		E C L	S			% Moisture
21 OPT-6 0-	and the same of	113 17:02 Soil	3					na anna mana		30111W-12110 AV		****	No ment deposition	MTTER COLUMN TO	-						AMERICAN PROGRAMMENT AND A
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3 DPT-6 10-	-15	12:18		X				-	************										Printriotone-non-ess.		K
DPT-6 15-	-20	12:25		X											***			·	*************		K
S DPT-7 0-5		12:24													***************************************				and the same of the same	T You'll his before causes	77777000mmmmm
	***********************************	12:45		X					\mathbb{Z}	בע	93		en e empresa de la constanta d	ocal decrees as a	700000000000000000000000000000000000000		Sel	2	200 th the later of the later o	The state of the s	K
27 DPT-7 10- 28 DPT-7 15-	SECTION STREET,	172:53		X																	K
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20 DPT-8 0-		/3:(5		****							MOZEKNIJAN ELE					-	#+ EMINENTENING BASE				
30 DPT-8 S-	-10 V	(3:20 W Common	<u> V </u>	Date			ne				900										
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OnSite Environmental Inc	2000 CO (100 CO) (100 CO (100 CO (100 CO (100 CO (100 CO) (100 CO (100 CO) (100 CO (100 CO) (100 CO	The same of the sa	
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Page 4 of 5

Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	Turnaround Request (in working days)		Labo	ratory	Numbe	r:				0	1 - 1	194	
Company:	(Check One)		1						T ₆ T		1 1	T	
Project Number: ASSO CIA TUS INC	Same Day 1 Day							Wis	incle on				
6552	2 Days 3 Days						81B	8270D/ 8151A	letals (c				
Project Name:	Standard (7 Days) (TPH analysis 5 Days)				32600	level)	des 80	icides cides	TCA M	664A			
Project Manager:		Siring	×		latiles	AHS) M (low	Pestici	us Pest 1 Herbi	als/M	ease) 1			
Sampled by: Nicolos Ri Hoffman	(other)	13 C	3x/BTR	ð ð	B260C	level F 70D/SII	32A Ilorine	osphor ed Acir	3A Mel	rais and gr			51
	Date Time	Aumber of Containers	NWTPH-Gx/BTEX	NWTPH-Gx NWTPH-Dx	Volatiles 8260C Halogenated Volatiles 8260C	(with low-level PAHs) PAHs 8270D/SIM (low-level)	PCBS 8082A Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	I CLP Metats HEM (oil and grease) 1664A	6		% Moisture
31 DPT-8 10-13		3	<u> </u>	2 2		<u>8 ≥ 13 1</u>	ž 6	ō <u>5</u>		= =			
31 DPT-8 10-13	1/28/13/13/30 Soil	+	$\perp \!\!\! \! \!\! \! \!$		 				_	_	 	 	
32 DOT-8 15-20	13:35	111											1 1
33 DPT-9 0-5	13,40		1/20	e No									
34 OPT-9 5-10	13148		X								X		b
35 DPT-9 10-15	13155		×										80
36 DPT-9 15-70	14:02		X										8
37 DPT-10 0-5	14(12		/	No									
38 DPT-10 5-10	14120	ΠT	X						11		X	abla	
31 DPT-8 10-13 32 DPT-8 15-20 33 DPT-9 0-5 34 DPT-9 5-10 35 DPT-9 16-15 36 DPT-9 15-20 37 DPT-10 0-5 38 DPT-10 5-10 39 DPT-10 16-15	14:28	$\dagger\dagger$	X									1	
40 DPT-10 15-20	V 14135 V	M	X				_						
Signature	Company	IVI	Date		Time	Com	ments/S _i	ecial ins	irections			Щ.	1 1 <i>V</i>
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Page <u>5</u> of <u>5</u>

Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	Historound Hanugat (in working days)	Laboratory Number:	01-194
Project Number: (5572 Project Name: Project Manager: Chol CK Lio Sampled by: Accorded Residentifications	(Check One) Same Day	NWTPH-HCID NWTPH-Gx/BTEX NWTPH-Gx NWTPH-Gx NWTPH-Dx Volatiles 8260C Semivolatiles 8276D/SIM With low-level PAHs) PAHs 8270D/SIM (low-level) PCBs 8082A	Organochlorine Pesticides 8081B Organophasphorus Pesticides 8270D/StM Onlorinated Acid Harbicides 8151A Total RCRA Metals TCLP Metals HEM (oil and grease) 1884A
A COPTONIO S	Samuleo Someon Salux 2 1/26//3 5120 SSI) 3		
Retinquished Received Received Received Received Received Received Received Received	Camplany Thi	1/29/13 /6135	Strist Apocial Instructions
State	a Package Loud III Loud IV	Chromat	tograms with final report



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

February 26, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1302-112

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 19, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112

Project: 6552

Case Narrative

Samples were collected on February 18, 2013 and received by the laboratory on February 19, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples MW-105-5', MW-105-10', MW-105-20' and MW-106-7.5' are similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112 Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	MW-105-5'					
Laboratory ID:	02-112-01					
Benzene	ND	0.030	EPA 8021B	2-19-13	2-19-13	· · ·
Toluene	ND	0.15	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	0.23	0.15	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	1.3	0.15	EPA 8021B	2-19-13	2-19-13	
o-Xylene	0.39	0.15	EPA 8021B	2-19-13	2-19-13	
Gasoline	7300	380	NWTPH-Gx	2-19-13	2-22-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	70-132				
Client ID:	MW-105-10'					
Laboratory ID:	02-112-02					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	:
Toluene	ND	0.10	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.10	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	0.15	0.10	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.10	EPA 8021B	2-19-13	2-19-13	
Gasoline	1000	100	NWTPH-Gx	2-19-13	2-22-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	70-132				
Client ID:	MW-105-15'					
Laboratory ID:	02-112-03					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	
Toluene	ND	0.048	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.048	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	ND	0.048	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.048	EPA 8021B	2-19-13	2-19-13	
Gasoline	ND	4.8	NWTPH-Gx	2-19-13	2-19-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	70-132				

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112

Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Wethod	Prepared	Analyzed	Flags
Client ID:	MW-105-20'					
Laboratory ID:	02-112-04					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	
Toluene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
Gasoline	14	5.6	NWTPH-Gx	2-19-13	2-19-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	70-132				
Client ID:	MW-106-7.5'					
Laboratory ID:	02-112-05					
Benzene	ND	0.029	EPA 8021B	2-19-13	2-19-13	55 5, 5, 1, 191015
Toluene	ND	0.15	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.15	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	0.65	0.15	EPA 8021B	2-19-13	2-19-13	
o-Xylene	0.27	0.15	EPA 8021B	2-19-13	2-19-13	
Gasoline	3300	360	NWTPH-Gx	2-19-13	2-22-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	95	70-132				
Client ID:	MW-106-12.5'					
Laboratory ID:	02-112-06					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	
Toluene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.056	EPA 8021B	2-19-13	2-19-13	
Gasoline	ND	5.6	NWTPH-Gx	2-19-13	2-19-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	108	70-132				

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112 Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	MW-106-17.5'					
Laboratory ID:	02-112-07					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	
Toluene	ND	0.055	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.055	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	ND	0.055	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.055	EPA 8021B	2-19-13	2-19-13	
Gasoline	ND	5.5	NWTPH-Gx	2-19-13	2-19-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	70-132				

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112

Project: 6552

NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						***************************************
Laboratory ID:	MB0219S1					
Benzene	ND	0.020	EPA 8021B	2-19-13	2-19-13	
Toluene	ND	0.050	EPA 8021B	2-19-13	2-19-13	
Ethyl Benzene	ND	0.050	EPA 8021B	2-19-13	2-19-13	
m,p-Xylene	ND	0.050	EPA 8021B	2-19-13	2-19-13	
o-Xylene	ND	0.050	EPA 8021B	2-19-13	2-19-13	
Gasoline	ND	5.0	NWTPH-Gx	2-19-13	2-19-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	70-132				

70-132

					Source	Pe	rcent	Recovery		RPD	
Analyte	Re	sult	Spike	Level	Result	Rec	overy	Limits	RPD		Flags
DUPLICATE			***************************************	******					~~~		
Laboratory ID:	02-0	61-05									
	ORIG	DUP									
Benzene	ND	ND	NA	NA		1	VΑ	NA	NA	30	
Toluene	ND	ND	NA	NA		NA		NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA		NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA		NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA		NA	NA	30	
Gasoline	25.9	23.8	NA	NA		NA		NA	8	30	
Surrogate:											
Fluorobenzene						94	97	70-132			
SPIKE BLANKS											
Laboratory ID:	SB02	1981									
	SB	SBD	SB	SBD		SB	SBD	20/			
Benzene	0.945	0.952	1.00	1.00		95	95	71-125	4000	11	
Toluene	1.04	1.07	1.00	1.00		104	107	77-125	3	11	
Ethyl Benzene	1.07	1.08	1.00	1.00		107	108	76-125	1	10	
m,p-Xylene	1.09	1.13	1.00	1.00		109	113	78-124	4	9	
o-Xylene	1.08	1.10	1.00	1.00		108	110	77-123	2	9	
Surrogate:											
Fluorobenzene						98	97	70-132			

Date of Report: February 26, 2013 Samples Submitted: February 19, 2013 Laboratory Reference: 1302-112

Project: 6552

% MOISTURE

Date Analyzed: 2-19-13

Client ID	Lab ID	% Moisture
MW-105-5'	02-112-01	21
MW-105-10'	02-112-02	14
MW-105-15'	02-112-03	8
MW-105-20'	02-112-04	8
MW-106-7.5'	02-112-05	19
MW-106-12.5'	02-112-06	14
MW-106-17.5'	02-112-07	5



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- 1 Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample,
- T The sample chromatogram is not similar to a typical .
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



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Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425):883-3881 • www.onsite-env.com	Turnaround Request (in working days)		Laboratory Number: 02-112						2							
Project Number: 6552 Project Name: Project Manager: Chuck Lie Sampled by: Wicolas R. Hoffman Lab 10 Sample Identification I MW-105 -5'	(Check One)	Mainers	NWTPH-HCID NWTPH-Gx/8TEX	NWTPH-Gx NWTPH-Dx	Volatiles B260C Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHS 8270D/SIM (low-level) PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pestlcides 8270D/SIM Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A				% Moisture
2 MW-105 -10'	2/18/13 910 500	12	X					-			1					X
3 MW-105-15'	2/18/139:20 531		X													1
4 MW-105 -70'	2/18/13 9:28 501		X												1	
S MW-106 -7.5'	2/18/13/0125 3:1		X											\top	\neg	1
6 MW-106 -17.5'	Z/18/13 10:35 Sai)		X													\ <u>\</u>
7 MW-106 -17.5'	2/18/13/0145 Soi)	U	X												\dashv	X
										1				1		X
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

April 4, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1303-237

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 26, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: April 4, 2013 Samples Submitted: March 26, 2013 Laboratory Reference: 1303-237

Project: 6552

Case Narrative

Samples were collected on March 26, 2013 and received by the laboratory on March 26, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples 25-14 0-5 lower and 25-14 10-15 upper are similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: April 4, 2013 Samples Submitted: March 26, 2013 Laboratory Reference: 1303-237 Project: 6552

NWTPH-Gx/BTEX

Matrix: Soil

Amakaa	₩ *8	201	33.00 a.e. a	Date	Date	
Analyte Client ID:	Result	PQL	Method	Prepared	Analyzed	Flags
	25-14 0-5 lower					
Laboratory ID:	03-237-02					
Benzene	ND	0.020	EPA 8021B	3-28-13	3-28-13	
Toluene	ND	0.051	EPA 8021B	3-28-13	3-28-13	
Ethyl Benzene	0.38	0.051	EPA 8021B	3-28-13	3-28-13	
m,p-Xylene	2.5	0.051	EPA 8021B	3-28-13	3-28-13	
o-Xylene	ND	0.051	EPA 8021B	3-28-13	3-28-13	U1
Gasoline	1000	100	NWTPH-Gx	3-28-13	3-29-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	70-132				
Client ID:	25-14 10-15 upper					
Laboratory ID:	03-237-05					
Benzene	ND	0.020	EPA 8021B	3-28-13	3-29-13	
Toluene	ND	0.049	EPA 8021B	3-28-13	3-29-13	
Ethyl Benzene	ND	0.049	EPA 8021B	3-28-13	3-29-13	
m,p-Xylene	0.10	0.049	EPA 8021B	3-28-13	3-29-13	
o-Xylene	ND	0.049	EPA 8021B	3-28-13	3-29-13	
Gasoline	67	4.9	NWTPH-Gx	3-28-13	3-29-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	70-132				
Client ID:	25-14 10-15 lower					
_aboratory ID:	03-237-06					
3enzene	ND	0.020	EPA 8021B	3-28-13	3-28-13	
Toluene	ND	0.048	EPA 8021B	3-28-13	3-28-13	
Ethyl Benzene	ND	0.048	EPA 8021B	3-28-13	3-28-13	
n,p-Xylene	ND	0.048	EPA 8021B	3-28-13	3-28-13	
-Xylene	ND	0.048	EPA 8021B	3-28-13	3-28-13	
Gasoline	ND	4.8	NWTPH-Gx	3-28-13	3-28-13	
Surrogate:	Percent Recovery	Control Limits			2 8 9 1 9	
Fluorobenzene	79	70-132				

Date of Report: April 4, 2013 Samples Submitted: March 26, 2013 Laboratory Reference: 1303-237

Project: 6552

NWTPH-Gx/BTEX **QUALITY CONTROL**

Matrix: Soil

Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0328S1					
Benzene	ND	0.020	EPA 8021B	3-28-13	3-28-13	
Toluene	ND	0.050	EPA 8021B	3-28-13	3-28-13	
Ethyl Benzene	ND	0.050	EPA 8021B	3-28-13	3-28-13	
m,p-Xylene	ND	0.050	EPA 8021B	3-28-13	3-28-13	
o-Xylene	ND	0.050	EPA 8021B	3-28-13	3-28-13	
Gasoline	ND	5.0	NWTPH-Gx	3-28-13	3-28-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	96	70-132				

Source Percent Recovery **RPD** Limits **RPD** Analyte Result **Spike Level** Result Recovery Limit Flags **DUPLICATE** Laboratory ID: 03-245-01 ORIG DUP ND ND NA NA NA NΑ NA Benzene 30 Toluene ND ND NA NA NA NA NA 30 ND ND NA NΑ NA NA 30 Ethyl Benzene NA ND ND 30 m,p-Xylene NA NA NA NΑ NA o-Xylene ND ND NA NA NA NA NA 30 ND 30 Gasoline ND NA NA NA NA NA Surrogate: Fluorobenzene 99 70-132 96

	A 7	· P	w	SP	11/	
M.	44 1	-	ı A	5P		

Laboratory ID:	03-2	35-01						<u></u>		
	MS	MSD	MS	MSD		MS	MSD			
Benzene	0.981	0.991	1.00	1.00	ND	98	99	68-125	1	12
Toluene	1.02	1.02	1.00	1.00	ND	102	102	65-139	0	13
Ethyl Benzene	0.972	0.968	1.00	1.00	ND	97	97	74-128	0	12
m,p-Xylene	0.989	0.990	1.00	1.00	ND	99	99	75-128	0	13
o-Xylene	0.973	0.932	1.00	1.00	ND	97	93	74-127	4	12
Surrogate:										
Fluorobenzene						92	97	70-132		

Date of Report: April 4, 2013 Samples Submitted: March 26, 2013 Laboratory Reference: 1303-237 Project: 6552

% MOISTURE

Date Analyzed:

4-2-13

Client ID	Lab ID	% Moisture
25-14 0-5 lower	03-237-02	7
25-14 10-15 upper	03-237-05	9
25-14 10-15 lower	03-237-06	9



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**



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Project Manager: Child I Child I Child I Child I Child I Child Child	ays 3 Days Inderd (7 Days) H analysis 5 Days) (other) COH HALM Sanglest Starty 3	NWTPH-Gx/BTEX NWTPH-Gx NWTPH-Dx Volatiles 8260C Halogenated Volatiles 8260C	With low-tevel PAHs/SIM (with low-tevel PAHs/SIM (with low-tevel) PCBs 8082A Organochlorine Pesticides 80818 Organochlorine Pesticides 8270D/SiM Chlorinated Acid Herbicides 8151A Total RCRA Metals/ MTCA Metals (circle one) TCLP Metals HEM (oil and grease) 1664A	% Moisture
Relinquished July 2007	12:50	X		X X
Retinquished Received Retinquished Received Received Received	97796889 34 4 5 4 4 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3/28/13 15:3t 3/28/3 15:3t	Guenments/Suscial Instructions	

APPENDIX D SAMPLING AND ANALYTICAL TESTING VAPOR SAMPLES

5221 Ballard Avenue NW Seattle, Washington

Vapor probes were installed in the 3 hand excavated test pits in the basement of 5221. The vapor probes consisted of a 6-inch length of 12-inch diameter pipe attached to a sampling barb. The test holes were backfilled with pea gravel. The pipes were placed with the top of the sampling barb just below the top of the existing slab. The pea gravel extended up to the base of the existing slab. The holes were patched with concrete. A metal electrical junction service box was placed in the concrete patch to provide a flush access box for the sampling barb. Prior to sampling, a vacuum pump was used to develop the probes.

Vapor samples were placed into laboratory-prepared 400 ml summa canisters. The canisters were provided with a flow control to limit sampling to a rate of 500 ml per minute. Each sample was given unique sample identification. All samples were delivered to H and P Mobile Geochemistry of Carlsbad, California. Chain of custody protocols were followed for all samples.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. All testing was within normal standards.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use.





Mr. Chuck Lie Terra Associates 12525 Willows Rd. #101 Kirkland, WA 98034

H&P Project: MC020413-10 Client Project: T-6552

Dear Mr. Chuck Lie:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 04-Feb-13 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- · Case Narrative (if applicable)
- Sample Results
- Quality Control Summary

Janis Villarreal

- · Notes and Definitions / Appendix
- · Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile Geochemistry Inc.

2470 Impala Drive Carlsbad, CA 92010 760-804-9678 Phone 760-804-9159 Fax

Тегга Associates

12525 Willows Rd. #101

Kirkland, WA 98034

Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VP-1	E302016-01	Vарог	29-Jan-13	04-Feb-13
VP-2	E302016-02	Vapor	29-Jan-13	04-Feb-13
VP-3	E302016-03	Vapor	29-Jan-13	04-Feb-13

H&P Mobile Geochemistry Inc.

Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported: 14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-1 (E302016-01) Vapor Sampled: 29-Jan-1	3 Received: 04-	Feb-13							
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
Chloromethane	ND	2.1	u	**	Ħ	**	**	н	
Dichlorotetrafluoroethane (F114)	ND	7.1	11	**	n	11	11	"	
Vinyl chloride	ND	2.6	"	**	"	•	11	**	
Bromomethane	ND	16	**	11	"	**	11	*	
Chloroethane	ND	8.0	**	**	**	n.	**	"	
Trichlorofluoromethane (F11)	ND	5.6	"	н	**	"	**	n	
Acetone	ND	24	**	n	Ħ	**	**	**	
1,1-Dichloroethene	ND	4.0	u	n	"		**	11	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	11	**	u	"	"		
Methylene chloride (Dichloromethane)	4.4	3.5	**	*	11	"	н	rr ·	
Carbon disulfide	ND	6.3	n	"	**	н	11	n	
trans-1,2-Dichloroethene	ND	8.0	**	"	n	H	TT	n	
1,1-Dichloroethane	ND	4.1		**	"	11	Ħ	n	
2-Butanone (MEK)	ND	30	**	11		**	n	**	
cis-1,2-Dichloroethene	ND	4.0	**	**	**	Ħ	**	**	
Chloroform	ND	4.9	"	н .	**	11		**	
1,1,1-Trichloroethane	ND	5.5	"	n	"	**	"	**	
1,2-Dichloroethane (EDC)	ND	4.1	n	11	**	"	n	**	
Benzene	4.3	3.2		**	н	**	**		
Carbon tetrachloride	ND	5.2 6.4	n	**	н	n		**	
Trichloroethene	ND	5.5	**	"	11	**	11	**	
1,2-Dichloropropane	ND	9.4	**	**	**	11	11	**	
Bromodichloromethane	ND	6.8	ıı	11	#1	"	"	11	
cis-1,3-Dichloropropene	ND	4.6	**	11		**		н	
4-Methyl-2-pentanone (MIBK)	ND	8.3	**	11	"	11	"	н	
trans-1,3-Dichloropropene	ND ND	6.3 4.6	,,	**	"	"	"	"	
Foluene	62	3.8	"	v	"	"	"	**	
1,1,2-Trichloroethane	ND	5.6 5.5	,,	**	11	"	*	"	
2-Hexanone (MBK)	ND	8.3	tr	n	ıı .	11	n	11	
Dibromochloromethane	ND ND	8.6	11	"		,,	п	**	
Petrachloroethene			**	,,					
1,2-Dibromoethane (EDB)	ND	6.9 7.8	**	"	"	,,		"	
1,1,1,2-Tetrachloroethane	ND		11		,,		"		
1,1,1,2-Tetrachioroethane Chlorobenzene	ND	7.0		"		,,	,,	**	
eniorobenzene Ethylbenzene	ND	4.7	,,	,,	"	,	"	"	
•	4.8	4.4		"	"	"			
n,p-Xylene		8.8					,,		
Styrene	ND	4.3	**	"	"	17	"	н	

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Тегта Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552 Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-1 (E302016-01) Vapor Sampled: 29-Jan-	13 Received: 04-	Feb-13							
o-Xylene	5.2	4.4	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
Bromoform	ND	10	16	**	61	11	74	18	
1,1,2,2-Tetrachloroethane	ND	7.0	1:	92	92	**	44	77	
4-Ethyltoluene	ND	5.0	FF	\$1	11	**	**	60	
1,3,5-Trimethylbenzene	ND	5.0	89	11	#F	89	11	**	
1,2,4-Trimethylbenzene	ND	5.0	Ħ	şį	U	11	87	19	
1,3-Dichlorobenzene	ND	12	16	19	+	31	**	\$1	
1,4-Dichlorobenzene	ND	12	п	\$1	99	÷*	**	H	
1,2-Dichlorobenzene	ND	12	89	15	н	**	91	11	
1,2,4-Trichlorobenzene	ND	7.5	41	41	н	91	19	+1	
Hexachlorobutadiene	ND	11	11	н	ft.	89	**	69	
Surrogate: 1,2-Dichloroethane-d4		127 %	76-1	134	п	n	"	n	
Surrogate: Toluene-d8		110 %	78-1		н	**	**	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	77-1		#	"	#	н	
VP-2 (E302016-02) Vapor Sampled; 29-Jan-1	3 Received: 04-I	eb-13							
		72577777777111111111111111111111111	TOTAL CONTRACTOR			×24.4.4			
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
Chloromethane	ND ND	5.0 2.1	ug/m3	1 "	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
			-				08-Feb-13		
Chloromethane	ND	2.1	f1		27	**	17	11	
Chloromethane Dichlorotetrafluoroethane (F114)	ND ND	2.1 7.1	\$1 *1	11 49	97	ri ti	19 99	11	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride	ND ND ND	2.1 7.1 2.6	61 61	# #	97	98 98	89 89 89	11 21 12	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane	ND ND ND ND	2.1 7.1 2.6 16	91 91 11	# #	95 94 94	99 98 11	89 89 89 84	11 21 12	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane	ND ND ND ND	2.1 7.1 2.6 16 8.0	91 91 11	# #	\$7 \$4 31 31	99 98 11	89 89 89 84	11 21 12	3
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane (F11)	ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6	91 91 91 91 91 91	#1 #1 ## #2 #7	97 91 91 91 11	61 55 52 22 23	89 89 89 84	11 11 11 11 11 11 11 11 11 11 11 11 11	3 T T T T T T T T T T T T T T T T T T T
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Frichlorofluoromethane (F11) Acetone	ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24	31 31 31 41 52 52	11 11 11 11 11 11 11 11 11 11 11 11 11	27 26 26 27 21 41 41	61 55 52 22 23	89 89 89 84	11 11 11 11 11 11 11 11 11 11 11 11 11	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Frichlorofluoromethane (F11) Acetone 1,1-Dichloroethene	ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7	11 11 11 11 12 17	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 17 17 17 17 17 17 17 17 17 17 17 1	61 55 52 22 23	89 89 89 84	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Frichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113)	ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5	31 31 31 31 32 32 44 44 44 44 44 44 44 44 44 44 44 44 44	17 47 47 47 47 47 47 47 47 47 47 47 47 47	11 11 11 11 11 11 11 11 11 11 11 11 11	61 55 52 22 23	89 89 89 84	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Frichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane)	ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 17 17 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 12 12 12 12 12 12 12 12 12 12 12 12 1	89 89 89 84	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane) Carbon disulfide	ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0	11 11 11 11 11 11 11 11 11 11 11 11 11	11 11 12 12 13 14 15 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	11 11 11 11 11 11 11 11 11 11 11 11 11	11 12 12 12 12 12 12 12 12 12 12 12 12 1	17 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Frichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Wethylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethene	ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 12 12 12 12 12 12 12 12 12 12 12 12 1	17 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Wethylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethane ,1-Dichloroethane	ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 18 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 11 11 11 11 11 11 11 11 11 11 11 11	17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethane ,1-Dichloroethane -Butanone (MEK)	ND ND ND ND ND ND ND 5.1 ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1 30 4.0	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 11 11 11 11 11 11 11 11 11 11 11 11	17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1,2-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethene 1,1-Dichloroethane 2-Butanone (MEK) is-1,2-Dichloroethene	ND ND ND ND ND ND ND 5.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1 30 4.0 4.9	11 11 11 11 11 11 11 11 11 11 11 11 11	17 17 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 11 11 11 11 11 11 11 11 11 11 11 11	17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	# # # # # # # # # # # # # # # # # # #	
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Crichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1-Z-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethene 1,1-Dichloroethane 2-Butanone (MEK) iis-1,2-Dichloroethene Chloroform 1,1-Trichloroethane	ND ND ND ND ND ND ND S.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1 30 4.0 4.9 5.5		17 17 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	11 11 11 11 11 11 11 11 11 11 11 11 11	11 11 11 11 11 11 11 11 11 11 11 11 11	17 18 19 19 19 19 19 19 19 19 19 19 19 19 19		
Chloromethane Dichlorotetrafluoroethane (F114) Vinyl chloride Bromomethane Chloroethane Crichlorofluoromethane (F11) Acetone 1,1-Dichloroethene 1,1-2-Trichlorotrifluoroethane (F113) Methylene chloride (Dichloromethane) Carbon disulfide rans-1,2-Dichloroethene 1,1-Dichloroethane 2-Butanone (MEK) iis-1,2-Dichloroethene Chloroform	ND ND ND ND ND ND ND 5.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	2.1 7.1 2.6 16 8.0 5.6 24 4.0 7.7 3.5 6.3 8.0 4.1 30 4.0 4.9		11 11 12 12 13 14 14 14 15 17 17 17 17 17 17 17 17 17 17 17 17 17		11 12 12 12 12 12 12 12 12 12 12 12 12 1		# # # # # # # # # # # # # # # # # # #	

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H&P Mobile Geochemistry Inc.

Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-2 (E302016-02) Vapor Sampled: 29-Jan	-13 Received: 04	Feb-13							
Trichloroethene	ND	5.5	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
1,2-Dichloropropane	ND	9.4	**	""	**	11	"	*	
Bromodichloromethane	ND	6.8	**	"	**	"	"	11	
cis-1,3-Dichloropropene	ND	4.6	н	11	**	11	**	17	
4-Methyl-2-pentanone (MIBK)	ND	8.3	#	"	**	Ħ	"	#	
trans-1,3-Dichloropropene	ND	4.6	**	**	**	**	**	**	
Toluene	42	3.8	"	"	11	#	"	#	
1,1,2-Trichloroethane	ND	5.5	n	**	17	"	Ħ	11	
2-Hexanone (MBK)	ND	8.3	"	H	17	н	**	11	
Dibromochloromethane	ND	8.6	•		n	11	**	II .	
Tetrachloroethene	ND	6.9	"	#	tr	11	"	n	
1,2-Dibromoethane (EDB)	ND	7.8	**	#	19	н	11	n	
1,1,1,2-Tetrachloroethane	ND	7.0	**	**	"	11	"	Ħ	
Chlorobenzene	ND	4.7	*	11	"	**	**	π	
Ethylbenzene	ND	4.4	"	11	"	**	**	п	
m,p-Xylene	12	8.8		11	11	#	**	н .	
Styrene	ND	4.3	"	n	**	17	**	Ħ	
o-Xylene	ND	4.4		n	11	Ħ	**	n	
Bromoform	ND	10	**	#	91	#	**	**	
1,1,2,2-Tetrachloroethane	ND	7.0	**	Ħ	**	#	**	n	
4-Ethyltoluene	ND	5.0	**	11	P	n	**	u	
1,3,5-Trimethylbenzene	ND	5.0	**	"	**	н	"	u	
1,2,4-Trimethylbenzene	ND	5.0	"	n	Ħ	н	"	U	
1,3-Dichlorobenzene	ND	12	**	n	11	11	11	#	
1,4-Dichlorobenzene	ND	12	**	11	H	11	Ħ	#	
1,2-Dichlorobenzene	ND	12	11	"	**	"	n	n	
1,2,4-Trichlorobenzene	ND	7.5	"	11	**	"	H	**	
Hexachlorobutadiene	ND	11	n	n	11		н	11	
Surrogate: 1,2-Dichloroethane-d4		115 %	76-	134	"	"	"	"	
Surrogate: Toluene-d8		98.6 %	<i>78</i> -	125	"	"	"	n	
Surrogate: 4-Bromofluorobenzene		88.2 %		127	"	n	"	n	

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Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

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Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-3 (E302016-03) Vapor Sampled: 29-Jan	-13 Received: 04-I	eb-13	Carrier and Car				10)	×	
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
Chloromethane	ND	2.1	n	11	12	#	99	n	
Dichlorotetrafluoroethane (F114)	ND	7.1	\$1	**	"	97	2.5	n	
Vinyl chloride	ND	2.6	10	47	"	11	**	**	
Bromomethane	ND	16	11	"	19	17	97	19	
Chloroethane	ND	8.0	79	01	**	97	81	**	
Trichlorofluoromethane (F11)	ND	5.6	**	"	87	II .	11	41	
Acetone	ND	24	n	41	##	п	17	41	
1,1-Dichloroethene	ND	4.0	11	17	11	**	#	u	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	11	99	н	**	**	15	
Methylene chioride (Dichloromethane)	6.2	3.5	61	**	Ħ	**	**	¥7	
Carbon disulfide	ND	6.3	**	n	**	**	*	**	
trans-1,2-Dichloroethene	ND	8.0	69	11	**	ge .	85	"	
1,1-Dichloroethane	ND	4.1	2 F	11	**	ŧý		**	
2-Butanone (MEK)	ND	30	**	++	11	11	89		
cis-1,2-Dichloroethene	ND	4.0	49	47	31	11	23	++	
Chloroform	ND	4.9	23	11	11	tr .	**	17	
1,1,1-Trichloroethane	ND	5.5	81	Ħ	19	75	#	**	
1,2-Dichloroethane (EDC)	ND	4.1	**	27	**	11	te	ti .	
Benzene	ND	3.2	11	49	**	13	*1	**	
Carbon tetrachloride	ND	6.4	Is.	**	18	18	**	11	
Trichloroethene	ND	5.5	91	97	84	92	25	15	
,2-Dichloropropane	ND	9.4	89	17	39	**	,,		
Bromodichloromethane	ND	6.8	11	52	45	21	27	Tr.	
sis-1,3-Dichloropropene	ND	4.6	**	н	16	*1		**	
I-Methyl-2-pentanone (MIBK)	ND	8.3	24	+4		19	ti.		
rans-1,3-Dichloropropene	ND	4.6	88	11	24	to to		"	
Foluene	47	3.8	48	**	п	**			
,1,2-Trichloroethane	ND	5.5	T	P.	35	11	"		
-Hexanone (MBK)	ND	8.3	11	61	89	n		**	
Dibromochloromethane	ND	6.3 8.6	.,	v	01	11		**	
Tetrachloroethene	ND 14D		iq.	**			19	"	
,2-Dibromoethane (EDB)	ND ND	6.9 7.8	44			91		19	
,1,1,2-Tetrachloroethane	ND	7.6 7.0	н	15	**	91	7+	19	
Chlorobenzene			ts .	**	"	**	11	19	
Ethylbenzene	ND ND	4.7	**	"	50	11		19	
a,p-Xylene	ND	4.4	"	**	50		#	99	
	12	8.8				71	60	41	
tyrene	ND	4.3	11	11	99	99	11	et .	

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Terra Associates

12525 Willows Rd. #101

Kirkland, WA 98034

Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Note
VP-3 (E302016-03) Vapor Sampled: 29-Jan-1	Received: 04	-Feb-13							
o-Xylene	ND	4.4	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	EPA TO-15	
Bromoform	ND	10	**	u	"	**		"	
1,1,2,2-Tetrachloroethane	ND	7.0	H	n	11	n	17	•	
4-Ethyltoluene	ND	5.0	u	"	11	"	**	•	
1,3,5-Trimethylbenzene	ND	5.0	#1	**	Ħ	11	**	br .	
1,2,4-Trimethylbenzene	ND	5.0	**	**	**	**	**	n	
1,3-Dichlorobenzene	ND	12	11	Ħ	**	*	**	n	
1,4-Dichlorobenzene	ND	12	**	Ħ	**	"	"	"	
1,2-Dichlorobenzene	ND	12	**	17	**	"	11	**	
1,2,4-Trichlorobenzene	ND	7.5	**	"	**	n	**	"	
Hexachlorobutadiene	ND	11		"	**	n	"	H	
Surrogate: 1,2-Dichloroethane-d4		115 %	76-1	34	"	"	"	,,	
Surrogate: Toluene-d8		97.6 %	78-1	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %	77-1	27	"	n	"	"	

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Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

TPHv / APH on Vapors by EPA Method TO-15

		*******		-					
	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Sampled: 29-Jan-13	Received: 04	-Feb-13							
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	150000	2500	ug/m3	25	EB31107	08-Feb-13	11-Feb-13	МА АРНю	
	520	100	11	1	**	11	08-Feb-13	**	
	ND	100	ry .	#	"	#1	#1	91	
Sampled: 29-Jan-13	Received: 04	-Feb-13							
	4600	100	ug/m3	1	EB31107	08-Feb-13	08-Feb-13	MA APHm	
	120	100	FF	11	34	ès	#¢	Ħ	
	ND	100	ŧŧ	"	23	34	49	**	
Sampled: 29-Jan-13	Received: 04-	Feb-13							
	2400	100	ng/m3	l	EB31107	08-Feb-13	08-Feb-13	MA APHm	
	180	100	11	##	†T	н	17	99	
	ND	100	71	87	**	11	**	19	
	Sampled: 29-Jan-13	Sampled: 29-Jan-13 Received: 04 180000 520 ND Sampled: 29-Jan-13 Received: 04 4600 120 ND Sampled: 29-Jan-13 Received: 04 2400 180	Result Limit	Result Limit Units	Result Reporting Limit Units Factor	Result Limit Units Factor Batch	Result Reporting Limit Units Factor Batch Prepared	Result Reporting Dilution Factor Batch Prepared Analyzed	Result Limit Units Factor Batch Prepared Analyzed Method

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H&P Mobile Geochemistry Inc.

Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15 - Quality Control H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB31107 - TO-15										
Blank (EB31107-BLK1)				Prepared &	: Analyzed:	08-Feb-13				
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	**							
Dichlorotetrafluoroethane (F114)	ND	7.1	**							
Vinyl chloride	ND	2.6								
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	**							
frichlorofluoromethane (F11)	ND	5.6	**							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	**							
,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	**							
Carbon disulfide	ND	6.3	**							
rans-1,2-Dichloroethene	ND	8.0	**							
,1-Dichloroethane	ND	4.1	**							
-Butanone (MEK)	ND	30								
is-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
,1,1-Trichloroethane	ND	5.5	**							
,2-Dichloroethane (EDC)	ND	4.1	**							
Benzene	ND	3.2	11							
Carbon tetrachloride	ND	6.4	n							
richloroethene	ND	5.5	#							
,2-Dichloropropane	ND	9.4	**							
Bromodichloromethane	ND	6.8	**							
is-1,3-Dichloropropene	ND	4.6	**							
-Methyl-2-pentanone (MIBK)	ND	8.3	**							
rans-1,3-Dichloropropene	ND	4.6	**							
oluene	ND	3.8	**							
,1,2-Trichloroethane	ND	5.5	"							
-Hexanone (MBK)	ND	8.3	#							
Dibromochloromethane	ND	8.6	"							
etrachloroethene	ND	6.9	**							
,2-Dibromoethane (EDB)	ND	7.8	11							
,1,1,2-Tetrachloroethane	ND	7.0	11							

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Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15 - Quality Control H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	MT
	TV50011		Omis	I.Eve1	Kestiit	70NDC	Liuns	KrD	Limit	Notes
Batch EB31107 - TO-15			***************************************			~~~~		*******		***************************************
Blank (EB31107-BLK1)				Prepared &	Analyzed:	08-Feb-13				
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	**							
m,p-Xylene	ND	8.8	19							
Styrene	ND	4.3	93							
o-Xylene	ND	4.4	**							
Bromoform	ND	10	e)							
1,1,2,2-Tetrachloroethane	ND	7.0	66							
4-Ethyltoluene	ND	5.0	is							
1,3,5-Trimethylbenzene	ND	5.0	47							
1,2,4-Trimethylbenzene	ND	5.0	Et.							
1,3-Dichlorobenzene	ND	12	77							
1,4-Dichlorobenzene	ND	12	27							
,2-Dichlorobenzene	ND	12	91							
1,2,4-Trichlorobenzene	ND	7.5	**							
Hexachlorobutadiene	ND	11	49							
Surrogate: 1,2-Dichloroethane-d4	278		n	214		130	76-134			
Surrogate: Toluene-d8	209		**	207		101	78-125			
Surrogate: 4-Bromofluorobenzene	329		u	364		90.2	77-127			
LCS (EB31107-BS1)				Prepared &	Analyzed:	08_Eeb_13				
Dichlorodifluoromethane (F12)	120	5.0	ug/m3	101		117	65-135			
/inyl chloride	50	2.6	н	52.0						
Chloroethane	47	8.0	+4	53.6		95.3 87.6	65-135 65-135			
richlorofluoromethane (F11)	120	5.6	н	113						
,1-Dichloroethene	79	5.6 4.0	8 P	80,8		105 97.9	65-135			
,1,2-Trichlorotrifluoroethane (F113)	79 140	7.7	b				65-135			
Methylene chloride (Dichloromethane)	55	7.7 3.5	"	155		90.3	65-135			
ens-1,2-Dichloroethene	72		**	70,8		78.1	65-135			
ans-1,2-Dichioroemene		8.0		80.8		89.3	65-135			
is-1,2-Dichloroethene	77	4.1		82.4		93,8	65-135			
is-1,2-Dichioroemene Thioroform	73	4.0	ft.	80.0		91.6	65-135			
	97	4.9	41	99.2		97.4	65-135			
I,I-Trichloroethane	100	5.5	99	boost boost		89,9	65-135			
2-Dichloroethane (EDC)	87	4.1	19	82.4		105	65-135			

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H&P Mobile Geochemistry Inc.

Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported: 14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15 - Quality Control H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	resuit	- Danit	Omw	Dover	- Trobait					
Batch EB31107 - TO-15										
LCS (EB31107-BS1)					Analyzed:					
Benzene	53	3.2	ug/m3	64.8		82.1	65-135			
Carbon tetrachloride	110	6.4	**	128		87.0	65-135			
Trichloroethene	100	5.5	**	110		93.3	65-135			
Toluene	66	3.8	#	76.8		85.9	65-135			
1,1,2-Trichloroethane	94	5.5	Ħ	111		84.1	65-135			
Tetrachloroethene	120	6.9	III	138		84.1	65-135			
1,1,1,2-Tetrachloroethane	110	7.0	n	140		79.8	65-135			
Ethylbenzene	67	4.4	"	88.4		76.1	65-135			
m,p-Xylene	140	8.8	н	177		81.9	65-135			
o-Xylene	74	4.4	н	88.4		84.1	65-135			
1,1,2,2-Tetrachloroethane	130	7.0		140		93.0	65-135			
Surrogate: 1,2-Dichloroethane-d4	280		"	214		131	76-134			
Surrogate: Toluene-d8	206		"	207		99.6	78-125			
Surrogate: 4-Bromofluorobenzene	349		n	364		95.7	77-127			
				Dropored 9	. A malura adv	00 Eab 12				
LCS Dup (EB31107-BSD1)					Analyzed:			1.27	25	
Dichlorodifluoromethane (F12)	120	5.0	ug/m3 "	101		119	65-135	1.27	35	
Vinyl chloride	52	2.6	"	52.0		101	65-135	5.50	35	
Chloroethane	47	8.0		53.6		87.4	65-135	0.228	35	
Trichlorofluoromethane (F11)	90	5.6		113		79.9	65-135	27.4	35	
1,1-Dichloroethene	77	4.0	**	80.8		95.3	65-135	2.73	35	
1,1,2-Trichlorotrifluoroethane (F113)	140	7.7	**	155		90.2	65-135	0.0551	35	
Methylene chloride (Dichloromethane)	55	3.5	Ħ	70.8		77.1	65-135	1.28	35	
rans-1,2-Dichloroethene	73	8.0	Ħ	80.8		90.1	65-135	0.944	35	
1,1-Dichloroethane	76	4.1	"	82.4		91.8	65-135	2.15	35	
eis-1,2-Dichloroethene	74	4.0	11	80.0		92.6	65-135	1.04	35	
Chloroform	94	4.9	"	99.2		94.5	65-135	3.01	35	
,1,1-Trichloroethane	98	5.5	"	111		88.5	65-135	1.61	35	
,2-Dichloroethane (EDC)	86	4.1	11	82.4		104	65-135	1.62	35	
Benzene	53	3.2	"	64.8		81.5	65-135	0.671	35	
Carbon tetrachloride	110	6.4	**	128		85.0	65-135	2.38	35	
Trichloroethene	100	5.5		110		91.7	65-135	1.72	35	
Toluene	65	3.8	**	76.8		85.3	65-135	0.697	35	

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Terra Associates

12525 Willows Rd, #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552 Project Manager: Mr. Chuck Lie

Reported: 14-Feb-13 08:36

Volatile Organic Compounds by EPA TO-15 - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB31107 - TO-15										00000000000000000000000000000000000000
LCS Dup (EB31107-BSD1)				Prepared &	: Analyzed:	08-Feb-13		**************************************		***************************************
1,1,2-Trichloroethane	95	5.5	ug/m3	111		85.4	65-135	1.58	35	
Tetrachloroethene	120	6.9	15	138		83.7	65-135	0.475	35	
1,1,1,2-Tetrachloroethane	110	7.0	н	140		80.3	65-135	0.622	35	
Ethylbenzene	68	4.4	"	88.4		77.4	65-135	1,62	35	
m,p-Xylene	140	8.8	**	177		81.7	65-135	0.182	35	
o-Xylene	75	4.4	11	88.4		85.2	65-135	1.41	35	
1,1,2,2-Tetrachloroethane	130	7.0	**	140		94.2	65-135	1.28	35	
Surrogate: 1,2-Dichloroethane-d4	276		и	214		129	76-134			-
Surrogate: Toluene-d8	206		n	207		99.5	78-125			
Surrogate: 4-Bromofluorobenzene	359		п	364		28.6	77-127			

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Terra Associates

12525 Willows Rd. #101 Kirkland, WA 98034 Project: MC020413-10

Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported: 14-Feb-13 08:36

TPHv / APH on Vapors by EPA Method TO-15 - Quality Control H&P Mobile Geochemistry, Inc.

_						****				
		Reporting		Spike	Source		%REC		RPD	
An	alyte Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

lank (EB31107-BLK1)				Prepared & Analyzed: 08-Feb-13
PHv (C5 - C8) aliphatic	ND	100	ug/m3	
PHv (C9 - C12) aliphatic	ND	100	**	
PHv (C9 - C10) aromatic	ND	100	"	

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Terra Associates

Project: MC020413-10

12525 Willows Rd. #101 Kirkland, WA 98034 Project Number: T-6552

Project Manager: Mr. Chuck Lie

Reported:

14-Feb-13 08:36

Notes and Definitions

DET

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

dry

Sample results reported on a dry weight basis

RPD

Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS Certificate# 2742, 2745, & 2741 approved for LUFT Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods.

1.2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1.2-Dichlorobenzene by EPA TO-15 & TO-14A
1.2-Dichlorobenzene by EPA TO-15 & TO-14A
1.2-Dichlorobenzene by EPA TO-15 & TO-14A
1.4-Dichlorobenzene by EPA TO-15 & TO-14A
1.4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
1.1.1-Trichloroethane by EPA TO-15 & TO-14A
1.1.2-Trichloroethane by EPA TO-15 & TO-14A
1.1.1-Trichloroethane by EPA TO-15 & TO-14A
1.1.1-Trichloroethane by EPA TO-15 & TO-14A

1,1-Dichloroethene by EPA TO-15 & TO-14A 1,2-Dichloroethase by EPA TO-15 & TO-14A 1,2-Dichloroepopase by EPA TO-15 & TO-14A

Benzyl Chloride by EPA TO-15 & TO-14A Bromoform by EPA TO-15 Bromomethene by EPA TO-15 & TO-14A

Carbon tetrachloride by EPA TO-15 & TO-14A Chloroethane by EPA TO-15 & TO-14A Chloroform by EPA TO-15 & TO-14A

Chloromethane by EPA TO-15 & TO-14A cis-1,2-Dichloroethene by EPA TO-15 & TO-14A

cis-1,3-Dichleropropene by EPA TO-15 & TO-14A Methylene chloride by EPA TO-15 & TO-14A Tetrachloroethane by EPA TO-15 & TO-14A

trans-1,2-Dichlorosthene by EPA TO-15 & TO-14A Trichlorosthene by EPA TO-15 & TO-14A Trichlorosthene by EPA TO-15 & TO-14A

Vinyi chloride by EPA TO -15 & TO-14A 2-Butanone by EPA TO-15 4-Methyl-2-Pentanone by EPA TO-15

4-Methyl-2-Pentanone by EPA TO-15 Hexane by EPA TO-15 Methyl test-butyl ether by EPA TO-15

Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters

Dibromochloromethane by EPA TO-15
1,3-Dicklorobenzene by EPA TO-15 & TO-14A
Ticklorofhoromethane by EPA TO-15 & TO-14A
Naphthzlene by H&P SOP TO-15/GC-MS
1,2-Dibromochlane (EDB) by EPA TO-15 & TO-14A
1,2-Dibromo-3-chloropropane by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Tricklorotifiluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15

Mobile Geochemistry Inc.

Chain of Custody Record

2470 Impola Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

		Date:	
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APPENDIX E ANALYTICAL TESTING VACUUM SYSTEM

5221 Ballard Avenue NW Seattle, Washington

All vapor samples were placed into laboratory-provided tedlar bags. Each sample was given unique sample identification. An electric pump was used to fill the tedlar bags from a sample port in the inlet pipe of the Vacuum system. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. The procedures consisted of sample blanks, duplicates, and matrix spikes. All testing was within normal standards.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use.



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 7, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1205-020

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 2, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: May 7, 2012 Samples Submitted: May 2, 2012 Laboratory Reference: 1205-020

Project: 6552

Case Narrative

Samples were collected on May 2, 2012 and received by the laboratory on May 2, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatograms for samples 3A and 102 are similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: May 7, 2012 Samples Submitted: May 2, 2012 Laboratory Reference: 1205-020 Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	3A					
Laboratory ID:	05-020-01					
Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Toluene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
m,p-Xylene	4.2	1.0	EPA 8021	5-3-12	5-3-12	
o-Xylene	ND	5.0	EPA 8021	5-3-12	5-3-12	U1
Gasoline	1900	100	NWTPH-Gx	5-3-12	5-3-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	73-121				
Client ID:	102					
Laboratory ID:	05-020-02					
Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Toluene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
n,p-Xylene	4.8	1.0	EPA 8021	5-3-12	5-3-12	
-Xylene	ND	5.0	EPA 8021	5-3-12	5-3-12	U1
Gasoline	1700	200	NWTPH-Gx	5-3-12	5-3-12	Z
Surrogate:	Percent Recovery	Control Limits	* **			
Fluorobenzene	96	73-121				

Date of Report: May 7, 2012 Samples Submitted: May 2, 2012 Laboratory Reference: 1205-020

Project: 6552

NWTPH-Gx/BTEX **QUALITY CONTROL**

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						······································
Laboratory ID:	MB0503A1					
Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Toluene	ND	1.0	EPA 8021	5-3-12	5-3-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-3-12	5-3-12	
m,p-Xylene		1.0	EPA 8021	5-3-12	5-3-12	
o-Xylene	ND	5.0	EPA 8021	5-3-12	5-3-12	
Gasoline	ND	100	NWTPH-Gx	5-3-12	5-3-12	
Surrogate:	Percent Recovery	Control Limits		The desired and the second		
Fluorobenzene	98	73-121				

Analyte	Res	sult	Spike	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE	***************************************	7 ii			····				**************************************	
Laboratory ID:	05-02	20-02								
	ORIG	DUP					·	***************************************		
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	4.78	4.28	NA	NA		NA	NA	11	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	1710	1440	NA	NA		NA	NA	19	30	
Surrogate:					***************************************				····	

Fluorobenzene

96 95 73-121



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

OnSite Environmental	les.
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 16, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1205-063

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 8, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: May 16, 2012 Samples Submitted: May 8, 2012 Laboratory Reference: 1205-063

Project: 6552

Case Narrative

Samples were collected on May 8, 2012 and received by the laboratory on May 8, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: May 16, 2012 Samples Submitted: May 8, 2012 Laboratory Reference: 1205-063

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	102					
Laboratory ID:	05-063-01					
Benzene	ND	1.0	EPA 8021	5-9-12	5-9-12	
Toluene	ND	1.0	EPA 8021	5-9-12	5-9-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-9-12	5-9-12	
m,p-Xylene	3.4	1.0	EPA 8021	5-9-12	5-9-12	
o-Xylene	ND	5.0	EPA 8021	5-9-12	5-9-12	
Gasoline	2100	200	NWTPH-Gx	5-9-12	5-9-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	96	73-121				

Date of Report: May 16, 2012 Samples Submitted: May 8, 2012 Laboratory Reference: 1205-063

Project: 6552

NWTPH-Gx/BTEX **QUALITY CONTROL**

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK			· · · · · · · · · · · · · · · · · · ·			
Laboratory ID:	MB0509A1					
Benzene	ND	1.0	EPA 8021	5-9-12	5-9-12	
Toluene	ND	1.0	EPA 8021	5-9-12	5-9-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-9-12	5-9-12	
m,p-Xylene	ND	1.0	EPA 8021	5-9-12	5-9-12	
o-Xylene	ND	5.0	EPA 8021	5-9-12	5-9-12	
Gasoline	ND	100	NWTPH-Gx	5-9-12	5-9-12	
Surrogate:	Percent Recovery	Control Limits				· · · · · · · · · · · · · · · · · · ·
Fluorobenzene	103	73-121				

Analyte	Re:	sult	Spike	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE					CANCOLOGICAL CONTRACTOR CONTRACTO		Section of the sectio	5 4 80	Be 66 2 5 9 %	, iana
Laboratory ID:	05-06	53-01								
	ORIG	DUP								
Benzene	ND	ND	NA	NA	*	NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	3.45	3.44	NA	NA		NA	NA	0	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	2060	2050	NA	NA		NA	NA	0	30	
Surrogate:										
Fluorobenzene						96 101	73-121			



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical ______
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**

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Project Number: \$552 Project Name: Associated Project Name: Sampled by: Vicolas R Haff	× sta		Days)	Number of Containers	WWTPH-HOID	NWTPH-Gwbtex	1-Gx	X5:	Volatiles 8260B	Mines ozona	Semivolatiles 8270D/SiM (with low-level PAHs)	270D/SIM (low-level)	082	Organochlorine Pesticides 8081A	Organophosphorus Pesticidas 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)		HEM (oil and grease) 1664						9,1
Lab ID Sample Identification	Date Sampled	Time Sampled	Mateix	Quin)	WTP	IWTP	NWTPH-Gx	NWI FR-UX	olatile	año la	with lo	AHs 8	PCBs 8082	rgano	rganor	hlorine	Hall AC	FOLP Metals	EM (o)						% Molature
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 30, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1205-217

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 22, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: May 30, 2012 Samples Submitted: May 22, 2012 Laboratory Reference: 1205-217

Project: 6552

Case Narrative

Samples were collected on May 22, 2012 and received by the laboratory on May 22, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: May 30, 2012 Samples Submitted: May 22, 2012 Laboratory Reference: 1205-217 Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

Analyte Result PQL Method Prepared Analyzed Flag Client ID: 102 Laboratory ID: 05-217-01 Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 Toluene ND 1.0 EPA 8021 5-24-12 5-24-12 Ethyl Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z Surrogate: Percent Recovery Control Limits					Date	Date	
Laboratory ID: 05-217-01 Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 Toluene ND 1.0 EPA 8021 5-24-12 5-24-12 Ethyl Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 Toluene ND 1.0 EPA 8021 5-24-12 5-24-12 Ethyl Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Client ID:	102					
Toluene ND 1.0 EPA 8021 5-24-12 5-24-12 Ethyl Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Laboratory ID:	05-217-01					
Ethyl Benzene ND 1.0 EPA 8021 5-24-12 5-24-12 m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Benzene	ND	1.0	EPA 8021	5-24-12	5-24-12	
m,p-Xylene 3.3 1.0 EPA 8021 5-24-12 5-24-12 o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Toluene	ND	1.0	EPA 8021	5-24-12	5-24-12	
o-Xylene ND 1.0 EPA 8021 5-24-12 5-24-12 Gasoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	Ethyl Benzene	ND	1.0	EPA 8021	5-24-12	5-24-12	
Gașoline 2000 100 NWTPH-Gx 5-24-12 5-24-12 Z	m,p-Xylene	3.3	1.0	EPA 8021	5-24-12	5-24-12	
	o-Xylene	ND	1.0	EPA 8021	5-24-12	5-24-12	
Surrogate: Percent Recovery Control Limits	Gasoline	2000	100	NWTPH-Gx	5-24-12	5-24-12	Z
	Surrogate:	Percent Recovery	Control Limits				

Fluorobenzene 89 73-121 Date of Report: May 30, 2012 Samples Submitted: May 22, 2012 Laboratory Reference: 1205-217

Project: 6552

NWTPH-GX/BTEX GUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0524A1					
Benzene	ND	1.0	EPA 8021	5-24-12	5-24-12	· · · · · · · · · · · · · · · · · · ·
Toluene	ND	1.0	EPA 8021	5-24-12	5-24-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-24-12	5-24-12	
m,p-Xylene	ND	1.0	EPA 8021	5-24-12	5-24-12	
o-Xylene	ND	1.0	EPA 8021	5-24-12	5-24-12	
Gasoline	ND	100	NWTPH-Gx	5-24-12	5-24-12	
Surrogate:	Percent Recovery	Control Limits			200	
Fluorobenzene	93	73-121				

					Source	Percent	Recovery		RPD	
<u>Analyte</u>	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE							· · · · · · · · · · · · · · · · · · ·	****		
Laboratory ID:	05-21	17-01								
	ORIG	DUP		.,				***************************************		
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	3.30	3.30	NA	NA		NA	NA	0	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	1980	1930	NA	NA		NA	NA	3	30	
Surrogate:										
Fluorobenzene						89 94	73-121			



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 6, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1205-265

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 29, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: June 6, 2012 Samples Submitted: May 29, 2012 Laboratory Reference: 1205-265

Project: 6552

Case Narrative

Samples were collected on May 29, 2012 and received by the laboratory on May 29, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 6, 2012 Samples Submitted: May 29, 2012 Laboratory Reference: 1205-265

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

Units: ug/L (ppb)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	102					
Laboratory ID:	05-265-01					
Benzene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Toluene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-31-12	5-31-12	
m,p-Xylene	3.2	1.0	EPA 8021	5-31-12	5-31-12	
o-Xylene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Gasoline	2200	200	NWTPH-Gx	5-31-12	5-31-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	96	73-121				

Date of Report: June 6, 2012 Samples Submitted: May 29, 2012 Laboratory Reference: 1205-265

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0531A1					
Benzene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Toluene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Ethyl Benzene	ND	1.0	EPA 8021	5-31-12	5-31-12	
m,p-Xylene	ND	1.0	EPA 8021	5-31-12	5-31-12	
o-Xylene	ND	1.0	EPA 8021	5-31-12	5-31-12	
Gasoline	ND	100	NWTPH-Gx	5-31-12	5-31-12	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	95	73-121				
Laboratory ID:	MB0601A2					
Gasoline	ND	100	NWTPH-Gx	6-1-12	6-1-12	
Surrogate:	Percent Recovery	Control Limits			V 1 1 Ex	
Fluorobenzene	89	73-121				

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1100	3616	Shire	FGAGI	Result	Recovery	Limits	RPD	Limit	Flags
05-26	35-01								
ORIG	DUP								
ND	ND	NA	NA		NA	NΔ	NIA	30	
ND	ND	NA	NA						
ND	ND	NA	NA			-			
3.20	3.20	NA	NA						
ND	ND	NA	NA				_		
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Fluorobenzene

96 94 73-121



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**

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14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com					l.	.abc	18	ory	Nu	mb	nber:														
Phone: (425) 883-3881 * www.onsite-env.com Company: Project Number: Project Name: Project Manager: Sampled by: Alco los R. H. F. M. Sample identification	Same	(Checi e Day /s dard (7 Days)	NVONTHAMININE CONTRACTOR STORY CO.	ays	NWTPH-HOID	ВТЕХ					Semivolatiles 8270D/SIM (with low-level PAHs)	AHs 6270D/SiM (low-level)	PCBs 8082	Organochiorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1864					% Moisture
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 19, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1206-103

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on June 14, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: June 19, 2012 Samples Submitted: June 14, 2012 Laboratory Reference: 1206-103

Project: 6552

Case Narrative

Samples were collected on June 14, 2012 and received by the laboratory on June 14, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits with diesel.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 19, 2012 Samples Submitted: June 14, 2012 Laboratory Reference: 1206-103 Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	102					
Laboratory ID:	06-103-01					
Benzene	ND	1.0	EPA 8021	6-15-12	6-15-12	
Toluene	ND	1.0	EPA 8021	6-15-12	6-15-12	
Ethyl Benzene	ND	1.0	EPA 8021	6-15-12	6-15-12	
m,p-Xylene	2.3	1.0	EPA 8021	6-15-12	6-15-12	
o-Xylene	ND	1.0	EPA 8021	6-15-12	6-15-12	
Gasoline	1700	100	NWTPH-Gx	6-15-12	6-15-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	92	71-116				

Date of Report: June 19, 2012 Samples Submitted: June 14, 2012 Laboratory Reference: 1206-103

Project: 6552

NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK				***************************************		······································
Laboratory ID:	MB0615A1					
Benzene	ND	1.0	EPA 8021	6-15-12	6-15-12	The second secon
Toluene	ND	1.0	EPA 8021	6-15-12	6-15-12	
Ethyl Benzene	ND	1.0	EPA 8021	6-15-12	6-15-12	
m,p-Xylene	ND	1.0	EPA 8021	6-15-12	6-15-12	
o-Xylene	ND	1.0	EPA 8021	6-15-12	6-15-12	
Gasoline	ND	100	NWTPH-Gx	6-15-12	6-15-12	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	91	71-116				

Source Percent RPD Recovery Analyte Result Spike Level Result Recovery Limits RPD Limit Flags DUPLICATE Laboratory ID: 06-103-01 **ORIG** DUP Benzene ND ND NA NA NA NA NA 30 Toluene ND ND NA NA NΑ NA NA 30 Ethyl Benzene ND ND NA NA NA NA NA 30 2.30 m,p-Xylene 2.20 NA NA NA NA 4 30 o-Xylene ND ND NA NA NA NA NA 30 Gasoline 1680 1700 NA NA NA NA 30 Surrogate:

Sun oyate. Fluorobenzene

92 92 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits with diesel.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



Chain of Custody

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 21, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1206-120

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on June 18, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: June 21, 2012 Samples Submitted: June 18, 2012 Laboratory Reference: 1206-120

Project: 6552

Case Narrative

Samples were collected on June 18, 2012 and received by the laboratory on June 18, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 21, 2012 Samples Submitted: June 18, 2012 Laboratory Reference: 1206-120 Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	
Result	PQL	Method	Prepared	Analyzed	Flags
101-103					
06-120-01					
ND	1.0	EPA 8021	6-19-12	6-19-12	
ND	1.0	EPA 8021	6-19-12	6-19-12	
ND	1.0	EPA 8021	6-19-12	6-19-12	
3.7	1.0	EPA 8021	6-19-12	6-19-12	
ND	1.0	EPA 8021	6-19-12	6-19-12	
2300	200	NWTPH-Gx	6-19-12	6-19-12	Z
Percent Recovery	Control Limits				
98	71-116				
	101-103 06-120-01 ND ND ND 3.7 ND 2300 Percent Recovery	101-103 06-120-01 ND 1.0 ND 1.0 ND 1.0 3.7 1.0 ND 1.0 2300 200 Percent Recovery Control Limits	101-103 06-120-01 ND 1.0 EPA 8021 ND 1.0 EPA 8021 ND 1.0 EPA 8021 3.7 1.0 EPA 8021 ND 1.0 EPA 8021 ND 1.0 EPA 8021 2300 200 NWTPH-Gx	101-103 06-120-01 ND 1.0 EPA 8021 6-19-12 ND 1.0 EPA 8021 6-19-12 ND 1.0 EPA 8021 6-19-12 3.7 1.0 EPA 8021 6-19-12 ND 1.0 EPA 8021 6-19-12 ND 1.0 EPA 8021 6-19-12 2300 200 NWTPH-Gx 6-19-12	101-103 06-120-01 ND 1.0 EPA 8021 6-19-12 6-19-12 ND 1.0 EPA 8021 6-19-12 6-19-12 ND 1.0 EPA 8021 6-19-12 6-19-12 3.7 1.0 EPA 8021 6-19-12 6-19-12 ND 1.0 EPA 8021 6-19-12 6-19-12 ND 1.0 EPA 8021 6-19-12 6-19-12 2300 200 NWTPH-Gx 6-19-12 6-19-12

Date of Report: June 21, 2012 Samples Submitted: June 18, 2012 Laboratory Reference: 1206-120

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Wethod	Prepared	Analyzed	Flags
METHOD BLANK						· · · · · · · · · · · · · · · · · · ·
Laboratory ID:	MB0619A1					
Benzene	ND	1.0	EPA 8021	6-19-12	6-19-12	
Toluene	ND	1.0	EPA 8021	6-19-12	6-19-12	
Ethyl Benzene	ND	1.0	EPA 8021	6-19-12	6-19-12	
m,p-Xylene	ND	1.0	EPA 8021	6-19-12	6-19-12	
o-Xylene	ND	1.0	EPA 8021	6-19-12	6-19-12	
Gasoline	ND	100	NWTPH-Gx	6-19-12	6-19-12	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	95	71-116				

Analyte	Res	sult	Spike	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE						****				
Laboratory ID:	06-12	20-01								
	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	****
Toluene	ND	ND	NA	NA		NA	ΝΑ	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	3.70	3.40	NA	NA		NA	NA	8	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	2270	2270	NA	NA		NA	NA	0	30	

Surrogate: Fluorobenzene

98 95 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**



Chain of Custody

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 31, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1207-210

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on July 26, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely.

David Baumeister Project Manager

Enclosures

Date of Report: July 31, 2012 Samples Submitted: July 26, 2012 Laboratory Reference: 1207-210

Project: 6552

Case Narrative

Samples were collected on July 26, 2012 and received by the laboratory on July 26, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX (air) Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: July 31, 2012 Samples Submitted: July 26, 2012 Laboratory Reference: 1207-210

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

Units: ug/L (ppb)				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	101-103					
Laboratory ID:	07-210-01					
Benzene	ND	1.0	EPA 8021	7-27-12	7-27-12	
Toluene	ND	1.0	EPA 8021	7-27-12	7-27-12	
Ethyl Benzene	ND	1,0	EPA 8021	7-27-12	7-27-12	
•	2.9	1.0	EPA 8021	7-27-12	7-27-12	
m,p-Xylene	ND	1.0	EPA 8021	7-27-12	7-27-12	
o-Xylene Gasoline	1700	100	NWTPH-Gx	7-27-12	7-27-12	Z
Surrogate:	Percent Recovery	Control Limits				

Surrogate: 71-116 101 Fluorobenzene

Date of Report: July 31, 2012 Samples Submitted: July 26, 2012 Laboratory Reference: 1207-210

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

s				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						11093
Laboratory ID:	MB0727A1					
Benzene	ND	1.0	EPA 8021	7-27-12	7-27-12	
Toluene	ND	1.0	EPA 8021	7-27-12	7-27-12	
Ethyl Benzene	ND	1.0	EPA 8021	7-27-12	7-27-12	
m,p-Xylene	ND	1.0	EPA 8021	7-27-12	7-27-12	
o-Xylene	ND	1.0	EPA 8021	7-27-12	7-27-12	
Gasoline	ND	100	NWTPH-Gx	7-27-12	7-27-12	
Surrogate:	Percent Recovery	Control Limits			1000	
Fluorobenzene	105	71-116				

Res	sult	Spike	8 8					RPD	
			Level	Result	Recovery	Limits	RPD	Linit	Flags
							0 4 8 80	00000000	11003
07-2	10-01								
RIG	DUP								
ND	ND	NA	NA	·	NA	NΔ	NΙΔ	30	
ND	ND	NA	NA						
ND	ND	NA	NA						
.90	2.60	NA	NA						
ND	ND	NA	NA						
700	1670	NA	NA						7
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Fluorobenzene 101 105 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical ______.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**



Chain of Custody

Page / of /

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 12, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1209-011

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 4, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: September 12, 2012 Samples Submitted: September 4, 2012 Laboratory Reference: 1209-011

Project: 6552

Case Narrative

Samples were collected on September 4, 2012 and received by the laboratory on September 4, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 12, 2012 Samples Submitted: September 4, 2012 Laboratory Reference: 1209-011

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	101-103					
Laboratory ID:	09-011-01					
Benzene	ND	1.0	EPA 8021	9-6-12	9-6-12	
Toluene	ND	1.0	EPA 8021	9-6-12	9-6-12	
Ethyl Benzene	ND	1.0	EPA 8021	9-6-12	9-6-12	
m,p-Xylene	1.8	1.0	EPA 8021	9-6-12	9-6-12	
o-Xylene	ND	1.0	EPA 8021	9-6-12	9-6-12	
Gasoline	1000	100	NWTPH-Gx	9-6-12	9-6-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	90	71-116				

Date of Report: September 12, 2012 Samples Submitted: September 4, 2012

Laboratory Reference: 1209-011

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	POL	Method	Prepared	Analyzed	Flags
METHOD BLANK				V		
Laboratory ID:	MB0906A1					
Benzene	ND	1.0	EPA 8021	9-6-12	9-6-12	1000 - 101 / NO PORT - 100 - 1
Toluene	ND	1.0	EPA 8021	9-6-12	9-6-12	
Ethyl Benzene	ND	1.0	EPA 8021	9-6-12	9-6-12	
m,p-Xylene	ND	1.0	EPA 8021	9-6-12	9-6-12	
o-Xylene	ND	1.0	EPA 8021	9-6-12	9-6-12	
Gasoline	ND_	100	NWTPH-Gx	9-6-12	9-6-12	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	86	71-116				

Analyte	Ras	suit	Snika	Level	Source	Percent	Recovery	500,000,000	RPD	
DUPLICATE	110	2435	Jhive	revei	Result	Recovery	Limits	RPD	Limit	Flags
Laboratory ID:	09-01	1-01								
	ORIG	DUP			·				-	
Benzene	ND	ND	NA	NA	»	NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	1.80	1.70	NA	NA		NA	NA	6	30	
o-Xylene	ND	ND	NA	NA		NA	NA NA	NA	30	
Gasoline	1010	963	NA	NA		NA	NA	5	30	
Surrogate:							1 4/1			
Fluorobenzene						90 93	71-116			



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
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- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
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- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**

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Chain of Custody

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 5, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1210-002

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 1, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: October 5, 2012 Samples Submitted: October 1, 2012 Laboratory Reference: 1210-002

Project: 6552

Case Narrative

Samples were collected on October 1, 2012 and received by the laboratory on October 1, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 5, 2012 Samples Submitted: October 1, 2012 Laboratory Reference: 1210-002

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	101-103					
Laboratory ID:	10-002-01					
Benzene	ND	1.0	EPA 8021	10-2-12	10-2-12	
Toluene	ND	1.0	EPA 8021	10-2-12	10-2-12	
Ethyl Benzene	ND	1.0	EPA 8021	10-2-12	10-2-12	
m,p-Xylene	2.1	1.0	EPA 8021	10-2-12	10-2-12	
o-Xylene	ND	1.0	EPA 8021	10-2-12	10-2-12	
Gasoline	1700	100	NWTPH-Gx	10-2-12	10-2-12	Z
Surrogate:	Percent Recovery	Control Limits				

Surrogate: Percent Recovery Control Limit Fluorobenzene 97 71-116

Date of Report: October 5, 2012 Samples Submitted: October 1, 2012 Laboratory Reference: 1210-002

Project: 6552

NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

Analyte	879. e.	_		Date	Date	
and the same of th	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1002A1					
Benzene	ND	1.0	EPA 8021	10-2-12	10-2-12	· · · · · · · · · · · · · · · · · · ·
Toluene	ND	1.0	EPA 8021	10-2-12	10-2-12	
Ethyl Benzene	ND	1.0	EPA 8021	10-2-12	10-2-12	
m,p-Xylene	ND	1.0	EPA 8021	10-2-12	10-2-12	
o-Xylene	ND	1.0	EPA 8021	10-2-12	10-2-12	
Gasoline	ND	100	NWTPH-Gx	10-2-12	10-2-12	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	71-116				

Source Percent Recovery RPD Analyte Result Spike Level Result Recovery Limits RPD Limit Flags DUPLICATE Laboratory ID: 10-002-01 **ORIG** DUP Benzene ND ND NA NA NA NA NA 30 Toluene ND NO NA NA NA NA NA 30 Ethyl Benzene ND ND NA NA NA NA NA 30 m,p-Xylene 2.10 2.10 NA NΑ NA NA 0 30 o-Xylene ND ND NA NA NA NA NA 30 Gasoline 1700 1650 NA NA NA NA 3 30 Surrogate:

Fluorobenzene

97 96 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- **RPD Relative Percent Difference**

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 21, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project T-6552 Laboratory Reference No. 1211-118

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: November 21, 2012 Samples Submitted: November 14, 2012 Laboratory Reference: 1211-118

Project: T-6552

Case Narrative

Samples were collected on November 14, 2012 and received by the laboratory on November 14, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample Air 11-14 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: November 21, 2012 Samples Submitted: November 14, 2012 Laboratory Reference: 1211-118

Project: T-6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	Air 11-14					
Laboratory ID:	11-118-01					
Benzene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
Toluene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
Ethyl Benzene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
m,p-Xylene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
o-Xylene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
Gasoline	970	100	NWTPH-Gx	11-15-12	11-15-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	71-116				

Date of Report: November 21, 2012 Samples Submitted: November 14, 2012 Laboratory Reference: 1211-118

Project: T-6552

NWTPH-GX/BTEX **QUALITY CONTROL**

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Wethod	Prepared	Anaiyzed	Flags
METHOD BLANK						······································
Laboratory ID:	MB1115A1					
Benzene	ND	1,0	EPA 8021B	11-15-12	11-15-12	
Toluene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
Ethyl Benzene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
m,p-Xylene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
o-Xylene	ND	1.0	EPA 8021B	11-15-12	11-15-12	
Gasoline	ND ND	100	NWTPH-Gx	11-15-12	11-15-12	
Surrogate:	Percent Recovery	Control Limits		**		
Fluorobenzene	104	71-116				

Analyte	Res	sult	Snike	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Elemo
DUPLICATE			- Spine	. 5.0401	1/59016	LECTACIA	Fillifo			Flags
Laboratory ID:	11-1	18-01								
	ORIG	DUP						_		
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	967	1020	NA	NA		NA	NA	5	30	
Surrogate:									<u> </u>	

Fluorobenzene

99 101 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

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14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	Redmond, WA 98052 Www.onsite.env.com							Laboratory Number:															
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

December 14, 2012

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6550 Laboratory Reference No. 1212-084

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 12, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: December 14, 2012 Samples Submitted: December 12, 2012

Laboratory Reference: 1212-084

Project: 6550

Case Narrative

Samples were collected on December 12, 2012 and received by the laboratory on December 12, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: December 14, 2012 Samples Submitted: December 12, 2012

Laboratory Reference: 1212-084 Project: 6550

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	101-103					
Laboratory ID:	12-084-01					
Benzene	ND	1.0	EPA 8021	12-13-12	12-13-12	
Toluene	ND	1.0	EPA 8021	12-13-12	12-13-12	
Ethyl Benzene	ND	1.0	EPA 8021	12-13-12	12-13-12	
m,p-Xylene	ND	1.0	EPA 8021	12-13-12	12-13-12	
o-Xylene	ND	1.0	EPA 8021	12-13-12	12-13-12	
Gasoline	790	100	NWTPH-Gx	12-13-12	12-13-12	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	71-116				

Date of Report: December 14, 2012 Samples Submitted: December 12, 2012

Laboratory Reference: 1212-084

Project: 6550

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

Analyte	F3 **			Date	Date	
METHOD BLANK	Result	PQL	Method	Prepared	Analyzed	Flags
Laboratory ID:	MB1213A1					
Benzene	QN	1.0	EPA 8021	12-13-12	12-13-12	
Toluene	ND	1.0	EPA 8021	12-13-12	12-13-12	
Ethyl Benzene	ND	1.0	EPA 8021	12-13-12	12-13-12	
m,p-Xylene	ND	O	EPA 8021	12-13-12	12-13-12	
o-Xylene	ND	1.0	EPA 8021	12-13-12	12-13-12	
Gasoline	ND ND	100	NWTPH-Gx	12-13-12	12-13-12	
Surrogate: Fluorobenzene	Percent Recovery 100	Control Limits 71-116				

Analyte DUPLICATE	Res	SUIT	Spike	Level	Source Result		cent overy	Recovery Limits	RPD	RPD Limit	Flags
Laboratory ID:	12-08	RA_0.1									
	ORIG	DUP						·			···········
Benzene	ND	ND	NA	NA		N	A	NA NA	NA		
Toluene	ND	ND	NA	NA		N		NA	NA NA	30 30	
Ethyl Benzene	ND	ND	NA	NA		N		NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		N		NA	NA	30 30	
o-Xylene	ND	ND	NA	NA		N	A	NA	NA	30	
Gasoline	792	815	NA	NA		N	Α	NA	3	30	
Surrogate: Fluorobenzene						93	97	71-116			



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
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- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

January 11, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1301-078

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 10, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: January 11, 2013 Samples Submitted: January 10, 2013 Laboratory Reference: 1301-078

Project: 6552

Case Narrative

Samples were collected on January 10, 2013 and received by the laboratory on January 10, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH-Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: January 11, 2013 Samples Submitted: January 10, 2013 Laboratory Reference: 1301-078

Project: 6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	101-103					
Laboratory ID:	01-078-01			_		
Benzene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Toluene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Ethyl Benzene	ND	1.0	EPA 8021	1-10-13	1-10-13	
m,p-Xylene	ND	1.0	EPA 8021	1-10-13	1-10-13	
o-Xylene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Gasoline	770	100	NWTPH-Gx	1-10-13	1-10-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	106	71-116				

Date of Report: January 11, 2013 Samples Submitted: January 10, 2013 Laboratory Reference: 1301-078

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK			***************************************			
Laboratory ID:	MB0110A1					
Benzene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Toluene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Ethyl Benzene	ND	1.0	EPA 8021	1-10-13	1-10-13	
m,p-Xylene	ND	1.0	EPA 8021	1-10-13	1-10-13	
o-Xylene	ND	1.0	EPA 8021	1-10-13	1-10-13	
Gasoline	ND	100	NWTPH-Gx	1-10-13	1-10-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	105	71-116				

					Source	Percent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Result	Recovery	Limits	RPD	Limit	Flags
DUPLICATE							**************************************			
Laboratory ID:	01-07	78-01								
	ORIG	DUP								
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	765	654	NA	NA		NA	NA	16	30	
Surrogate:										

Fluorobenzene

106 101 71-116



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
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- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

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Phone: (425) 883-3881 • www.onsite-env.com Company: Project Number: Project Name: Project Manager: A C C C C C C C C C C C C C C C C C C	☐ 2 Day	The state of the s					NWTPH-Gx AMAZERI D.		Voistlies 8260C Halogenated Voisilies 8260C	Sernivolatiles 8270D/SIM (with low-level PAHe)	PAHs 8270D/SIM (fow-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticidas 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A							% Maisture
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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

January 25, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project 6552 Laboratory Reference No. 1301-134

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 22, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: January 25, 2013 Samples Submitted: January 22, 2013 Laboratory Reference: 1301-134

Project: 6552

NWTPH-GX/BTEX QUALITY CONTROL

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK			,,			
Laboratory ID:	MB0124A1					
Benzene	ND	1.0	EPA 8021	1-24-13	1-24-13	
Toluene	ND	1.0	EPA 8021	1-24-13	1-24-13	
Ethyl Benzene	MD	1.0	EPA 8021	1-24-13	1-24-13	
m,p-Xylene	AD	1.0	EPA 8021	1-24-13	1-24-13	
o-Xylene	ND	1.0	EPA 8021	1-24-13	1-24-13	
Gasoline	ND	100	NWTPH-Gx	1-24-13	1-24-13	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	71-116				

Analyte	Res	suit	Spike	Level	Source Result	Percen Recover		RPD	RPD Limit	Elaca
DUPLICATE					1100011	1100000	y Lilling	Nru	5	Flags
Laboratory ID:	01-13	34-01								
	ORIG	DUP			···		· · · · · · · · · · · · · · · · · · ·			·····
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	663	648	NA	NA		NA	NA	2	30	
Surrogate:										
Fluorobenzene						98 9	9 71-116			



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
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- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

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14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

February 19, 2013

Chuck Lie Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, WA 98034

Re:

Analytical Data for Project T-6552 Laboratory Reference No. 1302-092

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 14, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely.

David Baumeister Project Manager

Enclosures

Date of Report: February 19, 2013 Samples Submitted: February 14, 2013 Laboratory Reference: 1302-092

Project: T-6552

Case Narrative

Samples were collected on February 14, 2013 and received by the laboratory on February 14, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

The chromatogram for sample Air 02-14 is similar to mineral spirits.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: February 19, 2013 Samples Submitted: February 14, 2013 Laboratory Reference: 1302-092

Project: T-6552

NWTPH-Gx/BTEX

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	Air 02-14			,		
Laboratory ID:	02-092-01					
Benzene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Toluene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Ethyl Benzene	ND	1.0	EPA 8021	2-14-13	2-14-13	
m,p-Xylene	ND	1.0	EPA 8021	2-14-13	2-14-13	
o-Xylene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Gasoline	980	100	NWTPH-Gx	2-14-13	2-14-13	Z
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	71-116				

Date of Report: February 19, 2013 Samples Submitted: February 14, 2013 Laboratory Reference: 1302-092

Project: T-6552

NWTPH-GX/BTEX **QUALITY CONTROL**

Matrix: Air

Units: ug/L (ppb)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK				***************************************		
Laboratory ID:	MB0214A1					
Benzene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Toluene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Ethyl Benzene	ND	1.0	EPA 8021	2-14-13	2-14-13	
m,p-Xylene	ND	1.0	EPA 8021	2-14-13	2-14-13	
o-Xylene	ND	1.0	EPA 8021	2-14-13	2-14-13	
Gasoline	ND	100	NWTPH-Gx	2-14-13	2-14-13	
Surrogate:	Percent Recovery	Control Limits				
Fl	-	71 110				

Fluorobenzene 99 71-116

Analyte	Res		Spike	Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE						**************************************		30000000000000000000000000000000000000		······································
Laboratory ID:	02-09	91-04								
	ORIG	DUP								4,540
Benzene	ND	ND	NA	NA		NA	NA	NA	30	
Toluene	ND	ND	NA	NA		NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA		NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA		NA	NA	NA	30	
Gasoline	ND	ND	NA	NA		NA	NA	NA	30	

Surrogate: Fluorobenzene

99 100 71-116



Data Qualifiers and Abbreviations

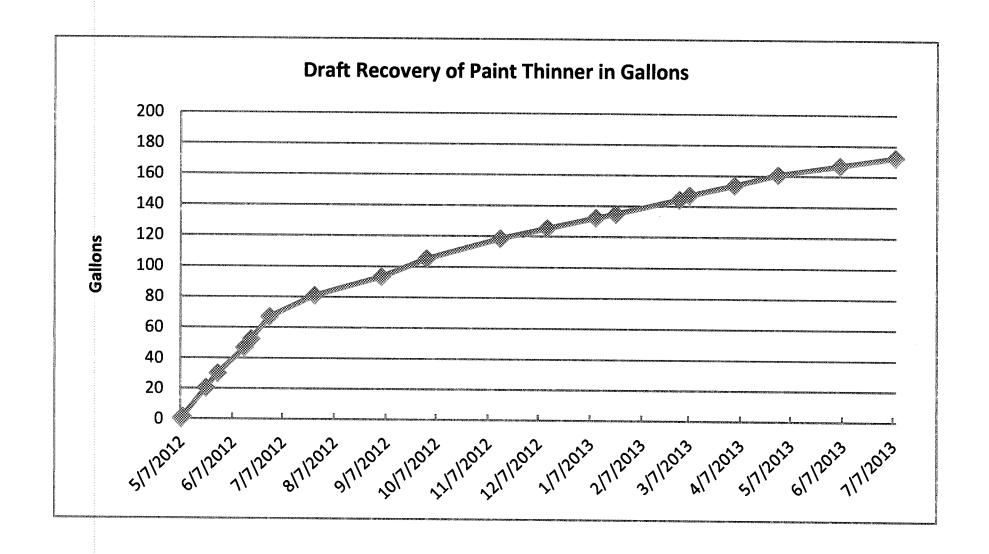
- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical ______.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z The sample chromatogram is similar to mineral spirits.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

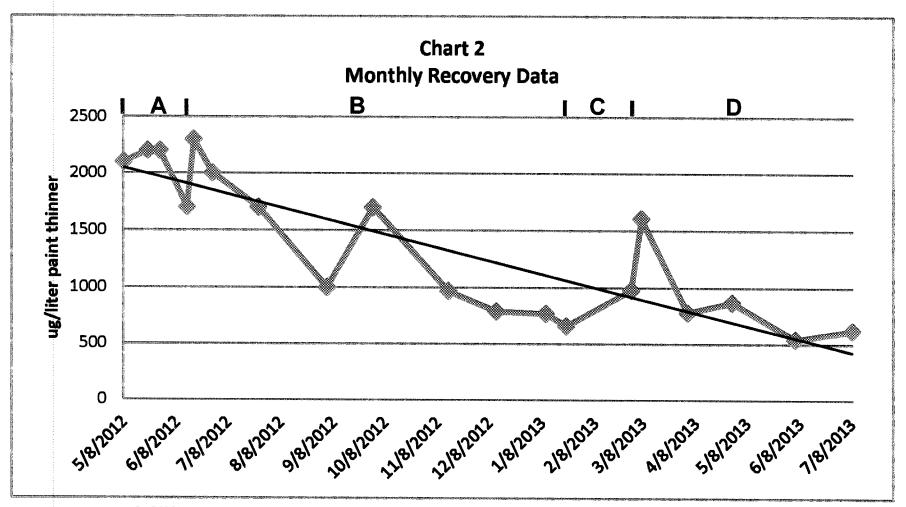
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A-MW-101 only

B- MW-101, 102 and 103

C-MW-101 and 102

D-MW-101, 102, 105 and 106

APPENDIX F MTCA TPH 11.1 SUMMARIES

Washington State Department of Ecology, Toxics Cleanup Program: Soil Cleanup Level for TPH Sites - Main Data Entry Form and Calculation Summary

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

Site Information

Date: 4/30/2013

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 4 5-10

Measured Soil TPH Concentration, mg/kg:

7,257.721

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil	With Measured Soil Conc		Does Measured Soil	
		TPH Conc, mg/kg	RISK @	HI@	Conc Pass or Fail?	
8	Method B	1,999	6.06E-10	3.63E+00	Fail	
	Method C	38,789	8.11E-11	1.87E-01	Pass	
	Potable GW: Human Health Protection	34	2.81E-07	2.82E+00	Fail	
Water Quality (Leaching)	Target TPH GW Conc. @ 500 ug/L	267	NA	NA	Fail	

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

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

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

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	1,999.02	38,788.53
Most Stringent Criterion	HI=1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	ні @	Most Stringent?	TPH Conc, mg/kg	RISK @	ні@
HI =1	YES	2.00E+03	1.67E-10	1.00E+00	YES	3.88E+04	4.33E-10	1.00E+00
Total Risk=1E-5	NO	1.20E+08	1.00E-05	5.99E+04	NO	8.95E+08	1.00E-05	2.31E+04
Risk of Benzene= 1E-6	NO	1.20E+07	1.00E-06	5.99E+03				,
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA	1	× + 1		
EDB	NA	NA	NA	NA	NA			
EDC	NA	NA	NA	NA	1			

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

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

Most Stringent Criterion	HI=l
Protective Ground Water Concentration, ug/L	196.72
Protective Soil Concentration, mg/kg	34.07

Ground Water Criteria	Protective	Protective Soil			
	Most Stringent?	TPH Conc, ug/L	RISK @	HI@	Conc, mg/kg
HI=I	YES	1.97E+02	1.13E-08	1.00E+00	3.41E+01
Total Risk = 1E-5	NO	6.17E+02	3.12E-07	2.84E+00	100% NAPL
Total Risk = 1E-6	NO	6.17E+02	3.12E-07	2.84E+00	100% NAPL
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NO	6.17E+02	3.12E-07	2.84E+00	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 69000 mg/kg TPH.

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

Ground Water Criteria	Protective	Protective Soil		
OTOLIC WARE CIRCIA	TPH Conc, ug/L	Risk @	НІ @	Conc, mg/kg
Target TPH GW Conc = 500 ug/L	5.00E+02	7.21E-08	2.40E+00	2.67E+02

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

1. Enter Site Information

Date: 04/30/13
Site Name: 5221 Ballard Ave NW
Sample Name: DPT 4 5-10

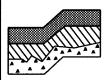
2. Enter Soil Concentrati	PETROLETA DE MANAGEMENTO DE LA COMPANSIONE DEL COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA COMPANSIONE DE LA C	
Chemical of Concern	Measured Soil Conc	Composition
or Equivalent Carbon Group	dry basis	Ratio
	mg/kg	%
Petroleum EC Fraction		_
AL_EC >5-6	2.5	0.03%
AL_EC >6-8	2.5	0.03%
AL_EC >8-10	11	0.15%
AL_EC >10-12	4600	63.38%
AL_EC >12-16	71	0.98%
AL_EC > 16-21	2.5	0.03%
AL_EC >21-34	2.5	0.03%
AR_EC>8-10	360	4.96%
AR_EC >10-12	2100	28.93%
AR_EC >12-16	100] 1.38%
AR_EC > 16-21	2.5	0.03%
AR EC>21-34	2.5	0.03%
Benzene	0.011	0.00%
Toluene	0.055] 0.00%
Ethylbenzene	0.055	0.00%
Total Xylenes	0.6	0.01%
Naphthalene	0	0,00%
I-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Вепхо(а)ругепе	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	7257.721	100.00%
3. Enter Site-Specific Hya	luncanionioni Vi	ata
Table 2	SE S COSTOCIONAS POR DESCRIPTION DE COMPTE DE	1
Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	J Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon: Dilution Factor:	0.001 20	Unitless Unitless
		<u> </u>
f. Target TPH Ground Wate		(i) adjusted)
f you adjusted the target TPH grou	THE RESERVE OF THE PARTY OF THE	
concentration, enter adjusted	500	ug/L

Notes for Data Entry	Set Default Hydrogeology
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Restore All Soil Con	centration Data cleared

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LETTER OF TRANSMITTAL

cc:



TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology

and
Environmental Earth Sciences

JUL 25 2013 DATE: 7/24/13 Ms. Heather Vick JOB NO.: T-6552 WDOE NWRO PROJECT: 5221 Ballard Avenue NW 3190 - 160th Avenue SE Bellevue, WA 98008-5452 We are sending you: Attached: √ Under separate cover via: the following: Copies Date Description 1 7/24/13 Remedial Investigation/Feasibility Study/Remedial Action Summary Remarks:

> 12525 Willows Road, Suite 101 ♦ Kirkland, Washington ♦ 98034 Phone (425) 821-7777 Fax (425) 821-4334

Signed: Charles R. Lie