TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

December 1, 2011
Project No. T-6552

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

Subject: Technical Memo-November Groundwater Sampling
5221 Ballard Avenue NW
Seattle, Washington
VCP NW 2496
UIC Site Number 31508

References:
1. Phase II Environmental Site Assessment, prepared by Terra Associates, dated July 29, 2011
2. Technical Memo, Fall Quarter sampling, prepared by Terra Associates, dated October 12, 2011

Dear Mr. Cowman:

As requested, we have completed the November 2011 sampling of the 4 monitoring wells constructed to document groundwater conditions at 5221 Ballard Avenue NW in Seattle, Washington. The purpose of this sampling was to document groundwater conditions following an initial injection of calcium hydroxide to assist in accelerated bio degradation on-site.

The attached memo presents the results of analytical testing and our current conclusions in more detail.

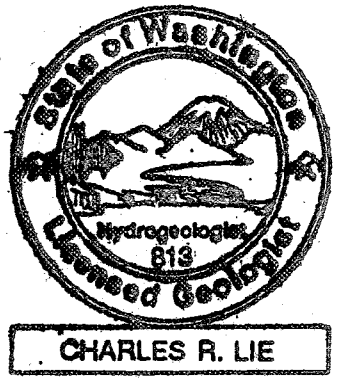
12525 Willows Road, Suite 101, Kirkland, Washington 98034
Phone (425) 821-7777 • Fax (425) 821-4334

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Respectfully submitted,
TERRA ASSOCIATES, INC.

Charles R. Lie, L.H.G.
Project Manager

cc: Mr. Livingston Wernecke, Betts, Patterson & Mines, P.S.
Mr. Steve Cowman
Ms. Audrey Heisey, NWRO WDOE
Ms. Mary Shaleen Hanson, UIC Office, WDOE



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Analytical Laboratory Report

November 2011 Groundwater Sampling
5221 Ballard Avenue NW
Seattle, Washington
VCP NW 2496
UIC Site Number 31508

1.0 EXECUTIVE SUMMARY

This memo summarized the November 2011 sampling for the parcel at 5221 Ballard Avenue NW in Seattle, Washington. This parcel is being sampled separately from the parcels that comprise the southern portion of the Cowman Campbell Paint site. The UST cluster on the 5221 site is a distinctly separate site relative to the former UST cluster on the parcels that front on Shilshole Avenue NW. Based on the data collected over the past 15 years, it is our opinion that the plumes from the two UST clusters do not overlap.

The purpose of this sampling was to monitor the impacts from the injection of calcium hydroxcide through 6 injection points. Two injection points were placed at each UST cavity. The injections are permitted by the Underground Injection Control (UIC) office of the WDOE.

On October 17, 2011, approximately 880 pounds of TersOx™ was injected using a GeoProbe rig owned and operated by Cascade Drilling. The material was mixed at a rate of about 30 percent solids mixed with city water for the injections. During the injections, no surfacing of the injected materials occurred. Measurements in adjacent monitoring wells did not show any increase in static water level, pH, or dissolved oxygen during the injections.

Subsequent to the injections, dewatering of a new construction project north of the site has lowered the groundwater by about seven feet. The data is summarized in more detail in the following sections of this memo.

2.0 SCOPE OF WORK

Our scope of work for this supplemental report consisted of the following:

- Sampling groundwater from Monitoring Wells MW-101 through MW-104.
- Subcontracting analytical testing of groundwater samples.
- Appropriate analysis of the data.
- Preparation of this report.

3.0 SITE CONDITIONS

3.1 Surface

The site is located at 5221 Ballard Avenue NW in Seattle, Washington. The site location is shown on Figures 1 and 2. The adjacent construction site is shown on Figure 2. The site layout is shown on Figure 3.

3.2 Groundwater

Table 1 summarizes the current and previous groundwater measurements. 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.

Table 1
Groundwater Measurements

Monitoring Well	Surface Elev.	MP Elev.	5/6/11		5/10/2011		6/29/2011		9/29/11	
			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

Monitoring Well	Surface Elev.	MP Elev.	10-17-11		11-18-11		11-29-11	
			Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	36.77	36.37	11.50	24.87	15.68	20.69	17.19	19.18
MW-102	36.35	35.93	10.86	25.07	15.78	20.15	17.32	18.61
MW-103	36.13	35.79	10.54	25.25	16.83	18.96	18.54	17.25
MW-104	28.23	27.98			6.83	21.15		
MW-8	27.97	27.51			5.22	22.29		
MW-9	30.24	29.99			7.39	22.60		

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.

4.0 FIELD SAMPLING

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.

All samples are obtained using a peristaltic pump and low flow pump rates. A minimum of three casing volumes are removed prior to sampling. Groundwater parameters are monitored during purging to verify that stable groundwater conditions have been reached prior to sampling. A flow through chamber was used for collection of field parameters.

All groundwater samples were placed into laboratory-prepared glassware. Each sample was given unique sample identification. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples.

5.0 LABORATORY TESTING

5.1 General

Groundwater samples were analyzed for the following analytes:

- Total petroleum hydrocarbons (TPH) in the gasoline range.
- BETX

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. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use. The laboratory report is attached to this memo.

5.2 Groundwater

The following tables are cumulative for Monitoring Wells MW-101 through MW-104.

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
	11/18/11	0.48	NT	NT
MW-102	5/10/11	0.5U	0.27U	0.41U
	9/29/11	0.59	0.26U	0.41U
	11/18/11	0.56	NT	NT

Table 3
(continued)
Total Petroleum Hydrocarbons
Groundwater

Well Number	Date	TPH Gas Range	TPH Diesel Range	TPH Oil Range
MW-103	5/10/11	**0.94**	**0.7U**	0.42U
	9/29/11	0.27	0.26U	0.41U
	11/18/11	0.44	NT	NT
MW-104	6/29/11	0.1U	0.41U	0.26U
	9/29/11	0.1U	0.26U	0.41U
	11/18/11	0.1U	NT	NT
MTCA		0.8 (1.0)	0.5	0.5

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
	11/18/11	1.5	2.5	1.0U	1.0U	1.0U
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
	11/18/11	1.0U	1.0U	1.0U	1.0U	1.0U
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
	11/18/11	1.0U	1.0U	1.0U	1.0U	1.0U

Table 4
(continued)
Volatile Organic Compounds
Groundwater

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
	9/29/11	3.2	3.4	0.2U	0.9
MW-102	5/10/11	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.22	0.2U	0.2U	0.2U
MW-103	5/10/11	0.2U	0.2U	0.2U	0.2U
	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 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
Groundwater Parameters

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
MW-101	5/10/11	NM	NM	NM	NM	15.3
	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
MW-102	5/10/11	NM	NM	NM	NM	15.2
	9/29/11	6.44	483	1.7	-117	17.4
	11/18/11	7.09	889	1.59	-62.6	15.23
MW-103	5/10/11	NM	NM	NM	NM	16.1
	7/6/11	6.49	113	0.3	-45	16.6
	9/29/11	6.39	455	1.8	-120	18
	11/18/11	6.34	962	6.32	59.4	15.53

Table 5
Groundwater Parameters

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
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 milli 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.

6.0 DISCUSSION

As can be seen in the tables there are no exceedances of the MTCA cleanup values in the groundwater samples from the 4 wells placed to document the USTs on the 5221 Ballard Avenue NW site. A construction site immediately across Ballard Avenue NW from the site has installed a dewatering system. As shown in the static water level data and on Figure 3, the groundwater elevations have decreased by about seven feet and the groundwater gradient has shifted to be towards the north. This decrease in the static water level precludes further use of calcium hydroxide injections on-site. We will consider alternative remedial measures and present our findings in a subsequent letter.

This letter closes the UIC activities on-site. If further UIC activities are planned, a new application will be submitted.

7.0 LIMITATIONS

This memo is the copyrighted property of Terra Associates, Inc. and was prepared in accordance with generally accepted local geo-environmental engineering practices and within the limitations of time and budget. Analytical testing of samples was based on our understanding of past land uses documented in reports by others and the tax records. In the event additional information regarding site history or current site uses is found, the information should be brought to our attention, as it may affect our conclusions.

This memo is intended for specific application to the 5221 Ballard Avenue NW project, and is for the exclusive use of Halco Properties, LLC and their authorized representatives. No other warranty, expressed or implied, is made.

Reference: Thomas Bros King County Road Atlas. NOT TO SCALE

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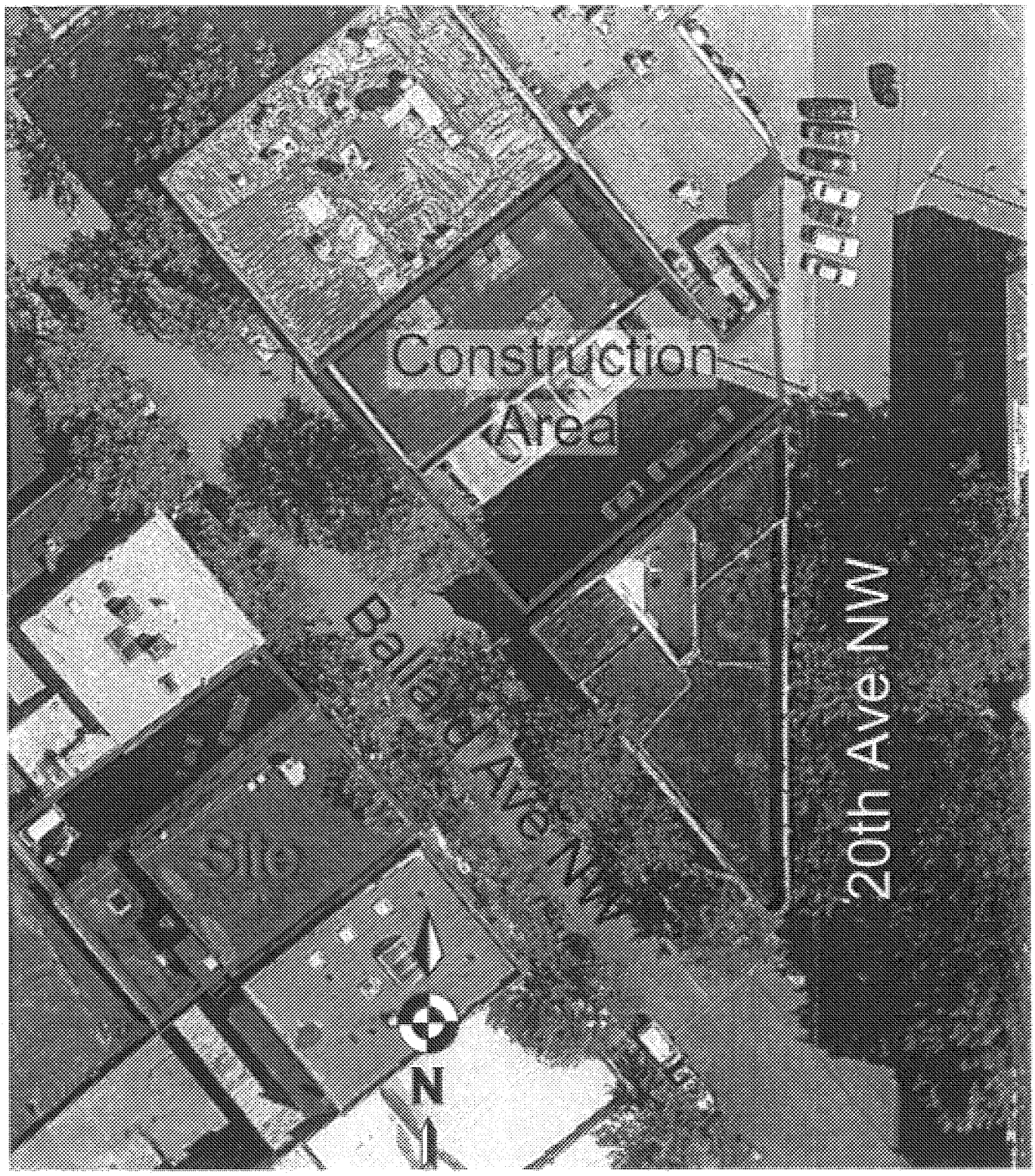
Geotechnical Consultants

Vicinity Map
5221 Ballard Ave NW
Seattle, Washington

Proj. No T-6552	Date Dec 2011	Figure 1



1" = 30' +/-

Reference: Pictometery, air photo dated 8-16-2009

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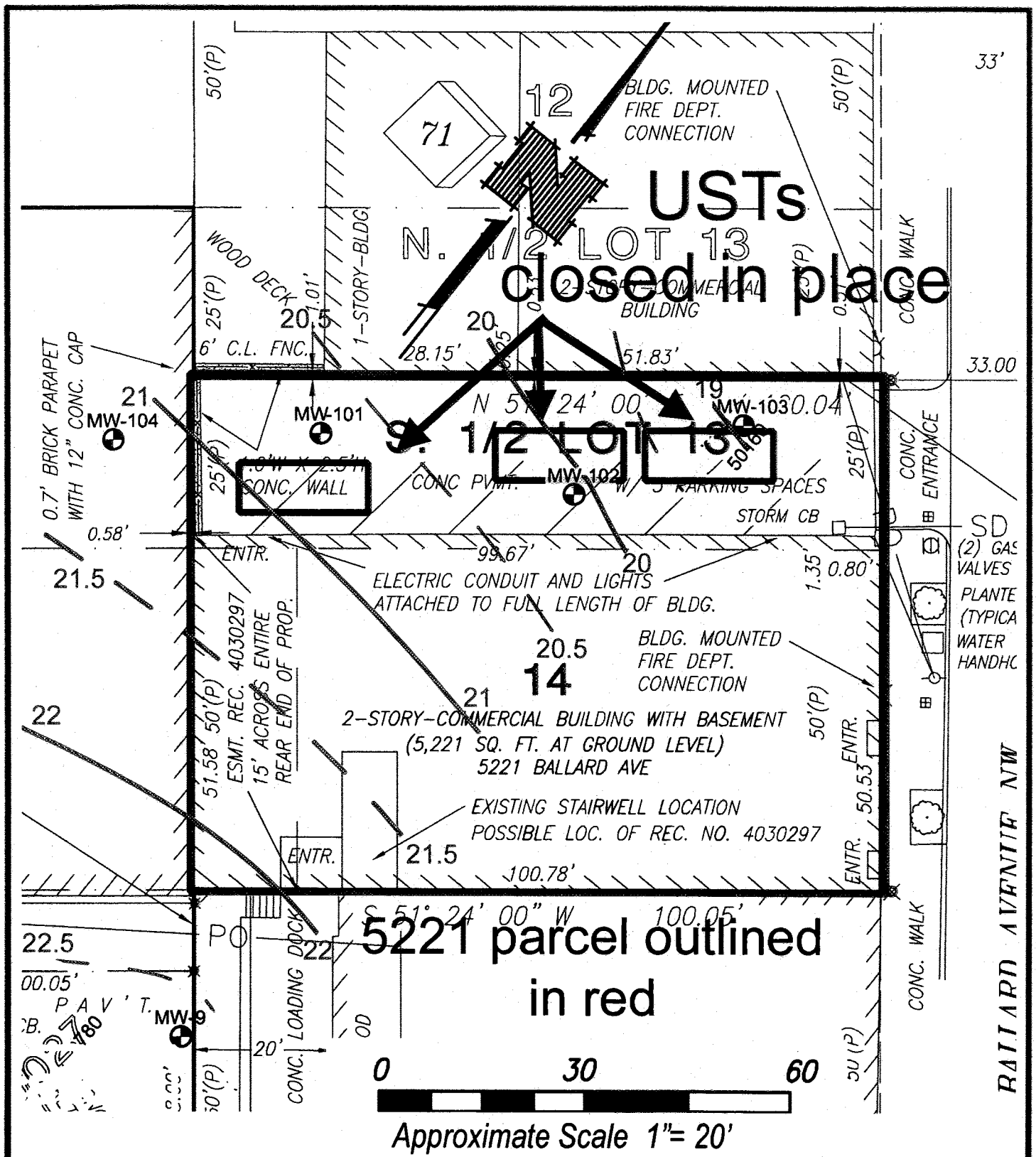
Index Location Map
5221 Ballard Ave NW
Seattle, Washington

Proj. No T-6552	Date Dec 2011	Figure 2



Reference: Site Survey by Hart Associates and Terra Associates field notes

TERRA ASSOCIATES

Geotechnical Consultants

Nov 18 2011 Static Water Level Summary
5221 Ballard Ave NW
Seattle, Washington

Proj. No T-6552	Date Dec 2011	Figure 3

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

November 29, 2011

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

Re: Analytical Data for Project 6552
Laboratory Reference No. 1111-139

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 18, 2011.

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 29, 2011
Samples Submitted: November 18, 2011
Laboratory Reference: 1111-139
Project: 6552

Case Narrative

Samples were collected on November 18, 2011 and received by the laboratory on November 18, 2011. 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.

Date of Report: November 29, 2011
Samples Submitted: November 18, 2011
Laboratory Reference: 1111-139
Project: 6552

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-101**					
Laboratory ID:	11-139-01					
Benzene	**1.5**	1.0	EPA 8021	11-22-11	11-22-11	
Toluene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Ethyl Benzene	**2.5**	1.0	EPA 8021	11-22-11	11-22-11	
m,p-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
o-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Gasoline	**480**	100	NWTPH-Gx	11-22-11	11-22-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*73-121*				
Client ID:	**MW-102**					
Laboratory ID:	11-139-02					
Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Toluene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
m,p-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
o-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Gasoline	**560**	100	NWTPH-Gx	11-22-11	11-22-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				
Client ID:	**MW-103**					
Laboratory ID:	11-139-03					
Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Toluene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
m,p-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
o-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Gasoline	**440**	100	NWTPH-Gx	11-22-11	11-22-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*73-121*				
Client ID:	**MW-104**					
Laboratory ID:	11-139-04					
Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Toluene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
m,p-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
o-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Gasoline	**ND**	100	NWTPH-Gx	11-22-11	11-22-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*73-121*				

Date of Report: November 29, 2011
Samples Submitted: November 18, 2011
Laboratory Reference: 1111-139
Project: 6552

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1122W2					
Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Toluene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
m,p-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
o-Xylene	**ND**	1.0	EPA 8021	11-22-11	11-22-11	
Gasoline	**ND**	100	NWTPH-Gx	11-22-11	11-22-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*73-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-139-04										
	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						*90*	*93*	*73-121*			
MATRIX SPIKES											
Laboratory ID:	11-151-03										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**51.1**	**48.5**	50.0	50.0	ND	**102**	**97**	82-120	5	8	
Toluene	**52.2**	**48.9**	50.0	50.0	ND	**104**	**98**	84-119	7	8	
Ethyl Benzene	**50.2**	**46.6**	50.0	50.0	ND	**100**	**93**	84-122	7	9	
m,p-Xylene	**50.3**	**46.4**	50.0	50.0	ND	**101**	**93**	85-121	8	9	
o-Xylene	**49.4**	**45.5**	50.0	50.0	ND	**99**	**91**	84-121	8	9	
Surrogate:											
Fluorobenzene						*101*	*101*	*73-121*			

OnSite Environmental Inc.

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 -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

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

Company: TAI
Project Number: 6552
Project Name: —
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 11-139

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	MW-101	11/15/11	9:20	H_2O	3		X															
2	MW-102	↓	10:06	↓	↓		↓															
3	MW-103		10:45																			
4	MW-104		11:30																			

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	11/18/11	12:56
Received	[signature]	[signature]	11/18/11	1250
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____