SKYWAY RESOURCE CENTER

Contract# SP2300150

12610 76th Ave Seattle, WA 98178

PROJECT MANUAL – VOLUME 3

ENVIRONMENTAL REPORTS – PART 2

Owner: King County Housing Authority

600 Andover Park W.
Tukwila, WA 98188

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END OF SECTION

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

September 29, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-289

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 26, 2014.

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 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

Case Narrative

Samples were collected on September 26, 2014 and received by the laboratory on September 26, 2014. 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.

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 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-26-1**					
Laboratory ID:	09-289-01					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	6.1	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				
Client ID:	**9-26-2**					
Laboratory ID:	09-289-02					
Benzene	**0.17**	0.060	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**1.1**	0.30	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
Gasoline	**150**	30	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*117*	*71-121*				
Client ID:	**9-26-3**					
Laboratory ID:	09-289-03					
Benzene	**0.22**	0.067	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.34	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**3.3**	0.34	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**8.3**	0.34	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**0.34**	0.34	EPA 8021B	9-26-14	9-26-14	
Gasoline	**250**	34	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*71-121*				

Date of Report: September 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0926S1					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-260-01										
	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	**0.0562**	**0.0545**	NA	NA		NA		NA	3	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*95*	*89*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0926S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.04**	**1.03**	1.00	1.00		**104**	**103**	73-121	1	10	
Toluene	**1.06**	**1.04**	1.00	1.00		**106**	**104**	75-124	2	10	
Ethyl Benzene	**1.07**	**1.05**	1.00	1.00		**107**	**105**	75-125	2	9	
m,p-Xylene	**1.08**	**1.06**	1.00	1.00		**108**	**106**	75-126	2	9	
o-Xylene	**1.02**	**1.01**	1.00	1.00		**102**	**101**	74-123	1	8	
Surrogate:											
Fluorobenzene						*95*	*95*	*71-121*			

Date of Report: September 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

% MOISTURE

Date Analyzed: 9-26-14

Client ID	Lab ID	% Moisture
9-26-1	09-289-01	12
9-26-2	09-289-02	14
9-26-3	09-289-03	18

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 09-289

Company: Terra Associates Inc.
Project Number: 6672-1
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)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	9-26-1	9/26/14	9:25	Soil	2		X																				X
2	9-26-2	↓	10:30	↓	↓		X																				X
3	9-26-3	↓	12:15	↓	↓		X																				X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/26/14	15:22
Received	[signature]	Onsite	9-26-14	1522
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 2, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-303

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2014.

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 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

Case Narrative

Samples were collected on September 29, 2014 and received by the laboratory on September 29, 2014. 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.

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.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 9-29-4. The sample was therefore extracted from a 4-ounce jar and analyzed.

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 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.4	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	8.3	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-300-01										
	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						*105*	*94*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Methyl t-Butyl Ether	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1002S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0435**	**0.0431**	0.0500	0.0500	87	86	56-141	1	15	
Benzene	**0.0453**	**0.0458**	0.0500	0.0500	91	92	70-121	1	15	
Trichloroethene	**0.0496**	**0.0499**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0461**	**0.0472**	0.0500	0.0500	92	94	75-120	2	15	
Chlorobenzene	**0.0446**	**0.0449**	0.0500	0.0500	89	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*98*	*100*	*65-129*			
Toluene-d8					*97*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*99*	*73-124*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-303-02					
Client ID:	**9-29-4**					
Lead	**ND**	6.5	6010C	10-1-14	10-1-14	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-1-14
Date Analyzed:	10-1-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1001SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**228**	91	**223**	89	2	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

% MOISTURE

Date Analyzed: 9-29-14

Client ID	Lab ID	% Moisture
9-29-1	09-303-01	15
9-29-4	09-303-02	23

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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: 09-303

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC 8260		TOTAL LEAD		% Moisture
1	9-29-1	9/29/14	11:15	Soil	2		X		X																		X
2	9-29-4	9/29/14	14:30	Soil	2		X		X														⊗		(X)		X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/29/14	16:57
Received	[signature]	OSE	9/29/14	1657
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
⊗ Added 10/1/14. DB (2 day TAT)

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

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

October 1, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-303

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2014.

Please note that the added analyses will follow in the final report.

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 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

Case Narrative

Samples were collected on September 29, 2014 and received by the laboratory on September 29, 2014. 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.

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 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.4	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	8.3	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-300-01										
	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						*105*	*94*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

% MOISTURE

Date Analyzed: 9-29-14

Client ID	Lab ID	% Moisture
9-29-1	09-303-01	15
9-29-4	09-303-02	23

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 09-303

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC 8260		TOTAL LEAD		% Moisture
1	9-29-1	9/29/14	11:15	Soil	2		X		X																		X
2	9-29-4	9/29/14	14:30	Soil	2		X		X														⊗		(X)		X

	Signature	Company	Date	Time
Relinquished		TAI	9/29/14	16:57
Received			9/29/14	1657
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
⊗ Added 10/1/14. DB (2 day TAT)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 1, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-318

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 30, 2014.

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 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

Case Narrative

Samples were collected on September 30, 2014 and received by the laboratory on September 30, 2014. 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.

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 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-30-1**					
Laboratory ID:	09-318-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.9	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				
Client ID:	**9-30-2**					
Laboratory ID:	09-318-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	10-1-14	
Toluene	**ND**	0.059	EPA 8021B	9-30-14	10-1-14	
Ethyl Benzene	**0.19**	0.059	EPA 8021B	9-30-14	10-1-14	
m,p-Xylene	**0.20**	0.059	EPA 8021B	9-30-14	10-1-14	
o-Xylene	**ND**	0.059	EPA 8021B	9-30-14	10-1-14	
Gasoline	**ND**	5.9	NWTPH-Gx	9-30-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S2					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-309-01										
	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*	*102*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-30-1**					
Laboratory ID:	09-318-01					
Diesel Range Organics	**ND**	30	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

% MOISTURE

Date Analyzed: 9-30-14

Client ID	Lab ID	% Moisture
9-30-1	09-318-01	16
9-30-2	09-318-02	11

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Liu
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: 09-318

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	9-30-1	9/30/14	11:50	Soil	2		X		X													X
2	9-30-2	9/30/14	13:30	Soil	2		X															X

	Signature	Company	Date	Time
Relinquished		TAI	9/30/14	15:25
Received		OSE	9/30/14	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date | Reviewed/Date | Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 2, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-008

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 1, 2014.

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 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

Case Narrative

Samples were collected on October 1, 2014 and received by the laboratory on October 1, 2014. 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.

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.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 10-1-2. The sample was therefore extracted from a 4-ounce jar and analyzed.

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 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-1**					
Laboratory ID:	10-008-01					
Benzene	**0.035**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.052	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**3.8**	0.052	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**15**	0.26	EPA 8021B	10-1-14	10-2-14	
o-Xylene	**4.6**	0.052	EPA 8021B	10-1-14	10-1-14	
Gasoline	**220**	5.2	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Benzene	**ND**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
Gasoline	**ND**	4.9	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				
Client ID:	**10-1-3**					
Laboratory ID:	10-008-03					
Benzene	**0.88**	0.022	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.11	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**13**	0.27	EPA 8021B	10-1-14	10-2-14	
m,p-Xylene	**0.58**	0.11	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.11	EPA 8021B	10-1-14	10-1-14	
Gasoline	**1500**	27	NWTPH-Gx	10-1-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1001S1					
Benzene	**ND**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-322-01										
	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						*96*	*93*	*71-121*			
MATRIX SPIKES											
Laboratory ID:	09-322-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**1.02**	**1.07**	1.00	1.00	ND	**102**	**107**	64-130	5	18	
Toluene	**1.03**	**1.07**	1.00	1.00	ND	**103**	**107**	71-133	4	15	
Ethyl Benzene	**1.01**	**1.04**	1.00	1.00	ND	**101**	**104**	72-133	3	17	
m,p-Xylene	**1.04**	**1.03**	1.00	1.00	ND	**104**	**103**	74-131	1	20	
o-Xylene	**1.04**	**1.11**	1.00	1.00	ND	**104**	**111**	69-133	7	12	
Surrogate:											
Fluorobenzene						*93*	*99*	*71-121*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-1**					
Laboratory ID:	10-008-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Diesel Range Organics	**ND**	47	NWTPH-Dx	10-1-14	10-1-14	U1
Lube Oil	**260**	55	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**10-1-3**					
Laboratory ID:	10-008-03					
Diesel Range Organics	**760**	27	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil	**2600**	55	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1001S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-008-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*91*	*93*	*50-150*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1002S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0435**	**0.0431**	0.0500	0.0500	87	86	56-141	1	15	
Benzene	**0.0453**	**0.0458**	0.0500	0.0500	91	92	70-121	1	15	
Trichloroethene	**0.0496**	**0.0499**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0461**	**0.0472**	0.0500	0.0500	92	94	75-120	2	15	
Chlorobenzene	**0.0446**	**0.0449**	0.0500	0.0500	89	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*98*	*100*	*65-129*			
Toluene-d8					*97*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*99*	*73-124*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-008-02					
Client ID:	**10-1-2**					
Lead	**ND**	5.5	6010C	10-1-14	10-1-14	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-1-14
Date Analyzed:	10-1-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1001SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**228**	91	**223**	89	2	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

% MOISTURE

Date Analyzed: 10-1-14

Client ID	Lab ID	% Moisture
10-1-1	10-008-01	10
10-1-2	10-008-02	9
10-1-3	10-008-03	8

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-008

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC		TOTAL LEAD		% Moisture
1	10-1-1	10/1/14	7:30	Soil	2		X		X																		X
2	10-1-2		10:12				X		X														X		X		X
3	10-1-3		10:30				X		X																		X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	10/1/14	15:25
Received	[signature]	OBE	10/1/14	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

~~will email analysis~~
~~request shortly~~ DB

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 6, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-043

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2014.

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 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

Case Narrative

Samples were collected on October 2, 2014 and received by the laboratory on October 3, 2014. 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 chromatogram for sample 10-2-4 is similar to mineral spirits with diesel.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 10-2-3. The sample was therefore extracted from a 4-ounce jar and analyzed.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-1**					
Laboratory ID:	10-043-01					
Benzene	**0.78**	0.023	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.11	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**1.2**	0.11	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.78**	0.11	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.11	EPA 8021B	10-3-14	10-3-14	
Gasoline	**330**	11	NWTPH-Gx	10-3-14	10-3-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*71-121*				
Client ID:	**10-2-2**					
Laboratory ID:	10-043-02					
Benzene	**0.40**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.054	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**2.0**	0.054	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.99**	0.054	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.054	EPA 8021B	10-3-14	10-3-14	
Gasoline	**350**	5.4	NWTPH-Gx	10-3-14	10-3-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*71-121*				
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.7	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-4**					
Laboratory ID:	10-043-04					
Benzene	**ND**	0.023	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.12	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**0.83**	0.12	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**1.2**	0.12	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**1.8**	0.12	EPA 8021B	10-3-14	10-3-14	
Gasoline	**3000**	290	NWTPH-Gx	10-3-14	10-3-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S1					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-03										
	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						*92*	*87*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1003S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.07**	**1.11**	1.00	1.00		**107**	**111**	73-121	4	10	
Toluene	**1.06**	**1.09**	1.00	1.00		**106**	**109**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-125	4	9	
m,p-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-126	4	9	
o-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	74-123	4	8	
Surrogate:											
Fluorobenzene						*97*	*99*	*71-121*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-1**					
Laboratory ID:	10-043-01					
Diesel Range Organics	**640**	140	NWTPH-Dx	10-3-14	10-6-14	
Lube Oil	**5400**	280	NWTPH-Dx	10-3-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**10-2-2**					
Laboratory ID:	10-043-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil	**490**	57	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**10-2-4**					
Laboratory ID:	10-043-04					
Diesel Range Organics	**900**	28	NWTPH-Dx	10-3-14	10-3-14	M
Lube Oil	**630**	56	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-04										
	ORIG	DUP									
Diesel Range Organics	**796**	**677**	NA	NA		NA		NA	16	NA	M
Lube Oil	**556**	**522**	NA	NA		NA		NA	6	NA	
Surrogate:											
o-Terphenyl						*78*	*75*	*50-150*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*65-129*				
Toluene-d8	*103*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1003S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*65-129*				
Toluene-d8	*113*	*77-122*				
4-Bromofluorobenzene	*115*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1003S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0406**	**0.0413**	0.0500	0.0500	81	83	56-141	2	15	
Benzene	**0.0449**	**0.0450**	0.0500	0.0500	90	90	70-121	0	15	
Trichloroethene	**0.0490**	**0.0489**	0.0500	0.0500	98	98	74-118	0	15	
Toluene	**0.0466**	**0.0466**	0.0500	0.0500	93	93	75-120	0	15	
Chlorobenzene	**0.0442**	**0.0448**	0.0500	0.0500	88	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*99*	*101*	*65-129*			
Toluene-d8					*98*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*101*	*73-124*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-043-03					
Client ID:	**10-2-3**					
Lead	**7.7**	5.7	6010C	10-6-14	10-6-14	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-14
Date Analyzed:	10-6-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1006SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**6.80**	**6.70**	2	5.0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**238**	93	**237**	92	0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

% MOISTURE

Date Analyzed: 10-3-14

Client ID	Lab ID	% Moisture
10-2-1	10-043-01	11
10-2-2	10-043-02	12
10-2-3	10-043-03	12
10-2-4	10-043-04	11

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 with diesel.

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

Laboratory Number: 10-043

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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)
☐ ASAP (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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)	TCLP Metals	HEM (oil and grease) 1664A	8260C MTBE, EDB, EDC	Total Lead				% Moisture
1	10-2-1	10/2/14	7:30	Soil	2		X		X																	X
2	10-2-2	↓	10:22	↓	↓		X		X																	X
3	10-2-3	↓	10:40	↓	↓		X		X												X	X				X
4	10-2-4	↓	13:20	↓	2		X		X																	X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	10/3/14	6:00
Received	Dyan McCloskey	TAI	10-3-14	6:00
Relinquished	Dyan McCloskey	TAI	10-3-14	7:37
Received	[signature]	OSE	10.3.14	7:37A
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ ———

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

October 6, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-055

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2014.

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 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

Case Narrative

Samples were collected on October 3, 2014 and received by the laboratory on October 3, 2014. 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.

Volatiles EPA 8260C Analysis

Some MTCA Method A cleanup levels are non-achievable for sample 10-3-1 due to the necessary dilution of the sample.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Benzene	**0.050**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.066	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**0.43**	0.066	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.094**	0.066	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.066	EPA 8021B	10-3-14	10-3-14	
Gasoline	**97**	6.6	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S1					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-03										
	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						*92*	*87*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1003S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.07**	**1.11**	1.00	1.00		**107**	**111**	73-121	4	10	
Toluene	**1.06**	**1.09**	1.00	1.00		**106**	**109**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-125	4	9	
m,p-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-126	4	9	
o-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	74-123	4	8	
Surrogate:											
Fluorobenzene						*97*	*99*	*71-121*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Diesel Range Organics	**ND**	46	NWTPH-Dx	10-3-14	10-3-14	U1,M1
Lube Oil	**140**	61	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-056-08									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *75*	*50-150*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Methyl t-Butyl Ether	ND	0.070	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.070	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.070	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*99*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1003S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*65-129*				
Toluene-d8	*113*	*77-122*				
4-Bromofluorobenzene	*115*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1003S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0406**	**0.0413**	0.0500	0.0500	81	83	56-141	2	15	
Benzene	**0.0449**	**0.0450**	0.0500	0.0500	90	90	70-121	0	15	
Trichloroethene	**0.0490**	**0.0489**	0.0500	0.0500	98	98	74-118	0	15	
Toluene	**0.0466**	**0.0466**	0.0500	0.0500	93	93	75-120	0	15	
Chlorobenzene	**0.0442**	**0.0448**	0.0500	0.0500	88	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*99*	*101*	*65-129*			
Toluene-d8					*98*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*101*	*73-124*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-055-01					
Client ID:	**10-3-1**					
Lead	**8.1**	6.1	6010C	10-6-14	10-6-14	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-14
Date Analyzed:	10-6-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1006SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**6.80**	**6.70**	2	5.0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**238**	93	**237**	92	0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

% MOISTURE

Date Analyzed: 10-3-14

Client ID	Lab ID	% Moisture
10-3-1	10-055-01	19

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 10-055

Company: Tarra Associates Inc.
Project Number: 6672-1
Project Name: ____
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [X] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] ____ (other)

TOTAL LEAD

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	X/MTBE, EDB, EDC	X/Total Lead				% Moisture
1	10-3-1	10/3/14	~~13:02~~ 11:20	Soil	3		X		X													X	X				X

	Signature	Company	Date	Time
Relinquished		TAI	10/3/14	15:24
Received		CSR	10/3/14	1524
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ ____

90c

OnSite Environmental Inc.

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

October 7, 2014

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

Re: Analytical Data for Project T-6672
Laboratory Reference No. 1410-068

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 2014.

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 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

Case Narrative

Samples were collected on October 6, 2014 and received by the laboratory on October 6, 2014. 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 chromatogram for sample 10-6-2 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 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-6-2**					
Laboratory ID:	10-068-02					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
Gasoline	**29**	8.0	NWTPH-Gx	10-6-14	10-6-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*71-121*				
Client ID:	**10-6-3**					
Laboratory ID:	10-068-03					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
Gasoline	**ND**	6.7	NWTPH-Gx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1006S1					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-063-01										
	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						*101*	*100*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1006S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.04**	1.00	1.00		**108**	**104**	73-121	4	10	
Toluene	**1.06**	**1.03**	1.00	1.00		**106**	**103**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.01**	1.00	1.00		**104**	**101**	75-125	3	9	
m,p-Xylene	**1.05**	**1.00**	1.00	1.00		**105**	**100**	75-126	5	9	
o-Xylene	**1.05**	**1.02**	1.00	1.00		**105**	**102**	74-123	3	8	
Surrogate:											
Fluorobenzene						*94*	*93*	*71-121*			

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-6-2**					
Laboratory ID:	10-068-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	10-6-14	10-7-14	
Lube Oil Range Organics	**110**	66	NWTPH-Dx	10-6-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**10-6-3**					
Laboratory ID:	10-068-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-6-14	10-6-14	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1006S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-6-14	10-6-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-059-02										
	ORIG	DUP									
Mineral Oil	**84.9**	**78.9**	NA	NA		NA		NA	7	NA	X1
Surrogate:											
o-Terphenyl						*105*	*98*	*50-150*			

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

% MOISTURE

Date Analyzed: 10-6-14

Client ID	Lab ID	% Moisture
10-6-2	10-068-02	24
10-6-3	10-068-03	21

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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

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: Terra Associates, Inc.
Project Number: T-1672
Project Name:
Project Manager: Charles Lee
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-068

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-6-1	10-6-14	1256	Soil	5																	
2	10-6-2	10-6-14	1305	Soil	5		X		X													X
3	10-6-3	10-6-14	1435	Soil	5		X		X													X

	Signature	Company	Date	Time
Relinquished		Environmental Field Sm	10-6-14	1545
Received		Onsite Env	10/6/14	1545
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

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

October 8, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-078

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 7, 2014.

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 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

Case Narrative

Samples were collected on October 7, 2014 and received by the laboratory on October 7, 2014. 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.

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 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-7-1**					
Laboratory ID:	10-078-01					
Benzene	**ND**	0.020	EPA 8021B	10-7-14	10-7-14	
Toluene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
Ethyl Benzene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
m,p-Xylene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
o-Xylene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
Gasoline	**ND**	6.0	NWTPH-Gx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1007S1					
Benzene	**ND**	0.020	EPA 8021B	10-7-14	10-7-14	
Toluene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-078-01										
	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						*103*	*103*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1007S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.05**	**1.03**	1.00	1.00		**105**	**103**	73-121	2	10	
Toluene	**1.04**	**1.01**	1.00	1.00		**104**	**101**	75-124	3	10	
Ethyl Benzene	**1.02**	**0.995**	1.00	1.00		**102**	**100**	75-125	2	9	
m,p-Xylene	**1.02**	**0.991**	1.00	1.00		**102**	**99**	75-126	3	9	
o-Xylene	**1.02**	**0.994**	1.00	1.00		**102**	**99**	74-123	3	8	
Surrogate:											
Fluorobenzene						*97*	*95*	*71-121*			

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-7-1**					
Laboratory ID:	10-078-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-7-14	10-7-14	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1007S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-7-14	10-7-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-074-05,06 Comp.										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Lube Oil	**250**	**206**	NA	NA		NA		NA	19	NA	
Surrogate:											
o-Terphenyl						*76*	*71*	*50-150*			

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-7-14

Client ID	Lab ID	% Moisture
10-7-1	10-078-01	10

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates, Inc
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lie
Sampled by: Terry Bukowski

Turnaround Request (in working days)

(Check One)

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-078

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	10-7-1	10-7-14	1125	Soil	5		X		X																		X

	Signature	Company	Date	Time
Relinquished	Terry Bukowski	Environmental Technologies	10-7-14	1540
Received			10/7/14	1540
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 9, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-110

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 8, 2014.

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 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

Case Narrative

Samples were collected on October 8, 2014 and received by the laboratory on October 8, 2014. 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 chromatogram for sample 10-8-1 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 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-8-1**					
Laboratory ID:	10-110-01					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
Gasoline	**16**	8.8	NWTPH-Gx	10-8-14	10-8-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*114*	*71-121*				
Client ID:	**10-8-3**					
Laboratory ID:	10-110-03					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
Gasoline	**ND**	7.2	NWTPH-Gx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S1					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-083-01										
	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*	*96*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1008S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.03**	**1.09**	1.00	1.00		**103**	**109**	73-121	6	10	
Toluene	**1.02**	**1.07**	1.00	1.00		**102**	**107**	75-124	5	10	
Ethyl Benzene	**0.998**	**1.06**	1.00	1.00		**100**	**106**	75-125	6	9	
m,p-Xylene	**0.998**	**1.06**	1.00	1.00		**100**	**106**	75-126	6	9	
o-Xylene	**1.00**	**1.08**	1.00	1.00		**100**	**108**	74-123	8	8	
Surrogate:											
Fluorobenzene						*96*	*97*	*71-121*			

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-8-1**					
Laboratory ID:	10-110-01					
Diesel Range Organics	**ND**	47	NWTPH-Dx	10-8-14	10-9-14	U1,M1
Lube Oil Range Organics	**190**	69	NWTPH-Dx	10-8-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**10-8-3**					
Laboratory ID:	10-110-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-8-14	10-9-14	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	10-8-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-8-14	10-8-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-070-09										
	ORIG	DUP									
Diesel Fuel #2	**80.6**	**68.2**	NA	NA		NA		NA	17	NA	N
Lube Oil	**806**	**784**	NA	NA		NA		NA	3	NA	
Surrogate:											
o-Terphenyl						*106*	*82*	*50-150*			

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-8-14

Client ID	Lab ID	% Moisture
10-8-1	10-110-01	28
10-8-3	10-110-03	21

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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

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

Laboratory Number: 10-110

Company: Terra Associates, Inc.
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lie
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
☒ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-8-1	10-8-14	1420	Soil	5		X		X													X
2	10-8-2	↓	1430	↓	↓																	10-8 X
3	10-8-3	↓	1450	↓	↓		X		X													X

	Signature	Company	Date	Time
Relinquished		Environmental Field Services LLC	10-8-14	1540
Received		ONE	10/8/14	1540
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 10, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-123

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 9, 2014.

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 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

Case Narrative

Samples were collected on October 9, 2014 and received by the laboratory on October 9, 2014. 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.

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 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-1**					
Laboratory ID:	10-123-01					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	6.4	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*71-121*				
Client ID:	**10-9-2**					
Laboratory ID:	10-123-02					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	8.2	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-9-3**					
Laboratory ID:	10-123-03					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	7.7	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-121*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-4**					
Laboratory ID:	10-123-04					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	6.0	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				
Client ID:	**10-9-5**					
Laboratory ID:	10-123-05					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	5.4	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-9-6**					
Laboratory ID:	10-123-06					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-9-14	
Toluene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
Ethyl Benzene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
m,p-Xylene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
o-Xylene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
Gasoline	**ND**	5.1	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-121*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1009S1					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-9-14	
Toluene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-120-01										
	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						*97*	*98*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1009S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.980**	**1.05**	1.00	1.00		**98**	**105**	73-121	7	10	
Toluene	**0.985**	**1.04**	1.00	1.00		**99**	**104**	75-124	5	10	
Ethyl Benzene	**0.969**	**1.02**	1.00	1.00		**97**	**102**	75-125	5	9	
m,p-Xylene	**1.01**	**1.04**	1.00	1.00		**101**	**104**	75-126	3	9	
o-Xylene	**0.970**	**1.01**	1.00	1.00		**97**	**101**	74-123	4	8	
Surrogate:											
Fluorobenzene						*91*	*95*	*71-121*			

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-1**					
Laboratory ID:	10-123-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**10-9-2**					
Laboratory ID:	10-123-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**130**	65	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**10-9-3**					
Laboratory ID:	10-123-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**10-9-4**					
Laboratory ID:	10-123-04					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**10-9-5**					
Laboratory ID:	10-123-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**10-9-6**					
Laboratory ID:	10-123-06					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1010S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-123-05									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*78* *82*	*50-150*			

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-9-14

Client ID	Lab ID	% Moisture
10-9-1	10-123-01	13
10-9-2	10-123-02	23
10-9-3	10-123-03	22
10-9-4	10-123-04	14
10-9-5	10-123-05	14
10-9-6	10-123-06	9

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 10-123

Company: Terra Associates Inc
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lee
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
☑ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-9-1	10-9-14	1254	Soil	5		X		X													X
2	10-9-2		1300																			
3	10-9-3		1315																			
4	10-9-4		1330																			
5	10-9-5		1340																			
6	10-9-6		1415																			

	Signature	Company	Date	Time
Relinquished	Terry A Bukowski	Environmental Field Manager	10-9-14	1555
Received		ORE	10/9/14	1555
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

APPENDIX F

ANALYTICAL TESTING-UST CONTENTS

OnSite Environmental Inc.

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

September 8, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-022

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 3, 2014.

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 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

Case Narrative

Samples were collected on September 3, 2014 and received by the laboratory on September 3, 2014. 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.

PCBs EPA 8082A Analysis

Due to matrix effects, the surrogate recovery of DCB (35%) for the sample 9-3-W was below the quality control limits of 46 – 136%. All other QC was within their corresponding quality control limits. No further action was performed.

Total Metals EPA 6010C/7471B Analysis

Due to the high concentration of barium and lead in the QC sample, the amount spiked was insufficient for meaningful MS/MSD recovery data. The Spike Blank recovery was 101% for barium and 101% for lead.

The duplicate RPD for barium is outside control limits due to sample inhomogeneity.

The Matrix Spike/Matrix Spike Duplicate RPD for silver is outside control limits due to matrix effects.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

PCBs
EPA 8082A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-3-W**					
Laboratory ID:	09-022-01					
Aroclor 1016	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1221	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1232	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1242	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1248	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1254	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Aroclor 1260	**ND**	0.10	EPA 8082A	9-4-14	9-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*35*	*46-136*				Q

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0904W1					
Aroclor 1016	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1221	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1232	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1242	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1248	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1254	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1260	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*101*	*46-136*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0904W1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.447**	**0.470**	0.500	0.500	N/A	**89**	**94**	60-119	5	13	
Surrogate:											
DCB						*105*	*101*	*46-136*			

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

PCBs
EPA 8082A

Matrix: Sludge
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-3-P**					
Laboratory ID:	09-022-02					
Aroclor 1016	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1221	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1232	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1242	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1248	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1254	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Aroclor 1260	**ND**	10	EPA 8082A	9-4-14	9-4-14	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*93*	*51-138*				

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0904S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1221	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1232	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1242	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1248	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1254	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Aroclor 1260	**ND**	0.050	EPA 8082A	9-4-14	9-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*88*	*51-138*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-018-15										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	**0.465**	**0.422**	0.500	0.500	ND	**93**	**84**	49-136	10	14	
Surrogate:											
DCB						*103*	*92*	*51-138*			

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B

Matrix: Sludge
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-022-02					
Client ID:	**9-3-P**					
Arsenic	**ND**	10	6010C	9-4-14	9-4-14	
Barium	**7200**	250	6010C	9-4-14	9-4-14	
Cadmium	**14**	0.50	6010C	9-4-14	9-4-14	
Chromium	**57**	0.50	6010C	9-4-14	9-4-14	
Lead	**65000**	500	6010C	9-4-14	9-4-14	
Mercury	**ND**	0.25	7471B	9-4-14	9-4-14	
Selenium	**ND**	10	6010C	9-4-14	9-4-14	
Silver	**ND**	1.0	6010C	9-4-14	9-4-14	

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-4-14
Date Analyzed:	9-4-14
Matrix:	Sludge
Units:	mg/kg (ppm)
Lab ID:	MB0904SH1&MB0904S1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Mercury	7471B	**ND**	0.25
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-4-14
Date Analyzed: 9-4-14

Matrix: Sludge
Units: mg/kg (ppm)

Lab ID: 09-022-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**7210**	**2890**	85	250	K
Cadmium	**14.0**	**15.0**	7	0.50	
Chromium	**56.8**	**66.0**	15	0.50	
Lead	**65300**	**63600**	3	500	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B
MS/MSD QUALITY CONTROL

Date Extracted: 9-4-14
Date Analyzed: 9-4-14

Matrix: Sludge
Units: mg/kg (ppm)

Lab ID: 09-022-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**92.6**	93	**98.3**	98	6	
Barium	100	**9080**	1870	**7940**	730	13	A
Cadmium	50.0	**57.1**	86	**60.2**	92	5	
Chromium	100	**136**	79	**149**	92	9	
Lead	250	**64400**	-362	**64700**	-222	1	A
Mercury	0.500	**0.458**	92	**0.451**	90	2	
Selenium	100	**95.5**	95	**100**	100	5	
Silver	25.0	**18.9**	76	**23.4**	94	21	W

Date of Report: September 8, 2014
Samples Submitted: September 3, 2014
Laboratory Reference: 1409-022
Project: 6672-1

pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-3-W**				
Laboratory ID:	09-022-01				
pH	**6.9**	SM 4500-H B	9-8-14	9-8-14	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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: 09-022

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	pH				% Moisture
1	9-3-W	9/3/14	13:45	Water	1									X								X				
2	9-3-P	9/3/14	13:50	Sludge	1									X				X								

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/3/14	14:37
Received	Alex Armantrout	OSE	9/3/14	1437
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
(X) Added 9/5/14. 4:40 pm - DB
(SAME DAY TAT)

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

September 17, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-143

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 15, 2014.

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 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

Case Narrative

Samples were collected on September 15, 2014 and received by the laboratory on September 15, 2014. 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: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-15-1**					
Laboratory ID:	09-143-01					
Diesel Range Organics	**1100**	590	NWTPH-Dx	9-15-14	9-16-14	N
Lube Oil	**20000**	1200	NWTPH-Dx	9-15-14	9-16-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**9-15-2**					
Laboratory ID:	09-143-02					
Diesel Range Organics	**1000**	570	NWTPH-Dx	9-15-14	9-16-14	N
Lube Oil	**25000**	1100	NWTPH-Dx	9-15-14	9-16-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**9-15-3**					
Laboratory ID:	09-143-03					
Diesel Range Organics	**2200**	610	NWTPH-Dx	9-15-14	9-16-14	N
Lube Oil	**30000**	1200	NWTPH-Dx	9-15-14	9-16-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0915S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-15-14	9-15-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-15-14	9-15-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-110-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Lube Oil	**180**	**154**	NA	NA		NA		NA	16	NA	
Surrogate:											
o-Terphenyl						*93*	*88*	*50-150*			

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-143-01					
Client ID:	**9-15-1**					
Arsenic	**ND**	12	6010C	9-15-14	9-15-14	
Barium	**100**	2.9	6010C	9-15-14	9-15-14	
Cadmium	**ND**	0.59	6010C	9-15-14	9-15-14	
Chromium	**45**	0.59	6010C	9-15-14	9-15-14	
Lead	**38**	5.9	6010C	9-15-14	9-15-14	
Mercury	**ND**	0.29	7471B	9-16-14	9-16-14	
Selenium	**ND**	12	6010C	9-15-14	9-15-14	
Silver	**ND**	1.2	6010C	9-15-14	9-15-14	
Lab ID:	09-143-02					
Client ID:	**9-15-2**					
Arsenic	**ND**	11	6010C	9-15-14	9-15-14	
Barium	**89**	2.8	6010C	9-15-14	9-15-14	
Cadmium	**ND**	0.57	6010C	9-15-14	9-15-14	
Chromium	**37**	0.57	6010C	9-15-14	9-15-14	
Lead	**16**	5.7	6010C	9-15-14	9-15-14	
Mercury	**ND**	0.28	7471B	9-16-14	9-16-14	
Selenium	**ND**	11	6010C	9-15-14	9-15-14	
Silver	**ND**	1.1	6010C	9-15-14	9-15-14	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-143-03					
Client ID:	**9-15-3**					
Arsenic	**ND**	12	6010C	9-15-14	9-15-14	
Barium	**390**	3.1	6010C	9-15-14	9-15-14	
Cadmium	**2.0**	0.61	6010C	9-15-14	9-15-14	
Chromium	**36**	0.61	6010C	9-15-14	9-15-14	
Lead	**860**	6.1	6010C	9-15-14	9-15-14	
Mercury	**ND**	0.31	7471B	9-16-14	9-16-14	
Selenium	**ND**	12	6010C	9-15-14	9-15-14	
Silver	**ND**	1.2	6010C	9-15-14	9-15-14	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-15-14
Date Analyzed:	9-15-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0915SM1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-16-14
Date Analyzed:	9-16-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0916S1

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-14
Date Analyzed: 9-15-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-114-05

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**45.0**	**46.2**	3	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**31.1**	**30.0**	4	0.50	
Lead	**ND**	**ND**	NA	5.0	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-16-14
Date Analyzed: 9-16-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-143-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-14
Date Analyzed: 9-15-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-114-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.5**	96	**96.4**	96	1	
Barium	100	**145**	100	**143**	98	1	
Cadmium	50.0	**48.5**	97	**48.4**	97	0	
Chromium	100	**120**	89	**120**	89	0	
Lead	250	**239**	96	**239**	96	0	
Selenium	100	**93.2**	93	**93.5**	93	0	
Silver	25.0	**22.2**	89	**22.2**	89	0	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 9-16-14
Date Analyzed: 9-16-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-143-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.501**	100	**0.508**	102	1	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TCLP LEAD
EPA 1311/6010C

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-143-03					
Client ID:	**9-15-3**					
Lead	**0.86**	0.20	6010C	9-17-14	9-17-14	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TCLP LEAD
EPA 1311/6010C
METHOD BLANK QUALITY CONTROL

Date Prepared:	9-16-14
Date Extracted:	9-17-14
Date Analyzed:	9-17-14
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB0917TM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	0.20

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TCLP LEAD
EPA 1311/6010C
DUPLICATE QUALITY CONTROL

Date Prepared: 9-16-14
Date Extracted: 9-17-14
Date Analyzed: 9-17-14

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-143-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**0.856**	**0.820**	4	0.20	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

TCLP LEAD
EPA 1311/6010C
MS/MSD QUALITY CONTROL

Date Prepared: 9-16-14
Date Extracted: 9-17-14
Date Analyzed: 9-17-14

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-143-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	10.0	**10.3**	94	**10.2**	93	1	

Date of Report: September 17, 2014
Samples Submitted: September 15, 2014
Laboratory Reference: 1409-143
Project: 6672-1

% MOISTURE

Date Analyzed: 9-15-14

Client ID	Lab ID	% Moisture
9-15-1	09-143-01	15
9-15-2	09-143-02	12
9-15-3	09-143-03	18

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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: 6672-1
Project Name: ——
Project Manager: Chuck Lia
Sampled by: Nicolas R. Huffman

Turnaround Request (in working days)

(Check One)

- ☒ ~~Same Day~~ D3
- ☒ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 09-143

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals LEAD	HEM (oil and grease) 1664A	% Moisture
1	9-15-1	9/15/14	13:00	Soil	1				X									X				X
2	9-15-2		13:05	Soil	1				X									X				X
3	9-15-3	↓	13:10	Soil	1				X									X		⊗		X

	Signature	Company	Date	Time
Relinquished		TAI	9/15/14	14:20
Received		OSE	9/15/14	1420
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

⊗ Added 9/16/14 - PB (SAME DAY) 4:30 pm

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

PBS | Engineering + Environmental

Underground Storage Tank Removal Report

Waste Oil Tank

12690 Renton Ave S
Seattle, WA 98178

Prepared for:
Jeff Keller
IO Environmental and Infrastructure
2200 118th Avenue SE
Bellevue, WA 98006

September 24, 2014
Project No.: 41299

2517 Eastlake Avenue East, Suite 100, Seattle, WA 98102
206.233.9639 Main
866.727.0140 Fax
www.pbsenv.com

Bend | Boise | Coos Bay | Eugene | Portland | Seattle | Tri-Cities | Vancouver

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Figure 2 – Site Plan with Soil Sample Locations

TABLES Table 1 – Soil Analytical Results

APPENDICES

Appendix I – WDOE Notice and King County Permit Documentation

Appendix II – UST and UST Contents Disposal Documentation

Appendix III – Laboratory Report and Chain-of-Custody

Appendix IV – UST Site Assessment Checklist

1.0 INTRODUCTION

PBS Engineering and Environmental Inc. (PBS) provided consulting services to IO Environmental and Infrastructure Inc. (IO), in relation to the removal of an underground storage tank (UST) from the property located at 12690 Renton Avenue South in Seattle, Washington (Site). The removal of the UST was part of the larger demolition and new construction project underway at the time this report was issued.

2.0 SITE DESCRIPTION AND UST INFORMATION

The Site is located at 12690 Renton Avenue South in Seattle, Washington (refer to Figure 1 - Site Vicinity Map), and is currently undergoing a renovation project which includes the new construction of a library. The site is located along Renton Avenue's commercial zone.

The UST was of cylindrical, steel construction, measuring 5'-0" long by 2'-6"diameter and having a capacity of approximately 200 gallons. The tank held approximately 50 gallons of oil which was noted to have a relatively high viscosity and a petroleum hydrocarbon odor. The UST was reportedly used to store waste oil.

3.0 UST DECOMMISSIONING BY REMOVAL

Prior to UST removal, notice was given to the Washington State Department of Ecology (WDOE) and a permit was obtained from King County. UST removal notice and permit documentation is included in Appendix I.

Rhine Demolition of Tacoma, Washington removed the UST from the site on September 15, 2014. Approximately 50 gallons of waste oil and sludge was pumped from the tank prior to removal. The tank appeared in fair/poor condition upon removal with moderate corrosion and a small leak at the base. The UST contents disposal documentation is included in Appendix II.

Ken Nogeire of PBS, a Washington State Certified Site Assessor, was on site and observed the removal of the tank. A tank pit excavation was approximately six feet in length in a northeast-southwest direction, three feet wide in a southeast-northwest direction and approximately three feet deep. Odorous and stained soil was observed at the base of the excavation. The UST excavation was part of a larger soil removal excavation, primarily to the north and west of the UST.

At the time this report was issued the UST disposal documentation was not available to PBS. That documentation should be added to Appendix II when it is available.

4.0 SOIL SAMPLING

Soil at the UST location was observed to be medium dense, brown silty sand (SM) with minor sub-rounded gravel.

Groundwater was not encountered during this assessment.

A total of three soil samples were collected from the excavation, one from the base and one from each the northeast and southwest sidewalls. Soil samples were collected directly from the excavation. Samples were screened for volatiles using a hand held photoionization detector (PID). Detected volatiles ranged from 10.5 parts per million (ppm) at the southwest sidewall sample location (TP1-WSW) to 47 ppm at the base sample (TP1-B).

Soil samples were collected using protocols specified in WDOE's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks.* Samples were placed into laboratory provided glass jars and/or vials and stored on ice, under chain of custody documentation, until delivery to Fremont Analytical laboratory in Seattle, Washington.

Based on the use of the UST to store waste oil, analysis conducted to identify if a release occurred included the following:

- Total petroleum hydrocarbons (TPH) as gasoline by Method NWTPH-Gx
- Total petroleum hydrocarbons (TPH) as diesel by Method NWTPH-Dx
- Volatile Organic Compounds (VOCs) by EPA Method 8260C
- Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270D SIM
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082A
- Select metals by EPA Method 200.8

5.0 RESULTS

Model Toxics Control Act (MTCA) Method A Cleanup Levels for Unrestricted Land Use were the adopted Cleanup Levels for the site.

Concentrations of gasoline and heavy oil range TPHs, cadmium and lead exceeded the adopted Cleanup Levels.

Analytical results are presented in Tables 1. A copy of the laboratory report and chain-of-custody form is presented in Appendix III. The UST Site Assessment Checklist is presented in Appendix IV.

6.0 CONCLUSIONS

One waste oil UST, of approximately 200 gallon capacity, was decommissioned by removal at the subject property on September 15, 2014. Analytical results indicate that a release has occurred in relation to the UST.

PBS was informed on September 19th that the owner reported the release to the WDOE in accordance with WAC 173-360-360.

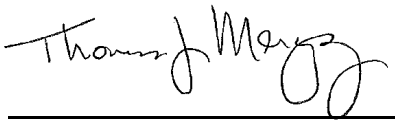
7.0 LIMITATIONS

PBS has prepared this report for use by IO, and is not intended for use by others without the written consent of PBS. This study was limited to the tests, locations and depths as indicated to determine the absence or presence of certain contaminants. The site as a whole may have other contamination that was not characterized by this study. The findings and conclusions of this report are not scientific certainties, but rather probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent that the site or adjoining land contain no hazardous waste, oil or other latent conditions beyond that detected or observed by PBS.

PBS ENGINEERING AND ENVIRONMENTAL

September 24, 2014

Ken Nogeire, LHG *Date*
Senior Geologist



September 24, 2014

Thomas Mergy, L.G. *Date*
Environmental Services Manager

FIGURES

SOURCE: © 2011 GOOGLE EARTH PRO, © 2012 GOOGLE

0' 1000' 2000' 4000'

SCALE: 1" = 2,000'

PREPARED FOR: IO ENVIRONMENTAL

PBS

PROJECT # 41299.000

DATE SEP 2014

SITE PLAN

12690 RENTON AVENUE SOUTH
SEATTLE, WASHINGTON

FIGURE 1

L:\Projects\41000\41299 IO Environmental & Infrastructure\CAD\41299.000 Fig-1-3.dwg Sep 19, 2014 11:36am justind

SOURCE: © 2011 GOOGLE EARTH PRO, © 2012 GOOGLE

LEGEND

TP1 SOIL SAMPLE NUMBER AND LOCATION

0' 10' 20' 40'

SCALE: 1" = 20'

PREPARED FOR: IO ENVIRONMENTAL

PBS

PROJECT # 41299.000

DATE SEP 2014

SOIL SAMPLE LOCATION MAP

12690 RENTON AVENUE SOUTH
SEATTLE, WASHINGTON

FIGURE 2

L:\Projects\41000\41299 IO Environmental & Infrastructure\CAD\41299.000 Fig-1-3.dwg Sep 19, 2014 11:37am justind

TABLE

TABLE 1 SOIL ANALYTICAL RESULTS

Site: 12690 Renton Avenue South, Seattle, WA

Project No: 41299

Result mg/kg (miligrams per kilogram)																	
Sample Identification	**Description**	**Gx**	**Dx**	**Heavy Oil**	**Benzene**	**Toluene**	**Ethyl Benzene**	**Xylene**	**Remaining VOCs**	**PCBs**	**arsenic**	**cadmium**	**chromium**	**lead**	**mercury**	**B(a)P**	**Naph**	**Carcinogenic PAHs**
Confirmation soil sampling: July 21, 2014																		
TP1-ESW	Silty sand	-	273	7,480	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1-WSW	Silty sand	-	162	9,530	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1-B	Silty sand	**153**	<23	**14,800**	<0.027	<0.027	0.099	0.489	3 compounds*	ND	4.29	**2.58**	26.2	**864**	<0.297	<0.061	4.21	0.006
Adopted Criteria	**MTCA Method A Soil Cleanup for Unrestricted Land Use**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**various**	**1**	**20**	**2**	**2,000**	**250**	**2**	**0.1**	**5**	**0.1****

BOLD indicates above MTCA Method A Cleanup Levels for Soil

mg/kg - milligrams of contaminant per kilogram of dry weight soil

< 0.1 - not detected above laboratory method reporting limit

(-) - not analyzed

ND - not detected above laboratory method reporting limit

PCBs - polychlorinated biphenols

VOCs - volatile organic compounds

TPH - total petroleum hydrocarbons

APPENDIX I

WDOE Notice and King County Permit Documentation

DEPARTMENT OF ECOLOGY
State of Washington

Request to Waive 30 Day Waiting Period

To be completed by Person Submitting Request

UST ID # (if known):

Full Site Address: 12640 Renton Ave S, Seattle, WA 98178

Owner/ Operator: current property owner-King County Library System, attn. Mr. Greg Smith

Contact Phone #: 425-369-3237

Waiver Requested for 30 Day Notice to:
(Circle one or both) DECOMMISSION INSTALL

Person and Company Submitting Request: Charles Lie-Terra Associates Inc

Contact phone #: 425.821.7777

Reason for Submitting Request: (Circle all that apply) ENVIRONMENTAL HAZARD HEALTH HAZARD OTHER

Explain Reason: UST encountered in active construction site-- project is on hold pending UST removal

Date Request Submitted: 8/28/2014

Date and Time of Construction: 8/29/14 requested date

For all that apply	**Name**	**Contact Phone Number**	**ICC Certification Number**
INSTALLER	n/a		
DECOMMISSIONER	Northwest Environmen Solutions	253-241-6213	5012674
SITE ASSESSOR	Nicolas Hoffman	425.821.7777	8252265

Completed 30 Day Notice Attached to Waiver Request Form?
(Circle one) (YES) NO

Department of Ecology Response to Request (to be completed by UST Inspector):

(WAVIER GRANTED) WAIVER DENIED

Inspector: Andrew A. Turke Signature and Date: 09/02/2014

DECOMMISSIONER(S) SHALL HAVE A COPY OF 30 DAY NOTICE **AND A COPY OF THE WAIVER REQUEST FORM ON SITE DURING ALL DECOMMISSIOING RELATED ACTIONS ***

Instructions

Please Read Carefully

AFTER COMPLETING THIS FORM, RETURN TO:

DEPARTMENT OF ECOLOGY
TOXICS CLEANUP PROGRAM
P.O. BOX 47655
OLYMPIA, WA 98504-7655

GENERAL

Under WAC 173-360-200 and 173-360-385, owners and operators are required to notify Ecology 30 days prior to beginning underground storage tank (UST) installation or decommissioning projects. Please use a separate form for each activity. Once this form is received and processed by Ecology, it is date stamped and returned to the owner listed on the form. Installation and decommissioning projects may begin 30 days after the date stamped on the form. If a project cannot meet the deadlines described below, you must submit an additional 30-Day Notice. The 30-day wait period may be waived on these additional 30-Day Notices by contacting the inspector in your region.

SITE AND OWNER INFORMATION

Fill in the site and owner information and be sure to provide telephone numbers and email addresses so that any problems can be resolved quickly. Include the facility compliance tag or UBI number for tank closures.

TANK INFORMATION

List tanks to be installed or closed, substance stored (e.g. gas, diesel, etc), tank size and date the project is expected to begin. **The contact person listed on this form must confirm the exact date an installation and/or decommissioning project will begin at least three business days before proceeding.** Please report tank ID number(s) for tanks to be closed and assign new Tank ID number(s) to tanks being installed. If you are installing new tanks, do not assign a Tank ID number that has previously been used at the facility. Use the Comments box to include additional information, such as when product was removed so that no more than one inch of residue remains in the system.

TANK INSTALLATIONS

List the installation company. The date stamped on the form indicates the beginning of a 90-day period in which an installation project must begin. Once, processed, this form also allows you to receive a one-time drop of product, for UST system testing purposes only. The fuel drop is not required to occur within this 90-day period.

To dispense product and receive additional deliveries, you must complete the Business License registration and obtain your facility compliance tag from Ecology. The registration information must be submitted to the Department of Revenue within 30 days of installation to receive a Business License with the appropriate tank endorsement(s). **If, at any time, your tank(s) store greater than one inch of product, you must begin using an acceptable release detection method to monitor for leaks every month.**

PERMANENT TANK CLOSURES

List the closure and site assessor companies. Upon receiving a completed 30-day closure form, Ecology will stamp the date received on the form and return a copy to the owner. Decommissioning projects must be completed 90 days after the stamped date. **No work may begin within the first 30 days unless a waiver has been obtained from Ecology.**

Contact your local fire marshal and planning department prior to tank closure to find out if any additional permits are required by county or other local jurisdictions. Compliance with the State Environmental Policy Act (SEPA) Rules, Chapter 197-11 WAC, may be required.

A site assessment is required at the time of closure. Contamination found or suspected at the site must be reported to the appropriate Ecology regional office within 24 hours. If the contamination is confirmed, a site characterization report must be submitted to the regional office within 90 days; if contamination is not confirmed, a site assessment report must be submitted to the above address within 30 days.

The following are examples of tanks that are exempt from notification requirements.

- Farm or residential tanks, 1,100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must be used for farm purposes and cannot be for resale.
- Tanks used for storing heating oil that is used solely for the purpose of heating the premises.
- Tanks with a capacity of 110 gallons or less.
- Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.
- Emergency overflow tanks, catch basins, or sumps.

DEPARTMENT OF ECOLOGY
State of Washington

UNDERGROUND STORAGE TANK (UST)
30-DAY NOTICE

(See back of form for instructions)

FOR OFFICE USE ONLY
Site ID # _____
FS ID # _____

Please ✓ the appropriate box: ☐ Intent to Install ☒ Intent to Close

HQ (360)407-7170 / Central (509)575-2490 / Eastern (509)329-3400 / Northwest (425)649-7000 / Southwest (360)407-6300

SITE INFORMATION

Tag or UBI number
Former Arco, Former Eat Em Up Hut, current library construction site

Site Name
12640 Renton Ave South

Site Physical Address
Seattle, Washington 98178

City Zip Code

Site Phone Number

OWNER INFORMATION
(this form will be returned to this address)

Arco last known owner, current property owner King County Library System

UST Owner/Operator
KCLS, attn Greg Smith, 960 Newport Way S

Mailing Address/PO Box
Issaquah, WA 98027

City Zip Code
425-369-3237

Owner/Operator Phone Number
ggsmith@kcls.org

Owner/Operator Email Address

TANK INFORMATION

Tank ID	Substance Stored	Capacity	Date Project is Expected to Begin	Comments:
3	Hydraulic Oil? ~~Waste Oil~~	300 g +/-	8-29-14	UST was uncovered during removal of residual petroleum contaminated soils encountered during foundation preperation

1) SERVICE PROVIDER INFORMATION - check the appropriate boxes

PLEASE NOTE: INDIVIDUALS PERFORMING UST SERVICES MUST BE ICC CERTIFIED OR HAVE PASSED ANOTHER QUALIFYING EXAM APPROVED BY THE DEPARTMENT OF ECOLOGY.

☐ Installer ☐ Decommissioner ☒ Site Assessor

Terra Associates Inc
Service Provider Company Name

Nicolas Hoffman
Certified Service Provider Name

8252265
ICC Certification #

Charles Lie
Contact Person

425.821.7777
Contact Phone Number

clie@terra-associates.com
Contact Email Address

2) SERVICE PROVIDER INFORMATION (REQUIRED IF USING MORE THAN ONE PROVIDER) - check the appropriate boxes

☐ Installer ☒ Decommissioner ☐ Site Assessor

Northwest Environmental Sol.
Service Provider Company Name

Certified Service Provider Name
5012674
ICC Certification #

Contact Person

253-241-6213
Contact Phone Number

Contact Email Address

ECY 020-95 (Rev. Feb. 2012)

King County
Department of Permitting
and Environmental Review
35030 SE Douglas St., Ste. 210
Snoqualmie, WA 98065-9266
206-296-6600 TTY Relay 711

FIRE PERMIT - SYSTEMS & EVENTS

Permit type, Subtype: Fire Permit Systems, Tank
Title: KC LIBRARY TANK 12690 RENTON AVE S

Description: REMOVE (1) 350 GAL NON DISPENSING OIL UNDERGROUND TANK

List of Parcels: 0231000040
Site Address: 12601 76TH AVE S 98178
Valuation: $0.00
Applicant Name: IO ENVIRONMENTAL & INFRASTRUCTURE
Applicant Address: 2200 118TH AVE SE BELLEVUE, WA 98006

Permit Number: FIRP14-0290
Date Issued:
Expiration Date:
Permit Status: Application Complete

Comments and Conditions

1. **Work Subject to Approved Plans and Conditions.** Work Authorized by this permit is subject to the approved plans and corrections shown thereon and the attached conditions of permit approval. Failure to comply with all conditions once construction is begun may necessitate an immediate work stoppage until such time as compliance with the stipulated conditions is attained.

2. **Posting on the job site.** This permit must be posted on the job site at all times in a visible and readily accessible location.

3. **Permit Status & Inspections; Scheduling, Est. Arrival Times* & Results.** (*Building only)

Online: aca.accela.com/kingcounty

Inspection cutoff: 3:00 pm for next day inspections. Fire Inspection and land use requests will be confirmed and scheduled by a return phone call. Additional inspection information including IVR/Web info: http://www.kingcounty.gov/property/permits/info/inspections.aspx. Written inspection results left at the job site will be phased out.

IVR: 1-888-546-7728 - Inspection Help: 206-296-6630

4. **Expiration.** Please note the expiration date on this permit located in the upper right corner. Permits are valid for one year from date of issuance or date of extension. Work must be substantially commenced within two years of permit issuance. Extensions beyond the third year shall only be granted to allow completion of the structure.

5. **Compliance with State and Federal laws and the Endangered Species Act.** The applicant is responsible for making a diligent inquiry regarding the need for concurrent state or federal permits to engage in the Work requested under this permit, and to obtain the required permits prior to issuance of this permit. It is understood that the granting of this permit shall not be construed as satisfying the requirements of other applicable Federal, State or Local laws or regulations. In addition this permit does not authorize the violation of regulations. In addition, the granting of this permit does not authorize the violation such "take" restrictions would be violated by work done pursuant to this permit, and is precluded by Federal law from undertaking work authorized by this permit if that work would violate the "take" restrictions set forth at 16 U.S.C. 8, 50 C.F.R. §17.21, 50 C.F.R. §223 and 50 C.F.R §224.

King County
Department of Permitting
and Environmental Review
35030 SE Douglas St., Ste. 210
Snoqualmie, WA 98065-9266
206-296-6600 TTY Relay 711

Permit: FIRP14-0290
Date Issued:
Expiration Dat
Permit Status: Application Complete

FIRE INSPECTION REPORT CARD

New Construction Fire Inspection 24-Hour Request Line **1-888-546-7728**
New Construction Fire Inspection General Information 206-296-6630

APPROVALS: (Followed by 3-digit inspection codes for use with the inspection Request Line)

1. Placement - Tank (291)	**2. Device Placement (259)**	**3. Nozzle/Head Placement (283)**	**4. Flow/Trip Test (273)**
By: _____	By: _____	By: _____	By: _____
5. Device/Panel Test (261)	**6. Flush Test (274)**	**7. Run Test (191)**	**8. Pressure Test (168)**
By: _____	By: _____	By: _____	By: _____
9: Insulation Cover (280)	**10. Rack/Pile Inspection (298)**	**11. Emergency Shut Off (067)**	**12. Underground (235)**
By: _____	By: _____	By: _____	By: _____
13. Hydrant/Watermain (245)	**14. Other (134)**	**15. Final Acceptance (077)**	
By: _____	By: _____	By: 9-15-14 _____	

Notes:

ALL PERMITS:

a) Responsibility for the building's compliance with the provisions of the applicable King County Codes and for maintenance of the building rests exclusively with the permit applicants and their agents and the property owners.

b) King County inspection of the building and real property are spot checks designed to foster and encourage compliance with the applicable codes. Neither the approvals above nor the issuance of a Certificate of Occupancy guarantees or assures compliance with all applicable codes.

c) The Owner/Applicant's copy of any applicable manufacturer's installation instructions, the approved set of plans, and the permit shall be available at the time of inspection.

APPENDIX II

UST and UST Contents Disposal Documentation

ENVIRONMENTAL
& INFRASTRUCTURE INC.

TRIPLE RINSE CERTIFICATE

This document certifies that I O Environmental & Infrastructure Inc. performed a Triple Rinse of the Underground Storage Tank (UST) per Chapter 173-360 of the Revised Code of Washington (RCW) and International Code Council (ICC) and uniform Fire Code guidelines:

UST Name/Number: 001

Address: 12690 Renton AVE S

Skyway WA

UST Size: 1000 Gallons

UST Contents: Leaded Gasolin / sludge

Date of Triple Rinse: 9/15/14

I hereby certify the triple rinse described above:

Signature | Scott Overdick (Printed Name) | 8178938 (ICC Lic. #)

IO Environmental & Infrastructure Inc.
2200 118th Ave. S.E.
Bellevue, WA 98005
(425)-454-1086

This Memorandum Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. 013010

Carrier No.

MARINE VACUUM SERVICE INC.

Page _____ of _____

(Name of carrier) (SCAC)

Date 9-15-14

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:
Consignee MARINE VACUUM SERVICE INC.

Street 1516 S. GRAHAM ST.

City SEATTLE State WA Zip Code 98108

FROM:
Shipper BEISLEY INC.

Street 12690 Renton Ave S.

City Seattle State Wa. Zip Code

24 hr. Emergency Contact Tel. No. 800-540-7491

Route

Vehicle Number

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
LTL		NON-REGULATED				
		Black Oil	50	gals.		
		NON-REGULATED				
		Oily Waste Water	0	gals.		
		~~NO~~ CONTENTS, pumped				
		into drum.				

PLACARDS TENDERED: YES ☐ NO ☒

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____."
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of Item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations.

_____ Signature

REMIT C.O.D. TO: ADDRESS

COD Amt: $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

TOTAL CHARGES $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER BEISLEY INC.

PER X Scott Beis

CARRIER MARINE VACUUM SERVICE INC.

PER Rob Woolsey

DATE 9-15-14

4

Permanent post-office address of shipper.

APPENDIX III

Laboratory Report and Chain-of-Custody

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

PBS Engineering & Environmental
Ken Nogeire
2517 Eastlake Ave, E #100
Seattle, WA 98102

RE: Skyway
Lab ID: 1409149

September 16, 2014

Attention Ken Nogeire:

Fremont Analytical, Inc. received 3 sample(s) on 9/15/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Mercury by EPA Method 7471
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Polychlorinated Biphenyls (PCB) by EPA 8082
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Date: *09/16/2014*

CLIENT: PBS Engineering & Environmental
Project: Skyway
Lab Order: 1409149

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1409149-001	TP1-ESW	09/15/2014 1:05 PM	09/15/2014 3:25 PM
1409149-002	TP1-WSW	09/15/2014 1:10 PM	09/15/2014 3:25 PM
1409149-003	TP1-B	09/15/2014 1:20 PM	09/15/2014 3:25 PM

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

Case Narrative

WO#: **1409149**
Date: **9/16/2014**

CLIENT: PBS Engineering & Environmental
Project: Skyway

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

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

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

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

Analytical Report

WO#: **1409149**
Date Reported: **9/16/2014**

CLIENT: PBS Engineering & Environmental
Project: Skyway

Lab ID: 1409149-001 **Collection Date:** 9/15/2014 1:05:00 PM
Client Sample ID: **TP1-ESW** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8711		Analyst: EC
Diesel (Fuel Oil)	ND	21.2		mg/Kg-dry	1	9/15/2014 7:38:00 PM
Diesel Range Organics (C12-C24)	273	21.2		mg/Kg-dry	1	9/15/2014 7:38:00 PM
Heavy Oil	7,480	53.0		mg/Kg-dry	1	9/15/2014 7:38:00 PM
Surr: 2-Fluorobiphenyl	111	50-150		%REC	1	9/15/2014 7:38:00 PM
Surr: o-Terphenyl	101	50-150		%REC	1	9/15/2014 7:38:00 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample Moisture (Percent Moisture)				Batch ID: R16762		Analyst: TK
Percent Moisture	13.0			wt%	1	9/15/2014 1:22:52 PM

Lab ID: 1409149-002 **Collection Date:** 9/15/2014 1:10:00 PM
Client Sample ID: **TP1-WSW** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8711		Analyst: EC
Diesel (Fuel Oil)	ND	21.2		mg/Kg-dry	1	9/15/2014 8:41:00 PM
Diesel Range Organics (C12-C24)	162	21.2		mg/Kg-dry	1	9/15/2014 8:41:00 PM
Heavy Oil	9,530	53.1		mg/Kg-dry	1	9/15/2014 8:41:00 PM
Surr: 2-Fluorobiphenyl	108	50-150		%REC	1	9/15/2014 8:41:00 PM
Surr: o-Terphenyl	111	50-150		%REC	1	9/15/2014 8:41:00 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample Moisture (Percent Moisture)				Batch ID: R16762		Analyst: TK
Percent Moisture	9.98			wt%	1	9/15/2014 1:22:52 PM

Qualifiers:

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

Analytical Report

WO#: **1409149**

Date Reported: **9/16/2014**

CLIENT: PBS Engineering & Environmental

Project: Skyway

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

Analytical Report

WO#: **1409149**
Date Reported: **9/16/2014**

CLIENT: PBS Engineering & Environmental
Project: Skyway

Lab ID: 1409149-003 **Collection Date:** 9/15/2014 1:20:00 PM
Client Sample ID: TP1-B **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polychlorinated Biphenyls (PCB) by EPA 8082				Batch ID: 8714		Analyst: NG
Aroclor 1016	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1221	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1232	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1242	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1248	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1254	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1260	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1262	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Aroclor 1268	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Total PCBs	ND	0.114		mg/Kg-dry	1	9/15/2014 6:26:00 PM
Surr: Decachlorobiphenyl	84.5	50.2-159		%REC	1	9/15/2014 6:26:00 PM
Surr: Tetrachloro-m-xylene	86.1	60.3-134		%REC	1	9/15/2014 6:26:00 PM
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8711		Analyst: EC
Diesel (Fuel Oil)	ND	23.0		mg/Kg-dry	1	9/15/2014 9:12:00 PM
Heavy Oil	14,800	57.6		mg/Kg-dry	1	9/15/2014 9:12:00 PM
Surr: 2-Fluorobiphenyl	108	50-150		%REC	1	9/15/2014 9:12:00 PM
Surr: o-Terphenyl	139	50-150		%REC	1	9/15/2014 9:12:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 8721		Analyst: NG
Naphthalene	ND	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
2-Methylnaphthalene	2,390	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
1-Methylnaphthalene	1,820	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Acenaphthylene	ND	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Acenaphthene	ND	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Fluorene	246	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Phenanthrene	696	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Anthracene	193	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Fluoranthene	486	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Pyrene	1,780	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Benz(a)anthracene	ND	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM
Chrysene	613	61.2		µg/Kg-dry	1	9/16/2014 2:01:00 PM

Qualifiers:

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

CLIENT: PBS Engineering & Environmental
Project: Skyway

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 8721 Analyst: NG

Benzo(b)fluoranthene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Benzo(k)fluoranthene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Benzo(a)pyrene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Indeno(1,2,3-cd)pyrene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Dibenz(a,h)anthracene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Benzo(g,h,i)perylene	ND	61.2	µg/Kg-dry	1	9/16/2014 2:01:00 PM
Surr: 2-Fluorobiphenyl	95.7	42.7-132	%REC	1	9/16/2014 2:01:00 PM
Surr: Terphenyl-d14 (surr)	111	48.8-157	%REC	1	9/16/2014 2:01:00 PM

Gasoline by NWTPH-Gx

Batch ID: R16796 Analyst: EM

Gasoline	153	6.68	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Surr: Toluene-d8	102	65-135	%REC	1	9/16/2014 3:07:00 PM
Surr: 4-Bromofluorobenzene	109	65-135	%REC	1	9/16/2014 3:07:00 PM

Volatile Organic Compounds by EPA Method 8260

Batch ID: 8735 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0801	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Chloromethane	ND	0.0801	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Vinyl chloride	ND	0.00267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Bromomethane	ND	0.120	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Trichlorofluoromethane (CFC-11)	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Chloroethane	ND	0.0801	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1-Dichloroethene	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Methylene chloride	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
trans-1,2-Dichloroethene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1-Dichloroethane	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
2,2-Dichloropropane	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
cis-1,2-Dichloroethene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Chloroform	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1,1-Trichloroethane (TCA)	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1-Dichloropropene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Carbon tetrachloride	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2-Dichloroethane (EDC)	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Benzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Trichloroethene (TCE)	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2-Dichloropropane	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Bromodichloromethane	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM

Qualifiers:

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

CLIENT: PBS Engineering & Environmental
Project: Skyway

Volatile Organic Compounds by EPA Method 8260

Batch ID: 8735 Analyst: EM

Dibromomethane	ND	0.0534	mg/Kg-dry	1	9/16/2014 3:07:00 PM
cis-1,3-Dichloropropene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Toluene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
trans-1,3-Dichloropropylene	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1,2-Trichloroethane	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,3-Dichloropropane	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Tetrachloroethene (PCE)	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Dibromochloromethane	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2-Dibromoethane (EDB)	ND	0.00668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Chlorobenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1,1,2-Tetrachloroethane	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Ethylbenzene	0.0988	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
m,p-Xylene	0.331	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
o-Xylene	0.158	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Styrene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Isopropylbenzene	ND	0.107	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Bromoform	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,1,2,2-Tetrachloroethane	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
n-Propylbenzene	0.0701	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Bromobenzene	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,3,5-Trimethylbenzene	0.458	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
2-Chlorotoluene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
4-Chlorotoluene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
tert-Butylbenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2,3-Trichloropropane	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2,4-Trichlorobenzene	ND	0.0668	mg/Kg-dry	1	9/16/2014 3:07:00 PM
sec-Butylbenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
4-Isopropyltoluene	0.0675	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,3-Dichlorobenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,4-Dichlorobenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
n-Butylbenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2-Dichlorobenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2-Dibromo-3-chloropropane	ND	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2,4-Trimethylbenzene	1.65	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Hexachlorobutadiene	ND	0.134	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Naphthalene	2.38	0.0401	mg/Kg-dry	1	9/16/2014 3:07:00 PM
1,2,3-Trichlorobenzene	ND	0.0267	mg/Kg-dry	1	9/16/2014 3:07:00 PM
Surr: Dibromofluoromethane	104	63.7-129	%REC	1	9/16/2014 3:07:00 PM
Surr: Toluene-d8	102	61.4-128	%REC	1	9/16/2014 3:07:00 PM

Qualifiers:

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

Analytical Report

WO#: **1409149**
Date Reported: **9/16/2014**

CLIENT: PBS Engineering & Environmental
Project: Skyway

Volatile Organic Compounds by EPA Method 8260

Batch ID: 8735 Analyst: EM

Surr: 1-Bromo-4-fluorobenzene	107	63.1-141	%REC	1	9/16/2014 3:07:00 PM

Mercury by EPA Method 7471

Batch ID: 8726 Analyst: MW

Mercury	ND	0.297	mg/Kg-dry	1	9/16/2014 11:28:28 AM

Total Metals by EPA Method 6020

Batch ID: 8727 Analyst: TN

Arsenic	4.29	0.104	mg/Kg-dry	1	9/16/2014 11:33:33 AM
Cadmium	2.58	0.208	mg/Kg-dry	1	9/16/2014 11:33:33 AM
Chromium	26.2	0.104	mg/Kg-dry	1	9/16/2014 11:33:33 AM
Lead	864	0.208	mg/Kg-dry	1	9/16/2014 11:33:33 AM

Sample Moisture (Percent Moisture)

Batch ID: R16762 Analyst: TK

Percent Moisture	19.0		wt%	1	9/15/2014 1:22:52 PM

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **MB-8727**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **9/16/2014**	RunNo: **16779**
Client ID: **MBLKS**	Batch ID: **8727**		Analysis Date: **9/16/2014**	SeqNo: **337215**

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

Sample ID: **LCS-8727**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **9/16/2014**	RunNo: **16779**
Client ID: **LCSS**	Batch ID: **8727**		Analysis Date: **9/16/2014**	SeqNo: **337216**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	110	0.100	104.0	0	105	69.5	130.8				
Cadmium	111	0.200	92.80	0	120	73.3	127.2				
Chromium	73.7	0.100	62.90	0	117	67.9	132				
Lead	324	0.200	319.0	0	101	75.9	124.1				

Sample ID: **1409140-001ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **9/16/2014**	RunNo: **16779**
Client ID: **BATCH**	Batch ID: **8727**		Analysis Date: **9/16/2014**	SeqNo: **337218**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4.04	0.115						3.948	2.23	30	
Cadmium	0.271	0.230						0.2947	8.48	30	
Chromium	29.4	0.115						32.87	11.1	30	
Lead	138	0.230						130.9	5.59	30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **1409140-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16779**
Client ID: **BATCH** Batch ID: **8727** Analysis Date: **9/16/2014** SeqNo: **337220**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.6	0.116	58.09	3.948	87.2	75	125				
Cadmium	3.86	0.232	2.905	0.2947	123	75	125				
Chromium	91.9	0.116	58.09	32.87	102	75	125				
Lead	154	0.232	29.05	130.9	79.2	75	125				

Sample ID: **1409140-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16779**
Client ID: **BATCH** Batch ID: **8727** Analysis Date: **9/16/2014** SeqNo: **337221**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.1	0.115	57.62	3.948	80.1	75	125	54.62	8.65	30	
Cadmium	3.13	0.230	2.881	0.2947	98.4	75	125	3.856	20.8	30	
Chromium	83.8	0.115	57.62	32.87	88.3	75	125	91.89	9.25	30	
Lead	159	0.230	28.81	130.9	96.8	75	125	153.9	3.12	30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Mercury by EPA Method 7471

Sample ID: **MB-8726** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16780**
Client ID: **MBLKS** Batch ID: **8726** Analysis Date: **9/16/2014** SeqNo: **337237**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.250									

Sample ID: **LCS-8726** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16780**
Client ID: **LCSS** Batch ID: **8726** Analysis Date: **9/16/2014** SeqNo: **337238**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.06	0.250	5.000	0	101	80	120				

Sample ID: **1409140-002ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16780**
Client ID: **BATCH** Batch ID: **8726** Analysis Date: **9/16/2014** SeqNo: **337240**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.257						0		20	

Sample ID: **1409140-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16780**
Client ID: **BATCH** Batch ID: **8726** Analysis Date: **9/16/2014** SeqNo: **337241**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.510	0.252	0.5036	0.002053	101	70	130				

Sample ID: **1409140-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16780**
Client ID: **BATCH** Batch ID: **8726** Analysis Date: **9/16/2014** SeqNo: **337242**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.539	0.262	0.5233	0.002053	103	70	130	0.5096	5.61	20	

Qualifiers:

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

Date: *9/16/2014*

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

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

Sample ID: **LCS-8711** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16772**
Client ID: **LCSS** Batch ID: **8711** Analysis Date: **9/15/2014** SeqNo: **336926**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	448	20.0	500.0	0	89.5	65	135				
Surr: 2-Fluorobiphenyl	17.9		20.00		89.4	50	150				
Surr: o-Terphenyl	21.5		20.00		107	50	150				

Sample ID: **MB-8711** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16772**
Client ID: **MBLKS** Batch ID: **8711** Analysis Date: **9/15/2014** SeqNo: **336927**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	17.1		20.00		85.5	50	150				
Surr: o-Terphenyl	18.2		20.00		91.1	50	150				

Sample ID: **1409149-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/15/2014** RunNo: **16772**
Client ID: **TP1-ESW** Batch ID: **8711** Analysis Date: **9/15/2014** SeqNo: **337398**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.9						0		30	
Diesel Range Organics (C12-C24)	256	20.9						273.5	6.70	30	
Heavy Oil	6,920	52.2						7,485	7.79	30	
Surr: 2-Fluorobiphenyl	23.2		20.89		111	50	150		0		
Surr: o-Terphenyl	22.2		20.89		106	50	150		0		

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-8721**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **9/15/2014**	RunNo: **16793**
Client ID: **MBLKS**	Batch ID: **8721**		Analysis Date: **9/16/2014**	SeqNo: **337559**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	50.0									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Acenaphthylene	ND	50.0									
Acenaphthene	ND	50.0									
Fluorene	ND	50.0									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Fluoranthene	ND	50.0									
Pyrene	ND	50.0									
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	844		1,000		84.4	42.7	132				
Surr: Terphenyl-d14 (surr)	1,180		1,000		118	48.8	157				

Sample ID: **LCS-8721**	SampType: **LCS**	Units: **µg/Kg**	Prep Date: **9/15/2014**	RunNo: **16793**
Client ID: **LCSS**	Batch ID: **8721**		Analysis Date: **9/16/2014**	SeqNo: **337560**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,030	50.0	1,000	0	103	61.6	125				
2-Methylnaphthalene	1,020	50.0	1,000	0	102	58.2	129				
1-Methylnaphthalene	1,020	50.0	1,000	0	102	56.4	132				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-8721** SampType: **LCS** Units: **µg/Kg** Prep Date: **9/15/2014** RunNo: **16793**
Client ID: **LCSS** Batch ID: **8721** Analysis Date: **9/16/2014** SeqNo: **337560**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	1,060	50.0	1,000	0	106	52.2	133				
Acenaphthene	1,050	50.0	1,000	0	105	54	131				
Fluorene	1,050	50.0	1,000	0	105	53.4	131				
Phenanthrene	1,040	50.0	1,000	0	104	55.6	128				
Anthracene	1,040	50.0	1,000	0	104	51	132				
Fluoranthene	1,070	50.0	1,000	0	107	48.4	134				
Pyrene	1,090	50.0	1,000	0	109	48.6	135				
Benz(a)anthracene	1,180	50.0	1,000	0	118	41.9	136				
Chrysene	1,020	50.0	1,000	0	102	51.4	135				
Benzo(b)fluoranthene	985	50.0	1,000	0	98.5	39.7	137				
Benzo(k)fluoranthene	1,120	50.0	1,000	0	112	45.7	138				
Benzo(a)pyrene	1,150	50.0	1,000	0	115	45.3	135				
Indeno(1,2,3-cd)pyrene	939	50.0	1,000	0	93.9	45.4	137				
Dibenz(a,h)anthracene	955	50.0	1,000	0	95.5	45.8	134				
Benzo(g,h,i)perylene	778	50.0	1,000	0	77.8	45	134				
Surr: 2-Fluorobiphenyl	1,020		1,000		102	42.7	132				
Surr: Terphenyl-d14 (surr)	1,140		1,000		114	48.8	157				

Sample ID: **1409122-009BDUP** SampType: **DUP** Units: **µg/Kg** Prep Date: **9/15/2014** RunNo: **16793**
Client ID: **BATCH** Batch ID: **8721** Analysis Date: **9/16/2014** SeqNo: **337571**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,570	48.8						1,308	18.1	30	
2-Methylnaphthalene	2,270	48.8						1,892	18.0	30	
1-Methylnaphthalene	1,500	48.8						1,241	18.9	30	
Acenaphthylene	ND	48.8						0		30	
Acenaphthene	ND	48.8						0		30	
Fluorene	ND	48.8						0		30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1409122-009BDUP**	SampType: **DUP**	Units: **µg/Kg**	Prep Date: **9/15/2014**	RunNo: **16793**
Client ID: **BATCH**	Batch ID: **8721**		Analysis Date: **9/16/2014**	SeqNo: **337571**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	ND	48.8						0		30	
Anthracene	ND	48.8						0		30	
Fluoranthene	ND	48.8						0		30	
Pyrene	ND	48.8						0		30	
Benz(a)anthracene	ND	48.8						0		30	
Chrysene	ND	48.8						0		30	
Benzo(b)fluoranthene	ND	48.8						0		30	
Benzo(k)fluoranthene	ND	48.8						0		30	
Benzo(a)pyrene	ND	48.8						0		30	
Indeno(1,2,3-cd)pyrene	ND	48.8						0		30	
Dibenz(a,h)anthracene	ND	48.8						0		30	
Benzo(g,h,i)perylene	ND	48.8						0		30	
Surr: 2-Fluorobiphenyl	930		975.6		95.3	42.7	132		0		
Surr: Terphenyl-d14 (surr)	1,080		975.6		110	48.8	157		0		

Sample ID: **1409149-003AMS**	SampType: **MS**	Units: **µg/Kg-dry**	Prep Date: **9/15/2014**	RunNo: **16793**
Client ID: **TP1-B**	Batch ID: **8721**		Analysis Date: **9/16/2014**	SeqNo: **337572**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	2,510	61.2	1,224	0	205	42.9	138				S
2-Methylnaphthalene	4,140	61.2	1,224	2,391	143	42.8	151				
1-Methylnaphthalene	3,380	61.2	1,224	1,823	127	41.6	148				
Acenaphthylene	1,560	61.2	1,224	0	127	32.6	160				
Acenaphthene	1,510	61.2	1,224	0	123	46.3	142				
Fluorene	1,670	61.2	1,224	245.5	116	43.4	153				
Phenanthrene	2,170	61.2	1,224	695.7	121	45.5	140				
Anthracene	1,590	61.2	1,224	193.5	114	32.6	160				
Fluoranthene	1,720	61.2	1,224	486.4	101	44.6	161				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1409149-003AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **9/15/2014** RunNo: **16793**
Client ID: **TP1-B** Batch ID: **8721** Analysis Date: **9/16/2014** SeqNo: **337572**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	3,020	61.2	1,224	1,784	101	48.3	158				
Benz(a)anthracene	1,180	61.2	1,224	0	96.7	57.5	169				
Chrysene	1,850	61.2	1,224	613.1	101	45.2	146				
Benzo(b)fluoranthene	1,130	61.2	1,224	0	92.3	42.2	168				
Benzo(k)fluoranthene	1,310	61.2	1,224	0	107	48	161				
Benzo(a)pyrene	1,430	61.2	1,224	0	117	34.4	179				
Indeno(1,2,3-cd)pyrene	787	61.2	1,224	0	64.3	41.1	165				
Dibenz(a,h)anthracene	778	61.2	1,224	0	63.5	38.1	166				
Benzo(g,h,i)perylene	725	61.2	1,224	0	59.2	45.6	157				
Surr: 2-Fluorobiphenyl	944		1,224		77.1	42.7	132				
Surr: Terphenyl-d14 (surr)	1,330		1,224		109	48.8	157				

NOTES:
S - Outlying QC recoveries were associated with this sample. The method is in control as indicated by the LCS.

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: **MB-8714** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16768**
Client ID: **MBLKS** Batch ID: **8714** Analysis Date: **9/15/2014** SeqNo: **336860**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.100									
Aroclor 1221	ND	0.100									
Aroclor 1232	ND	0.100									
Aroclor 1242	ND	0.100									
Aroclor 1248	ND	0.100									
Aroclor 1254	ND	0.100									
Aroclor 1260	ND	0.100									
Aroclor 1262	ND	0.100									
Aroclor 1268	ND	0.100									
Total PCBs	ND	0.100									
Surr: Decachlorobiphenyl	42.0		50.00		84.1	50.2	159				
Surr: Tetrachloro-m-xylene	38.7		50.00		77.3	60.3	134				

Sample ID: **LCS-8714** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16768**
Client ID: **LCSS** Batch ID: **8714** Analysis Date: **9/15/2014** SeqNo: **336861**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	1.09	0.100	1.000	0	109	45.8	133				
Aroclor 1260	1.11	0.100	1.000	0	111	57	134				
Surr: Decachlorobiphenyl	43.8		50.00		87.6	50.2	159				
Surr: Tetrachloro-m-xylene	40.5		50.00		81.0	60.3	134				

Sample ID: **1409034-003ADUP** SampType: **DUP** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16768**
Client ID: **BATCH** Batch ID: **8714** Analysis Date: **9/15/2014** SeqNo: **336863**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0978						0		30	
Aroclor 1221	ND	0.0978						0		30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: **1409034-003ADUP** SampType: **DUP** Units: **mg/Kg** Prep Date: **9/15/2014** RunNo: **16768**
Client ID: **BATCH** Batch ID: **8714** Analysis Date: **9/15/2014** SeqNo: **336863**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1232	ND	0.0978						0		30	
Aroclor 1242	ND	0.0978						0		30	
Aroclor 1248	ND	0.0978						0		30	
Aroclor 1254	ND	0.0978						0		30	
Aroclor 1260	ND	0.0978						0		30	
Aroclor 1262	ND	0.0978						0		30	
Aroclor 1268	ND	0.0978						0		30	
Total PCBs	ND	0.0978						0		30	
Surr: Decachlorobiphenyl	40.1		48.88		82.1	50.2	159		0		
Surr: Tetrachloro-m-xylene	37.3		48.88		76.4	60.3	134		0		

Sample ID: **1409140-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/15/2014** RunNo: **16768**
Client ID: **BATCH** Batch ID: **8714** Analysis Date: **9/15/2014** SeqNo: **336865**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	1.25	0.138	1.378	0	91.0	61.7	139				
Aroclor 1260	1.25	0.138	1.378	0	90.6	63.1	138				
Surr: Decachlorobiphenyl	51.6		68.92		74.9	50.2	159				
Surr: Tetrachloro-m-xylene	48.9		68.92		71.0	60.3	134				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **1409149-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **9/16/2014**	RunNo: **16796**
Client ID: **TP1-B**	Batch ID: **R16796**		Analysis Date: **9/16/2014**	SeqNo: **337493**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	139	6.68						152.9	9.90	30	
Surr: Toluene-d8	3.37		3.339		101	65	135		0		
Surr: 4-Bromofluorobenzene	3.58		3.339		107	65	135		0		

Sample ID: **LCS-R16796**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **9/16/2014**	RunNo: **16796**
Client ID: **LCSS**	Batch ID: **R16796**		Analysis Date: **9/16/2014**	SeqNo: **337495**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	28.4	5.00	25.00	0	114	65	135				
Surr: Toluene-d8	2.56		2.500		103	65	135				
Surr: 4-Bromofluorobenzene	2.69		2.500		107	65	135				

Sample ID: **MB-R16796**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **9/16/2014**	RunNo: **16796**
Client ID: **MBLKS**	Batch ID: **R16796**		Analysis Date: **9/16/2014**	SeqNo: **337496**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	2.45		2.500		98.0	65	135				
Surr: 4-Bromofluorobenzene	2.57		2.500		103	65	135				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1409149-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337486**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0801						0		30	
Chloromethane	ND	0.0801						0		30	
Vinyl chloride	ND	0.00267						0		30	
Bromomethane	ND	0.120						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0668						0		30	
Chloroethane	ND	0.0801						0		30	
1,1-Dichloroethene	ND	0.0668						0		30	
Methylene chloride	ND	0.0267						0		30	
trans-1,2-Dichloroethene	ND	0.0267						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0668						0		30	
1,1-Dichloroethane	ND	0.0267						0		30	
2,2-Dichloropropane	ND	0.0668						0		30	
cis-1,2-Dichloroethene	ND	0.0267						0		30	
Chloroform	ND	0.0267						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0267						0		30	
1,1-Dichloropropene	ND	0.0267						0		30	
Carbon tetrachloride	ND	0.0267						0		30	
1,2-Dichloroethane (EDC)	ND	0.0401						0		30	
Benzene	ND	0.0267						0		30	
Trichloroethene (TCE)	ND	0.0267						0		30	
1,2-Dichloropropane	ND	0.0267						0		30	
Bromodichloromethane	ND	0.0267						0		30	
Dibromomethane	ND	0.0534						0		30	
cis-1,3-Dichloropropene	ND	0.0267						0		30	
Toluene	ND	0.0267						0		30	
trans-1,3-Dichloropropylene	ND	0.0401						0		30	
1,1,2-Trichloroethane	ND	0.0401						0		30	
1,3-Dichloropropane	ND	0.0668						0		30	
Tetrachloroethene (PCE)	ND	0.0267						0		30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1409149-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337486**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	ND	0.0401						0		30	
1,2-Dibromoethane (EDB)	ND	0.00668						0		30	
Chlorobenzene	ND	0.0267						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0401						0		30	
Ethylbenzene	0.0895	0.0401						0.09885	9.93	30	
m,p-Xylene	0.289	0.0267						0.3313	13.8	30	
o-Xylene	0.149	0.0267						0.1583	6.09	30	
Styrene	ND	0.0267						0		30	
Isopropylbenzene	ND	0.107						0		30	
Bromoform	ND	0.0267						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0267						0		30	
n-Propylbenzene	0.0601	0.0267						0.07013	15.4	30	
Bromobenzene	ND	0.0401						0		30	
1,3,5-Trimethylbenzene	0.416	0.0267						0.4575	9.48	30	
2-Chlorotoluene	ND	0.0267						0		30	
4-Chlorotoluene	ND	0.0267						0		30	
tert-Butylbenzene	ND	0.0267						0		30	
1,2,3-Trichloropropane	ND	0.0267						0		30	
1,2,4-Trichlorobenzene	ND	0.0668						0		30	
sec-Butylbenzene	ND	0.0267						0		30	
4-Isopropyltoluene	0.0862	0.0267						0.06746	24.3	30	
1,3-Dichlorobenzene	ND	0.0267						0		30	
1,4-Dichlorobenzene	ND	0.0267						0		30	
n-Butylbenzene	ND	0.0267						0		30	
1,2-Dichlorobenzene	ND	0.0267						0		30	
1,2-Dibromo-3-chloropropane	ND	0.0401						0		30	
1,2,4-Trimethylbenzene	1.47	0.0267						1.646	11.4	30	
Hexachlorobutadiene	ND	0.134						0		30	
Naphthalene	3.17	0.0401						2.382	28.4	30	

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1409149-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337486**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichlorobenzene	ND	0.0267						0		30	
Surr: Dibromofluoromethane	3.51		3.339		105	63.7	129		0		
Surr: Toluene-d8	3.54		3.339		106	61.4	128		0		
Surr: 1-Bromo-4-fluorobenzene	3.46		3.339		104	63.1	141		0		

Sample ID: **1409149-003BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337487**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.66	0.0759	1.265	0	131	43.5	121				S
Chloromethane	1.48	0.0759	1.265	0	117	45	130				
Vinyl chloride	1.48	0.00253	1.265	0	117	51.2	146				
Bromomethane	0.262	0.114	1.265	0	20.7	21.3	120				S
Trichlorofluoromethane (CFC-11)	1.20	0.0632	1.265	0	95.2	35	131				
Chloroethane	0.351	0.0759	1.265	0	27.8	43.8	117				S
1,1-Dichloroethene	0.974	0.0632	1.265	0	77.0	61.9	141				
Methylene chloride	0.689	0.0253	1.265	0	54.5	54.7	142				S
trans-1,2-Dichloroethene	1.38	0.0253	1.265	0	109	52	136				
Methyl tert-butyl ether (MTBE)	1.33	0.0632	1.265	0	105	54.4	132				
1,1-Dichloroethane	1.42	0.0253	1.265	0	113	51.8	141				
2,2-Dichloropropane	1.93	0.0632	1.265	0	153	36	123				S
cis-1,2-Dichloroethene	1.32	0.0253	1.265	0	105	58.6	136				
Chloroform	1.40	0.0253	1.265	0	111	53.2	129				
1,1,1-Trichloroethane (TCA)	1.51	0.0253	1.265	0	119	58.3	145				
1,1-Dichloropropene	1.57	0.0253	1.265	0	124	55.1	138				
Carbon tetrachloride	1.51	0.0253	1.265	0	119	53.3	144				
1,2-Dichloroethane (EDC)	1.30	0.0379	1.265	0	103	51.3	139				
Benzene	1.44	0.0253	1.265	0	114	63.5	133				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1409149-003BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337487**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	1.40	0.0253	1.265	0	110	68.6	132				
1,2-Dichloropropane	1.32	0.0253	1.265	0	105	59	136				
Bromodichloromethane	1.46	0.0253	1.265	0	115	50.7	141				
Dibromomethane	1.28	0.0506	1.265	0	101	50.6	137				
cis-1,3-Dichloropropene	1.53	0.0253	1.265	0	121	50.4	138				
Toluene	1.31	0.0253	1.265	0.02204	102	63.4	132				
trans-1,3-Dichloropropylene	1.78	0.0379	1.265	0	141	44.1	147				
1,1,2-Trichloroethane	1.34	0.0379	1.265	0	106	51.6	137				
1,3-Dichloropropane	1.31	0.0632	1.265	0	104	53.1	134				
Tetrachloroethene (PCE)	1.35	0.0253	1.265	0	107	35.6	158				
Dibromochloromethane	1.31	0.0379	1.265	0	104	55.3	140				
1,2-Dibromoethane (EDB)	1.24	0.00632	1.265	0	98.3	50.4	136				
Chlorobenzene	1.29	0.0253	1.265	0	102	60	133				
1,1,1,2-Tetrachloroethane	1.30	0.0379	1.265	0	103	53.1	142				
Ethylbenzene	1.39	0.0379	1.265	0.09885	102	54.5	134				
m,p-Xylene	2.96	0.0253	2.530	0.3313	104	53.1	132				
o-Xylene	1.45	0.0253	1.265	0.1583	102	53.3	139				
Styrene	1.32	0.0253	1.265	0	105	51.1	132				
Isopropylbenzene	1.31	0.101	1.265	0	103	58.9	138				
Bromoform	1.21	0.0253	1.265	0	96.0	57.9	130				
1,1,2,2-Tetrachloroethane	2.41	0.0253	1.265	0	191	51.9	131				S
n-Propylbenzene	1.43	0.0253	1.265	0.07013	107	53.6	140				
Bromobenzene	1.24	0.0379	1.265	0	98.2	54.2	140				
1,3,5-Trimethylbenzene	1.86	0.0253	1.265	0.4575	111	51.8	136				
2-Chlorotoluene	1.33	0.0253	1.265	0	105	51.6	136				
4-Chlorotoluene	1.28	0.0253	1.265	0	101	50.1	139				
tert-Butylbenzene	1.14	0.0253	1.265	0	90.1	50.5	135				
1,2,3-Trichloropropane	1.44	0.0253	1.265	0	114	50.5	131				
1,2,4-Trichlorobenzene	1.39	0.0632	1.265	0	110	50.8	130				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1409149-003BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **TP1-B** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337487**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	1.29	0.0253	1.265	0	102	52.6	141				
4-Isopropyltoluene	0.167	0.0253	1.265	0.06746	7.87	52.9	134				S
1,3-Dichlorobenzene	1.27	0.0253	1.265	0	100	52.6	131				
1,4-Dichlorobenzene	1.12	0.0253	1.265	0	88.9	52.9	129				
n-Butylbenzene	1.71	0.0253	1.265	0	135	52.6	130				S
1,2-Dichlorobenzene	1.24	0.0253	1.265	0	97.7	55.8	129				
1,2-Dibromo-3-chloropropane	2.26	0.0379	1.265	0	178	40.5	131				S
1,2,4-Trimethylbenzene	3.64	0.0253	1.265	1.646	158	50.6	137				S
Hexachlorobutadiene	1.13	0.126	1.265	0	89.4	40.6	158				
Naphthalene	6.44	0.0379	1.265	2.382	321	52.3	124				S
1,2,3-Trichlorobenzene	1.24	0.0253	1.265	0	98.3	54.4	124				
Surr: Dibromofluoromethane	3.20		3.162		101	63.7	129				
Surr: Toluene-d8	3.18		3.162		101	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	3.22		3.162		102	63.1	141				

NOTES:
S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

Sample ID: **CCV-8735** SampType: **CCV** Units: **µg/L** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **CCV** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337489**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	22.0	0.0900	20.00	0	110	80	120				
Chloroethane	19.2	0.0600	20.00	0	96.0	80	120				
Surr: Dibromofluoromethane	51.3		50.00		103	63.7	129				
Surr: Toluene-d8	47.8		50.00		95.7	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	51.0		50.00		102	63.1	141				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **LCS-8735** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **LCSS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337490**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.32	0.0600	1.000	0	132	37.7	136				
Chloromethane	1.09	0.0600	1.000	0	109	38.8	132				
Vinyl chloride	1.15	0.00200	1.000	0	115	56.1	130				
Bromomethane	0.283	0.0900	1.000	0	28.3	41.3	148				S
Trichlorofluoromethane (CFC-11)	0.998	0.0500	1.000	0	99.8	42.9	147				
Chloroethane	0.218	0.0600	1.000	0	21.8	37.1	144				S
1,1-Dichloroethene	0.778	0.0500	1.000	0	77.8	49.7	142				
Methylene chloride	0.831	0.0200	1.000	0	83.1	54.5	131				
trans-1,2-Dichloroethene	1.08	0.0200	1.000	0	108	68	130				
Methyl tert-butyl ether (MTBE)	0.945	0.0500	1.000	0	94.5	59.1	138				
1,1-Dichloroethane	1.10	0.0200	1.000	0	110	65.5	132				
2,2-Dichloropropane	1.56	0.0500	1.000	0	156	28.1	149				S
cis-1,2-Dichloroethene	1.05	0.0200	1.000	0	105	71.6	123				
Chloroform	1.10	0.0200	1.000	0	110	67.5	129				
1,1,1-Trichloroethane (TCA)	1.14	0.0200	1.000	0	114	69	132				
1,1-Dichloropropene	1.17	0.0200	1.000	0	117	72.7	131				
Carbon tetrachloride	1.16	0.0200	1.000	0	116	63.4	137				
1,2-Dichloroethane (EDC)	1.02	0.0300	1.000	0	102	61.9	136				
Benzene	1.07	0.0200	1.000	0	107	74.6	124				
Trichloroethene (TCE)	1.03	0.0200	1.000	0	103	65.5	137				
1,2-Dichloropropane	0.989	0.0200	1.000	0	98.9	63.2	142				
Bromodichloromethane	1.10	0.0200	1.000	0	110	76.1	136				
Dibromomethane	0.998	0.0400	1.000	0	99.8	70	130				
cis-1,3-Dichloropropene	1.16	0.0200	1.000	0	116	59.1	143				
Toluene	1.02	0.0200	1.000	0	102	67.3	138				
trans-1,3-Dichloropropylene	1.30	0.0300	1.000	0	130	49.2	149				
1,1,2-Trichloroethane	0.933	0.0300	1.000	0	93.3	74.5	129				
1,3-Dichloropropane	0.976	0.0500	1.000	0	97.6	70	130				
Tetrachloroethene (PCE)	1.03	0.0200	1.000	0	103	52.7	150				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **LCS-8735** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **LCSS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337490**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	0.974	0.0300	1.000	0	97.4	70.6	144				
1,2-Dibromoethane (EDB)	0.986	0.00500	1.000	0	98.6	70	130				
Chlorobenzene	0.992	0.0200	1.000	0	99.2	76.1	123				
1,1,1,2-Tetrachloroethane	0.985	0.0300	1.000	0	98.5	74.8	131				
Ethylbenzene	1.04	0.0300	1.000	0	104	74	129				
m,p-Xylene	2.10	0.0200	2.000	0	105	79.8	128				
o-Xylene	1.00	0.0200	1.000	0	100	72.7	124				
Styrene	1.04	0.0200	1.000	0	104	76.8	130				
Isopropylbenzene	1.11	0.0800	1.000	0	111	70	130				
Bromoform	0.926	0.0200	1.000	0	92.6	67	154				
1,1,2,2-Tetrachloroethane	0.963	0.0200	1.000	0	96.3	60	130				
n-Propylbenzene	1.12	0.0200	1.000	0	112	74.8	125				
Bromobenzene	0.966	0.0300	1.000	0	96.6	49.2	144				
1,3,5-Trimethylbenzene	0.990	0.0200	1.000	0	99.0	74.6	123				
2-Chlorotoluene	1.06	0.0200	1.000	0	106	76.7	129				
4-Chlorotoluene	1.03	0.0200	1.000	0	103	77.5	125				
tert-Butylbenzene	1.08	0.0200	1.000	0	108	66.2	130				
1,2,3-Trichloropropane	1.01	0.0200	1.000	0	101	67.9	136				
1,2,4-Trichlorobenzene	1.15	0.0500	1.000	0	115	65.6	137				
sec-Butylbenzene	1.16	0.0200	1.000	0	116	75.6	133				
4-Isopropyltoluene	1.14	0.0200	1.000	0	114	76.8	131				
1,3-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	128				
1,4-Dichlorobenzene	0.928	0.0200	1.000	0	92.8	72.6	126				
n-Butylbenzene	1.22	0.0200	1.000	0	122	65.3	136				
1,2-Dichlorobenzene	0.961	0.0200	1.000	0	96.1	72.8	126				
1,2-Dibromo-3-chloropropane	0.892	0.0300	1.000	0	89.2	61.2	139				
1,2,4-Trimethylbenzene	1.08	0.0200	1.000	0	108	77.5	129				
Hexachlorobutadiene	1.16	0.100	1.000	0	116	42	151				
Naphthalene	1.01	0.0300	1.000	0	101	62.3	134				

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **LCS-8735** SampType: **LCS** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **LCSS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337490**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	62.1	140				
Surr: Dibromofluoromethane	2.66		2.500		106	63.7	129				
Surr: Toluene-d8	2.47		2.500		98.9	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.57		2.500		103	63.1	141				

NOTES:
S - Outlying QC recoveries were observed. Adequate sensitivity for Bromomethane and Chloroethane is demonstrated by the CCV. There were no detections of 2,2-Dichloropropane (high bias); therefore, no further action required.

Sample ID: **MB-8735** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **MBLKS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **MB-8735** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **MBLKS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									

Qualifiers:

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

Work Order: 1409149
CLIENT: PBS Engineering & Environmental
Project: Skyway

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **MB-8735** SampType: **MBLK** Units: **mg/Kg** Prep Date: **9/16/2014** RunNo: **16795**
Client ID: **MBLKS** Batch ID: **8735** Analysis Date: **9/16/2014** SeqNo: **337491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.0300									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	2.53		2.500		101	63.7	129				
Surr: Toluene-d8	2.54		2.500		102	61.4	128				
Surr: 1-Bromo-4-fluorobenzene	2.52		2.500		101	63.1	141				

Qualifiers:

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

Sample Log-In Check List

Client Name:	**PBS**	Work Order Number:	**1409149**
Logged by:	**Erica Silva**	Date Received:	**9/15/2014 3:25:00 PM**

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	10.0	Good

Chain of Custody Record

Fremont Analytical

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

Laboratory Project No (internal): 1409149

Date: 9/15/14

Page: 1 of: 1

Client: PBS

Address:

City, State, Zip

Tel: 509.572.8163

Reports To (PM): Ken.nogera@pbsenv.com Fax:

Project Name: Skyway

Location: Renton

Collected by: E. Nogera

Email:

Project No: 42300

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (Dx)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1 TP1-ESW	9/15/14	1305	Soil					X									
2 TP1-WSW	↓	1310	↓					X									
3 TP1-B	↓	1320	↓	X			X	X		X	X	X					
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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

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

Special Remarks:

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

Relinquished	Date/Time	Received	Date/Time
x Ken Nogera	9.15.14 1525	x	9/15/14 16:25
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

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

APPENDIX IV

UST Site Assessment Checklist

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

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

INSTRUCTIONS

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

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

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

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

CHECKLIST: Please initial each item in the appropriate box.

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

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

SITE INFORMATION

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

Site/Business Name: NA

Site Address: 12690 Renton Avenue South (Street) Telephone: (509) 512-8163

Seattle (City) WA (State) 98178 (Zip Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
TP1 (PBS named)	200 gallons	Waste Oil

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

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

CHECKLIST

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

SITE ASSESSOR INFORMATION

Ken Nogeire
Person registered with Ecology

PBS Engineering and Environmental
Firm Affiliated with

Business Address: 2517 Eastlake Ave. E.
Street

Telephone: (509) 572-8163

Seattle
City

WA
State

98102
Zip Code

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

9.19.14
Date

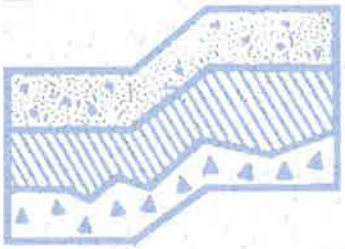
Signature of Person Registered with Ecology

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

REMEDIAL INVESTIGATION/FEASIBILITY STUDY/CLEANUP ACTION SUMMARY

Skyway Library
King County Parcel 023100-0040
12601 – 76th Avenue South
King County, Washington
Former VCP NW2149

Project No. T-6672-2



Terra Associates, Inc.

Prepared for:

King County Library System
c/o K&L Gates, LLP
Seattle, Washington

April 3, 2017

TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

April 3, 2017
Project No. T-6672-2

Mr. Greg Smith
King County Library System
c/o Alyssa Moir
K&L Gates, LLP
925 Fourth Avenue, Suite 2900
Seattle, Washington 98104

Subject: Remedial Investigation/Feasibility Study/Cleanup Action Summary
Skyway Library
King County Parcel 023100-0040
12601 – 76th Avenue South
King County, Washington
Former VCP NW2149

Dear Ms. Moir:

This letter transmits a Remedial Investigation/Feasibility Study/Cleanup Action Summary for the Skyway Library site. We previously prepared a technical memorandum that transmitted the results of sampling during a supplemental remedial excavation on-site in the summer of 2014. Our prior memo is dated December 16, 2014. Subsequent to the prior memo, Terra Associates has provided supplemental soil, groundwater, and soil vapor sampling in new explorations on and immediately adjacent to the site. This report summarizes prior work by others but does not present prior soil sampling by others.

Based on our observations, it is our opinion that the site cleanup is complete and that a No Further Action Determination with a site covenant is appropriate for this site.

12220 113th Avenue NE, Ste. 130, 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.

Sincerely yours,
TERRA ASSOCIATES, INC.

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

cc: Washington State Department of Ecology Voluntary Cleanup Program

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ACRONYMS AND ABBREVIATIONS

ALKAI	Alkai Consultants LLC
BETX	Benzene, ethylbenzene, toluene, and total xylenes
COCs	Constituents of concern
DPT	Direct Push Technology
Ecology	Washington State Department of Ecology
EPH	Extractable Petroleum Hydrocarbons
ESA	Environmental Site Assessment
GRO	Total petroleum hydrocarbons as gasoline-range organics
KCLS	King County Library System
LUST	Leaking Underground Storage Tank
mg/kg	Milligrams per kilogram
µg/l	Micrograms per liter
µg/m3	Micrograms per cubic meter
MTCA	Washington State Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC
NFA	No Further Action
NWHC	Northwest HydroGeo Consultants
PCB	Poly Chlorinated Bisphenol's
PCS	Petroleum contaminated soils
PID	Photoionization detector
PQL	Practical quantitation limit
RCW	Revised Code of Washington
Subject Property	King County Tax Parcel 023100-0040
Terra	Terra Associates, Inc.
TPH	Total Petroleum Hydrocarbons
TPHD	Total Petroleum Hydrocarbons Diesel and Oil Range
TPHG	Total Petroleum Hydrocarbons-Gasoline Range
UST	Underground storage tank
VCP	Voluntary Cleanup Program
VOCs	Volatile organic compounds
VPH	Volatile Petroleum Hydrocarbons
WAC	Washington Administrative Code

1.0 INTRODUCTION

1.1 General Site Information

Current Site Name	Skyway Library, a branch library of the King County Library System (KCLS)
Prior Site Name	Eat Em Up Hut
Site Address	12601 – 76th Avenue South, Seattle, Washington (unincorporated King County)
King County Tax Parcel ID	023100-0040
PLSS	Within SW ¼ of Section 12, Township 23N, Range 4E
Latitude/Longitude	47.490488, -122.238550
Owner	King County Library System
Owner Contact	Greg Smith, Director Facilities Management Services 960 Newport Way NW Issaquah, Washington 98027 425-369-3237 ggsmith@kcls.org
Prior Owner	Harnek S. and Pamila D. Pabla
Consultant Consultant Contact	Terra Associates, Inc. Charles R. Lie, L.E.G., L.H.G. Project Manager 12220 – 113th Avenue NE, Suite 130 Kirkland, Washington 98034 425-821-7777
Ecology Site ID	LUST ID 619116 Prior VCP ID NW2149

1.2 Site History

1936 aerial photos on the King County iMap site show the site and vicinity as being vacant brush covered land. Archived King County Tax Records show that a gas station was built on the site in 1948. The gas station included two bays for the repair of autos. One tax record shows two 4,000-gallon USTs and one heating oil UST as being present. A 1979 sheet lists three 4,000-gallon USTs and one 6,000-gallon UST for the storage of gasoline. A note in 1984 tax records reports that the pumps had been removed and that the site was for sale. No prior buildings are listed as having been on this site.

King County reports that a permit was taken out in 1984 for the removal of two gasoline USTs. There is no record that USTs were removed. This date is prior to contemporary UST assessment or registration requirements.

City Directory information shows that in 1979, 1983, and 1987 that the site was occupied by a gas and towing service. The city directory for 1991 lists the site as being occupied by a business called Sea Waves Restaurant. Subsequent descriptions list the site as being an office in 1986, a fish restaurant in 1995, and a fruit stand in 1999. A food truck is listed as being present on the site in 2004.

The building on-site was demolished in 2005. Aerial photos suggest the site was subsequently used as a laydown area for nearby construction sites or was vacant unused land until the recent construction of the new Library building on-site.

Current Site Use

The site is currently a branch library that was built in 2014 and 2015. The branch library opened in February of 2015. The library is a single-story building with a footprint of about 8,448 square feet of finished space. The underlying tax parcel has an area of 16,182 square feet. With the exception of narrow planter strips along the northern and southern sides of the new building, the site is covered by either the building or the hardscaping that surrounds the building. Approximately 88 percent of the tax parcel is covered by impermeable surfaces.

The stormwater management system for the surface runoff from the library is managed with an on-site stormwater system that includes an infiltration facility on the adjacent tax parcel to the west of the subject site. No rain gardens or infiltration facilities have been placed on the subject property.

The parcel and parcels that surround the site are zoned CB, Community Business. This land use is expected to extend into the foreseeable future.

The site is not within any designated wellhead protection areas for the City of Renton Water Supply or other public water supply systems. The site is not within any crucial aquifer recharge areas mapped by King County.

The location of the site is shown on Figures 1 and 2 attached to this report. Figure 3 shows the subject parcel and the location of the new library. The prior layout of the site is shown on Figure 4 attached to this report.

2.0 FIELD INVESTIGATIONS

Previous Environmental Investigations.

1) Site Investigations Report, Environmental Site Assessment Phase II, Soils and Groundwater Testing at a former Service Station, 12640 Renton Avenue South, Seattle, Washington, prepared for Mr. Ravinder Dhillon by Northwest HydroGeo Consultants (NWHC) dated December 18, 2003. This report is the earliest report known for the site. This report used four direct push technology (DPT) borings to obtain soil and groundwater samples. The results of the testing showed that there were elevated levels of gasoline range hydrocarbons in the UST cavity and both the soils and groundwater. The soil sample test results were not listed with depths below existing grade. The water samples were taken from temporary well screens common to DPT drilling tools.

2) Site Characterization Report, Phase II, Soil and Groundwater Testing at a site at 12640 Renton Avenue South in Seattle, Washington 98178, prepared for Mr. Ravinder Dhillon by NWHC, dated March 17, 2004.

Nine additional DPT borings were advanced on the site. Additional soils and groundwater samples were collected that documented the extent of gasoline impacted soils. This study found elevated levels of gasoline range hydrocarbons in soil and groundwater in an area that corresponds with the former UST cavity east of the former service station building. This study also identified an area along the margin of the site along Renton Avenue South where a dense till was interpreted as being present. The author concluded that the till was not a water-bearing formation, there was no groundwater in the temporary borings along Renton Avenue South.

The soil sample test results were not listed with depths below existing grade. The water samples were taken from temporary well screens common to DPT drilling tools. The report concluded that remedial measures were needed on-site. The report estimated that 1,000 cubic yards of petroleum contaminated soils (PCS) would need to be removed.

3) UST Decommissioning, Site Assessment, and Independent Soil Remedial Action, 12640 Renton Avenue South, Renton, Washington, prepared for Dhillon and Riaz by Alkai Consultants LLC, dated August 17, 2005.

This report documents the remedial action undertaken to address the PCS identified in the prior reports by Northwest HydroGeo Consultants. This report documents the removal of 1981 tons of PCS and of 4,500 gallons of contaminated groundwater that were removed from the site during the remedial action. The 1981 tons of PCS roughly corresponds with the estimate of 1,000 cubic yards of PCS identified in the 2004 report by NWHC. In addition, a heating oil UST was found and removed. The heating oil UST was listed as having had releases.

The report discusses the excavation procedure used to identify and remove PCS. The remedial excavation started roughly in the center of the former UST cavity and extended out in segments based on the results of performance samples of sidewalls and base soils that were taken to the project laboratory. The approximate extent of the prior remedial excavation is shown on Figure 3 attached to this report. The final depth of the remedial excavation is reported to have been 13 to 15 feet below existing grade. The base of the remedial excavation is described as being a "very dense layer of dark brown fine sandy clay." The highest petroleum hydrocarbon level in the samples reported by Alai were in Sample NEC #7 at a depth of 12 feet with a TPH G value of 4,280 mg/kg and NEC #5 at a depth of 10.5 feet with a TPH G value of 1,530 mg/kg. Soil at both of these locations are reported to have been removed. The report states that a PID was used to identify contaminated soils.

No free product was reported to have been observed, encountered, or suspected to be present. Seepage was reported to have been encountered at a depth of 12 feet below existing grade. The report states that 4,500 gallons of water were removed from the UST excavation for off-site treatment and disposal.

This report concluded that "All petroleum impacted soils were removed from the site, as shown by non-detect analysis of the sidewalls and the bottom of the excavation pit. A groundwater remedial investigation is currently underway to assess the approach to be used for remediation of the existing site groundwater contamination."

The report also describes that the remedial excavation was backfilled with clean imported soils and site soils that had been field screened with a handheld PID. Photographs attached to the report show a common hoe pack being used to compact what appears to be debris free fill soils in the remedial excavation.

4) Monitoring Well Installation at the former Arco Service Station 12640 Renton Avenue South, Seattle, Washington, prepared for Ravinder Dhillon by NWHC, dated March 7, 2008. This report discusses the installation of 4 groundwater monitoring wells surrounding the remedial excavation discussed in the Alkai report dated August 17, 2005. Four monitoring wells were drilled surrounding the PCS excavation. The well along the margin of the excavation along Renton Avenue South was a dry well, no groundwater was found in Boring MW-3 within its total depth of 30 feet. The screen interval in MW-3 was from 30 to 10 feet below existing site grades. The other wells were drilled to depths of 20 feet and completed with 10-foot screen intervals from 20 to 10 feet below existing grade. The monitoring wells were built in borings created with hollow stem auger. No soil samples were submitted for analytical testing. The wells were generally placed in the three corners of the triangularly shaped parcel.

Groundwater was found to be at depths of about 6 feet in Monitoring Wells MW-1, MW-2, MW-4, and MW-3 was dry. No discussion entitled conceptual site model is presented in their report; however, the report concludes that an impermeable till zone is present along the margin of Renton Avenue South where no groundwater was reportedly encountered.

The results of the groundwater testing showed that MW-1 and MW-2 had no detectable hydrocarbons, while MW-4 had gasoline hydrocarbons present but below the MTCA Method A cleanup levels. Levels of lead were found in MW-1 and MW-2 above the MTCA Method A cleanup level.

5) Final Report, summary and results of 4 quarters of groundwater monitoring at the Former ARCO Service Station, 12640 Renton Avenue South, Seattle, Washington prepared for Mr. Ravinder Dhillon by NWHC, dated March 17, 2009. This report summarizes the four consecutive quarters of groundwater sampling at the project. The groundwater in MW-1, MW-2, and MW-4 was mapped as having a gradient towards the northeasterly direction towards Lake Washington. The amplitude of the seasonal variations was found to be about 2.5 feet. The highest groundwater was found to be at about 5.38 feet below site grades in MW-4. The deepest groundwater level was found to be at about 9.25 feet in MW-2.

The report summarizes the testing for gasoline range hydrocarbons and lead. Over the four quarters, all of the groundwater samples were either below the detection limit or were below the cleanup levels. Lead was found to be in the groundwater above the cleanup level of 15 ug/l in all monitoring wells and was attributed to background urban lead concentrations.

Monitoring Well MW-3 remained dry through the four quarters of sampling.

6) Testing for Dissolved Lead in Groundwater, letter prepared for Mr. Ravinder Dhillon by NWHC, dated March 9, 2010.

Subsequent to the prior report, Monitoring Wells MW-1, MW-2, and MW-4 were resampled at the request of the Ecology reviewer to address the lead issue. The wells were resampled on February 15, 2010 and the samples were field filtered. The results of the field filtered samples showed that the prior samples were based high due to suspended sediment from using a bailer to sample the monitoring wells.

7) No Further Action Letter for Eat Em Up Hut, Former ARCO Service Station, addressed to Ravinder Singh Dhillon, prepared by Washington State Department of Ecology, dated September 16, 2010.

This letter presents the WDOE review of the documents referenced above and concludes that no further action is required to address the prior releases of petroleum hydrocarbons at the subject site.

8) Phase I Environmental Site Assessment, Skyway Parcels, 12630 and 12690 Renton Avenue South, King County, Washington, report prepared for the King County Library System (KCLS), prepared by Terra Associates, Inc. (Terra), dated March 13, 2012.

This report was a due diligence report prepared for the KCLS prior to the purchase of the parcel and an adjacent parcel. As part of the study, the prior documents referenced above were reviewed. Terra concluded that the lack of testing for halogenated compounds in the monitoring wells was a data gap. Supplemental groundwater sampling from the monitoring wells was approved by the KCLS. The results of the sampling are summarized in Appendix I of the Phase I ESA. No halogenated compounds were detected in the samples from the three monitoring wells on-site. MW-3 was found to be dry as reported by the prior consultant.

9) Underground Storage Tank Removal Report, Waste Oil Tank, 12690 Renton Avenue South, Seattle, Washington, prepared for IO Environmental by PBS Engineering and Environmental, dated September 24, 2014.

This report is a regulatory summary of the closure of a UST. The UST is reported to have been a 200-gallon UST and a confirmed release from the UST was made by the property owner to the State of Washington. Terra Associates, Inc. was also on-site during the removal of the UST and concurs with the conclusions in the report.

10) Technical Memo, Supplemental Site Remedial Action, New Skyway Library, Renton Ave South, King County, Washington, prepared for K and L Gates, LLP by Terra, dated December 16, 2014.

This memo summarizes the discovery of the UST discussed in the report referenced above and of the removal of additional PCS and building rubble from the former UST cavity and surrounding soils. In the course of the work summarized in this memo, an additional 4,519 tons of soil was removed from the site and 157,800 gallons of water was removed from the remedial excavation. Due to the lack of room on-site to stockpile soils, all soils that were excavated were routed to off-site disposal. Due to a lack of shoring around the perimeter of the site and previously placed pile foundation elements, not all of the PCS was removed during the supplemental remedial action.

Photographs taken during the 2014 remedial action are presented in Appendix B. The photos include a photo of the waste oil UST, the buried rubble that was encountered as well as general site photos.

2.1 Site Geologic and Soil Characterization

2.1.1 General

Published geologic mapping shows the site as being in an area underlain at shallow depths by till soils. The initial site characterization by NWHC characterized the site as being underlain by sands with a till zone along the southwest margin of the site along Renton Avenue South.

For the current work, soils have been characterized through on-site observations during the remedial action, through review of geotechnical boring logs contained in the geotechnical report appended to the referenced December 16, 2014 memo, and the drilling of 6 supplemental borings on-site subsequent to the remedial action that took place in 2014. The locations of these borings are shown on Figure 4.

2.1.2 Geotechnical Explorations

We have also referred to geotechnical explorations that were done by GeoEngineers as part of the geotechnical study of the site. No environmental testing was done by GeoEngineers. The explorations done by GeoEngineers have been used to evaluate stratigraphy beneath the site. In the geotechnical boring GEI 1, the ground surface was found to be underlain by five feet of fill. The fill was in turn underlain by a brown silt that may represent a buried topsoil layer. Beneath the silt, this boring encountered and was terminated within glacially consolidated silty fine to medium sands.

In the Geotechnical Boring GEI 2 the ground surface was underlain by five feet of fill. Beneath the fill, a loose silty sand was encountered that extended to a depth of 12 feet below existing grades. Beneath the loose sands, glacially consolidated sands were found that extended to the base of the boring at a depth of 19 feet below existing grades.

In Geotechnical Boring GEI 3 located northwest of the new library building, several feet of fill and loose to medium dense sands were encountered immediately below existing grade. Beneath this surficial layer this boring encountered glacially consolidated alluvial sands that extended to the base of the boring at a depth of 21.5 feet.

2.1.3 Supplemental Monitoring Wells by Terra Associates, Inc.

In Boring MW-101 along Renton Avenue South, no fill was encountered, till was reported to be present beneath the gravel placed as subgrade material for the sidewalk. The till extended down to about 12 feet below existing grade where fine to medium and coarse sands were found to the depths explored.

In Boring MW-102, dense silty fine to medium grained sands were found immediately below the sidewalk. These sands extended to the bottom of the boring at a depth of 55 feet.

In Boring MW-103 along S 76th Street, the sands were encountered immediately below the sidewalk and extended to a depth of 21.5 feet below site grades.

In MW-104 located in the northeastern corner of the parking lot for the new library, 6 feet of fill was encountered immediately below grades. Beneath the fill, a dark brown silt was encountered that extended to ten feet below-grade. Beneath the silt, this boring encountered and was terminated at a depth of 21.5 feet below-grade in dense silty fine to medium sands.

In MW-105 located 25 feet north of MW-101 along Renton Avenue, till was encountered beneath 2 feet of fill. The till extends down to 12 feet below existing grade. Beneath the till, this boring encountered and was terminated with dense glacially consolidated sands.

Soils exposed in the remedial excavation were primarily silty fine sands with some silt beds. Along Renton Avenue South, the upper six feet of the excavation encountered dense till soils. None of the soils encountered in the borings or excavations suggest that the UST cavity was excavated into a uniform till deposit or that the UST cavity extended down through a continuous layer of till. Till was only identified along the Renton Avenue South side of the site.

The report by ALKAI describes a layer of very dense brown sandy clay was present at the base of the remedial excavation. Based on our observations, this potential aquitard material does not extend to the portion of the site along Renton Avenue South. Our field observations were that the silt layer was not a continuous layer throughout the base of the excavation.

2.2 Groundwater

The initial characterization by NWHC concluded that the till soils along the southwestern margin of the site were impermeable and non-water bearing. This conclusion was based on the lack of near-surface groundwater in DPT Borings 5, 6, and 7 along the southwest margin of the site and in the lack of any groundwater in Monitoring Well MW-3. Based on measurements by NWHC in the other monitoring wells, a slight gradient towards the northeast was found to be present. Groundwater depths in Monitoring Wells MW-1, MW-2, and MW-3 were in the range of six to nine feet below existing grades. Monitoring Wells MW-1, MW-2, and MW-4 were drilled to depths of about 20 feet below-grade and provided with screens from 10 to 20 feet below site grades. Monitoring Well MW-3 was drilled to a total depth of about 30 feet below-grade and was provided with a screen that extended from 10 to 30 feet below site grades. Measurements in MW-3 never found any accumulated water within the well.

All wells installed by NWHC were closed in accordance with Chapter 123-45 WAC prior to construction of the new library building. These wells are no longer accessible for measurements or sampling.

GeoEngineers constructed one monitoring well in the course of their geotechnical study in GEI 3. The static water level was measured to be about six to seven feet below site grades. This measurement is consistent with the groundwater levels measured by NWHC. The GeoEngineers report does not identify any near-surface aquitards. This well was lawfully closed prior to the construction of the new library. This well is no longer accessible for measurements or sampling.

Borings done for this study found groundwater at depths consistent with the prior explorations by others with one exception. Along Renton Avenue South, the depth to the groundwater was found to be about 50 feet. The till layer that was encountered terminated at about 12 feet below site grades. The sands that are present beneath the till along Renton Avenue South are consistent with the glacially consolidated sands found elsewhere on the site and had an appearance of being saturated. Shallow monitoring wells built within the upper portion of the sands did not find any groundwater. Monitoring Well MW-101 was initially drilled to a final depth of 17 feet below site grades and provided with a screen interval from 7 to 17 feet below site grades. No groundwater accumulated in the screened interval. MW-102 was initially drilled to a total depth of 20 feet below existing site grades and provided with a screen interval of 10 to 20 feet below site grades. No groundwater accumulated in MW-102.

MW-101 was re-drilled to remove the previous screen and the boring extended down to a depth of 39 feet. A screen was installed that extended from 30 to 32 feet below existing site grades. No groundwater accumulated in this second and final configuration of MW-101. Monitoring Well MW-102 was re-drilled and extends down to a depth of 55 feet below site grades. A screen was placed that extended from 40 to 55 feet below site grades. Groundwater was found to be present at a depth of about 40 feet below-grade.

While the prior study suggested that there was a slight groundwater gradient towards the northeast, based on the results of the monitoring wells constructed for this study together with the prior observations and distribution of near-surface groundwater, it is our opinion that there is a vertical groundwater gradient along the Renton Avenue South side of the site. The aquitard that has created the near-surface groundwater noted at other locations on the site has not been identified in borings and is inferred based on the groundwater present in the prior and current explorations and monitoring wells. The groundwater gradients based on current data and existing wells is shown on Figures 11, 12, and 13.

The prior groundwater data showed that during the four quarters of monitoring, that the deepest groundwater present in the wells was nine feet. Significant levels of gasoline range hydrocarbons were found extending down below that level suggesting that broader variations of historic groundwater levels are likely to have occurred during the time period that the gasoline station was in operation.

The static water levels measured by NWHC is summarized on Table 1.

The static groundwater readings for the current wellfield are summarized on Table 2.

2.3 Sampling/Analytical Results

The contaminants of concern were chosen based on the documented past use of the property and the prior work by others. This report does not tabulate prior soil testing done by others. Prior groundwater testing done by others in permanent groundwater monitoring wells is tabulated and summarized in this report.

The contaminants of concern for soil consisted of:

- Total petroleum hydrocarbons in the gasoline range including benzene, ethylbenzene toluene, xylene due to the past use of the site as a retail gasoline station.

- Total petroleum hydrocarbons in the diesel through oil range due to the past presence of a heating oil UST and a waste oil UST.
- Lead due to the use of leaded gasoline during the period the gasoline station was in operation.
- Dibromomethane (EDB), Dichloroethane (EDC), and Methyl Tertiary-butyl ether (MTBE), gasoline additives.
- PCBs due to releases from a waste oil UST.
- Volatile organics due to the releases from a waste oil UST.

Soil samples were analyzed for these constituents based on their proximity to the sources.

The contaminants of concern for groundwater consisted of:

- Total petroleum hydrocarbons in the gasoline range including benzene, ethylbenzene toluene, xylene due to the past use of the site as a retail gasoline station.
- Total petroleum hydrocarbons in the diesel through oil range due to the past presence of a heating oil UST and a waste oil UST.
- Lead due to the use of leaded gasoline during the period the gasoline station was in operation and due to the ambiguity of prior data by others.
- Halogenated volatile organics due to the releases from a waste oil UST and nearby dry cleaners. This testing was done during the due diligence period. No halogenated compounds in the groundwater were detected at that time.

The contaminants of concern for soil vapor consisted of:

- Total petroleum hydrocarbons in the gasoline range including benzene, ethylbenzene toluene, xylene due to the past use of the site as a retail gasoline station.

No surface water or sediments were suspected of being impacted by the past operation of the gasoline station. No free product has been observed or suspected of being present in either of the two remedial excavations performed on-site. The soil contamination has extended down below the lower range of contemporary static water levels. Screen intervals chosen for this study were placed to allow measurement of the dissolved phase of the hydrocarbons.

No silica gel cleanup was done for any of the samples analyzed for the current study. For the lead samples in groundwater, samples were submitted for both total and dissolved lead. The groundwater was field filtered and introduced into a sample container with nitric acid preservative. The samples for total lead analysis were placed directly into the sample containers with nitric acid preservative. Groundwater sampling was done with low flow techniques using a stainless steel pump for the deeper wells and a peristaltic pump for the shallower wells.

The lab results for the 2014 remedial excavation are presented on Table 3. The laboratory results for soils from the supplemental drilling are presented on Table 4. The laboratory samples and field parameters for the groundwater sampling are presented on Tables 5, 6, and 7.

As can be seen in the data, four soil samples from the remedial excavation failed in regards to MTCA Method A cleanup values for total petroleum hydrocarbons and/or benzene in soil. Two soil samples from the supplemental borings failed for total petroleum hydrocarbons and/or benzene in soil. The samples also showed that the excavation in 2014 did not extend beneath the depths reported from the prior remedial excavation.

The initial intent for supplemental soil samples was to have the lab analyze several samples using the extended VPH/EPH methodology to allow a site specific cleanup value to be calculated. The levels of hydrocarbons in the supplemental samples was too low to allow meaningful calculations of site specific cleanup levels.

All of the samples were analyzed within their respective holding times. The only exception to this is VPH/EPH analysis that was done outside of the holding time. For the samples tested no anomalies or quality control issues were noted by the laboratory. No formal data validation has been done. It is our opinion that the final data is suitable for use in this report.

The results of soil vapor sampling are summarized on Table 8. The soil vapor probes were installed using DPT drilling techniques and are about 5 feet below the existing grade. The installation details are described in more detail in Appendix D attached to this report. During the winter of 2015/2016, groundwater levels were higher than in previous years. This resulted in the vapor well inlet screens to be below the static water level in Gas Probes SGP 1 and SGP 3.

3.0 CONCEPTUAL SITE MODEL

The USTs were removed prior to contemporary requirements for UST assessments. For this report, we have assumed that all of the USTs had releases from either the tanks and/or the distribution system. The releases impacted soils, soil vapor, and groundwater. The timing of the releases is not known beyond the removal date of the USTs being the early 1980s.

In addition, there were releases at the heating oil UST and the waste oil UST. Shallow surficial contamination with weathered gasoline range hydrocarbons was also noted in a shallow trench that extended north from the former building. The contamination in the trench appears to be surface releases that followed the bedding of clean sand and gravel placed to support a pipe in the shallow trench. The soils impacted with hydrocarbons in the trench line were removed in 2014. The storm drains in the neighborhood are generally above Elev. 423, above the historic static water levels. A sanitary sewer line along the southern margin of the site that has an invert of about 422 as it extends along the north side of Renton Avenue S along the south side of the site. Historically, the investigations by NWHG found no groundwater along the south margin of the site. Thus, no preferential pathways have been identified that would create off-site migration pathways.

The ALKAI report describe an aquitard beneath the site at a depth of about 12 feet below site grades that was present beneath much of the site including the UST cavity. This aquitard level is supported by the reported presence of seepage at a depth of 12 feet below existing grades during the initial remedial excavation.

During the 2014 remedial soil excavation, near-surface groundwater ponded in the remedial excavation. The accumulated seepage was very turbid. The fines within the turbid water appear to have clogged the permeability of the sandier soils present along the south margin of the site where the vertical gradient appears to be present. The shallow screen placed from a depth of 17 to 5 feet bgs in the original Boring MW-101 along the south margin of the remedial excavation was dry.

The removal of pavement and other impermeable surfaces following demolition of the building in 2005 allowed the infiltration of precipitation with a higher level of dissolved oxygen. It is likely that additional bio degradation occurred due to both the prior excavation in 2005 and the subsequent infiltration of surface water following the removal of the building and the pavement.

NWHG described the lack of groundwater along Renton Avenue South as being due to an impervious till soil unit. Terra Associates verified the presence of a till unit along Renton Avenue South; however, the lack of near-surface perched water appears to be due to an incomplete presence of the aquitard described by ALKAI and a local vertical gradient down into a dense silty fine to medium sand unit that underlies the site.

No free phase product has been identified on-site during the two remedial excavations on-site. The groundwater seepage in both remedial excavations had a distinct sheen and appeared to be heavily contaminated. This groundwater was disturbed by the excavation process that emulsified hydrocarbons that had been absorbed onto soil particles and was not representative of the final groundwater conditions in either excavation.

A common concern from releases from retail gasoline stations are vapor intrusion into on and off-site buildings and the migration of gasoline contaminants to off-site locations through either natural geologic materials or high permeability corridors such as utility trenches. In regards to soil vapor, gas monitoring probes have been installed around the new library to monitor not only for gasoline range vapors but for oxygen as well.

It was unknown if the vadose zone would be sufficiently oxic to allow for natural degradation of the gasoline range hydrocarbons and allow for an exit ramp from the vapor intrusion pathway. To address this uncertainty, a sub slab depressurization system was installed to allow for passive or active sub slab ventilation in the event it was necessary. Three gas probes were placed around the building to allow sampling of the near-surface vadose vapor zone. Due to the nature of the building with a raised floor over a slab-on-grade space used as a plenum, no sub slab vapor ports were installed. Subsequently measurements in the soil vapor probes show that the soil pore vapors meets the current sub slab screening levels for gasoline range hydrocarbons. The soil vapor results are summarized on Table 8. The locations of the soil gas probes are shown on Figure 4.

Based on the analytical test results of sampling during both phases of remedial excavation on-site, the highest levels of gasoline range hydrocarbons were in the range of 8 to 12 feet below site grades. This suggests that significant variations in groundwater levels had occurred in the past. No free product was observed in either excavation. The monitoring well screens for the current evaluation were built based on the lack of prior free product and the presence of a source of dissolved phase gasoline range hydrocarbons in the soil horizon 8 to 12 feet below existing grade zone.

4.0 PROPOSED CLEANUP STANDARDS

The intent of the owner, KCLS, was to apply MTCA Method A cleanup levels at all locations on the site. The initial discovery of elevated hydrocarbons during construction appeared to consist of local near-surface releases from the waste oil UST. Subsequent excavation made to remove this local pocket of PCS encountered further PCS and buried building rubble. The excavations proceeded until it would have been required to install temporary shoring to support the adjacent right of ways and to remove the pin piles that were placed to support the new building. During excavation, it was unknown how much additional PCS was present that extended beyond the excavation limits and into the right-of-way. This is discussed more in Section 6 of this report.

The proposed cleanup levels are summarized below. With the exception of vapors all of the cleanup levels are Method B cleanup values.

Soil

TPH Gasoline Range	30 mg/kg.
Benzene	0.03 mg/kg.
Ethyl Benzene	6.0 mg/kg. The soil vapor levels are all below their current screening levels.
Toluene	7.0 mg/kg.
Xylenes	9.0 mg/kg.
Lead	250 mg/kg.

Groundwater

TPH Gasoline Range	800 µg/l.
Benzene	5.0 µg/l.
Ethyl Benzene	700 µg/l.
Toluene	1,000 µg/l.
Xylenes	1,000 µg/l.
Lead	15 µg/l based on drinking water criteria.

Sub Slab Vapor

TPH Gasoline Range

APH EC 5-8 Aliphatics	90,000 µg/m³, based on the Method B value 2,700 µg/m³ for indoor air and an attenuation factor of 0.03.
APH EC 9-12 Aliphatics	4,667 µg/m³, based on the Method B value 140 µg/m³ for indoor air and an attenuation factor of 0.03.
APH EC 9-10 Aromatics	6,000 µg/m³, based on Method B value 180 µg/m³ for indoor air and an attenuation factor of 0.03.
Benzene	10.7 µg/m³, based on the Method B value 0.321 µg/m³ for indoor air and an attenuation factor of 0.03.
Ethyl Benzene	15,233 µg/m³, based on the Method B value 457 µg/m³ for indoor air and an attenuation factor of 0.03.
Toluene	76,333 µg/m³, based on the Method B value 2,290 µg/m³ for indoor air and an attenuation factor of 0.03.
Xylenes	15,233 µg/m³, based on the Method B value 457 µg/m³ for indoor air and an attenuation factor of 0.03.

Terrestrial Ecological Evaluation (TEE)

A TEE was performed using Table 749-1. The site is within a well developed suburban residential and commercial area. Within a 500-foot radius of the site there are several backyards along the south side of S 124th Street that cover slightly less than one-acre in size. Based on this amount of relative open space and the contaminants found on-site, the site passes the Simplified TEE Evaluation. The form is attached in Appendix G.

5.0 REMEDIAL INVESTIGATION SUMMARY AND CONCLUSIONS

Based on prior regulatory closure through the voluntary cleanup program and a No Further Action opinion letter, the operating belief at the beginning of construction was that the site was clean and that no supplemental remedial measures would be needed.

Initial excavations during the preparation of the building pad found some shallow site contamination that appeared to be outside of the area that had been previously addressed. A small UST was also encountered that was outside of the area of the prior remedial measures. The initial conclusion was that the surficial hydrocarbon contamination encountered and the UST were elements that had not been addressed during the earlier site remedial measures.

Based on the initial local nature of the shallow contamination, to keep the project on schedule and reduce impacts to the budget, the perimeter pipe piles were installed while the shallow supplemental remedial excavation was done. Subsequent excavations encountered buried debris that was underlain by deeper pockets of hydrocarbon contamination that overlapped with the prior remedial excavation and a zone of building demolition debris within the former remedial excavation. The limited space on-site precluded the segregation of soils and stockpiling of soils on-site. In addition, due to the debris found within the backfill of the original remedial excavation, the soils were not considered to be suitable for use as structural fill on the site or on other construction sites.

A discussion of the options that were discussed following the discovery of more widespread residential hydrocarbons is presented in the Feasibility Section of the report that follows.

Based on the results of the soil, vapor, and groundwater testing completed for this remedial investigation, it is our opinion that the exposure pathways to the residual hydrocarbon contamination have been addressed. There are three areas with residual contamination that were not addressed during the remedial excavation due to access constraints, prior foundation elements, and property line limitations. The residual soils beneath the sidewalk areas are below the levels listed in Ecology databases for direct contact. This is discussed in more detail within the Feasibility Section of this report.

6.0 FEASIBILITY STUDY/CLEANUP ACTION SUMMARY

Remedial Action Objectives. The intent of the library system was to clean the site up to MTCA Method A cleanup values. The KCLS is committed to providing a safe and healthy location for the public. This would allow a timely re-assessment of the site by Ecology and allow for a timely closure of the environmental issues. The conditions on the ground, the project budget, and the project schedule created a need for the KCLS to consider other options that would allow the project to remain on schedule and still provide a safe public building.

Alternatives. Five alternatives were considered. These alternatives included the following options:

1) ***Do nothing***. This option would have left the contaminated soils in place at all locations. This option would not have addressed the requirements of the MTCA. Potential off-site migration paths would not have been addressed.

2) ***Cleanup to Method A using excavation and off-site disposal***. This option would have required a longer delay in construction, removal of the new pipe piles placed for the support of the new building, the placement of temporary shoring to support the adjacent public rights of way, and was not expected to have reached Method A soil cleanup values at all locations within the area of impacted soils. This alternative may have created a pathway for a property specific No Further Action Determination provided that the groundwater was found to meet MTCA requirements.

3) ***Cleanup to meet Method B cleanup alternatives.*** This alternative would have required the analysis of several soil samples using the VPH methodology to establish site specific cleanup values. During recent supplemental site explorations, no soil samples with sufficiently elevated hydrocarbons were encountered that would have allowed a meaningful evaluation of this alternative. Thus, cleanup to the Method B alternative was determined to have the same limitations as 2 and in the following sections this option is considered to be the same as Option 2.

4) ***Final cleanup using in situ technology with vapor extraction***. The soils along the southern margin of the site where the highest residual impact was found have a high silt content and a high moisture content that limits the use of vapor extraction technology. In addition, the soils with the highest TPH values are beneath the building and are not accessible for direct sampling to monitor or verify the effectiveness of the remedial measure.

5) ***Partial cleanup with an institutional covenant***. This option was chosen for the final remedy. As discussed in this report the exposure pathways are addressed. In addition, passive bio degradation will occur that will further reduce the levels of hydrocarbons in the soils.

A Disproportionate Cost Analysis was completed to illustrate the cost of this alternative 5 vs the alternative outlined in 2 outlined above. The cost summary includes a brief cost review of Option 4). The disproportionate cost alternative is presented in Table FS2 and Chart 1 attached to this report.

Table FS1
Detailed Evaluation and Selection of Alternatives
Remedial Options

Option	Advantage	Disadvantage
1) No Action	*No immediate costs.*	*Will require cleanup at a later date. Will not satisfy the owner's desire for a No Further Action Determination. No economic evaluation was done for this alternative. This option would not have quantified risks to the general public or adjacent properties. This option is not discussed in any subsequent portions of this report.*
2) and 3) Cleanup to MTCA Method A or Method B soil cleanup values	*Would have provided a permanent solution for the property.*	*Would have delayed the completion of the project and added costs to the project. Would require a temporary shoring wall along two sides of the property to provide support for the adjacent right-of-way. Would not have cleaned up the entire site including the adjacent right-of-way.*

Table FS1 (continued)
Detailed Evaluation and Selection of Alternatives
Remedial Options

Option	Advantage	Disadvantage
4) Vapor Extraction	*Reduces the quantity of waste generated.*	*The site soils have a low permeability and high moisture content. Air short circuits would occur in existing utility corridors and high permeability backfill placed into remedial excavation. Direct performance sampling would be precluded by the presence of the existing building and pile foundation.*
5) Partial cleanup with an institutional covenant.	*Expedient and least expensive solution.*	*Will require institutional controls and a restrictive covenant.* Meaningful p*erformance sampling of soils will be limited by the presence of the existing building and pile foundation. Based on current data, all of the exposure pathways have been addressed.*

7.0 EVALUATION OF ALTERNATIVES

The MTCA in WAC 173-340-360(2) (a) requires that a cleanup action must meet these minimum requirements:

Threshold requirements:

- ***Protect human health and the environment***
- ***Comply with cleanup standards***
- ***Comply with applicable state and federal laws***
- ***Provide for compliance monitoring***

Other requirements:

- ***Use permanent solutions to the maximum extent practicable***
- ***Provide for a reasonable restoration time frame***
- ***Consider public concerns***

Table FS2
Detailed Evaluation of Alternatives

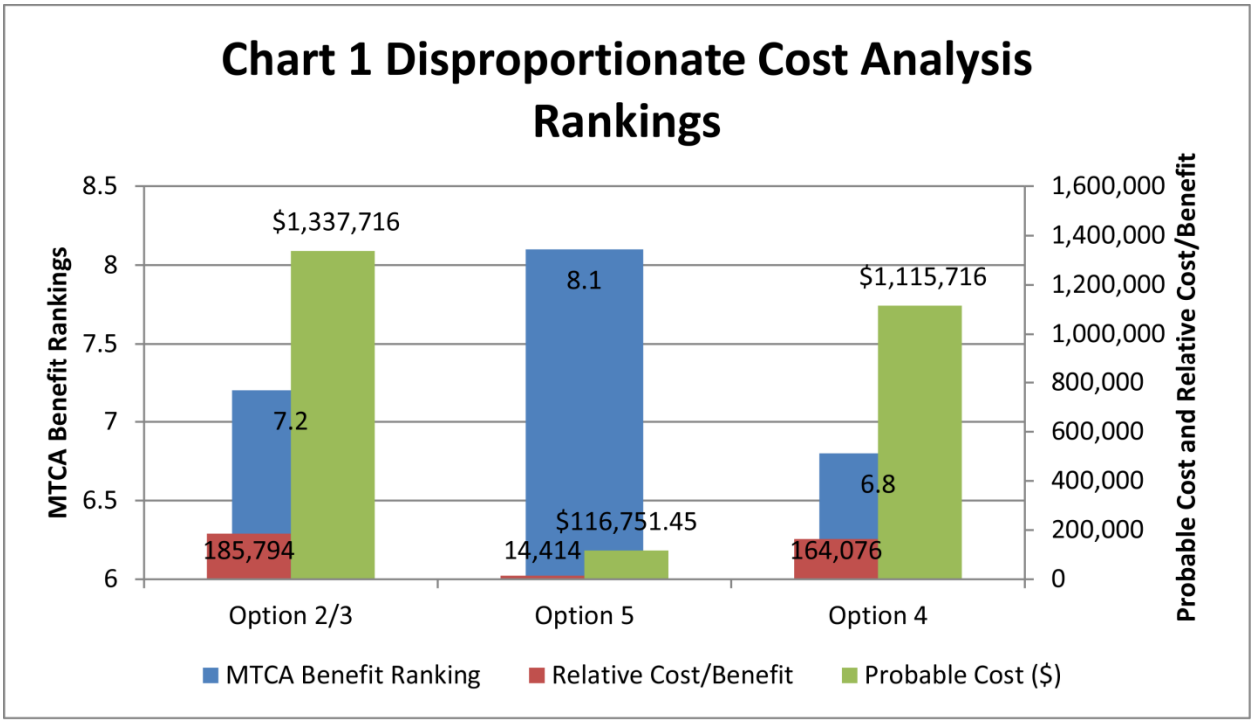
Option Number	Option 2/3	Option 5	Option 4
Description and Ranking	Removal of all soils above Method A or Method B Cleanup Values from within property boundary.	Removal of accessible soil that exceeds Method A or Method B Cleanup Values from within property boundary and an institutional covenant to address the residual soils.	Vapor Extraction to reduce residual impacts that exceed Method A or Method B.
Area of Containment (acres)	<0.1	<0.1	<0.1
Volume of Soil Removal from site (truck cubic yards)	3,390 cubic yards.	3,000 cubic yards	3,000 cubic yards
Overall Alternative Ranking	7.2	8.1	6.8
Compliance with MTCA Threshold Criteria			
Protection of Human Health and the Environment	Yes – Alternative will protect human health and the environment.	Yes – Alternative will protect human health and the environment	Yes – Alternative will protect human health and the environment.
Compliance with Cleanup Standards	Yes – Active removal of impacted soils from within the project property lines.	Yes – Active remedial measures removal and containment of PCS are used for soils not complying with cleanup standards.	Yes – Active remedial measure (vapor removal) is used for soils not complying with cleanup standards.
Compliance with Applicable State and Federal Laws	Yes – Alternative complies with applicable laws.	Yes – Alternative complies with applicable laws.	Yes – Alternative complies with applicable laws.
Provision for Compliance Monitoring	Yes – Alternative includes provisions for compliance monitoring (i.e., compliance soil sampling during removal and subsequent groundwater and soil vapor monitoring).	Yes – Alternative includes provisions for compliance monitoring (i.e., soil vapor and groundwater sampling).	Yes – Alternative includes provisions for compliance monitoring (i.e., soil vapor and groundwater sampling). No direct compliance sampling for soils would be possible.
Restoration Timeframe	Not an option, it was determined that the time element and costs were not within the project budget or schedule. The WDOE VCP process does not allow for timely discussions of options for projects that are under construction.	Work is currently done.	Work would add three to five years to the project schedule. There would be no direct method for measuring the success of this option in regards to soils that are beneath the building. Ultimately, a land use covenant would likely be required.
Evaluation Criteria			
Protectiveness (30% Weighted Factor)	This alternative will achieve overall protection through site land use covenants and engineering controls. (7)	This alternative will achieve overall protection through site land use covenants and engineering controls. (7)	This alternative will achieve overall protection through site land use covenants and engineering controls. (7)
Permanence (20% Weighted Factor)	This option removes all impacted soils from within the property. (8)	This alternative reduces the volume of impacted material by removal of most impacted soils. Remaining impacted soils will be contained in a defined area. (8)	This alternative reduces the volume of impacted material by removal of most impacted soils. It is unknown if this option would reduce remaining impacted soils to below cleanup levels in a reasonable timeframe. (8)
Long-Term Effectiveness (20% Weighted Factor)	This option removes all impacted soils from within the property. (8)	This alternative makes use of partial removal and off-site disposal, with containment for the remaining impacted soils in a defined area. (8)	It is unknown if this option would reduce remaining impacted soils to below cleanup levels in a reasonable timeframe. (7).

Table FS2 (continued)
Detailed Evaluation of Alternatives

Option Number	Option 2/3	Option 5	Option 4
Short-Term Risk Management (10% Weighted Factor)	This option would have delayed the opening of the project and would have increased the cost of the project. The short-term risk was the uncertainly of regulatory concurrence. (8)	This option has been implemented, the short-term risk was the uncertainly of regulatory concurrence. (8)	It is unknown if this option would reduce remaining impacted soils to below cleanup levels in a reasonable timeframe. (6)
Implementability (10% Weighted Factor)	The owner determined that this option would require excessive time and money and would adversely impact the project completion date. (5)	This option has been implemented. All exposure pathways have been addressed. (10)	Implementable; however, the time frame is unknown. (6)
Public Concerns (10% Weighted Factor)	This option would have delayed the opening of the library. Visits to the library show that the facility is in demand. Delays would have created public concerns over availability of the library resources at the new branch. (6)	No known public concerns. (10)	This alternative would require closure of the sidewalk areas during the installation of the vapor extraction wells, piping, and of the vacuum pump assembly. At least one parking stall would be needed for the long-term staging of a vacuum assembly. This option would also add costs to the project with no demonstrated decrease in risk to the public. (5)
Projected Cost Estimate	**$1,337,716**	**$1,015,716**	**$116,751.45**

Table FS3
Ranking of Selected Alternatives

		Alternative 2/3		Alternative 5		Alternative 4	
Factor	**Weighting**	**Rank**	**Value**	**Rank**	**Value**	**Rank**	**Value**
Protectiveness	0.3	7	2.1	7	2.1	7	2.1
Permanence	0.2	8	1.6	8	1.6	8	1.6
Long-term effectiveness	0.2	8	1.6	8	1.6	7	1.4
Short-term risk	0.1	8	0.8	8	0.8	6	0.6
Implementability	0.1	5	0.5	10	1	6	0.6
Public concerns	0.1	6	0.6	10	1	5	0.5
Sum	1		7.2		8.1		6.8



The contractor summarizes the costs to date in their requests for change order documents attached to this report in Appendix H. The contactors additional costs were a total of $873,304.17. Our costs excluding the costs of closing the prior monitoring wells is about $144,000. These costs do not include project management costs by the owner or the construction management team.

As discussed in Table 1, none of the options is expected to provide soil TPH levels that achieve MTCA Method A cleanup values throughout the site.

8.0 DISCUSSION OF ALTERNATIVE

Potential Risk

The risk from the remaining contamination will be low. The risk of exposure is limited to short-term direct contact by workers in utility trenches, the levels of TPH in that gasoline range and of benzene are in the range considered safe for direct contact. The area with the highest residual TPH is beneath the building and is not an area where future utilities will be placed.

Practicality of Achieving Shorter Timeframe

The proposed action is complete at this time. Option 2/3 is not applicable since the building has been completed. The other option, Option 4, increases the funding requirements and will delay the implementation of the cleanup.

Availability of Alternate Water Supplies

No impacts to drinking water supplies are known or suspected to exist.

Likely Effectiveness and Reliability of Institutional Controls

The area that will be addressed by the institutional controls are an area of commercial development. No zoning changes are planned in the near future that will change the existing site use.

Ability to Control and Monitor Contaminant Migration

The impacted soils are in a defined area and will be subject to a land use covenant recorded with King County. No groundwater or soil vapor migration has been documented as occurring.

Potential for Contaminant Degradation Over Time

The contaminants are expected to degrade over time. The groundwater has been oxic throughout the monitoring period and soil vapor measurements have found the soil vapor is oxic.

9.0 CLEANUP ACTION PLAN-CONCLUSION

Based on the date presented in the Remedial Investigation Section of this report and the discussion of alternatives in the Feasibility Study portion of this report, it is our opinion that the site qualifies for a property specific no Further Action with a deed restriction. The exposure pathways have been addressed. The monitoring data supports the conclusion that natural degradation will occur to reduce the levels of residual contamination with gasoline range hydrocarbons. Verification testing is not possible due to the presence of the building over the residual contamination and the piles that support the building.

In summary:

- During the construction of the new building, accessible PCS was removed from the site.
- Groundwater impacted from the excavation was removed for off-site treatment.
- None of the permanent groundwater monitoring wells, the prior wells, and the current wells, have encountered levels of gasoline range hydrocarbons that require remedial action.
- The vapor pathway has been addressed. The levels of gasoline range hydrocarbons in the soil vapor probes meets the screening levels and sufficient oxygen is present to allow natural degradation to occur.
- No stormwater infiltration facilities are present or planned for the underlying tax parcel or within the MTCA definition of the site. Most of the parcel is covered by the building and surrounding hardscaping.
- No drinking water wells are planned for the underlying tax parcel.
- The soils beneath the sidewalk areas where future utilities may be placed is suitable for direct contact.

10.0 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 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. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the new Skyway Library project in unincorporated King County, Washington. This report is for the exclusive use of the King County Library System and their authorized representatives.

Table 1
Static Water Level Summary
Monitoring Wells by NW HydroGeo Consultants

			2/19/2008		5/15/2008		8/14/2008	
Well Number	**Elev.**	**Screen Depth**	**Depth**	**Elev.**	**Depth**	**Elev.**	**Depth**	**Elev.**
1	429.26	10-20	5.7	423.56	6.41	422.85	8.5	420.76
2	430.33	10-20	6.4	423.93	7.12	423.21	9.25	421.08
3	428.3	10-30	Dry		Dry		Dry	
4	429.25	10-20	5.38	423.87	6.08	423.17	8.14	421.11

			11/13/2008		2/22/2016	
Well Number	**Elev.**	**Screen Depth**	**Depth**	**Elev.**	**Depth**	**Elev.**
1	429.26	10-20	6.27	422.99	4.4	424.86
2	430.33	10-20	6.97	423.36	5.09	425.24
3	428.3	10-30	Dry		Dry	
4	429.25	10-20	5.97	423.28	4.08	425.17

Notes: All depths and elevations are in feet.
Refer to report prepared by NW HydroGeo for details on elevations.
Readings prior to February 22, 2016 were by NW HydroGeo.

Table 2
Static Water Level
Monitoring Wells Built by Terra Associates

Well	Screen Depth (Feet Below-grade)	Surface Elev.	Stick Down	PVC MP Elev.	10/7/2015		10/14/2015		10/20/2015		10/23/2015	
					Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	5-17	428.89	0.42	428.47	Dry		Dry		Dry		Re-drilled to deeper depth.	
MW-102	10-20	428.82	0.38	428.44	Dry		Dry		Dry		Re-drilled to deeper depth.	
MW-103	10-20	427.55	0.33	427.22	10.05	417.17	9.05	418.17	8.89	418.33	8.92	418.3
MW-104	10-20	427.85	0.29	427.56	10.45	417.11	9.43	418.13	9.3	418.26	9.31	418.25

Table 2
(continued)
Static Water Level
Monitoring Wells Built by Terra Associates

Well	Screen Depth (Feet Below-grade)	Surface Elev.	Stick Down	PVC MP Elev.	12/4/2015		12/14/2016		2/3/2016	
					Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	30-32	428.89	0.42	428.47	Dry		Dry		Dry	
MW-102	40-55	428.82	0.38	428.44	43.53	384.91			39.34	389.1
MW-103	10-20	427.55	0.33	427.22	4.97	422.25			3.41	423.81
MW-104	10-20	427.85	0.29	427.56	5.33	422.23			3.72	423.84
MW-105	45-55	428.8	0.45	428.35			47	381.35	44.58	383.77

Table 2
(continued)
Static Water Level
Monitoring Wells Built by Terra Associates

Well	Screen Depth (Feet Below-grade)	Surface Elev.	Stick Down	PVC MP Elev.	3/29/2016		7/14/2016		10/18/2016	
					Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	30-32	428.89	0.42	428.47	Dry		Dry			
MW-102	40-55	428.82	0.38	428.44	36.45	391.99	39.55	388.89	42.08	386.36
MW-103	10-20	427.55	0.33	427.22	5.61	421.61	7.07	420.15	6	421.22
MW-104	10-20	427.85	0.29	427.56	5.71	421.85	7.52	420.04	6.25	421.31
MW-105	45-55	428.8	0.45	428.35	42.73	385.62	45.02	383.33	47.07	381.28

Notes: All elevations and depths are in feet.
Readings for initial Wells MW-101 and 102 are shown for information purposes, both wells were subsequently re-drilled to deeper depths.

Table 3
Soil Sample Summary-Remedial Action
KCLS Skyway

Sample Date	Sample ID	Depth	TPH Diesel Range	TPH Oil Range	TPH Gasoline Range	Benzene	Toluene	Ethyl Benzene	m,p Xylene	o Xylene	EDB	EDC	MTBE	Lead	Notes	Removed?
8-7-14	8-7-1	4	4,600	11,000	1,200	0.067	<0.13	0.42	0.86	<0.65	NT	NT	NT	NT	TP-1, C, M	Yes
	8-7-2	5.5	<28	<56	10	<0.02	<0.058	<0.058	<0.058	<0.058	NT	NT	NT	NT	TP-2, C, M	No
	8-7-3	3.5	<28	<56	16	<0.02	<0.06	<0.06	<0.06	<0.06	NT	NT	NT	NT	TP-3, C, M	No
	8-7-4	2	<840	600	3,800	<0.02	<0.06	1.8	2.8	<1.2	NT	NT	NT	NT	TP-4, C, M	Yes
	8-7-5	4.5	<100	290	770	<0.02	<0.064	0.19	0.63	<0.32	NT	NT	NT	NT	TP-5, C, M	Yes
8-13-14	8-13-1	1.5	<130	580	<7.5	<0.2	<0.075	<0.075	<0.075	<0.075	NT	NT	NT	NT	TP-6, C	Yes
	8-13-2	4.5	*<63*	*<130*	*<25*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-7, C	No
	8-13-3	5	*<58*	*<120*	*<23*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-8, C	No
	8-13-4	2	*<59*	*<120*	*<24*	NT	NT	NT	NT	NT	NT	NT	NT	NT	Grid Z1@11, C	No
	8-13-5	5.5	*<29*	*150*	<7.1	<0.02	<0.071	<0.071	<0.071	<0.071	NT	NT	NT	NT	TP-9, C	Yes
	8-13-6	2	<38	370	*<23*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-9, C	Yes
	8-13-7	6.5	2,400	31,000	860	0.68	<0.13	1.9	1.3	1.6	NT	NT	NT	NT	TP-10, C	Yes
	8-13-8	7	130	660	180	0.028	<0.12	0.3	0.22	0.16	NT	NT	NT	NT	TP-11, C	Yes
	8-13-9	2	<27	<54	<5.8	<0.02	<0.058	<0.058	<0.058	<0.058	NT	NT	NT	NT	TP-10, C	Yes
	8-13-10	5.5	*<55*	*<110*	*<22*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-12, C	Yes
	8-13-11	2	*<54*	*<110*	*<22*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-12, C	Yes
	8-13-12	2.5	<150	870	*<24*	NT	NT	NT	NT	NT	NT	NT	NT	NT	TP-1, C	Yes
8-25-14	8-25-1	10	270	1,300	430	<0.02	<0.098	0.2	0.45	<0.49	NT	NT	NT	NT	C, M	Yes
	8-25-2	9	<28	80	1,400	<0.021	<0.1	0.57	1.7	<0.5	NT	NT	NT	NT	C, M	Yes
	8-25-3	9	<55	<28	<5.5	<0.02	<0.55	<0.55	<0.55	<0.55	NT	NT	NT	NT	E	No
	8-25-4	9	<29	<58	<6.2	<0.02	<0.062	<0.062	<0.062	<0.062	NT	NT	NT	NT	E	Yes
	8-25-5	8	510	1300	670	<0.021	<0.11	0.43	0.42	<0.55	NT	NT	NT	NT	C, M	Yes
8-26-14	8-26-1	13	<29	<57	<5.5	<0.02	<0.55	<0.55	<0.55	<0.55	NT	NT	NT	NT	D	Yes
9-15-14	9-15-1	2.5	1,100	20,000	NT	NT	NT	NT	NT	NT	NT	NT	NT	38	B, C, A	Yes
	9-15-2	2.5	1,000	25,000	NT	NT	NT	NT	NT	NT	NT	NT	NT	16	B, C, A	Yes
	9-15-3	3.5	2,200	30,000	NT	NT	NT	NT	NT	NT	NT	NT	NT	860	B, C, A	Yes
9-16-14	9-16-1	8	NT	NT	400	0.029	<0.12	1.2	0.71	0.52	NT	NT	NT	NT	A	Yes
9-18-14	9-18-1	11	<28	<56	<11	<0.023	<0.11	0.14	<0.11	<0.11	NT	NT	NT	NT	E	No
	9-18-2	12	NT	NT	930	1.0	<0.13	12	45	11	NT	NT	NT	NT	E	No
	9-18-3	13	<30	<61	<7.0	<0.02	<0.7	<0.7	<0.7	<0.7	NT	NT	NT	NT	D	No
	9-18-4	9	NT	NT	230	0.18	<0.29	4.4	17	1.0	NT	NT	NT	NT	C	Yes
9-19-14	9-19-1	13.5	<32	<65	<7.9	<0.02	<0.079	<0.079	<0.079	<0.079	NT	NT	NT	NT	D	No
9-25-14	9-25-1	13	<33	<65	<7.9	0.023	<0.079	<0.079	0.084	<0.079	NT	NT	NT	NT	D	No
	9-25-2	10	NT	NT	1,900	1.3	<0.11	50	150	5.5	<0.059	<0.059	<0.059	<5.5	C	Yes
	9-25-3	12	NT	NT	<7.8	<0.02	<0.078	<0.078	<0.078	<0.078	NT	NT	NT	NT	E	No
	9-25-4	13	NT	NT	2,500	2.2	<0.14	19	33	0.53	NT	NT	NT	NT	C, A	Yes
	9-25-5	13.5	<29	<59	<6.9	<0.02	<0.069	<0.069	<0.069	<0.069	<0.0012	<0.0012	<0.0012	<5.9	E	No

Table 3
(continued)
Soil Sample Summary-Remedial Action
KCLS Skyway

Sample Date	Sample ID	Depth	TPH Diesel Range	TPH Oil Range	TPH Gasoline Range	Benzene	Toluene	Ethyl Benzene	m,p Xylene	o Xylene	EDB	EDC	MTBE	Lead	Notes	Removed
9-26-14	9-26-1	12.5	NT	NT	<6.1	<0.02	<0.061	<0.061	<0.061	<0.061	NT	NT	NT	NT	D	No
	9-26-2	12	NT	NT	150	0.17	<0.3	1.1	<0.3	<0.3	NT	NT	NT	NT	C	Yes
	9-26-3	11	NT	NT	250	0.22	<0.34	3.3	8.3	0.34	NT	NT	NT	NT	C	Yes
9-29-14	9-29-1	13	<29	<59	<6.4	<0.02	<0.064	<0.064	<0.064	<0.064	NT	NT	NT	NT	E	No
	9-29-4	13.5	<33	<65	<8.3	<0.02	<0.083	<0.083	<0.083	<0.083	<0.0013	<0.0013	<0.0013	<6.5	D	No
9-30-2014	9-30-1	4.5	<30	<60	<6.9	<0.02	<0.069	<0.069	<0.069	<0.069	NT	NT	NT	NT	E	No
	9-30-2	12	NT	NT	<5.9	<0.02	<0.059	0.19	0.2	<0.059	NT	NT	NT	NT	D	No
10-1-2014	10-1-1	8.5	<28	<56	220	0.035	<0.052	3.8	15	4.6	NT	NT	NT	NT	E	No
	10-1-2	15	<47	280	<4.9	<0.02	<0.49	<0.49	<0.49	<0.49	<0.0011	<0.0011	<0.0011	<5.5	E	No
	10-1-3	11	760	2,600	1,500	0.88	<0.11	13	0.58	<0.11	NT	NT	NT	NT	C,A	Yes
10-2-2014	10-2-1	10	640	5,400	330	0.78	<0.11	1.2	0.78	<0.11	NT	NT	NT	NT	C, A	Yes
	10-2-2	12	<28	490	350	0.4	<0.054	2.0	0.99	<0.054	NT	NT	NT	NT	C, A	Yes
	10-2-3	4.5	<28	<57	<5.7	<0.2	<0.057	<0.057	<0.057	<0.057	<0.0011	<0.0011	<0.0011	7.7	E	No
	10-2-4	8	900	630	3,000	<0.023	<0.12	0.83	1.2	1.8	NT	NT	NT	NT	C, M	Yes
10-3-2014	10-3-1	12	<46	<140	97	0.05	<0.066	0.43	0.094	<0.066	<0.07	<0.07	<0.07	8.1	E	No
10-6-2014	10-6-2	5	<33	110	29	<0.02	<0.08	<0.08	<0.08	<0.08	NT	NT	NT	NT	E, M	No
	10-6-3	15	<32	<63	<6.7	<0.02	<0.067	<0.067	<0.067	<0.067	NT	NT	NT	NT	D	No
10-7-2014	10-7-1	5	<28	<50	<6.0	<0.02	<0.06	<0.06	<0.06	<0.06	NT	NT	NT	NT	E	No
10-8-2014	10-8-1	8	47	190	16	<0.02	<0.088	<0.088	<0.088	<0.088	NT	NT	NT	NT	D, M	No
	10-8-3	5	<32	<63	<7.2	<0.02	<0.072	<0.072	<0.072	<0.072	NT	NT	NT	NT	E	No
10-9-2014	10-9-1	5	<29	<57	<6.4	<0.02	<0.06	<0.06	<0.06	<0.06	NT	NT	NT	NT	E	No
	10-9-2	3	<33	130	<8.2	<0.02	<0.082	<0.082	<0.082	<0.082	NT	NT	NT	NT	E	No
	10-9-3	3	<32	<64	<7.7	<0.02	<0.077	<0.077	<0.077	<0.077	NT	NT	NT	NT	E	No
	10-9-4	3	<29	<58	<6.0	<0.02	<0.06	<0.06	<0.06	<0.06	NT	NT	NT	NT	E	No
	10-9-5	5	<29	<58	<5.4	<0.02	<0.054	<0.054	<0.054	<0.054	NT	NT	NT	NT	D	No
	10-9-6	2	<28	<55	<5.1	<0.02	<0.051	<0.051	<0.051	<0.051	NT	NT	NT	NT	E	No
MTCA			2,000	2,000	30	0.03	7	6	9		0.005	480	0.1	250		

Notes:
A indicates the area represented by the sample was removed for off-site disposal.
B indicates the samples were taken from the waste oil UST cavity during the UST assessment.
C indicates that the sample is a characterization sample.
D indicates that the sample is the final sample from the base of the excavation.
E indicates that the sample is a final sidewall sample.
NT indicates that the sample was not tested for the individual analyte.
Values in italics are from HCID testing.
Shaded cells are values that exceed the MTCA Method A cleanup value.
M indicates that the lab flagged the chromatogram as resembling mineral spirits.

Table 4
Supplemental Borings
Soil Sample Summary
KCLS Skyway

Boring	Depth (feet)	TPH Gasoline Range	Benzene	Toluene	Ethyl Benzene	m,p Xylene	o Xylene	Sample Date
MW-101	7.5	7.0	0.02U	0.049U	0.17	0.47	0.049U	10-5-2015
	10	27	0.1	2.3	0.89	3.2	1.3	
	12.5	5.7U	0.02U	0.057U	0.057U	0.057U	0.057U	
	17.5	5.8U	0.02U	0.058U	0.058U	0.058U	0.058U	
	22.5	5.3U	0.02U	0.053U	0.053U	0.053U	0.053U	11-21-2015
	37.5	6.3U	0.02U	0.063U	0.063U	0.063U	0.063U	Re-drill to place deeper screen.
MW-102	7.5	5.7U	0.02U	0.057U	0.057U	0.057U	0.057U	10-5-15
	10	5.6U	0.02U	0.056U	0.056U	0.056U	0.056U	
	12.5	5.7U	0.02U	0.057U	0.057U	0.057U	0.057U	
	22.5	5.4U	0.02U	0.054U	0.054U	0.054U	0.054U	11-21-2015
	40	4.5U	0.02U	0.045U	0.045U	0.045U	0.045U	Re-drill to place deeper screen.
	50	5.7U	0.02U	0.057U	0.057U	0.057U	0.057U	
MW-103	7.5	6.3U	0.02U	0.063U	0.063U	0.063U	0.063U	10-6-2015
	10	6.0U	0.02U	0.06U	0.06U	0.06U	0.06U	
MW-104	5.0	5.5U	0.02U	0.055U	0.055U	0.055U	0.055U	
	10	5.6U	0.02U	0.056U	0.056U	0.056U	0.056U	

Table 4 (continued)
Supplemental Borings
Soil Sample Summary
KCLS Skyway

Boring	Depth (feet)	TPH Gasoline Range	Benzene	Toluene	Ethyl Benzene	m,p Xylene	o Xylene	Sample Date
MW-105	12.5	16	0.075	0.19	0.41	1.6	0.35	12-14-2015
	15	20	0.29	0.08U	0.76	2.9	0.65	
	20	5.3U	0.02U	0.53U	0.53U	0.17	0.53U	
	25	5.1U	0.02U	0.051U	0.051U	0.051U	0.051U	
	35	5.8U	0.02U	0.058U	0.058U	0.058U	0.058U	
	45	5.9U	0.02U	0.059U	0.059U	0.059U	0.059U	
MTCA	Method A	30	0.03	7.0	6.0	9.0		

Notes: Depths are in feet below ground surface and are the top of the sample interval.
NT indicates that the sample was not tested for the individual analyte.
Shaded cells are values that exceed the MTCA Method A cleanup value.

Table 5
Analytical Testing Summary
Groundwater
Prior Testing by NW HydroGeo Consultants

Monitoring Well Number	Date	TPH Diesel Range	TPH Oil Range	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Lead	Dissolved lead
MW-1	2/19/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.017
	5/15/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.004
	8/14/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.055
	11/13/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.017
	2/15/2010	NT	NT	NT	NT	NT	NT	NT	<0.015	NT
MW-2	2/19/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.32
	5/15/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.010
	8/14/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.018
	11/13/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	ND	0.008
	2/15/2010	NT	NT	NT	NT	NT	NT	NT	<0.015	NT
MW-3	2/19/2008	Dry								
	5/15/2008									
	8/14/2008									
	11/13/2008									
	2/25/2010									
MW-4	2/19/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	NT	0.008
	5/15/2008	0.2U	0.2U	0.25U	ND	ND	0.0007	0.0007	NT	0.004
	8/14/2008	0.2U	0.2U	0.447	0.0029	ND	0.0235	0.0036	NT	0.050
	11/13/2008	0.2U	0.2U	0.25U	ND	ND	ND	ND	NT	0.009
	2/15/2010	NT	NT	NT	NT	NT	NT	NT	<0.015	NT
MTCA	Method A	500	500	800	0.005	1.0	0.7	1.0	0.015	

Notes: All units are mg/l, parts per million equivalent.
Lab data reports for BETX and dissolved lead were not attached to prior reports by NW HydroGeo Consultants.
Total lead samples were not considered to be representative of the site groundwater by Ecology and are not flagged in this table as exceeding the MTCA Method A cleanup value.

Table 6
Analytical Testing Summary
Groundwater
Testing by Terra Associates Inc.

Monitoring Well Number	Date	Elapsed Time (days)	TPH Diesel Range	TPH Oil Range	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	m,p- Xylenes	o-Xylene	Total Lead	Dissolved lead
MW-101	10/23/2015											
	2/2/2016											
	4/29/2016											
	7/15/2016											
	10/17/2016											
MW-102	2/2/2016		260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.7	1.0U
	4/29/2016	87	260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	2.5	1.0U
	7/15/2016	77	270U	430U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	10/17/2016	94										
MW-103	10/23/2015		260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	2/2/2016	102	260U	440U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	4/29/2016	87	260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	7/15/2016	77	270U	430U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
MW-104	10/23/2015		270U	420U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	7.1	1.0U
	2/2/2016	102	260U	440U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	4/29/2016	87	260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	7/15/2016	77	270U	440U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	2.5	1.0U
MW-105	2/2/2016		260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	4/29/2016	87	260U	410U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	7/15/2016	77	280U	450U	100U	0.5U	1.0U	1.0U	1.0U	1.0U	1.1U	1.0U
	10/17/2016	94										
MTCA Method A			500	500	800	5	1,000	700	1,000		15	

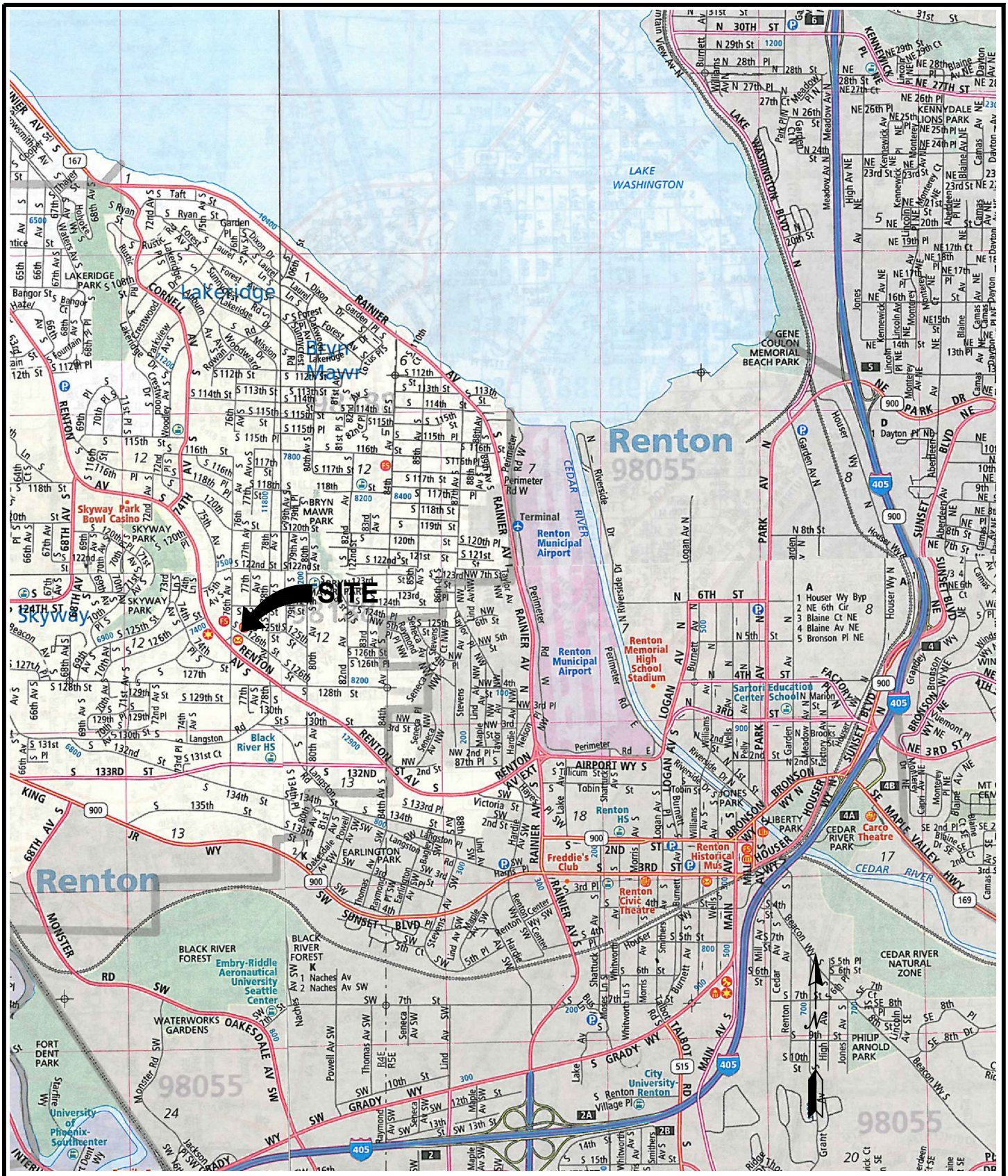
Notes: All units are µg/l, parts per billion equivalent.

Table 7
Soil Vapor

Soil Vapor Probe	Date	EC5-8 Aliphatics	EC 9-12 Aliphatics	EC 9-10 Aromatics	Oxygen
VPSW-1	8/3/2016	100U	180	100U	
VPSW-2	8/3/2016	350	300	100U	
VPSW-3	2/26/2016	310	130	100U	
	8/3/2016	1000	2100	200	
MTCA	Method B	90,000	4667	6,000	Not applicable

Soil Vapor Probe	Date	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene
VPSW-1	8/3/2016	3.2U	110	33	140	27
VPSW-2	8/3/2016	4.0	710	180	730	120
VPSW-3	2/26/2016	3.2U	9.7	6.3	9.7	4.6
	8/3/2016	5.7	700	190	800	140
MTCA	Method B	10.7	76,333	15,233	1,523	1,523

Notes: All units are µg/cubic meter.
MTCA Method B levels are screening levels based on indoor air levels and a 0.03 attenuation factor.
The attenuation factor is for sub slab readings and is conservative for soil vapor readings.
Oxygen is measured in the field with a field instrument.



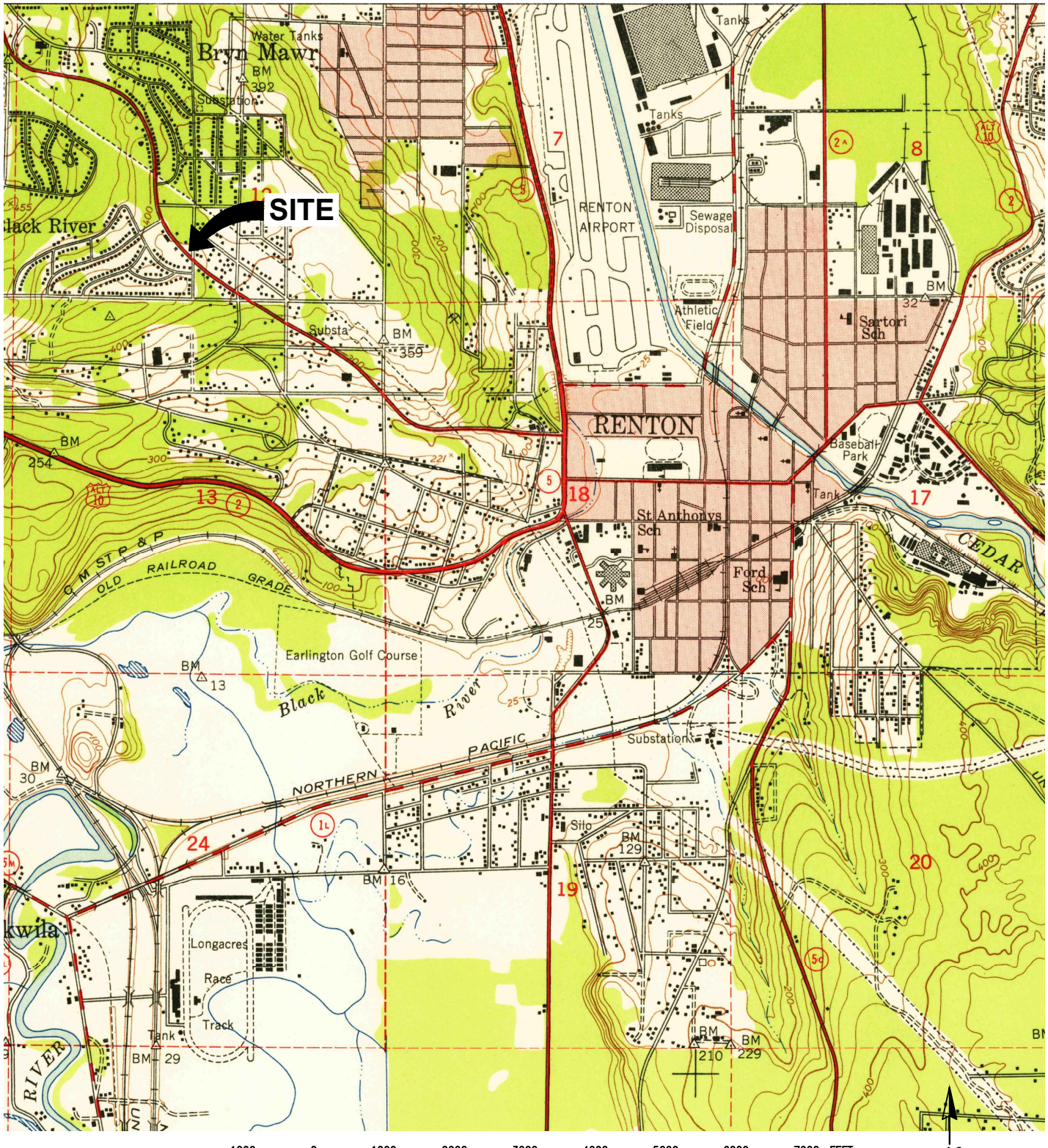
REFERENCE: THOMAS BROTHERS GUIDE 2001

NOT TO SCALE

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

VICINITY MAP
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 1



1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 1/2 0 1 MILE

N

CONTOUR INTERVAL: 25 METERS
REFERENCE: USGS MAPS, RENTON, WASHINGTON QUADRANGLE

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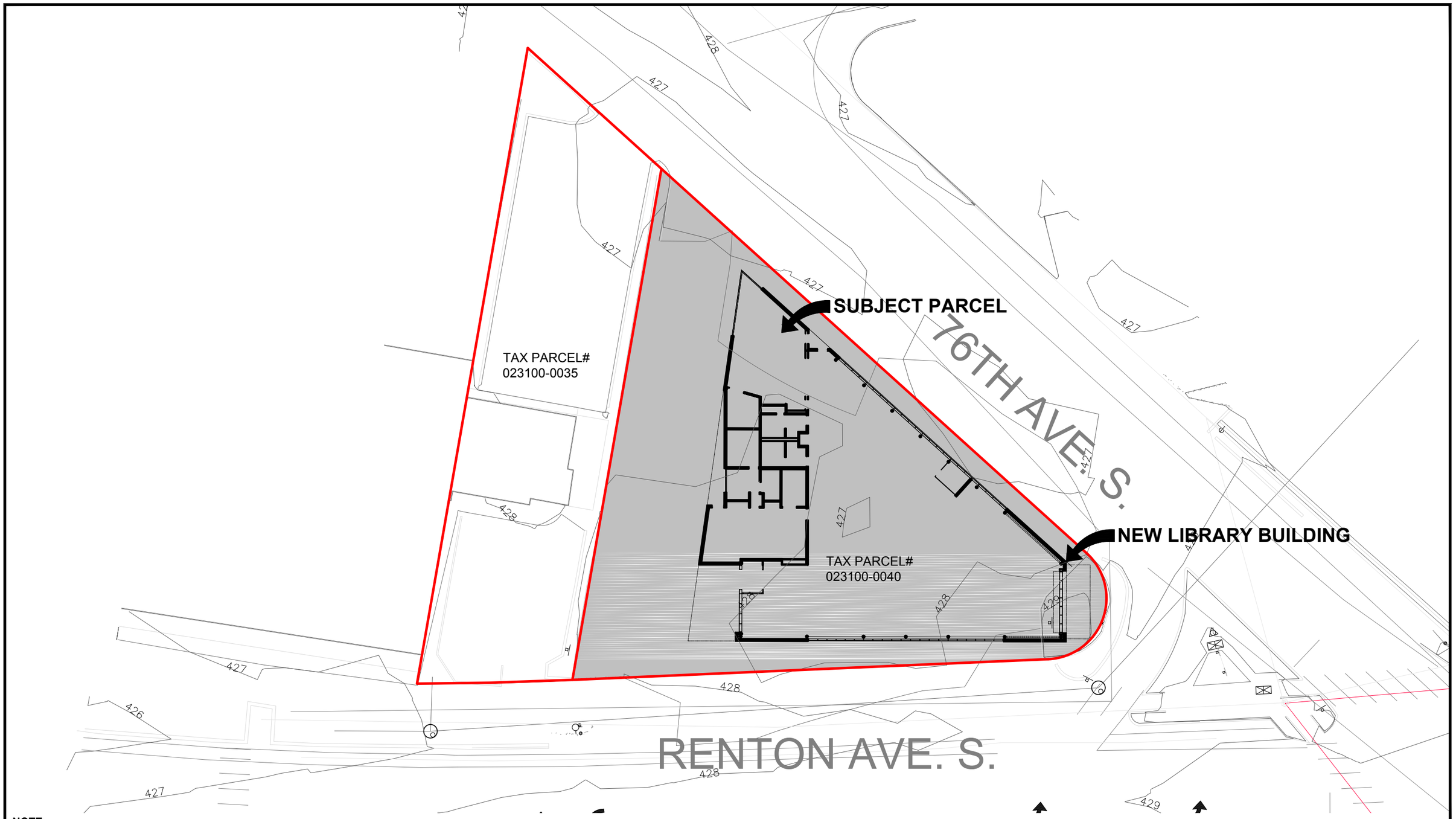
TOPOGRAPHIC VICINITY MAP
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 2



NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY CLIENT.

0 30 60

APPROXIMATE SCALE IN FEET

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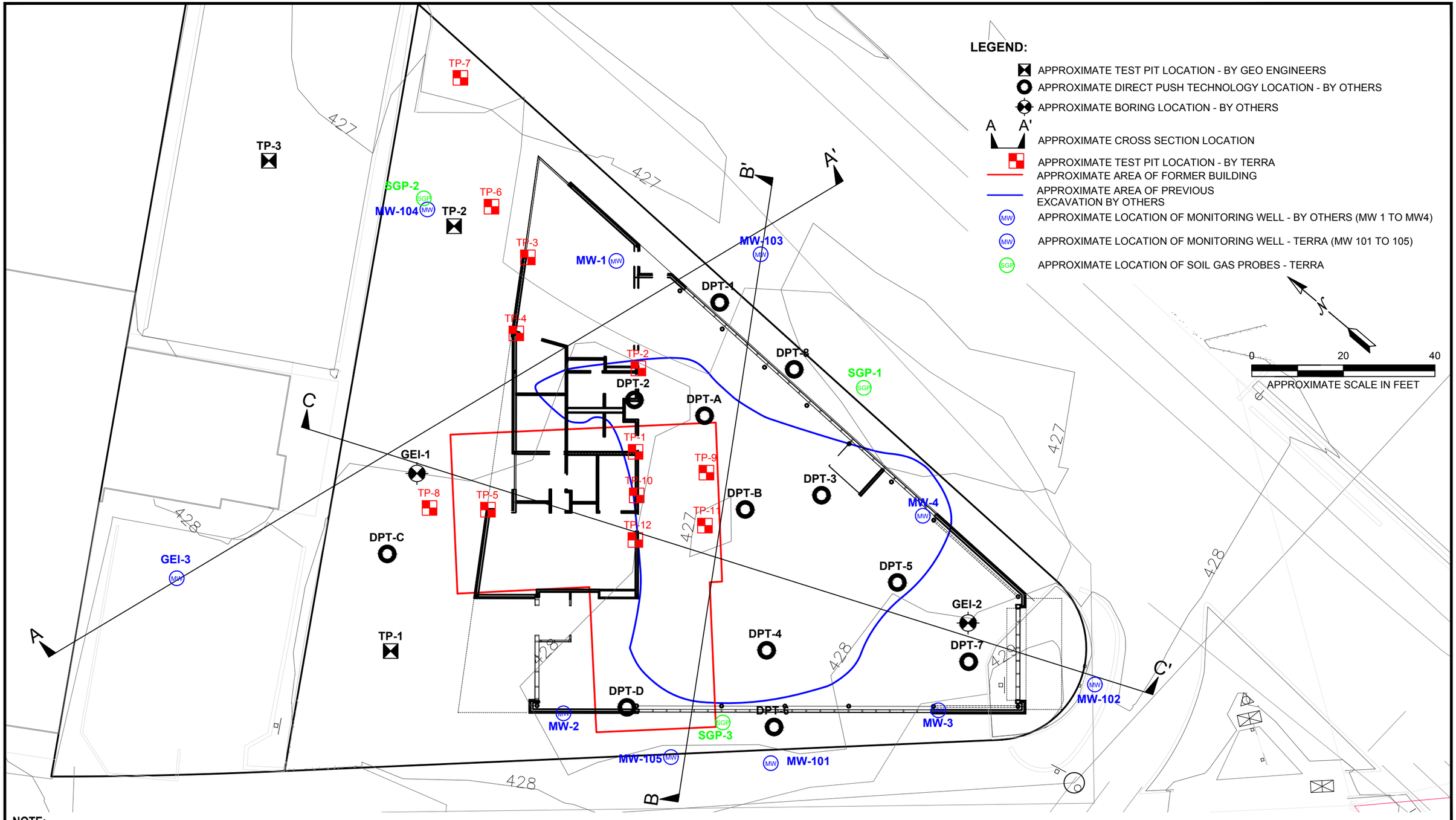
Environmental Earth Sciences

SUBJECT PARCEL OUTLINE
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 3



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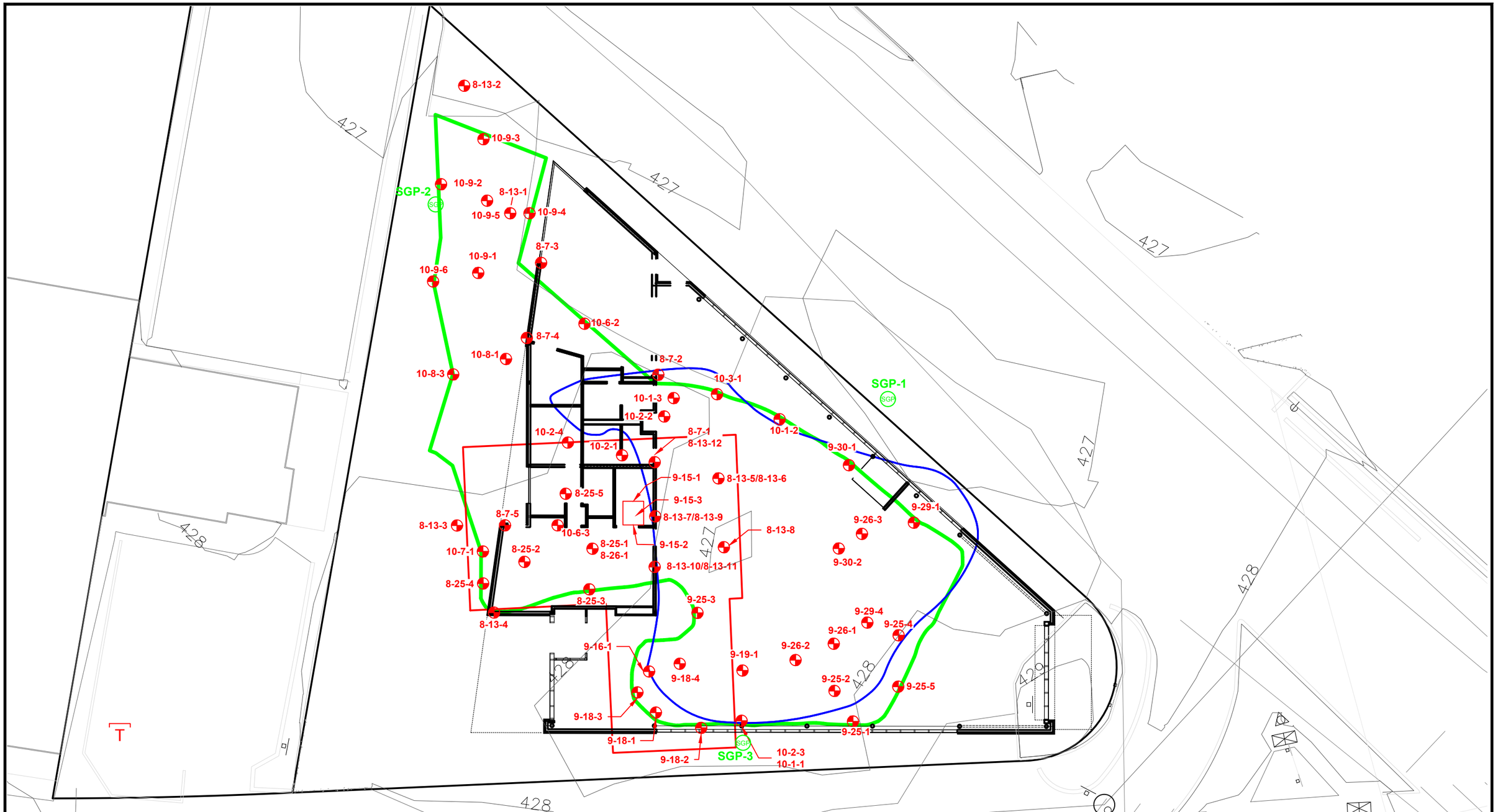
EXPLORATION LOCATION PLAN
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 4



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REFERENCE: SITE PLAN PROVIDED BY CLIENT.

LEGEND:

- APPROXIMATE SAMPLE LOCATION
- APPROXIMATE AREA OF CURRENT EXCAVATION
- APPROXIMATE AREA OF PREVIOUS EXCAVATION BY OTHERS

0 20 40

APPROXIMATE SCALE IN FEET

Terra Associates, Inc.

Consultants in Geotechnical Engineering Geology and Environmental Earth Sciences

SAMPLE LOCATION PLAN
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 5

10-3-1	
Sidewall	12' bgs
TPHG	97
B	.05
E	0.43
T	<0.066
X	0.094

Legend	
bgs	below site grade
TPHG	total petroleum hydrocarbons in the gasoline range
B	Benzene
E	Ethyl Benzene
T	Toluene
X	Xylenes
Red	indicates sample that was above MTCA Method A

10-1-1	
Sidewall	8.5' bgs
TPHG	220
B	0.035
E	3.8
T	<0.052
X	19.6

9-18-2	
Sidewall	12'bgs
TPHG	930
B	1.0
E	12
T	<0.13
X	56

10-2-2	
Sidewall	
TPHG	350
B	0.4
E	2.0
T	<0.054
X	3.0

NOTE:

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REFERENCE: SITE PLAN PROVIDED BY CLIENT.

LEGEND:

- APPROXIMATE SAMPLE LOCATION
- APPROXIMATE AREA OF CURRENT EXCAVATION
- APPROXIMATE AREA OF FORMER BUILDING
- APPROXIMATE AREA OF PREVIOUS EXCAVATION BY OTHERS

0 20 40

APPROXIMATE SCALE IN FEET

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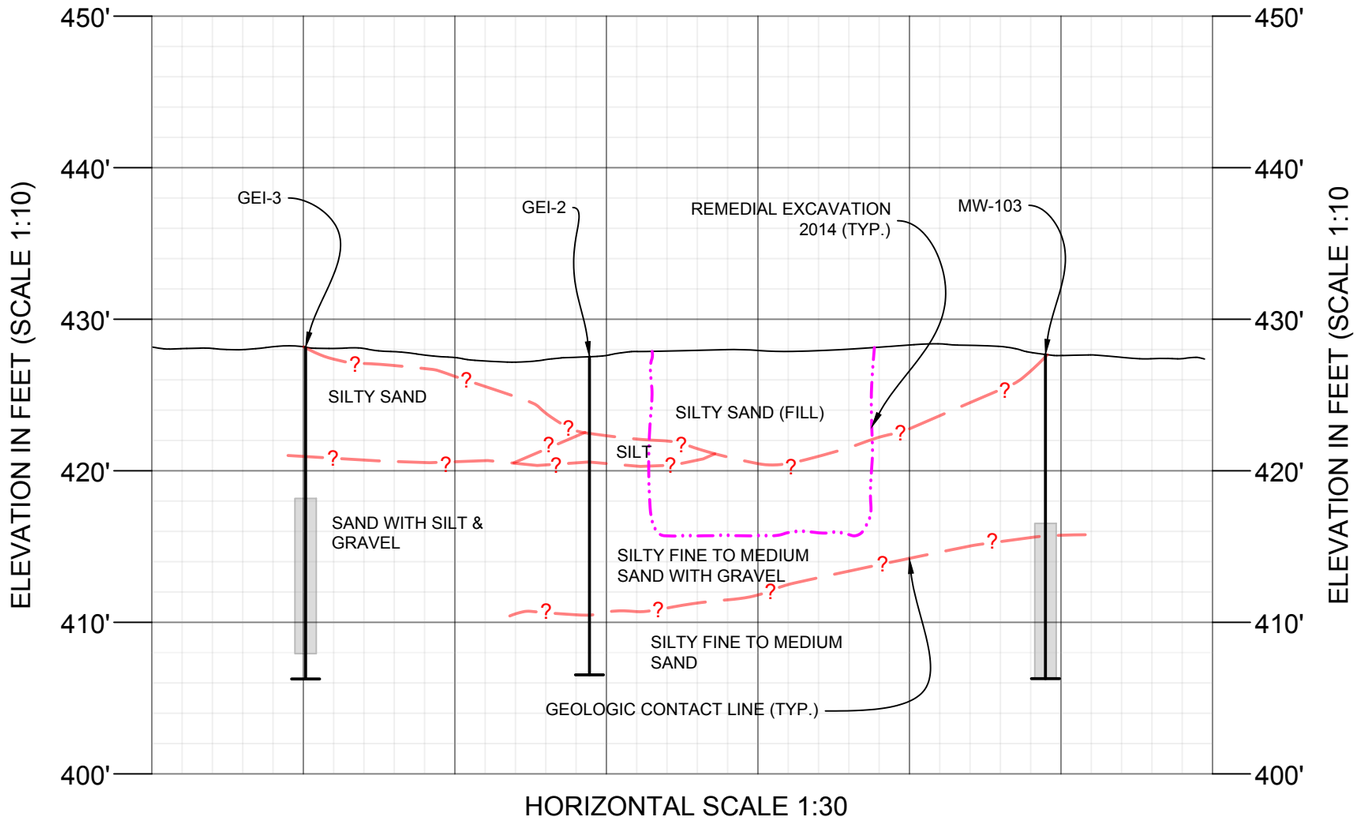
FINAL SAMPLE LOCATIONS
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2 | Date APRIL 2017 | Figure 6



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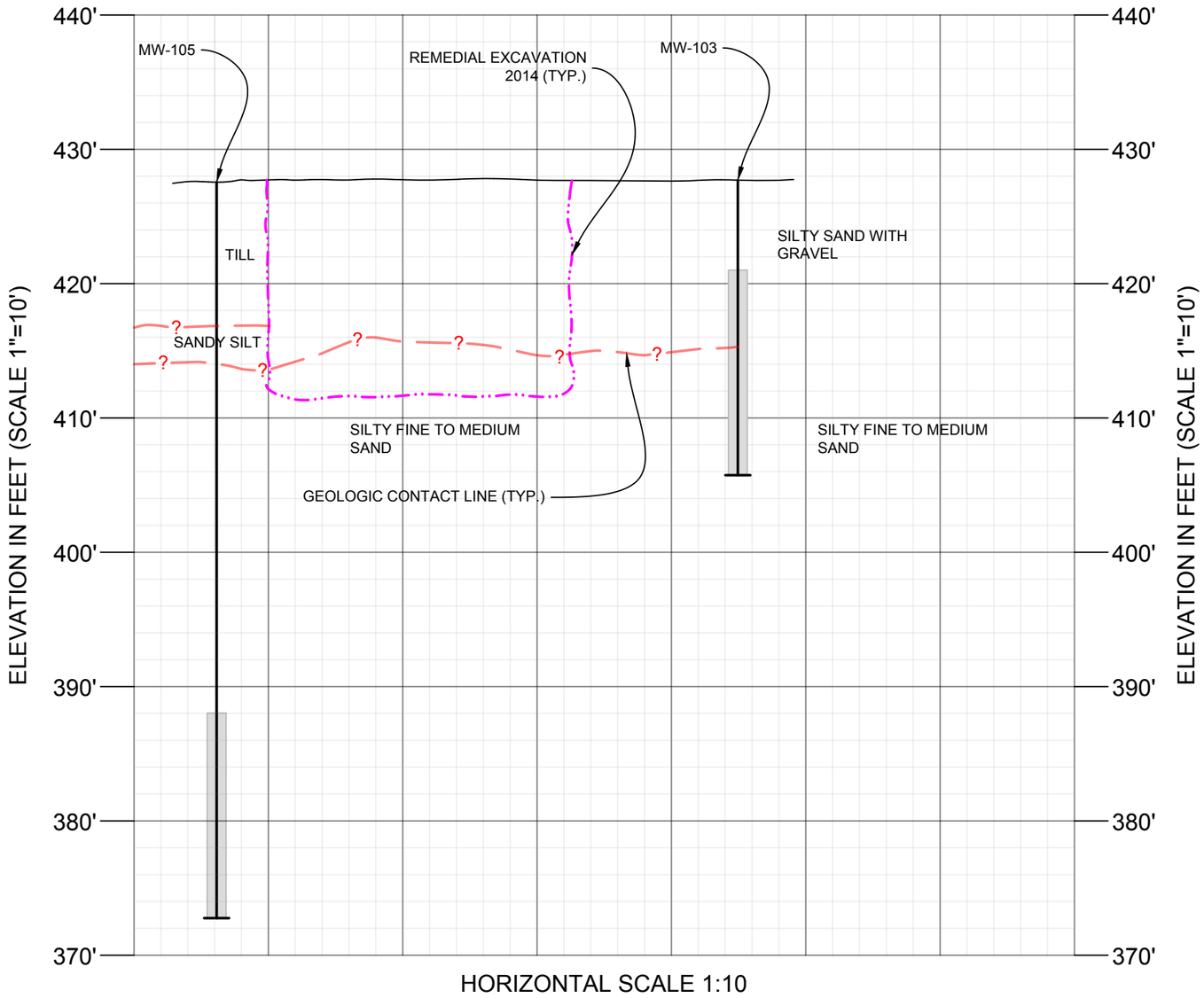
Environmental Earth Sciences

CROSS SECTION A-A'
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 7



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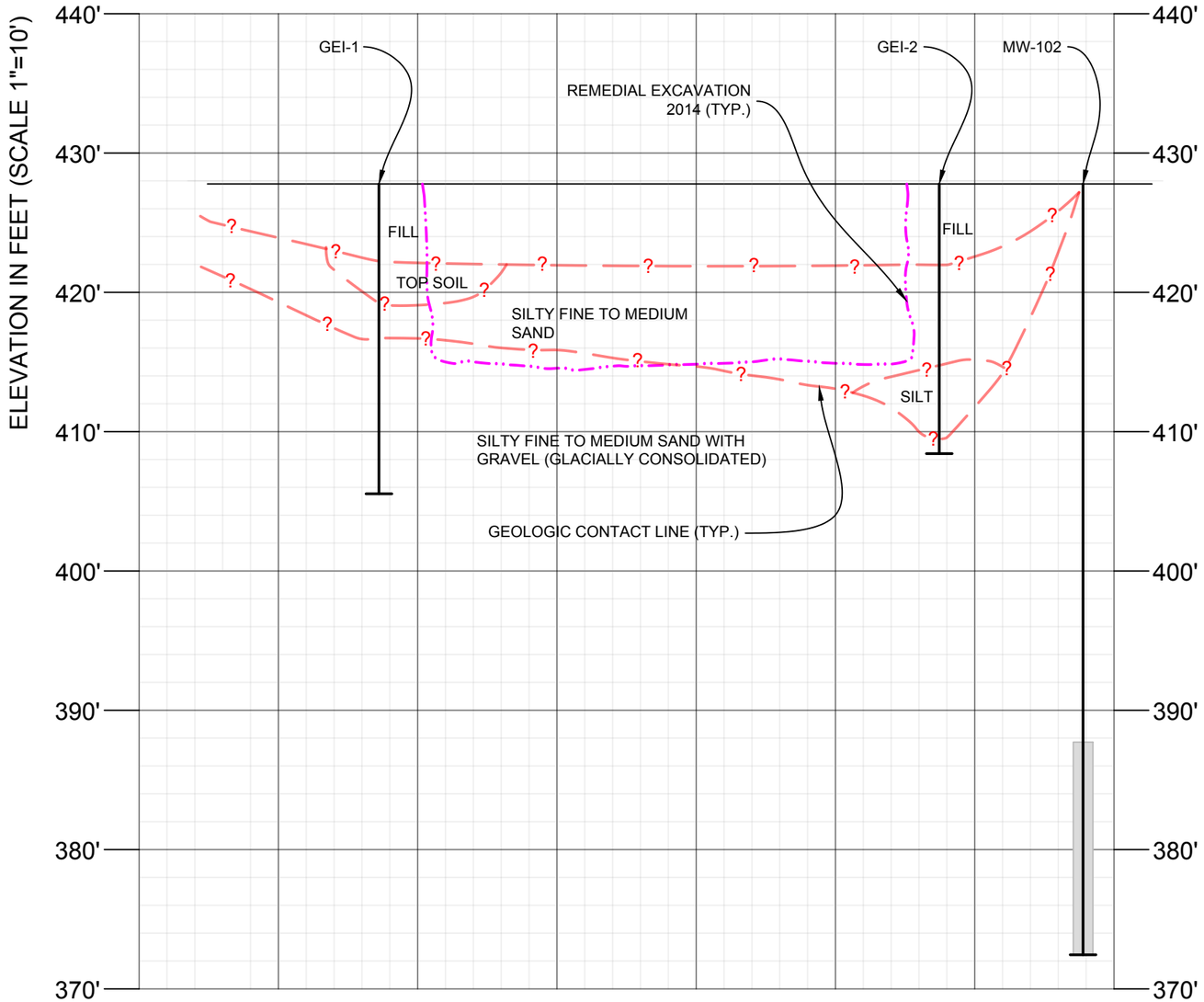
Environmental Earth Sciences

CROSS SECTION B-B'
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 8



HORIZONTAL SCALE 1:10

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Environmental Earth Sciences

CROSS SECTION C-C'
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 9

LEGEND:

- APPROXIMATE TEST PIT LOCATION - BY OTHERS
- APPROXIMATE DIRECT PUSH TECHNOLOGY LOCATION - BY OTHERS
- APPROXIMATE BORING LOCATION - BY OTHERS
- A A' APPROXIMATE CROSS SECTION LOCATION
- APPROXIMATE TEST PIT LOCATION
- APPROXIMATE AREA OF FORMER BUILDING
- APPROXIMATE AREA OF PREVIOUS EXCAVATION BY OTHERS
- MW APPROXIMATE MONITORING WELL LOCATIONS - BY OTHERS

SGP-2
MW-104
MW-1
MW-103
SGP-1
MW-4
GEI-3
MW-2
SGP-3
MW-105
MW-101
MW-3
MW-102
420
410
400
390
427
428

NOTE:

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REFERENCE: SITE PLAN PROVIDED BY CLIENT.

N

0 20 40

APPROXIMATE SCALE IN FEET

Terra Associates, Inc.
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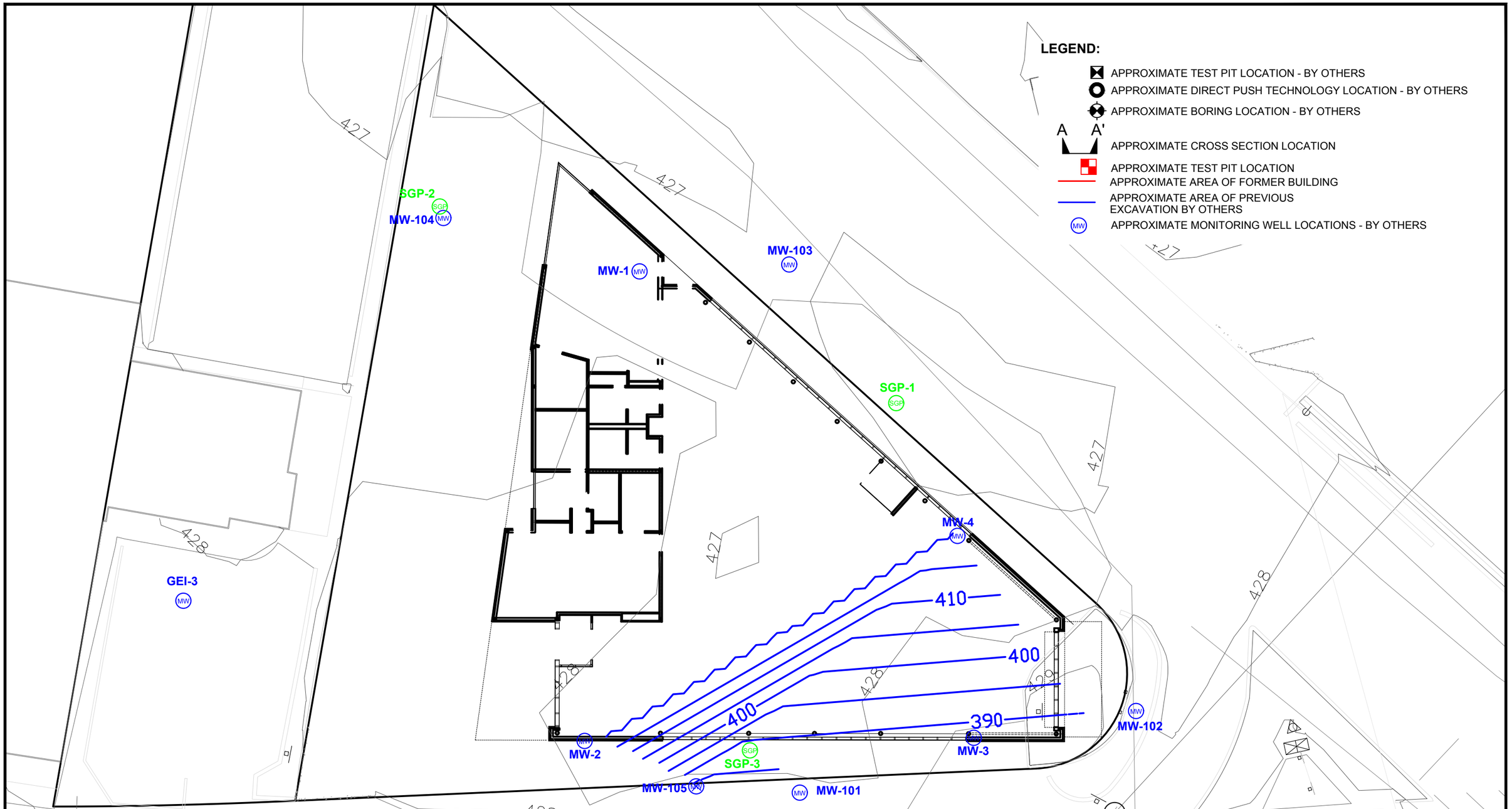
STATIC WATER ELEVATION MARCH 2016
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 10



NOTE:

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REFERENCE: SITE PLAN PROVIDED BY CLIENT.

N

0 20 40

APPROXIMATE SCALE IN FEET

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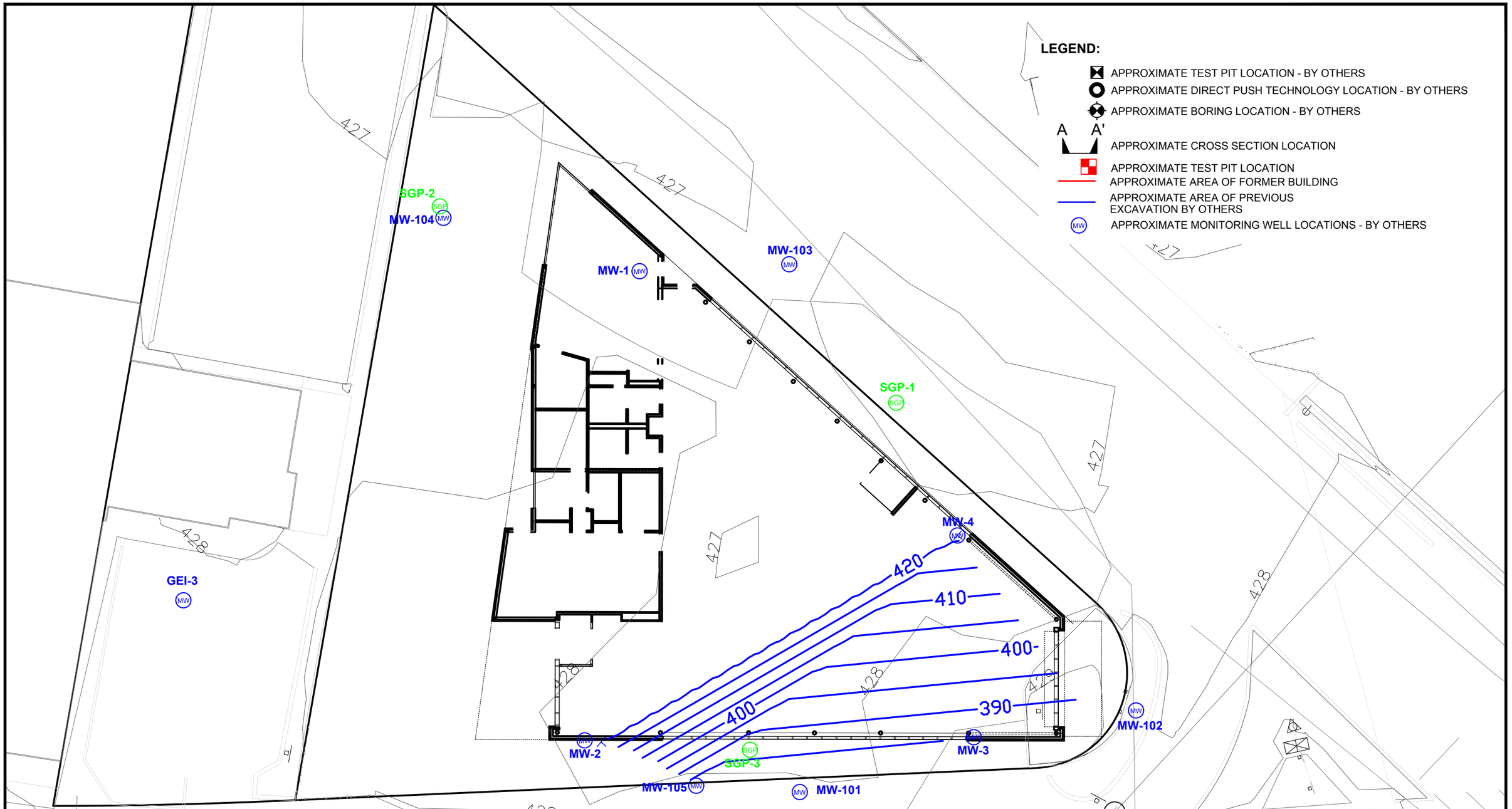
STATIC WATER ELEVATION JULY 2016
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 11



NOTE:

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REFERENCE: SITE PLAN PROVIDED BY CLIENT.

N

0 20 40

APPROXIMATE SCALE IN FEET

Terra Associates, Inc.
Consultants in Geotechnical Engineering Geology and Environmental Earth Sciences

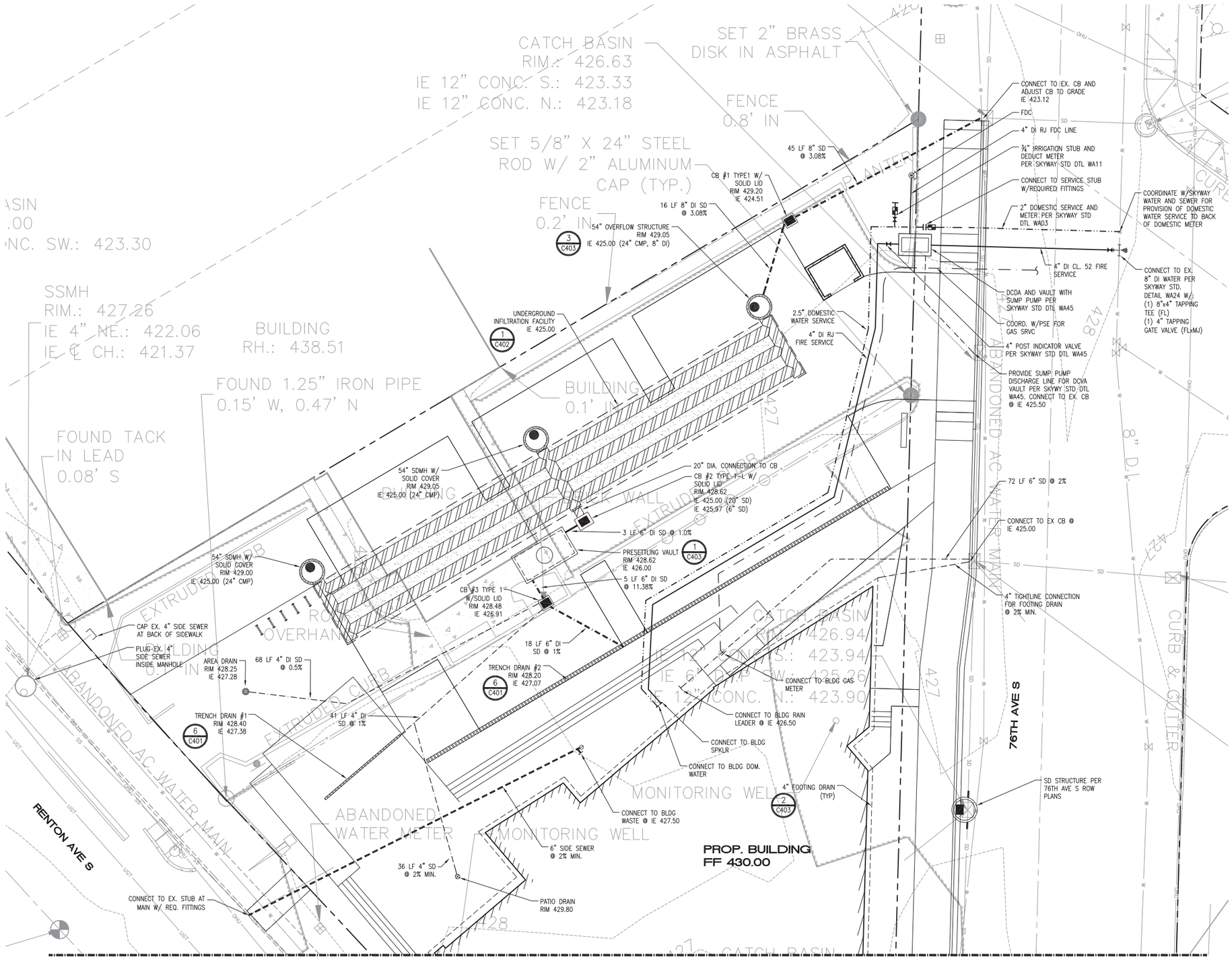
STATIC WATER ELEVATION OCT. 2016
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure 12

APPENDIX A

CURRENT SITE LAYOUT

KING COUNTY LIBRARY SYSTEM



N

10 0 10

SCALE: 1" = 10'

DATUM

NAVD 88

LEGEND

- SDMH 8 C401
- CB TYPE 1-L 5 C403
- CB TYPE 1 7 C401
- AREA DRAIN 4 C401
- PATIO DRAIN 4 C403
- CLEANOUT 5 C401
- THRUST BLOCK PER SKYWAY STD PLAN WA21 & WA22
- WATER SERVICE
- FIRE SERVICE
- SANITARY SEWER
- 4" DIA. STORM DRAIN U.N.O.
- STORM DRAIN

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
2. SEE DETAIL 3 SHEET C401 FOR TYPICAL UTILITY TRENCH.
3. COORDINATE BLDG. SYSTEM CONNECTION LOCATIONS AND INVERT ELEVATIONS WITH MECH/FIRE CONTRACTOR. PROVIDE ALL REQ. FITTINGS FOR CONNECTION.
4. COORDINATE ALL UTILITY INTERRUPTIONS WITH AFFECTED FACILITY OWNERS. PROVIDE MINIMUM 2 WEEKS ADVANCE NOTICE OF ALL INTERRUPTIONS.
5. WHERE A NEW PIPE CLEARS AN EXISTING OR NEW UTILITY BY 6" OR LESS POLYETHYLENE PLASTIC FOAM SHALL BE PLACED AS A CUSHION BETWEEN THE UTILITIES.
6. VERIFY LOCATION AND INVERTS OF ALL EX. SYSTEMS AT PROPOSED POC'S TO NEW LINES PRIOR TO CONSTRUCTION OF ANY NEW PIPING, AND NOTIFY ENGINEER OF ANY DISCREPANCIES AT LEAST 4 WORKING DAYS PRIOR TO STARTING PIPE LAYING OPERATIONS.
7. ADJUST ALL NEW AND EX. UTILITY CASTINGS TO FINAL FINISH GRADE PRIOR TO FINAL PAVING/ PLANTING.
8. ALL CB GRATES SHALL BE HERRINGBONE STYLE, U.N.O.
9. PROVIDE 3" COVER OVER ALL WATER LINES, U.N.O.
10. PROVIDE TAMPER SWITCHES ON DCDA AND PIV PER SKYWAY STANDARD DETAIL WA45. COORDINATE W/ELECTRICAL AND MONITORING SYSTEM INSTALLER FOR PROVISION OF TAMPER SWITCHES AND PUMP ELEC. SERVICE.

springline design
Civil Engineering | Site Development | Transportation

3131 Western Avenue, Suite 501 ph 206 957 8311
Seattle, WA 98121 fax 206 957 8313

Rev. Date Issued

Skyway Library

12690 Renton Ave S
Seattle, WA 98178

Project No. **12008**

Weinstein A|U
Architects + Urban Designers, LLC
121 Stewart Street Suite 200
Seattle, WA 98101-1000
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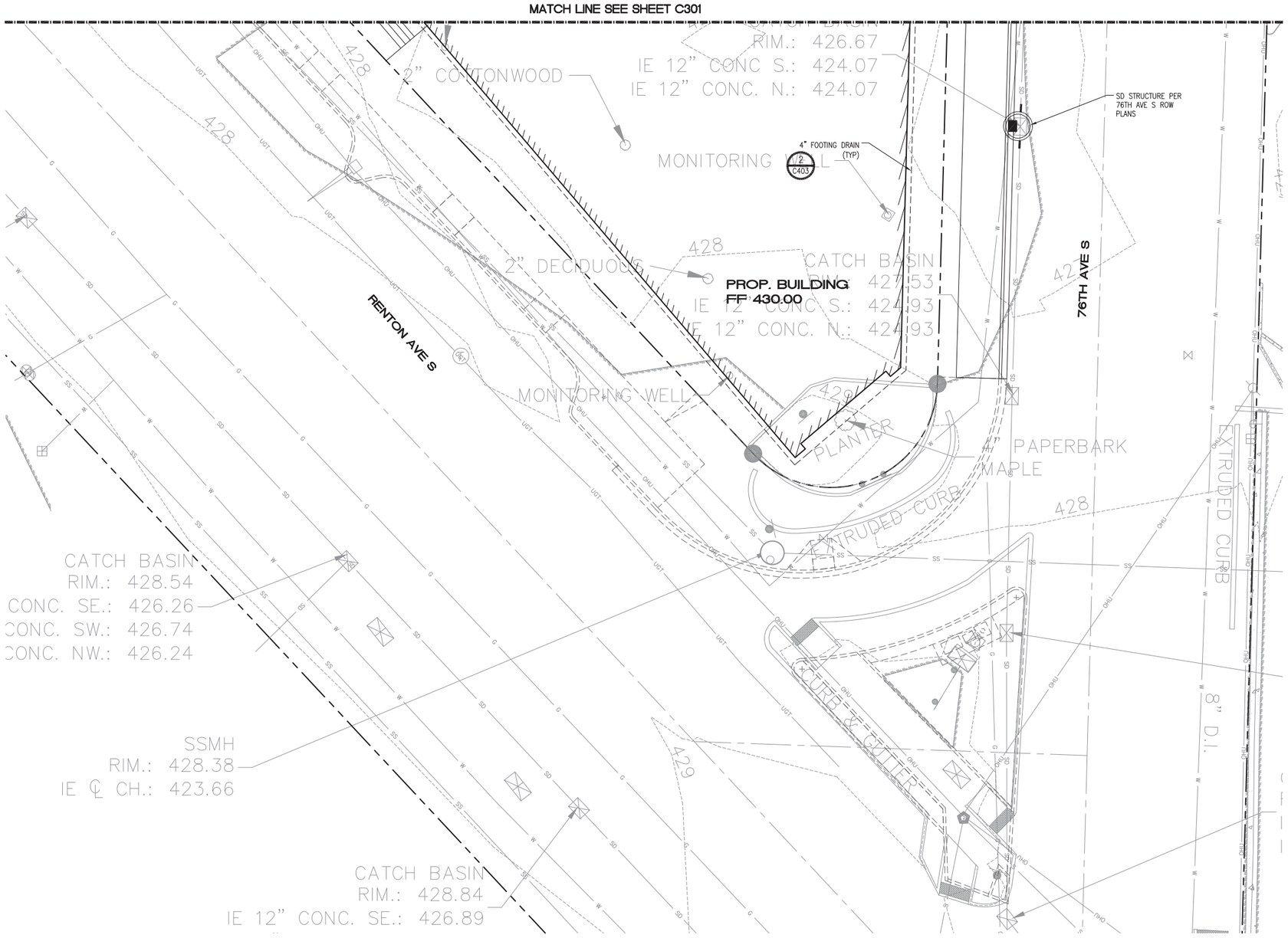
WeinsteinAU.com

MARC J. ERRICHETTI STATE OF WASHINGTON 30714 REGISTERED PROFESSIONAL ENGINEER

Issue	CONSTRUCTION SET
Date	6/11/14
Scale	1" = 10'
Sheet Title	DRAINAGE AND UTILITY PLAN
Sheet	**C301**

WEINSTEIN A|U ARCHITECTS + URBAN DESIGNERS LLC

KING COUNTY LIBRARY SYSTEM



N

10 0 10

SCALE: 1" = 10'

DATUM

NAVD 88

LEGEND

- SDMH (8 / C401)
- CB TYPE 1-L (5 / C403)
- CB TYPE 1 (7 / C401)
- AREA DRAIN (4 / C401)
- PATIO DRAIN (4 / C403)
- CLEANOUT (5 / C401)
- THRUST BLOCK PER SKYWAY STD PLAN WA21 & WA22
- WATER SERVICE
- FIRE SERVICE
- SANITARY SEWER
- 4" DIA. STORM DRAIN U.N.O.
- STORM DRAIN

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES.
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Skyway Library

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MARC J. ERRICHETTI STATE OF WASHINGTON 30714 REGISTERED PROFESSIONAL ENGINEER

Issue	CONSTRUCTION SET
Date	6/11/14
Scale	1" = 10'
Sheet Title	DRAINAGE AND UTILITY PLAN
Sheet	**C302**

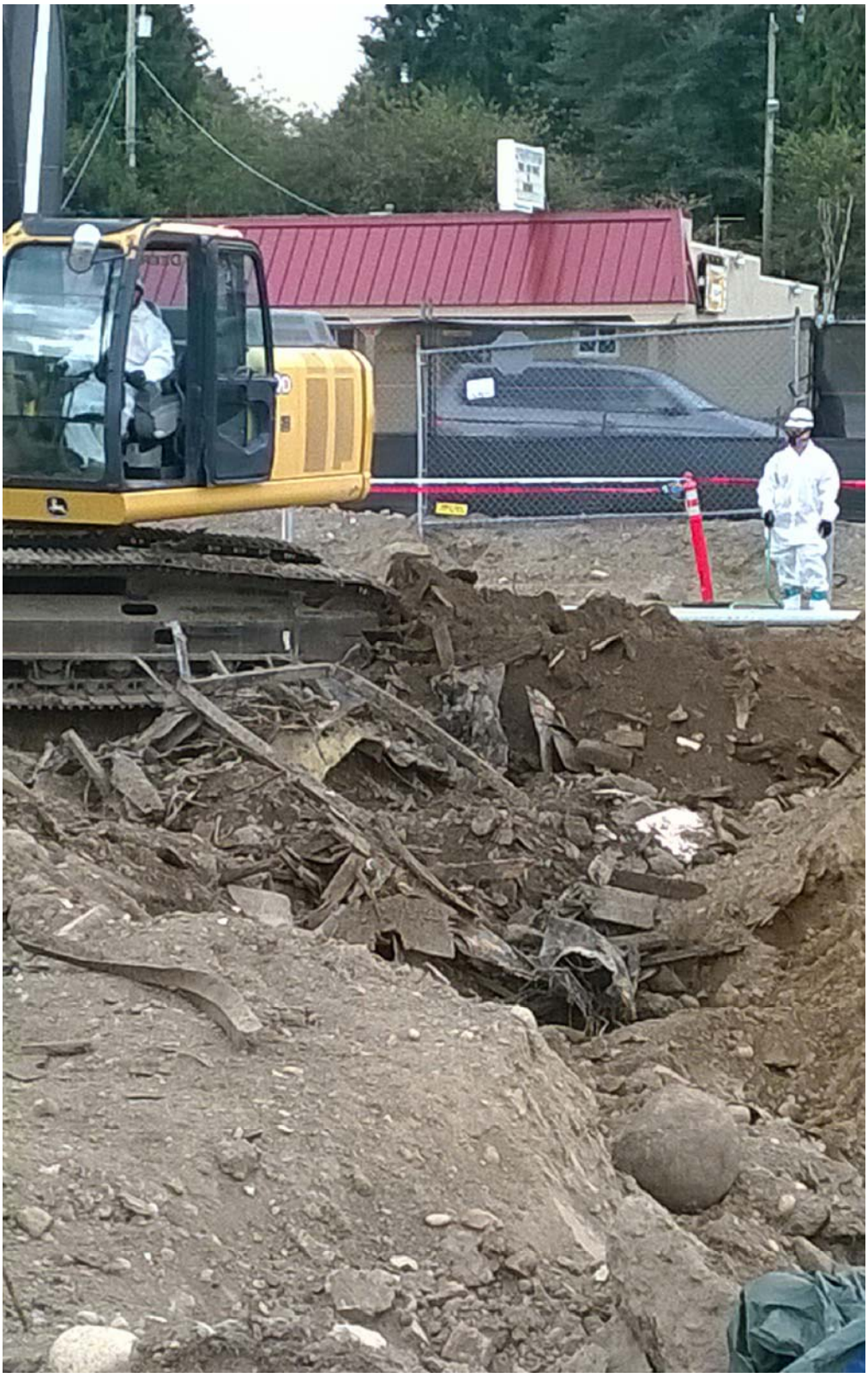
WEINSTEIN A|U ARCHITECTS + URBAN DESIGNERS LLC

APPENDIX B

SITE PHOTOS

Waste Oil UST 8-25-2014.

Soils from Waste Oil UST being loaded out and buried debris in UST Cavity.



Removal of suspect ACM debris 9-17-14.

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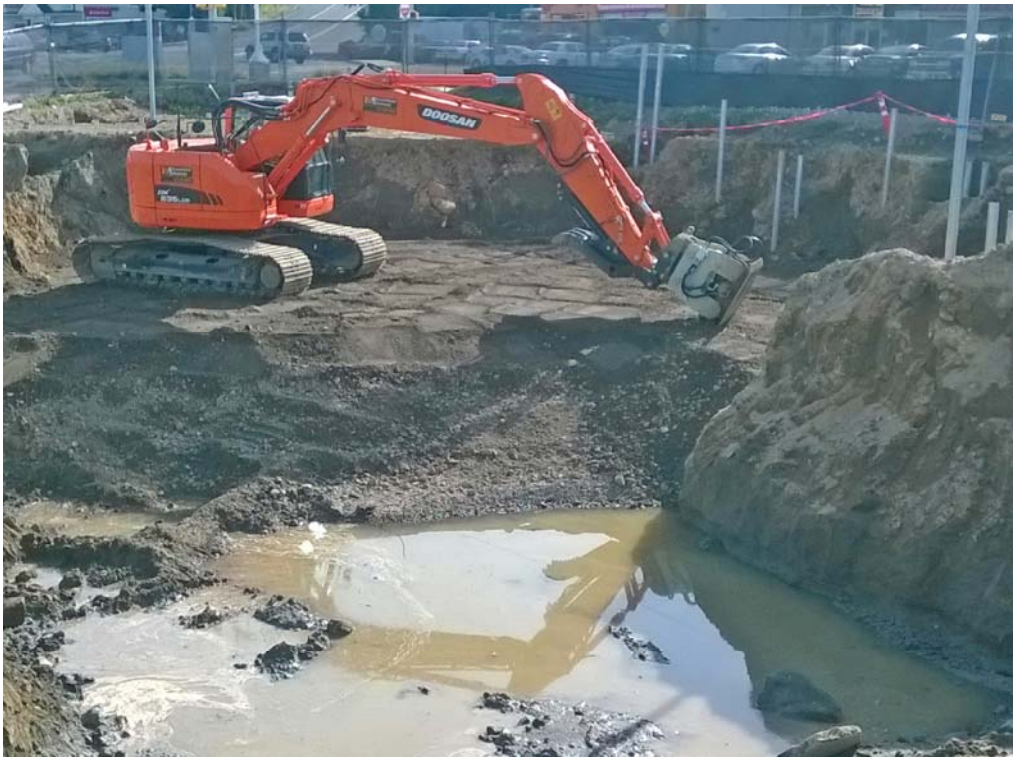
SITE PHOTOS
SKYWAY LIBRARY
KING COUNTY, WASHINGTON

Proj. No.T-6672-2	Date APRIL 2017	Figure B-2

South Side of Excavation showing backfill 9-30-14.

North Side of excavation showing backfill 10-9-14.

Backfill of southeast corner 10-2-14.



Backfill of southeast corner 10-3-14.

APPENDIX C
SUBSURFACE EXPLORATION/FIELD SAMPLING

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross contamination. On October 5 and 6, 2015, we observed the construction of 4 monitoring wells. Three of the wells were located on the sidewalk around the perimeter of the site. The fourth well was located north of the newly constructed library building in the parking lot. At MW-101, we observed wet medium to coarse grained sands and silty sands. Based on this observation, the screen was constructed from 5 to 17 feet below current grade. At Monitoring Well MW-102, wet fine to medium grained silty sand and sand was encountered from 10 to 20 feet below-grade. Based on this observation and our experience with similar soils, the screen was set from 10 to 20 feet below existing grade. At both MW-103 and MW-104 saturated silty sand and sand was encountered below 12.5 feet. Screens were constructed from 10 to 20 feet below current grade at both of these wells.

Subsequent measurements of groundwater levels in the wells showed that no water was present in MW-101 or MW-102. On November 19, and 20, 2015, we returned to the site to re-construct the wells and to construct an additional well to the north of MW-101. The existing two wells were drilled out with the drill auger. We continued to observe visibly wet soils at MW-101 to a depth of 37.5 feet where they became moist. The well was screened from 30 to 32 feet below existing grade in the saturated zone. At MW-102, we encountered wet becoming saturated soils below 45 feet. The well was screened from 40 to 55 feet below existing grade in the saturated zone. At the location north of MW-101, we encountered refusal on a boulder at approximately five feet below existing grade and no well was constructed.

On December 14, 2015, we returned to the site to observe the construction of MW-105 approximately 20 feet north of MW-101. Although MW-101 was re-screened during well construction in November, it was still dry. We observed visibly wet soils from 10 to 25 feet below existing grade. From 27.5 to 47.5 feet soils became moist. Below 47.5 feet soils became wet to saturated. The well was screened from 45 to 55 feet below existing grade.

A representative of our firm continuously monitored the drilling and kept a detailed log of each test exploration. Samples recovered during the site explorations 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 (PID) 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.

Soil samples were placed into laboratory prepared glassware. Samples that were to be tested for TPHG and BETX were sampled using a EasyDraw Syringe® & PowerStop Handle® to select a sample of about 5 grams in weight. The soil samples were then placed into pre weighed vials.

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 wells were developed by surging the screened segment with a disposable bailer and by bailing at least three well casings from the screened interval. Development was done at least three days prior to sampling.

During groundwater sampling, selected basic parameters were monitored. The groundwater parameters are summarized below in Table A-2.

Table C-2
Groundwater Parameters

Well Number	Date	pH	DO	ORP	Temp.
MW-101	10-23-2016	Dry			
	3-13-2016	Dry			
	4-29-2016	Dry			
	7-14-2016	Dry			
	10-18-2016	Dry			
MW-102	2-3-2016	5.86	8.96	98.7	14.36
	4-29-2016	5.95	5.95	92.7	14.41
	7-14-2016	5.82	5.38	190.9	16.15
	10-18-2016	5.83	6.14	233.5	14.7
MW-103	10-23-2015	6.26	0.46	-36.1	16.51
	2-3-2016	6.21	3.68	98.7	13.19
	4-29-2016	NR	NR	NR	NR
	7-14-2016	6.18	4.5	136.1	15.33

Table C-2 (continued)
Groundwater Parameters

Well Number	Date	pH	DO	ORP	Temp.
MW-104	10-23-2015	5.84	0.33	-40.4	15.94
	2-3-2016	5.61	4.49	103.7	10.7
	4-29-2016	NR	NR	NR	NR
	7-14-2016	6.7	4.52	20	15.10
MW-105	2-3-2016	6.33	7.72	80.7	14.2
	4-29-2016	6.67	4.99	45	14.58
	7-14-2016	6.54	5.2	84.8	15.5
	10-18-2016	6.06	3.24	216	15

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.
Our field instrument failed on April 29, 2016 before the sampling was complete-NR indicates that the parameter was not reported due to equipment failure.

All soil and 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. 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.

LOG OF MONITORING WELL MW-101

Figure No. C-1

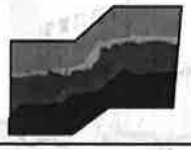
Project: Skyway Library **Project No:** T-6672-1 **Date Drilled:** 10/5/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1		(GRAVEL, .75-2" diameter)				
2		Brown silty SAND with gravel, fine to medium grained, moist. (SM)				
3						
4						
5			No/No	38 ×	12.6	
6						
7						
8		Gray silty SAND within gravel, fine grained, moist. (SM)	Yes/No	47 ×	980	
9						
10			Yes/No	50/6" ×	345	
11		4" lense of tan SILT, moist. (ML)				
12		Gray SAND with silt, becomes saturated, medium grained, wet. (SP-SM)	No/No	50/6" ×	0.0	
13						
14						
15			No/No	50/5" ×	0.0	
16						
17						
18			No/No	50/5" ×	0.0	
19		Boring terminated at 19 feet. 2-inch PVC monitoring well installed with .010 slotted screen from 5 to 17 feet. Samples collected with 140 ib hammer and split spoon sampler.				
20						
21						
22						
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.



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Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF MONITORING WELL MW-101 Re-Drill

Figure No. C-2

Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/5/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1–3		Concrete and well box. Bentonite				
4–19		Sandpack				
20–22		SAND, medium to coarse grained, saturated.	No/No	50/4" ×	0.0	
23–26		Becomes fine grained silty SAND and wet.	No/No	50/4" ×	0.0	
27–28			No/No	50/6" ×	0.0	
29–32		Becomes medium to coarse grained.	No/No	50/3" ×	0.0	
33–38		Becomes fine grained.	No/No	50/3" ×	0.0	
39–50		Terminated at 39 feet. Samples collected using 2 1/2-inch split spoon sampler driven by 140 ib hammer. 2-inch PVC monitoring well constructed with .010 screen from 30 to 32 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.
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LOG OF MONITORING WELL MW-102

Figure No. C-3

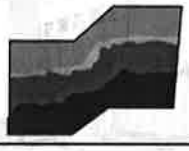
Project: Skyway Library **Project No:** T-6672-1 **Date Drilled:** 10/5/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Recovery % (20 40 60 80 100)	PID (PPM)	Observ. Well
0		(6 inches CONCRETE)				
1–4		Brown silty SAND with gravel, fine grained, moist. (SM)				
5–6		Mottled in places.	No/No	30.0	3.4	
7–8			No/No	30.0	3.3	
9–11		Medium grained SAND with silt lenses.	No/No	75.0	5.5	
12–14		Tan SAND, medium grained, moist. (SP)	No/No	30.0	8.1	
15–16		Brown silty SAND, fine to medium grained, moist. (SM)	No/No	30.0	5.0	
17–19		Gray SAND, fine to medium grained, moist, minor silt. (SP-SM)	No/No	30.0	5.1	
20–21			No/No	30.0	4.9	
22–25		Boring terminated at 21.5 feet. 2-inch PVC monitoring well installed with .010 screen from 10 to 20 feet. Samples collected using 140 ib hammer and split spoon sampler.				

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 MONITORING WELL MW-102 Re-Drill

Figure No. C-4

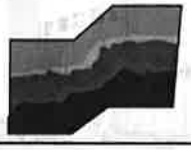
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/5/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1–7		Concrete and well box. Bentonite				
8–21		Sandpack				
22–30		Gray SAND, fine to medium grained, moist. (SP)	No/No			
25			No/No	50/5" ×	0.0	
27			No/No	50/5" ×	0.0	
28–29		*Continued on Next Page.				
30			No/No			

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 MONITORING WELL MW-102 Re-Drill

Figure No. C-4

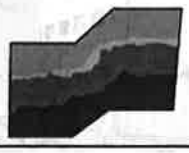
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/5/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Monitor Well
31–35		Gravel and minor silt.	No/No	50/3"	0.0	
35–40			No/No	50/3"		
40–45		Becomes wet.	No/No	50/4"		
45–50		Saturated. Coarse grained.	No/No	50/3"		
55–60		Terminated at 55 feet. Sampler collected using 2-inch split spoon sampler driven by 140 ib hammer. 2-inch PVC monitoring well constructed with .010 screen from 40 to 55 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.

Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF MONITORING WELL MW-103

Figure No. C-5

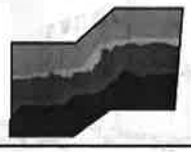
Project: Skyway Library **Project No:** T-6672-1 **Date Drilled:** 10/6/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1		(6 inches CONCRETE & CRUSHED ROCK)				
2						
3						
4		Brown silty SAND with gravel, fine grained, moist. (SM)				
5			No/No	45 ×	5.4	
6						
7		Becomes gray.	No/No	50/5" ×	230	
8						
9						
10			No/No	50/2" ×	5.1	
11						
12			No/No	50/6" ×	12.5	
13		Gray SAND with silt, fine to medium grained, saturated. (SP-SM)				
14						
15			No/No	50/5" ×	15.1	
16		Medium to coarse grained.				
17						
18						
19						
20			No/No	50/2.5" ×	3.9	
21						
22		Boring terminated at 21.5 feet. 2-inch PVC monitoring well constructed with .010 slotted screen from 10 to 20 feet. Samples collected with 140 ib hammer and split spoon sampler.				
23						
24						
25						
26						
27						
28						
29						
30						

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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LOG OF MONITORING WELL MW-104

Figure No. C-6

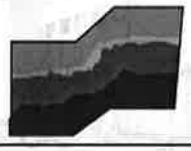
Project: Skyway Library **Project No:** T-6672-1 **Date Drilled:** 10/6/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1		(4 inches ASPHALT GRAVEL)				
2						
3		FILL: brown silty sand with gravel, fine grained, moist.				
4						
5			No/No	30 ×	9.5	
6						
7		Dark brown SILT, moist. (ML)	No/No	30 ×		
8						
9						
10			No/No	50/4" ×	21.1	
11		Gray silty SAND with gravel, fine grained, moist, till-like. (SM) Mottled				
12			No/No	50/4" ×		
13						
14						
15			No/No	50/2.5" ×	15.1	
16		Brown SAND with occasional gravel and silt, medium grained, saturated. (SP-SM)				
17			No/No	50/4" ×	24.1	
18						
19						
20			No/No	50/5" ×	12.0	
21						
22		Boring terminated at 21.5 feet. 2-inch PVC monitoring well installed with .010 screen from 10 to 20 feet. Samples collected with 140 ib hammer and split spoon sampler.				
23						
24						
25						
26						
27						
28						
29						
30						

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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LOG OF MONITORING WELL MW-105

Figure No. C-7

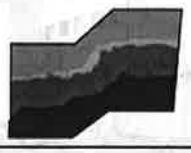
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 12/14/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Observ. Well
1		(6 inches CONCRETE) (4 inches CRUSHED ROCK)				
2		FILL: gray/brown silty sand with gravel, fine grained, moist.	No/No	50/6" ×	0.0	
3						
4		Brown silty SAND with gravel, fine grained, moist, mottled. (SM) (Till)	No/No	50/6" ×	0.0	
5						
6						
7		Becomes gray.	No/No	50/6" ×	0.0	
8		2-inch sand lense.				
9						
10		Becomes wet.	No/No	50/6" ×	0.0	
11						
12			Light/No	50/6" ×	12.7	
13		Brown sandy SILT and silty SAND, fine grained, moist. (SM-ML)				
14						
15			Light/No	50/6" ×	28.0	
16						
17		Brown silty SAND, fine to medium grained, wet to saturated. (SM)				
18						
19						
20		Becomes medium to coarse grained.	No/No	50/6" ×	8.9	
21						
22						
23						
24		Occasional gravel.				
25			No/No	50/6" ×	0.2	
26						
27						
28						
29		*Continued on Next Page.				
30						

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 MONITORING WELL MW-105

Figure No. C-7

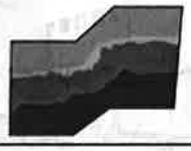
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 12/14/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Blow Count (10 30 50 70 90)	PID (PPM)	Monitor Well
31			No/No	50/6"	0.0	
32		Brown SAND, medium grained, moist, trace silt. (SP)				
33						
34						
35			No/No	50/6"	0.0	
36						
37						
38						
39						
40			No/No	50/6"	0.0	
41						
42						
43						
44						
45			No/No	50/6"	0.0	
46						
47						
48						
49		Becomes wet.				
50			No/No	50/6"	0.0	
51						
52						
53						
54						
55						
56		Boring terminated at 55 feet. 2-inch PVC monitoring well constructed with .010 screen from 45 to 55 feet. Samples collected using 2 1/2" diameter split spoon sampler driven with 140 ib hammer.				
57						
58						
59						
60						

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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APPENDIX D

SOIL VAPOR PROBES

Soil vapor probes were installed along the three sides of the new library built on October 4, 2015. The soil vapor probes were installed with a limited access direct push technology (DPT) drill rig owned and operated by Cascade Drilling. The probes consist of a 6-inch screen that was placed at the base of a 2-inch boring that is about 4.5 feet below existing grade. The screen zone was backfilled with clean silica sand, the boring above the screen zone was backfilled with a bentonite grout. The screen is provided with a 3/8-inch outside diameter tygon riser tube. The riser tube terminates within a tamper resistant monument cover.

Prior to sampling the tubing is purged of at least three tube volumes prior to sampling using a syringe. The samples are collected in a laboratory prepared summa canister with a choke that limits the flow to <200mL/min. The summa canisters have a capacity of 400 milliliters are batch certified at the laboratory. The sample tubing that connects to each dedicated soil gas probe is provided by the laboratory and is only used once. Each sample uses a new dedicated aboveground sample train.

The sample equipment is all supplied by the analytical laboratory and H and P Mobile Geochemistry. The laboratory analysis is by H and P Mobile Geochemistry.

Following the collection of the samples, the tubing is connected to a sensor to measure the amount of oxygen in each soil vapor probe location. The results of the soil vapor oxygen readings are appended to Table 7 that summarizes the analytical data.

LOG OF VAPOR MONITORING WELL SGP-1

Figure No. D-1

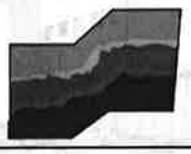
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/7/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Relative Density	PID (PPM)	Observ. Well
1		FILL: Brown silty SAND with gravel, moist.	No/No	Medium Dense		
2					0.0	
3						
4		Terminated at 3.5 feet. Soil vapor probe installed as shown with 6-inch stainless steel screen set from approximately Elev. 424.5-425. Screen attached to 3/8" o.d. tygon riser encased in grout.				
5						

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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LOG OF VAPOR MONITORING WELL SGP-2

Figure No. D-2

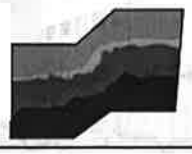
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/7/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Relative Density	PID (PPM)	Observ. Well
		(3 inches ASPHALT) Coarse crushed rock and soil.				
1		FILL: Brown silty SAND with gravel, moist.				
2			No/No	Medium Dense	0.0	
3						
4		Terminated at 4 feet. Soil vapor probe installed as shown with 6-inch stainless steel screen set from approximately Elev. 424.5-425. Screen attached to 3/8" o.d. tygon riser encased in grout.				
5						

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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Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF VAPOR MONITORING WELL SGP-3

Figure No. D-3

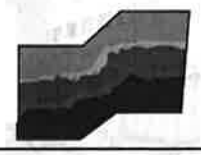
Project: Skyway Library **Project No:** T-6672-2 **Date Drilled:** 10/7/15

Client: KCLS **Driller:** Cascade Drilling **Logged By:** NRH

Location: Skyway, Washington **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/Sheen	Relative Density	PID (PPM)	Observ. Well
1		FILL: Brown silty SAND with gravel, moist.	No/No	Loose		
2				Medium Dense	0.0	
3						
4		Terminated at 4 feet. Soil vapor probe installed with 6-inch stainless steel screen set from approximately Elev. 424.5-425. Screen attached to 3/8" o.d. tygon riser encased in grout.				
5						

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

Mobile Geochemistry Inc.

14 March 2016

Mr. Charles R. Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

H&P Project: MC030416-11
Client Project: 6672-1 / Skyway, WA

Dear Mr. Charles R. 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-Mar-16 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
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that 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

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
Geochemistry Inc.

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

Terra Associates, Inc.	Project: MC030416-11	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VPSW-3	E603027-01	Vapor	26-Feb-16	04-Mar-16

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12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VPSW-3 (E603027-01) Vapor Sampled: 26-Feb-16 Received: 04-Mar-16									
Benzene	ND	3.2	ug/m3	1	EC60909	09-Mar-16	09-Mar-16	EPA TO-15	
Toluene	**9.7**	3.8	"	"	"	"	"	"	
Ethylbenzene	**6.3**	4.4	"	"	"	"	"	"	
m,p-Xylene	**9.7**	8.8	"	"	"	"	"	"	
o-Xylene	**4.6**	4.4	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*125 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*98.6 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.4 %*		*77-127*	"	"	"	"	

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Terra Associates, Inc.	Project: MC030416-11	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

Petroleum Hydrocarbon Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VPSW-3 (E603027-01) Vapor Sampled: 26-Feb-16 Received: 04-Mar-16									
TPHv (C5 - C8) aliphatic	**310**	100	ug/m3	1	EC60909	09-Mar-16	09-Mar-16	EPA TO-15	
TPHv (C9 - C12) aliphatic	**130**	100	"	"	"	"	"	"	
TPHv (C9 - C10) aromatic	ND	100	"	"	"	"	"	"	

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Terra Associates, Inc.	Project: MC030416-11	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

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 EC60909 - TO-15										
Blank (EC60909-BLK1)				Prepared: 08-Mar-16 Analyzed: 09-Mar-16						
Benzene	ND	3.2	ug/m3							
Toluene	ND	3.8	"							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
o-Xylene	ND	4.4	"							
Surrogate: 1,2-Dichloroethane-d4	*255*		*"*	*214*		*119*	*76-134*			
Surrogate: Toluene-d8	*208*		*"*	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*315*		*"*	*364*		*86.3*	*77-127*			
LCS (EC60909-BS1)				Prepared: 08-Mar-16 Analyzed: 09-Mar-16						
Benzene	49	3.2	ug/m3	64.8		76.2	69-119			
Toluene	57	3.8	"	76.8		73.9	66-119			
Ethylbenzene	66	4.4	"	88.4		74.7	70-124			
m,p-Xylene	66	8.8	"	88.4		74.6	61-134			
o-Xylene	67	4.4	"	88.4		75.8	67-125			
Surrogate: 1,2-Dichloroethane-d4	*259*		*"*	*214*		*121*	*76-134*			
Surrogate: Toluene-d8	*204*		*"*	*207*		*98.6*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*354*		*"*	*364*		*97.2*	*77-127*			

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Terra Associates, Inc.	Project: MC030416-11	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

Petroleum Hydrocarbon Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC60909 - TO-15										
Blank (EC60909-BLK1)				Prepared: 08-Mar-16 Analyzed: 09-Mar-16						
TPHv (C5 - C8) aliphatic	ND	100	ug/m3							
TPHv (C9 - C12) aliphatic	ND	100	"							
TPHv (C9 - C10) aromatic	ND	100	"							

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Terra Associates, Inc.	Project: MC030416-11	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	14-Mar-16 13:20

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Mobile Geochemistry, Inc.

2470 Impala Drive, Carlsbad, CA 92010
& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com
P 760.804.9678 F 760.804.9159

VAPOR / AIR Chain of Custody

DATE:_____
Page ____ of ____

Lab Client and Project Information

Lab Client/Consultant: Terra Associates Inc	Project Name / #: 6672-1
Lab Client Project Manager: Charles R. Lie	Project Location: SKYWAY, WA KIM 3/4/16
Lab Client Address: 12220 113TH Ave NE Suite 130	Report E-Mail(s): CLie@terra-associates.com
Lab Client City, State, Zip: Kirkland, WA 98034	
Phone Number: 425 821-7777	

Sample Receipt (Lab Use Only)

Date Rec'd: 3/4/16	Control #: 160147.01
H&P Project # MC030416-11	
Lab Work Order # E603027	
Sample Intact: ☒ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167	Temp: RT
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190511 8043	
Lab PM Initials: KIM	

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time

☒ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☐ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): Nicolas R. Hoffman
Signature:
Date: 3/26/16

Additional Instructions to Laboratory:

☒ Check if Project Analyte List is ~~Attached~~ → Project List BETX + TPH

** Preferred VOC units (please choose one):*

☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv KIM 3/4/16

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☒ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☒ TO-15m	Leak Check Compound ☐ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
VPSW-3		2/26/16	11:30	SV	400	~~1086~~ 102			X					X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by: Tori Unswath	Company: H&P	Date: 3/4/16	Time: 1035
Approved/Relinquished by: TAI	Company:	Date: 3/1/16	Time: 16:30	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 08/18/2014

Mobile Geochemistry Inc.

15 August 2016

Mr. Charles R. Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

H&P Project: MC080916-13
Client Project: 6672-1 / Skyway, WA

Dear Mr. Charles R. 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 09-Aug-16 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
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that 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

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
Geochemistry Inc.

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

Terra Associates, Inc.	Project: MC080916-13	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VPSW-1	E608029-01	Vapor	03-Aug-16	09-Aug-16
VPSW-2	E608029-02	Vapor	03-Aug-16	09-Aug-16
VPSW-3	E608029-03	Vapor	03-Aug-16	09-Aug-16

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12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VPSW-1 (E608029-01) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
Benzene	ND	3.2	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
Toluene	**110**	3.8	"	"	"	"	"	"	
Ethylbenzene	**33**	4.4	"	"	"	"	"	"	
m,p-Xylene	**140**	8.8	"	"	"	"	"	"	
o-Xylene	**27**	4.4	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.0 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*		*77-127*	"	"	"	"	
VPSW-2 (E608029-02) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
Benzene	**4.0**	3.2	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
Toluene	**710**	3.8	"	"	"	"	"	"	
Ethylbenzene	**180**	4.4	"	"	"	"	"	"	
m,p-Xylene	**730**	8.8	"	"	"	"	"	"	
o-Xylene	**120**	4.4	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.4 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*		*77-127*	"	"	"	"	
VPSW-3 (E608029-03) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
Benzene	**5.7**	3.2	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
Toluene	**700**	3.8	"	"	"	"	"	"	
Ethylbenzene	**190**	4.4	"	"	"	"	"	"	
m,p-Xylene	**800**	8.8	"	"	"	"	"	"	
o-Xylene	**140**	4.4	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.6 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.7 %*		*77-127*	"	"	"	"	

H&P Mobile
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Terra Associates, Inc.	Project: MC080916-13	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

Petroleum Hydrocarbon Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VPSW-1 (E608029-01) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
TPHv (C5 - C8) aliphatic	ND	100	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
TPHv (C9 - C12) aliphatic	**180**	100	"	"	"	"	"	"	
TPHv (C9 - C10) aromatic	ND	100	"	"	"	"	"	"	
VPSW-2 (E608029-02) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
TPHv (C5 - C8) aliphatic	**350**	100	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
TPHv (C9 - C12) aliphatic	**300**	100	"	"	"	"	"	"	
TPHv (C9 - C10) aromatic	ND	100	"	"	"	"	"	"	
VPSW-3 (E608029-03) Vapor Sampled: 03-Aug-16 Received: 09-Aug-16									
TPHv (C5 - C8) aliphatic	**1000**	100	ug/m3	1	EH61014	10-Aug-16	11-Aug-16	EPA TO-15	
TPHv (C9 - C12) aliphatic	**2100**	100	"	"	"	"	"	"	
TPHv (C9 - C10) aromatic	**200**	100	"	"	"	"	"	"	

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Terra Associates, Inc.	Project: MC080916-13	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

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 EH61014 - TO-15										
Blank (EH61014-BLK1)				Prepared & Analyzed: 10-Aug-16						
Benzene	ND	3.2	ug/m3							
Toluene	ND	3.8	"							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
o-Xylene	ND	4.4	"							
Surrogate: 1,2-Dichloroethane-d4	*42.3*		*"*	*42.9*		*98.7*	*76-134*			
Surrogate: Toluene-d8	*43.0*		*"*	*41.4*		*104*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*72.6*		*"*	*72.9*		*99.6*	*77-127*			
LCS (EH61014-BS1)				Prepared & Analyzed: 10-Aug-16						
Benzene	14	3.2	ug/m3	13.0		110	69-119			
Toluene	14	3.8	"	15.4		87.9	66-119			
Ethylbenzene	18	4.4	"	17.7		99.2	70-124			
m,p-Xylene	17	8.8	"	17.7		96.2	61-134			
o-Xylene	16	4.4	"	17.7		90.5	67-125			
Surrogate: 1,2-Dichloroethane-d4	*44.8*		*"*	*42.9*		*104*	*76-134*			
Surrogate: Toluene-d8	*41.6*		*"*	*41.4*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*63.3*		*"*	*72.9*		*86.8*	*77-127*			
LCS Dup (EH61014-BSD1)				Prepared & Analyzed: 10-Aug-16						
Benzene	14	3.2	ug/m3	13.0		105	69-119	5.12	25	
Toluene	14	3.8	"	15.4		90.9	66-119	3.33	25	
Ethylbenzene	17	4.4	"	17.7		95.5	70-124	3.83	25	
m,p-Xylene	17	8.8	"	17.7		94.5	61-134	1.83	25	
o-Xylene	16	4.4	"	17.7		88.3	67-125	2.50	25	
Surrogate: 1,2-Dichloroethane-d4	*42.9*		*"*	*42.9*		*100*	*76-134*			
Surrogate: Toluene-d8	*42.9*		*"*	*41.4*		*104*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*65.2*		*"*	*72.9*		*89.4*	*77-127*			

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Terra Associates, Inc.	Project: MC080916-13	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

Petroleum Hydrocarbon Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH61014 - TO-15										
Blank (EH61014-BLK1)				Prepared & Analyzed: 10-Aug-16						
TPHv (C5 - C8) aliphatic	ND	100	ug/m3							
TPHv (C9 - C12) aliphatic	ND	100	"							
TPHv (C9 - C10) aromatic	ND	100	"							

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Terra Associates, Inc.	Project: MC080916-13	
12220 113th Avenue NE, Suite 130	Project Number: 6672-1 / Skyway, WA	Reported:
Kirkland, WA 98034	Project Manager: Mr. Charles R. Lie	15-Aug-16 11:45

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Mobile Geochemistry, Inc.
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VAPOR / AIR Chain of Custody

DATE: 8/3/16
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: Terra Associates Inc	Project Name / #: 6672-1
Lab Client Project Manager: Charles Lin	Project Location: Skyway, WA
Lab Client Address: 12220 113th Ave NE Suite 130	Report E-Mail(s): CLin@terra-associates.com
Lab Client City, State, Zip: Kirkland, WA, 98034	
Phone Number: 425 821-7777	

Sample Receipt (Lab Use Only)

Date Rec'd: 8/9/16	Control #: 160698.01
H&P Project # MC080916-13	
Lab Work Order # E608029	
Sample Intact: ☑ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167	Temp: 22°
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190 4965 8410	
Lab PM Initials: KIM	

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time

☒ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☐ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): Nicolas R. Hoffman
Signature:
Date: 8/3/16

Additional Instructions to Laboratory:

☒ Check if Project Analyte List is ~~Attached~~ → Project list – BETX + APH
KIM 8/9/16

*** Preferred VOC units (please choose one):***
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List (Project List) ☐ 8260SV ☒ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☒ TO-15m	Leak Check Compound ☐ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
VPSW-1		08/03/16	14:33	SV	400	248	-.59		X					X						
VPSW-2		08/03/16	14:58	SV	400	346	-1.38		X					X						
VPSW-3		08/03/16	15:16	SV	400	326	-1.78		X					X						

Approved/Relinquished by:	Company: TAI	Date: 8/3/16	Time: 16:00	Received by:	Company: H&P	Date: 8/9/16	Time: 950
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 08/18/2014

APPENDIX E

ANALYTICAL TEST REPORTS-SOIL

OnSite Environmental Inc.

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

August 13, 2014

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

Re: Analytical Data for Project 6672
Laboratory Reference No. 1408-054

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 7, 2014.

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: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

Case Narrative

Samples were collected on August 7, 2014 and received by the laboratory on August 7, 2014. 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 chromatogram for sample 8-7-1 is similar to mineral spirits with diesel.

The chromatograms for samples 8-7-2, 8-7-3, 8-7-4 and 8-7-5 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.

Volatiles EPA 8260C 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.

Method 5035A VOA vials were not provided for the Method 8260 analysis of samples 8-7-1 and 8-7-4. Therefore, the extracts from the NWTPH-Gx/BTEX analysis were analyzed under Method 8260, including the associated Method Blank. Because different spiking agents are used for each analysis, SB/SBD data is not included.

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: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-1**					
Laboratory ID:	08-054-01					
Benzene	**0.067**	0.026	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.13	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**0.42**	0.13	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**0.86**	0.13	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	0.65	EPA 8021B	8-7-14	8-7-14	U1
Gasoline	**1200**	130	NWTPH-Gx	8-7-14	8-8-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				
Client ID:	**8-7-2**					
Laboratory ID:	08-054-02					
Benzene	**ND**	0.020	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.058	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**ND**	0.058	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**ND**	0.058	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	0.058	EPA 8021B	8-7-14	8-7-14	
Gasoline	**10**	5.8	NWTPH-Gx	8-7-14	8-8-14	Z1
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				
Client ID:	**8-7-3**					
Laboratory ID:	08-054-03					
Benzene	**ND**	0.020	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.060	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**ND**	0.060	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**ND**	0.060	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	0.060	EPA 8021B	8-7-14	8-7-14	
Gasoline	**16**	6.0	NWTPH-Gx	8-7-14	8-7-14	Z1
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-4**					
Laboratory ID:	08-054-04					
Benzene	**ND**	0.020	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.060	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**1.8**	0.060	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**2.8**	0.060	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	1.2	EPA 8021B	8-7-14	8-7-14	U1
Gasoline	**3800**	300	NWTPH-Gx	8-7-14	8-8-14	Z1
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*71-121*				
Client ID:	**8-7-5**					
Laboratory ID:	08-054-05					
Benzene	**ND**	0.020	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.064	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**0.19**	0.064	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**0.63**	0.064	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	0.32	EPA 8021B	8-7-14	8-7-14	U1
Gasoline	**770**	64	NWTPH-Gx	8-7-14	8-8-14	Z1
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*71-121*				

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0807S2					
Benzene	**ND**	0.020	EPA 8021B	8-7-14	8-7-14	
Toluene	**ND**	0.050	EPA 8021B	8-7-14	8-7-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-7-14	8-7-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-7-14	8-7-14	
o-Xylene	**ND**	0.050	EPA 8021B	8-7-14	8-7-14	
Gasoline	**ND**	5.0	NWTPH-Gx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-043-06										
	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						*108*	*114*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0807S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.996**	**1.01**	1.00	1.00		**100**	**101**	73-121	1	10	
Toluene	**1.06**	**1.10**	1.00	1.00		**106**	**110**	75-124	4	10	
Ethyl Benzene	**1.07**	**1.11**	1.00	1.00		**107**	**111**	75-125	4	9	
m,p-Xylene	**1.08**	**1.11**	1.00	1.00		**108**	**111**	75-126	3	9	
o-Xylene	**1.08**	**1.09**	1.00	1.00		**108**	**109**	74-123	1	8	
Surrogate:											
Fluorobenzene						*105*	*109*	*71-121*			

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-1**					
Laboratory ID:	08-054-01					
Diesel Range Organics	**4600**	150	NWTPH-Dx	8-7-14	8-8-14	M,N
Lube Oil	**11000**	290	NWTPH-Dx	8-7-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**8-7-2**					
Laboratory ID:	08-054-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	8-7-14	8-7-14	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**8-7-3**					
Laboratory ID:	08-054-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	8-7-14	8-7-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**8-7-4**					
Laboratory ID:	08-054-04					
Diesel Range Organics	**ND**	840	NWTPH-Dx	8-7-14	8-7-14	U1
Lube Oil	**600**	57	NWTPH-Dx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**8-7-5**					
Laboratory ID:	08-054-05					
Diesel Range Organics	**ND**	100	NWTPH-Dx	8-7-14	8-7-14	U1
Lube Oil	**290**	59	NWTPH-Dx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0807S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-7-14	8-7-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-7-14	8-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-054-05										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Lube Oil	**248**	**240**	NA	NA		NA		NA	3	NA	
Surrogate:											
o-Terphenyl						*87*	*89*	*50-150*			

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-1**					
Laboratory ID:	08-054-01					
Dichlorodifluoromethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Chloromethane	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Vinyl Chloride	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Bromomethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Chloroethane	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Trichlorofluoromethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloroethene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Acetone	ND	0.65	EPA 8260C	8-7-14	8-11-14	
Iodomethane	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Carbon Disulfide	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Methylene Chloride	ND	0.32	EPA 8260C	8-7-14	8-11-14	
(trans) 1,2-Dichloroethene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Methyl t-Butyl Ether	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Vinyl Acetate	ND	0.32	EPA 8260C	8-7-14	8-11-14	
2,2-Dichloropropane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
(cis) 1,2-Dichloroethene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
2-Butanone	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Bromochloromethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Chloroform	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1,1-Trichloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Carbon Tetrachloride	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloropropene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Benzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,2-Dichloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Trichloroethene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,2-Dichloropropane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Dibromomethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Bromodichloromethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
2-Chloroethyl Vinyl Ether	ND	0.55	EPA 8260C	8-7-14	8-11-14	
(cis) 1,3-Dichloropropene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Methyl Isobutyl Ketone	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Toluene	ND	0.32	EPA 8260C	8-7-14	8-11-14	
(trans) 1,3-Dichloropropene	ND	0.065	EPA 8260C	8-7-14	8-11-14	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-1**					
Laboratory ID:	08-054-01					
1,1,2-Trichloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Tetrachloroethene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,3-Dichloropropane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
2-Hexanone	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Dibromochloromethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,2-Dibromoethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Chlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1,1,2-Tetrachloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Ethylbenzene	0.45	0.065	EPA 8260C	8-7-14	8-11-14	
m,p-Xylene	0.95	0.13	EPA 8260C	8-7-14	8-11-14	
o-Xylene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Styrene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Bromoform	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Isopropylbenzene	0.36	0.065	EPA 8260C	8-7-14	8-11-14	
Bromobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,1,2,2-Tetrachloroethane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,2,3-Trichloropropane	ND	0.065	EPA 8260C	8-7-14	8-11-14	
n-Propylbenzene	1.1	0.065	EPA 8260C	8-7-14	8-11-14	
2-Chlorotoluene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
4-Chlorotoluene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,3,5-Trimethylbenzene	0.24	0.065	EPA 8260C	8-7-14	8-11-14	
tert-Butylbenzene	0.093	0.065	EPA 8260C	8-7-14	8-11-14	
1,2,4-Trimethylbenzene	6.5	0.065	EPA 8260C	8-7-14	8-11-14	
sec-Butylbenzene	0.87	0.065	EPA 8260C	8-7-14	8-11-14	
1,3-Dichlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
p-Isopropyltoluene	2.3	0.065	EPA 8260C	8-7-14	8-11-14	
1,4-Dichlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
1,2-Dichlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
n-Butylbenzene	2.1	0.065	EPA 8260C	8-7-14	8-11-14	
1,2-Dibromo-3-chloropropane	ND	0.32	EPA 8260C	8-7-14	8-11-14	
1,2,4-Trichlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Hexachlorobutadiene	ND	0.32	EPA 8260C	8-7-14	8-11-14	
Naphthalene	7.9	0.065	EPA 8260C	8-7-14	8-11-14	
1,2,3-Trichlorobenzene	ND	0.065	EPA 8260C	8-7-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*124*	*73-124*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-4**					
Laboratory ID:	08-054-04					
Dichlorodifluoromethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Chloromethane	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Vinyl Chloride	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Bromomethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Chloroethane	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Trichlorofluoromethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1-Dichloroethene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Acetone	ND	0.60	EPA 8260C	8-7-14	8-12-14	
Iodomethane	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Carbon Disulfide	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Methylene Chloride	ND	0.30	EPA 8260C	8-7-14	8-12-14	
(trans) 1,2-Dichloroethene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Methyl t-Butyl Ether	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1-Dichloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Vinyl Acetate	ND	0.30	EPA 8260C	8-7-14	8-12-14	
2,2-Dichloropropane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
(cis) 1,2-Dichloroethene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
2-Butanone	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Bromochloromethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Chloroform	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1,1-Trichloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Carbon Tetrachloride	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1-Dichloropropene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Benzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,2-Dichloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Trichloroethene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,2-Dichloropropane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Dibromomethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Bromodichloromethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
2-Chloroethyl Vinyl Ether	ND	0.49	EPA 8260C	8-7-14	8-12-14	
(cis) 1,3-Dichloropropene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Methyl Isobutyl Ketone	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Toluene	ND	0.30	EPA 8260C	8-7-14	8-12-14	
(trans) 1,3-Dichloropropene	ND	0.060	EPA 8260C	8-7-14	8-12-14	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-4**					
Laboratory ID:	08-054-04					
1,1,2-Trichloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Tetrachloroethene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,3-Dichloropropane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
2-Hexanone	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Dibromochloromethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,2-Dibromoethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Chlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1,1,2-Tetrachloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Ethylbenzene	0.40	0.060	EPA 8260C	8-7-14	8-12-14	
m,p-Xylene	1.0	0.12	EPA 8260C	8-7-14	8-12-14	
o-Xylene	0.17	0.060	EPA 8260C	8-7-14	8-12-14	
Styrene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Bromoform	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Isopropylbenzene	1.7	0.060	EPA 8260C	8-7-14	8-12-14	
Bromobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,1,2,2-Tetrachloroethane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,2,3-Trichloropropane	ND	0.060	EPA 8260C	8-7-14	8-12-14	
n-Propylbenzene	5.2	0.060	EPA 8260C	8-7-14	8-12-14	
2-Chlorotoluene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
4-Chlorotoluene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,3,5-Trimethylbenzene	2.6	0.060	EPA 8260C	8-7-14	8-12-14	
tert-Butylbenzene	0.52	0.060	EPA 8260C	8-7-14	8-12-14	
1,2,4-Trimethylbenzene	90	1.2	EPA 8260C	8-7-14	8-12-14	
sec-Butylbenzene	6.2	0.060	EPA 8260C	8-7-14	8-12-14	
1,3-Dichlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
p-Isopropyltoluene	9.6	0.060	EPA 8260C	8-7-14	8-12-14	
1,4-Dichlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
1,2-Dichlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
n-Butylbenzene	9.3	0.060	EPA 8260C	8-7-14	8-12-14	
1,2-Dibromo-3-chloropropane	ND	0.30	EPA 8260C	8-7-14	8-12-14	
1,2,4-Trichlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Hexachlorobutadiene	ND	0.30	EPA 8260C	8-7-14	8-12-14	
Naphthalene	2.1	0.060	EPA 8260C	8-7-14	8-12-14	
1,2,3-Trichlorobenzene	ND	0.060	EPA 8260C	8-7-14	8-12-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*112*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

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VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0807S2					
Dichlorodifluoromethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Chloromethane	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Vinyl Chloride	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Bromomethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Chloroethane	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Trichlorofluoromethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloroethene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Acetone	ND	0.50	EPA 8260C	8-7-14	8-11-14	
Iodomethane	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Carbon Disulfide	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Methylene Chloride	ND	0.25	EPA 8260C	8-7-14	8-11-14	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Methyl t-Butyl Ether	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Vinyl Acetate	ND	0.25	EPA 8260C	8-7-14	8-11-14	
2,2-Dichloropropane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
2-Butanone	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Bromochloromethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Chloroform	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1,1-Trichloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Carbon Tetrachloride	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1-Dichloropropene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Benzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2-Dichloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Trichloroethene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2-Dichloropropane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Dibromomethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Bromodichloromethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
2-Chloroethyl Vinyl Ether	ND	0.43	EPA 8260C	8-7-14	8-11-14	
(cis) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Toluene	ND	0.25	EPA 8260C	8-7-14	8-11-14	
(trans) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-7-14	8-11-14	

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
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Project: 6672

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0807S2					
1,1,2-Trichloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Tetrachloroethene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,3-Dichloropropane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
2-Hexanone	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Dibromochloromethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2-Dibromoethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Chlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Ethylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
m,p-Xylene	ND	0.10	EPA 8260C	8-7-14	8-11-14	
o-Xylene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Styrene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Bromoform	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Isopropylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Bromobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2,3-Trichloropropane	ND	0.050	EPA 8260C	8-7-14	8-11-14	
n-Propylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
2-Chlorotoluene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
4-Chlorotoluene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
tert-Butylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
sec-Butylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,3-Dichlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
p-Isopropyltoluene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,4-Dichlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2-Dichlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
n-Butylbenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	8-7-14	8-11-14	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	8-7-14	8-11-14	
Naphthalene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260C	8-7-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*65-129*				
Toluene-d8	*107*	*77-122*				
4-Bromofluorobenzene	*132*	*73-124*				Q

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-7-1**					
Laboratory ID:	08-054-01					
Aroclor 1016	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1221	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1232	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1242	**0.36**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1248	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1254	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Aroclor 1260	**ND**	0.058	EPA 8082A	8-11-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*89*	*51-138*				

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0811S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1221	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1232	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1242	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1248	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1254	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Aroclor 1260	**ND**	0.050	EPA 8082A	8-11-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*115*	*51-138*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0811S1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.488**	**0.452**	0.500	0.500	N/A	**98**	**90**	66-120	8	14	
Surrogate:											
DCB						*112*	*103*	*51-138*			

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-054-01					
Client ID:	**8-7-1**					
Arsenic	**ND**	12	6010C	8-12-14	8-12-14	
Barium	**87**	2.9	6010C	8-12-14	8-12-14	
Cadmium	**ND**	0.58	6010C	8-12-14	8-12-14	
Chromium	**42**	0.58	6010C	8-12-14	8-12-14	
Lead	**20**	5.8	6010C	8-12-14	8-12-14	
Mercury	**ND**	0.29	7471B	8-12-14	8-12-14	
Selenium	**ND**	12	6010C	8-12-14	8-12-14	
Silver	**ND**	1.2	6010C	8-12-14	8-12-14	
Lab ID:	08-054-04					
Client ID:	**8-7-4**					
Lead	**15**	5.7	6010C	8-12-14	8-12-14	

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

TOTAL METALS
EPA 6010C/7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-12-14
Date Analyzed:	8-12-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB9812SM1&MB0812S1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Mercury	7471B	**ND**	0.25
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

TOTAL METALS
EPA 6010C/7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-12-14
Date Analyzed: 8-12-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-054-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**74.6**	**75.8**	2	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**35.5**	**38.5**	8	0.50	
Lead	**17.5**	**17.1**	3	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

TOTAL METALS
EPA 6010C/7471B
MS/MSD QUALITY CONTROL

Date Extracted: 8-12-14
Date Analyzed: 8-12-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-054-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**92.7**	93	**93.9**	94	1	
Barium	100	**170**	95	**169**	94	0	
Cadmium	50.0	**47.8**	96	**48.2**	96	1	
Chromium	100	**127**	91	**128**	93	1	
Lead	250	**256**	95	**260**	97	1	
Mercury	0.500	**0.424**	85	**0.436**	87	3	
Selenium	100	**94.0**	94	**95.4**	95	2	
Silver	25.0	**22.2**	89	**22.3**	89	1	

Date of Report: August 13, 2014
Samples Submitted: August 7, 2014
Laboratory Reference: 1408-054
Project: 6672

% MOISTURE

Date Analyzed: 8-7-14

Client ID	Lab ID	% Moisture
8-7-1	08-054-01	15
8-7-2	08-054-02	11
8-7-3	08-054-03	12
8-7-4	08-054-04	12
8-7-5	08-054-05	15

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 with diesel.

Z1 - The sample chromatogram is similar to mineral spirits.

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: Terra Associates Inc
Project Number: 6672
Project Name: —
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
~~Same Day~~ NO 2D ☐ 1 Day ☒ 2 Days ☐ 3 Days ☐ Standard (7 Days) (TPH analysis 5 Days) ☐ _____ (other)

Laboratory Number: 08-054

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		LEAD - TOTAL				% Moisture
1	8-7-1	8/7/14	13:15	Soil	2		X		X	(X)				(X)				(X)									X
2	8-7-2		13:30				X		X																		X
3	8-7-3		13:40				X		X																		X
4	8-7-4		13:50				X		X	(X)													(X)				X
5	8-7-5	↓	14:00	↓	↓		X		X																		X

	Signature	Company	Date	Time
Relinquished		TAI	8-7-14	14:50
Received		OSE	8/7/14	1450
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
(X) Added 8/11/14. DB (1 day TAT)

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

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

August 15, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1408-091

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 13, 2014.

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: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

Case Narrative

Samples were collected on August 13, 2014 and received by the laboratory on August 14, 2014. 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.

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: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-HCID

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-2**					
Laboratory ID:	08-091-02					
Gasoline Range Organics	**ND**	25	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	63	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	130	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**8-13-3**					
Laboratory ID:	08-091-03					
Gasoline Range Organics	**ND**	23	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	58	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**8-13-4**					
Laboratory ID:	08-091-04					
Gasoline Range Organics	**ND**	24	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	59	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**8-13-6**					
Laboratory ID:	08-091-06					
Gasoline Range Organics	**ND**	23	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	56	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil	**Detected**	110	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**8-13-10**					
Laboratory ID:	08-091-10					
Gasoline Range Organics	**ND**	22	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	55	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	110	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-HCID

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-11**					
Laboratory ID:	08-091-11					
Gasoline Range Organics	**ND**	22	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	54	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	110	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**8-13-12**					
Laboratory ID:	08-091-12					
Gasoline Range Organics	**ND**	24	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	130	NWTPH-HCID	8-13-14	8-13-14	U1
Lube Oil	**Detected**	120	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-HCID
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0813S1					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	8-13-14	8-13-14	
Diesel Range Organics	**ND**	50	NWTPH-HCID	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-1**					
Laboratory ID:	08-091-01					
Benzene	**ND**	0.020	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.075	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**ND**	0.075	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**ND**	0.075	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**ND**	0.075	EPA 8021B	8-14-14	8-14-14	
Gasoline	**ND**	7.5	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-121*				
Client ID:	**8-13-5**					
Laboratory ID:	08-091-05					
Benzene	**ND**	0.020	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.071	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**ND**	0.071	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**ND**	0.071	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**ND**	0.071	EPA 8021B	8-14-14	8-14-14	
Gasoline	**ND**	7.1	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*71-121*				
Client ID:	**8-13-7**					
Laboratory ID:	08-091-07					
Benzene	**0.68**	0.025	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.13	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**1.9**	0.13	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**1.3**	0.13	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**1.6**	0.13	EPA 8021B	8-14-14	8-14-14	
Gasoline	**860**	13	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-121*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-8**					
Laboratory ID:	08-091-08					
Benzene	**0.028**	0.024	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.12	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**0.30**	0.12	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**0.22**	0.12	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**0.16**	0.12	EPA 8021B	8-14-14	8-14-14	
Gasoline	**180**	12	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-121*				
Client ID:	**8-13-9**					
Laboratory ID:	08-091-09					
Benzene	**ND**	0.020	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.058	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**ND**	0.058	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**ND**	0.058	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**ND**	0.058	EPA 8021B	8-14-14	8-14-14	
Gasoline	**ND**	5.8	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0814S1					
Benzene	**ND**	0.020	EPA 8021B	8-14-14	8-14-14	
Toluene	**ND**	0.050	EPA 8021B	8-14-14	8-14-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-14-14	8-14-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-14-14	8-14-14	
o-Xylene	**ND**	0.050	EPA 8021B	8-14-14	8-14-14	
Gasoline	**ND**	5.0	NWTPH-Gx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-091-01										
	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						*88*	*86*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0814S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.00**	**1.06**	1.00	1.00		**100**	**106**	73-121	6	10	
Toluene	**1.03**	**1.08**	1.00	1.00		**103**	**108**	75-124	5	10	
Ethyl Benzene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-125	4	9	
m,p-Xylene	**1.05**	**1.07**	1.00	1.00		**105**	**107**	75-126	2	9	
o-Xylene	**1.03**	**1.09**	1.00	1.00		**103**	**109**	74-123	6	8	
Surrogate:											
Fluorobenzene						*88*	*94*	*71-121*			

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-1**					
Laboratory ID:	08-091-01					
Diesel Range Organics	**ND**	130	NWTPH-Dx	8-13-14	8-13-14	U1
Lube Oil	**580**	61	NWTPH-Dx	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*66*	*50-150*				
Client ID:	**8-13-5**					
Laboratory ID:	08-091-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-13-14	8-14-14	
Lube Oil	**150**	57	NWTPH-Dx	8-13-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				
Client ID:	**8-13-7**					
Laboratory ID:	08-091-07					
Diesel Range Organics	**2400**	590	NWTPH-Dx	8-13-14	8-14-14	
Lube Oil	**31000**	1200	NWTPH-Dx	8-13-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**8-13-8**					
Laboratory ID:	08-091-08					
Diesel Range Organics	**130**	30	NWTPH-Dx	8-13-14	8-13-14	
Lube Oil	**660**	60	NWTPH-Dx	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**8-13-9**					
Laboratory ID:	08-091-09					
Diesel Range Organics	**ND**	27	NWTPH-Dx	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0813S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-13-14	8-13-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-13-14	8-13-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-090-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*68* *80*	*50-150*			

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-13-6**					
Laboratory ID:	08-091-06					
Diesel Range Organics	**ND**	38	NWTPH-Dx	8-14-14	8-14-14	U1
Lube Oil	**370**	56	NWTPH-Dx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				
Client ID:	**8-13-12**					
Laboratory ID:	08-091-12					
Diesel Range Organics	**ND**	150	NWTPH-Dx	8-14-14	8-14-14	U1
Lube Oil	**870**	60	NWTPH-Dx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*73*	*50-150*				

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0814S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-14-14	8-14-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-14-14	8-14-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-101-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*79*	*81*	*50-150*			

Date of Report: August 15, 2014
Samples Submitted: August 13, 2014
Laboratory Reference: 1408-091
Project: 6672-1

% MOISTURE

Date Analyzed: 8-13-14

Client ID	Lab ID	% Moisture
8-13-1	08-091-01	18
8-13-2	08-091-02	20
8-13-3	08-091-03	14
8-13-4	08-091-04	15
8-13-5	08-091-05	12
8-13-6	08-091-06	11
8-13-7	08-091-07	16
8-13-8	08-091-08	17
8-13-9	08-091-09	8
8-13-10	08-091-10	10
8-13-11	08-091-11	7
8-13-12	08-091-12	17

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Laboratory Number: 08-091

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lia
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)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	8-13-1	8/13/14	7:15	Soil	5		X		X													10
2	8-13-2		7:25			X																
3	8-13-3		8:15			X																
4	8-13-4		8:25			X																
5	8-13-5		9:00				X		X													
6	8-13-6		9:15			X			(X)													
7	8-13-7		9:25				X		X													
8	8-13-8		9:50				X		X													
9	8-13-9		10:35				X		2													
10	8-13-10	↓	10:45	↓	↓	X																↓

	Signature	Company	Date	Time
Relinquished	[signature]	THI	8/13/14	12:20
Received	[signature]	[signature]	8/13/14	1220
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
Follow-up all detects accordingly
(X) Added 8/14/14. DJ (1 day TAT)

Reviewed/Date | Reviewed/Date | Chromatograms with final report ☐

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lie
Sampled by: Nicolas R. Huffman

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: 08-091

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
11	8-13-11	8/13/14	10:55	Soil	5	X																8
12	8-13-12	8/13/14	11:05	Soil	5	X			(X)													8

	Signature	Company	Date	Time
Relinquished		TAI	8/13/14	12:20
Received			8/13/14	1220
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

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

August 27, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1408-214

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 25, 2014.

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: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

Case Narrative

Samples were collected on August 25, 2014 and received by the laboratory on August 25, 2014. 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 sample chromatograms are 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: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-25-1**					
Laboratory ID:	08-214-01					
Benzene	**ND**	0.020	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.098	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**0.20**	0.098	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**0.45**	0.098	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.49	EPA 8021B	8-25-14	8-26-14	U1
Gasoline	**430**	49	NWTPH-Gx	8-25-14	8-26-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-121*				
Client ID:	**8-25-2**					
Laboratory ID:	08-214-02					
Benzene	**ND**	0.021	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.10	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**0.57**	0.10	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**1.7**	0.10	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.50	EPA 8021B	8-25-14	8-26-14	U1
Gasoline	**1400**	100	NWTPH-Gx	8-25-14	8-26-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-121*				

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S2					
Benzene	**ND**	0.020	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	8-25-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-217-02										
	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	**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						*93*	*88*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0825S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.909**	**0.991**	1.00	1.00		**91**	**99**	73-121	9	10	
Toluene	**0.894**	**0.966**	1.00	1.00		**89**	**97**	75-124	8	10	
Ethyl Benzene	**0.922**	**0.989**	1.00	1.00		**92**	**99**	75-125	7	9	
m,p-Xylene	**0.923**	**0.992**	1.00	1.00		**92**	**99**	75-126	7	9	
o-Xylene	**0.914**	**0.985**	1.00	1.00		**91**	**99**	74-123	7	8	
Surrogate:											
Fluorobenzene						*88*	*89*	*71-121*			

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-25-1**					
Laboratory ID:	08-214-01					
Diesel Range Organics	**270**	27	NWTPH-Dx	8-25-14	8-25-14	M,N
Lube Oil	**1300**	54	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**8-25-2**					
Laboratory ID:	08-214-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	8-25-14	8-25-14	
Lube Oil	**80**	55	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-25-14	8-25-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-214-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**72.7**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*90*	*86*	*50-150*			

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-214
Project: 6672-1

% MOISTURE

Date Analyzed: 8-25-14

Client ID	Lab ID	% Moisture
8-25-1	08-214-01	8
8-25-2	08-214-02	9

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 with diesel.

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

Chain of Custody

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

Laboratory Number: 08-214

Company: TAI
Project Number: 6672-1
Project Name: ——
Project Manager: Chuck Lio
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)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Lead				% Moisture
1	8-25-1	8/25/14	10:50	Soil	3		X		X													X				X
2	8-25-2		11:15	Soil	3		X		X																	X
~~3~~	~~8-25-1~~		~~11:00~~	~~Liquid~~	~~1~~													X		X						

	Signature	Company	Date	Time
Relinquished		TAI	8/25/14	11:20
Received		TAI	"	"
Relinquished		"	"	12:20
Received			8/25/14	1720
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

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

August 27, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1408-217

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 25, 2014.

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: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

Case Narrative

Samples were collected on August 25, 2014 and received by the laboratory on August 25, 2014. 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 chromatogram for sample 8-25-5 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: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-25-3**					
Laboratory ID:	08-217-01					
Benzene	**ND**	0.020	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.055	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**ND**	0.055	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**ND**	0.055	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.055	EPA 8021B	8-25-14	8-26-14	
Gasoline	**ND**	5.5	NWTPH-Gx	8-25-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				
Client ID:	**8-25-4**					
Laboratory ID:	08-217-02					
Benzene	**ND**	0.020	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.062	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**ND**	0.062	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**ND**	0.062	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.062	EPA 8021B	8-25-14	8-26-14	
Gasoline	**ND**	6.2	NWTPH-Gx	8-25-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				
Client ID:	**8-25-5**					
Laboratory ID:	08-217-03					
Benzene	**ND**	0.021	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.11	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**0.43**	0.11	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**0.42**	0.11	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.55	EPA 8021B	8-25-14	8-26-14	U1
Gasoline	**670**	54	NWTPH-Gx	8-25-14	8-26-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-121*				

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S2					
Benzene	**ND**	0.020	EPA 8021B	8-25-14	8-26-14	
Toluene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	8-25-14	8-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	8-25-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-217-02										
	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	**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						*93*	*88*	*71-121*			

SPIKE BLANKS											
Laboratory ID:	SB0825S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.909**	**0.991**	1.00	1.00		**91**	**99**	73-121	9	10	
Toluene	**0.894**	**0.966**	1.00	1.00		**89**	**97**	75-124	8	10	
Ethyl Benzene	**0.922**	**0.989**	1.00	1.00		**92**	**99**	75-125	7	9	
m,p-Xylene	**0.923**	**0.992**	1.00	1.00		**92**	**99**	75-126	7	9	
o-Xylene	**0.914**	**0.985**	1.00	1.00		**91**	**99**	74-123	7	8	
Surrogate:											
Fluorobenzene						*88*	*89*	*71-121*			

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-25-3**					
Laboratory ID:	08-217-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	8-25-14	8-25-14	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**8-25-4**					
Laboratory ID:	08-217-02					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-25-14	8-25-14	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**8-25-5**					
Laboratory ID:	08-217-03					
Diesel Range Organics	**510**	28	NWTPH-Dx	8-25-14	8-25-14	M,N
Lube Oil	**1300**	56	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-25-14	8-25-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-25-14	8-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-214-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**72.7**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*90*	*86*	*50-150*			

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B

Matrix: Product
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-217-04					
Client ID:	**8-25-L**					
Arsenic	**ND**	10	6010C	8-26-14	8-26-14	
Barium	**64**	2.5	6010C	8-26-14	8-26-14	
Cadmium	**0.80**	0.50	6010C	8-26-14	8-26-14	
Chromium	**0.56**	0.50	6010C	8-26-14	8-26-14	
Lead	**190**	5.0	6010C	8-26-14	8-26-14	
Mercury	**ND**	0.25	7471B	8-26-14	8-26-14	
Selenium	**ND**	10	6010C	8-26-14	8-26-14	
Silver	**ND**	1.0	6010C	8-26-14	8-26-14	

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-26-14
Date Analyzed:	8-26-14
Matrix:	Product
Units:	mg/kg (ppm)
Lab ID:	MB0826PH1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Mercury	7471B	**ND**	0.25
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

TOTAL METALS
EPA 6010C/7471B
SB/SBD QUALITY CONTROL

Date Extracted: 8-26-14
Date Analyzed: 8-26-14

Matrix: Product
Units: mg/kg (ppm)

Lab ID: SB0826PH1

Analyte	Spike Level	SB	Percent Recovery	SBD	Percent Recovery	RPD	Flags
Arsenic	100	**97.1**	97	**101**	101	4	
Barium	100	**97.3**	97	**99.3**	99	2	
Cadmium	50.0	**50.3**	101	**51.5**	103	3	
Chromium	100	**102**	102	**106**	106	4	
Lead	250	**269**	108	**276**	110	2	
Mercury	0.500	**0.512**	102	**0.497**	99	3	
Selenium	100	**97.8**	98	**101**	101	4	
Silver	25.0	**26.6**	106	**27.7**	111	4	

Date of Report: August 27, 2014
Samples Submitted: August 25, 2014
Laboratory Reference: 1408-217
Project: 6672-1

% MOISTURE

Date Analyzed: 8-25-14

Client ID	Lab ID	% Moisture
8-25-3	08-217-01	9
8-25-4	08-217-02	13
8-25-5	08-217-03	11

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 with diesel.

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

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/27/2014

OnSite Environmental Inc
14648 NE 95th Street
Redmond, WA 98052
Attn: David Baumeister

Project:	6672-1
Client ID:	8-25-L
Sample Matrix:	Liquid
Date Sampled:	08/25/2014
Date Received:	08/27/2014
Spectra Project:	2014080640
Spectra Number:	1
	Rush

Analyte	Result	Units	Method
Total Halogens	45	ppm	SW846 9076

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a5/bw

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

August 27, 2014

OnSite Environmental Inc.	Method:	SW846 9076
14648 NE 95th Street	Sample Matrix:	Liquid
Redmond, Wa 98052	Units:	ppm
Attn: David Baumeister	Spectra Project:	2014080640
	Spectra #'s:	1

TOTAL HALOGENS QUALITY CONTROL RESULTS

METHOD BLANK

Date Analyzed: 08/27/14
Units: ppm

Total Halogens	< 1.0

INITIAL CHECK STANDARD RESULT

Date Analyzed: 08/27/14
Units: ppm

	Known Value	Measured Value	% Recovered
Total Halogens	100	110.3	110.3

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

OnSite Environmental Inc.

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

201408064O

Laboratory Reference #: 08-217

Subcontract Laboratory: Spectra Laboratories

Attention: Marie Holt

Address: 2221 Ross Way Tacoma, WA 98421

Phone Number: (253) 272-4850

Date/Time: _____

Turnaround Request: ~~1 Day~~ 2 Day 3 Day Standard

Other: Same Day

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 6072-1

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
	8-25-L	8/25/14		L	1	Total Halogens 9076

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OnSite Env.	8/26/14	1505	RUSH
Received by:		Spectra	8/27/14	0800	Same Day
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
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: 08-217

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	T&X					% Moisture
1	8-25-3	8/25/14	12:10	Soil	3		X		X													X					X
2	8-25-4		13:55		3		X		X													X					X
3	8-25-5		14:55		3		X		X													X					X
4	8-25-L		11:00	Liquid	1													X			~~X~~	X					

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	[signature]	TAI	8/25/14	15:40	
Received	Alex Armantrout	OSE	8/25/14	1542	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

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

August 27, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1408-231

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 26, 2014.

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: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

Case Narrative

Samples were collected on August 26, 2014 and received by the laboratory on August 26, 2014. 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.

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: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-26-1**					
Laboratory ID:	08-231-01					
Benzene	**ND**	0.020	EPA 8021B	8-26-14	8-26-14	
Toluene	**ND**	0.055	EPA 8021B	8-26-14	8-26-14	
Ethyl Benzene	**ND**	0.055	EPA 8021B	8-26-14	8-26-14	
m,p-Xylene	**ND**	0.055	EPA 8021B	8-26-14	8-26-14	
o-Xylene	**ND**	0.055	EPA 8021B	8-26-14	8-26-14	
Gasoline	**ND**	5.5	NWTPH-Gx	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-121*				

Date of Report: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0826S2					
Benzene	**ND**	0.020	EPA 8021B	8-26-14	8-26-14	
Toluene	**ND**	0.050	EPA 8021B	8-26-14	8-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-26-14	8-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-26-14	8-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	8-26-14	8-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-224-02										
	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	**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						*92*	*98*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0826S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.939**	**1.01**	1.00	1.00		**94**	**101**	73-121	7	10	
Toluene	**0.939**	**1.02**	1.00	1.00		**94**	**102**	75-124	8	10	
Ethyl Benzene	**0.958**	**1.02**	1.00	1.00		**96**	**102**	75-125	6	9	
m,p-Xylene	**0.961**	**1.02**	1.00	1.00		**96**	**102**	75-126	6	9	
o-Xylene	**0.939**	**1.00**	1.00	1.00		**94**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*83*	*86*	*71-121*			

Date of Report: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**8-26-1**					
Laboratory ID:	08-231-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-26-14	8-26-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0826S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-26-14	8-26-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-231-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*86*	*77*	*50-150*			

Date of Report: August 27, 2014
Samples Submitted: August 26, 2014
Laboratory Reference: 1408-231
Project: 6672-1

% MOISTURE

Date Analyzed: 8-26-14

Client ID	Lab ID	% Moisture
8-26-1	08-231-01	13

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: ——
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 08-231

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	8-26-1	8/26/14	14:55	Soil	3		X		X													X

	Signature	Company	Date	Time
Relinquished		TAI	8/26/14	15:30
Received	Alex Armantrout	OSE	8/26/14	1531
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

September 18, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-160

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 17, 2014.

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 18, 2014
Samples Submitted: September 17, 2014
Laboratory Reference: 1409-160
Project: 6672-1

Case Narrative

Samples were collected on September 16, 2014 and received by the laboratory on September 17, 2014. 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.

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 18, 2014
Samples Submitted: September 17, 2014
Laboratory Reference: 1409-160
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-16-1**					
Laboratory ID:	09-160-01					
Benzene	**0.029**	0.024	EPA 8021B	9-17-14	9-17-14	
Toluene	**ND**	0.12	EPA 8021B	9-17-14	9-17-14	
Ethyl Benzene	**1.2**	0.12	EPA 8021B	9-17-14	9-17-14	
m,p-Xylene	**0.71**	0.12	EPA 8021B	9-17-14	9-17-14	
o-Xylene	**0.52**	0.12	EPA 8021B	9-17-14	9-17-14	
Gasoline	**400**	12	NWTPH-Gx	9-17-14	9-17-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*71-121*				

Date of Report: September 18, 2014
Samples Submitted: September 17, 2014
Laboratory Reference: 1409-160
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0917S1					
Benzene	**ND**	0.020	EPA 8021B	9-17-14	9-17-14	
Toluene	**ND**	0.050	EPA 8021B	9-17-14	9-17-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-17-14	9-17-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-17-14	9-17-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-17-14	9-17-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-17-14	9-17-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-160-01										
	ORIG	DUP									
Benzene	**0.0270**	**0.0254**	NA	NA		NA		NA	6	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**1.08**	**1.12**	NA	NA		NA		NA	4	30	
m,p-Xylene	**0.649**	**0.658**	NA	NA		NA		NA	1	30	
o-Xylene	**0.475**	**0.473**	NA	NA		NA		NA	0	30	
Gasoline	**369**	**347**	NA	NA		NA		NA	6	30	
Surrogate:											
Fluorobenzene						*98*	*95*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0917S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.01**	**1.04**	1.00	1.00		**101**	**104**	73-121	3	10	
Toluene	**1.01**	**1.03**	1.00	1.00		**101**	**103**	75-124	2	10	
Ethyl Benzene	**0.999**	**1.01**	1.00	1.00		**100**	**101**	75-125	1	9	
m,p-Xylene	**1.00**	**1.02**	1.00	1.00		**100**	**102**	75-126	2	9	
o-Xylene	**1.01**	**1.02**	1.00	1.00		**101**	**102**	74-123	1	8	
Surrogate:											
Fluorobenzene						*91*	*93*	*71-121*			

Date of Report: September 18, 2014
Samples Submitted: September 17, 2014
Laboratory Reference: 1409-160
Project: 6672-1

% MOISTURE

Date Analyzed: 9-17-14

Client ID	Lab ID	% Moisture
9-16-1	09-160-01	9

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
[X] Same Day [ ] 1 Day
[ ] 2 Days [ ] 3 Days
[ ] Standard (7 Days) (TPH analysis 5 Days)
[ ] _____ (other)

Laboratory Number: 09-160

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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)	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	9-16-1	9/16/14	14:25	Soil	2		X																			X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/17/14	0600
Received	Dugan McCloskey	TAI	9/17/14	0600
Relinquished	Dugan McCloskey	TAI	9/17/14	0715
Received	Kacey Meyer	TAI	9/17/14	0715
Relinquished	Kacey Meyer	TAI	9.17.14	0715
Received	[signature]	OSE	9.17.14	7:15A
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report [ ]

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

OnSite Environmental Inc.

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

September 23, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-186

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 18, 2014.

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 23, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186
Project: 6672-1

Case Narrative

Samples were collected on September 18, 2014 and received by the laboratory on September 18, 2014. 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.

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 23, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-18-1**					
Laboratory ID:	09-186-01					
Benzene	**ND**	0.023	EPA 8021B	9-19-14	9-19-14	
Toluene	**ND**	0.11	EPA 8021B	9-19-14	9-19-14	
Ethyl Benzene	**0.14**	0.11	EPA 8021B	9-19-14	9-19-14	
m,p-Xylene	**ND**	0.11	EPA 8021B	9-19-14	9-19-14	
o-Xylene	**ND**	0.11	EPA 8021B	9-19-14	9-19-14	
Gasoline	**ND**	11	NWTPH-Gx	9-19-14	9-19-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*71-121*				
Client ID:	**9-18-2**					
Laboratory ID:	09-186-02					
Benzene	**1.0**	0.026	EPA 8021B	9-19-14	9-19-14	
Toluene	**ND**	0.13	EPA 8021B	9-19-14	9-19-14	
Ethyl Benzene	**12**	0.13	EPA 8021B	9-19-14	9-19-14	
m,p-Xylene	**45**	1.3	EPA 8021B	9-19-14	9-19-14	
o-Xylene	**11**	0.13	EPA 8021B	9-19-14	9-19-14	
Gasoline	**930**	13	NWTPH-Gx	9-19-14	9-19-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*71-121*				
Client ID:	**9-18-3**					
Laboratory ID:	09-186-03					
Benzene	**ND**	0.020	EPA 8021B	9-19-14	9-19-14	
Toluene	**ND**	0.070	EPA 8021B	9-19-14	9-19-14	
Ethyl Benzene	**ND**	0.070	EPA 8021B	9-19-14	9-19-14	
m,p-Xylene	**ND**	0.070	EPA 8021B	9-19-14	9-19-14	
o-Xylene	**ND**	0.070	EPA 8021B	9-19-14	9-19-14	
Gasoline	**ND**	7.0	NWTPH-Gx	9-19-14	9-19-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*71-121*				

Date of Report: September 23, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-18-4**					
Laboratory ID:	09-186-04					
Benzene	**0.18**	0.057	EPA 8021B	9-19-14	9-19-14	
Toluene	**ND**	0.29	EPA 8021B	9-19-14	9-19-14	
Ethyl Benzene	**4.4**	0.29	EPA 8021B	9-19-14	9-19-14	
m,p-Xylene	**17**	0.29	EPA 8021B	9-19-14	9-19-14	
o-Xylene	**1.0**	0.29	EPA 8021B	9-19-14	9-19-14	
Gasoline	**230**	29	NWTPH-Gx	9-19-14	9-19-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-121*				

Date of Report: September 23, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0919S1					
Benzene	**ND**	0.020	EPA 8021B	9-19-14	9-19-14	
Toluene	**ND**	0.050	EPA 8021B	9-19-14	9-19-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-19-14	9-19-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-19-14	9-19-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-19-14	9-19-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-19-14	9-19-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-186-03										
	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						*98*	*95*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0919S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.02**	**1.06**	1.00	1.00		**102**	**106**	73-121	4	10	
Toluene	**1.02**	**1.05**	1.00	1.00		**102**	**105**	75-124	3	10	
Ethyl Benzene	**1.01**	**1.04**	1.00	1.00		**101**	**104**	75-125	3	9	
m,p-Xylene	**1.01**	**1.04**	1.00	1.00		**101**	**104**	75-126	3	9	
o-Xylene	**1.02**	**1.04**	1.00	1.00		**102**	**104**	74-123	2	8	
Surrogate:											
Fluorobenzene						*94*	*97*	*71-121*			

Date of Report: September 23, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186
Project: 6672-1

% MOISTURE

Date Analyzed: 9-19-14

Client ID	Lab ID	% Moisture
9-18-1	09-186-01	11
9-18-2	09-186-02	14
9-18-3	09-186-03	18
9-18-4	09-186-04	10

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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: Terra Associates Inc.
Project Number: 6672-1
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: 09-186

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	9-18-1	9/18/14	10:15	Soil	2		X																				X
2	9-18-2	↓	11:45	↓	↓		X																				X
3	9-18-3		13:10				X																				X
4	9-18-4		14:35				X																				X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	9/18/14	15:30	
Received		OSE	9/18/14	15:30	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

September 26, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-186B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 18, 2014.

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 26, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186B
Project: 6672-1

Case Narrative

Samples were collected on September 18, 2014 and received by the laboratory on September 18, 2014. 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: September 26, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186B
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-18-1**					
Laboratory ID:	09-186-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**9-18-3**					
Laboratory ID:	09-186-03					
Diesel Range Organics	**ND**	30	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Date of Report: September 26, 2014
Samples Submitted: September 18, 2014
Laboratory Reference: 1409-186B
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0925S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-186-03										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*90*	*96*	*50-150*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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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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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.

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L - The RPD is outside of the control limits.

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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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lia
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: 09-186

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	9-18-1	9/18/14	10:15	Soil	2		X		(X)													X
2	9-18-2		11:45				X															X
3	9-18-3		13:10				X		(X)													X
4	9-18-4		14:35				X															X

	Signature	Company	Date	Time
Relinquished		TAI	9/18/14	15:30
Received		OSE	9/18/14	15:30
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
(X) Added 9/25/14. DB (1 day TAT)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

September 22, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-193

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 19, 2014.

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 22, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193
Project: 6672-1

Case Narrative

Samples were collected on September 19, 2014 and received by the laboratory on September 19, 2014. 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.

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 22, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-19-1**					
Laboratory ID:	09-193-01					
Benzene	**ND**	0.020	EPA 8021B	9-21-14	9-21-14	
Toluene	**ND**	0.079	EPA 8021B	9-21-14	9-21-14	
Ethyl Benzene	**ND**	0.079	EPA 8021B	9-21-14	9-21-14	
m,p-Xylene	**ND**	0.079	EPA 8021B	9-21-14	9-21-14	
o-Xylene	**ND**	0.079	EPA 8021B	9-21-14	9-21-14	
Gasoline	**ND**	7.9	NWTPH-Gx	9-21-14	9-21-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*71-121*				

Date of Report: September 22, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0921S1					
Benzene	**ND**	0.020	EPA 8021B	9-21-14	9-21-14	
Toluene	**ND**	0.050	EPA 8021B	9-21-14	9-21-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-21-14	9-21-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-21-14	9-21-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-21-14	9-21-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-21-14	9-21-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-191-01										
	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*	*98*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0921S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.06**	**1.12**	1.00	1.00		**106**	**112**	73-121	6	10	
Toluene	**1.05**	**1.10**	1.00	1.00		**105**	**110**	75-124	5	10	
Ethyl Benzene	**1.01**	**1.07**	1.00	1.00		**101**	**107**	75-125	6	9	
m,p-Xylene	**1.01**	**1.06**	1.00	1.00		**101**	**106**	75-126	5	9	
o-Xylene	**1.00**	**1.04**	1.00	1.00		**100**	**104**	74-123	4	8	
Surrogate:											
Fluorobenzene						*97*	*100*	*71-121*			

Date of Report: September 22, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193
Project: 6672-1

% MOISTURE

Date Analyzed: 9-21-14

Client ID	Lab ID	% Moisture
9-19-1	09-193-01	23

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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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.

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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 _____.

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
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: 09-193

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	9-19-1	9/19/14	10:15	Soil	2		X																				10

	Signature	Company	Date	Time
Relinquished		TAI	9/19/14	15:15
Received		CQ&E	9/19/14	1515
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

September 26, 2014

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12525 Willows Road, Suite 101
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Laboratory Reference No. 1409-193B

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Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 26, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193B
Project: 6672-1

Case Narrative

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Date of Report: September 26, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193B
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-19-1**					
Laboratory ID:	09-193-01					
Diesel Range Organics	**ND**	32	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Date of Report: September 26, 2014
Samples Submitted: September 19, 2014
Laboratory Reference: 1409-193B
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0925S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-186-03									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*90* *96*	*50-150*			

OnSite Environmental Inc.

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P - The RPD of the detected concentrations between the two columns is greater than 40.

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T - The sample chromatogram is not similar to a typical _____.

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Z -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
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: 09-193

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	9-19-1	9/19/14	10:15	Soil	2		X		(X)													6

	Signature	Company	Date	Time
Relinquished		TAI	9/19/14	15:15
Received		CCE	9/19/14	1515
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
(X) Added 9/25/14. DB (1 day TAT)

Chromatograms with final report ☐

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

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

September 29, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-264

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 25, 2014.

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 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

Case Narrative

Samples were collected on September 25, 2014 and received by the laboratory on September 25, 2014. 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.

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 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-25-1**					
Laboratory ID:	09-264-01					
Benzene	**0.023**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.079	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.079	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**0.084**	0.079	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.079	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	7.9	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*71-121*				
Client ID:	**9-25-2**					
Laboratory ID:	09-264-02					
Benzene	**1.3**	0.022	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.11	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**50**	2.7	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**150**	2.7	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**5.5**	0.11	EPA 8021B	9-26-14	9-26-14	
Gasoline	**1900**	270	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*71-121*				
Client ID:	**9-25-3**					
Laboratory ID:	09-264-03					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.078	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.078	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.078	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.078	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	7.8	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*71-121*				

Date of Report: September 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-25-4**					
Laboratory ID:	09-264-04					
Benzene	**2.2**	0.027	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.14	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**19**	1.4	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**33**	1.4	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**0.53**	0.14	EPA 8021B	9-26-14	9-26-14	
Gasoline	**2500**	140	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				
Client ID:	**9-25-5**					
Laboratory ID:	09-264-05					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.069	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.069	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.069	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.069	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	6.9	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				

Date of Report: September 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0926S1					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-260-01										
	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	**0.0562**	**0.0545**	NA	NA		NA		NA	3	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*95*	*89*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0926S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.04**	**1.03**	1.00	1.00		**104**	**103**	73-121	1	10	
Toluene	**1.06**	**1.04**	1.00	1.00		**106**	**104**	75-124	2	10	
Ethyl Benzene	**1.07**	**1.05**	1.00	1.00		**107**	**105**	75-125	2	9	
m,p-Xylene	**1.08**	**1.06**	1.00	1.00		**108**	**106**	75-126	2	9	
o-Xylene	**1.02**	**1.01**	1.00	1.00		**102**	**101**	74-123	1	8	
Surrogate:											
Fluorobenzene						*95*	*95*	*71-121*			

Date of Report: September 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-25-1**					
Laboratory ID:	09-264-01					
Diesel Range Organics	**ND**	33	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**9-25-5**					
Laboratory ID:	09-264-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: September 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0925S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-25-14	9-25-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-25-14	9-25-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-186-03									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*90* *96*	*50-150*			

Date of Report: September 29, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264
Project: 6672-1

% MOISTURE

Date Analyzed: 9-25-14

Client ID	Lab ID	% Moisture
9-25-1	09-264-01	23
9-25-2	09-264-02	9
9-25-3	09-264-03	21
9-25-4	09-264-04	13
9-25-5	09-264-05	15

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 09-264

Company: Terra Associates Inc.
Project Number: 6672-2
Project Name: ——
Project Manager: Chuck Liu
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
- [X] Same Day
- [X] ND 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	9-25-1	9/25/14	7:50	Soil	2		X		X													X
2	9-25-2		9:20				X															10
3	9-25-3		10:35				X															8
4	9-25-4		11:45				X															6
5	9-25-5		14:05				X		X													X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	9/25/14	15:50	
Received		OSE	9/25/14	1550	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 2, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-264B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 25, 2014.

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 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

Case Narrative

Samples were collected on September 25, 2014 and received by the laboratory on September 25, 2014. 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.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for samples 9-25-2 and 9-25-5. The samples were therefore extracted from 4-ounce jars and analyzed.

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 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-25-2**					
Laboratory ID:	09-264-02					
Methyl t-Butyl Ether	ND	0.059	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.059	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.059	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*65-129*				
Toluene-d8	*96*	*77-122*				
4-Bromofluorobenzene	*99*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-25-5**					
Laboratory ID:	09-264-05					
Methyl t-Butyl Ether	ND	0.0012	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0012	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0012	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1002S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0435**	**0.0431**	0.0500	0.0500	87	86	56-141	1	15	
Benzene	**0.0453**	**0.0458**	0.0500	0.0500	91	92	70-121	1	15	
Trichloroethene	**0.0496**	**0.0499**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0461**	**0.0472**	0.0500	0.0500	92	94	75-120	2	15	
Chlorobenzene	**0.0446**	**0.0449**	0.0500	0.0500	89	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*98*	*100*	*65-129*			
Toluene-d8					*97*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*99*	*73-124*			

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-264-02					
Client ID:	**9-25-2**					
Lead	**ND**	5.5	6010C	10-1-14	10-1-14	
Lab ID:	09-264-05					
Client ID:	**9-25-5**					
Lead	**ND**	5.9	6010C	10-1-14	10-1-14	

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-1-14
Date Analyzed:	10-1-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1001SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 2, 2014
Samples Submitted: September 25, 2014
Laboratory Reference: 1409-264B
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**228**	91	**223**	89	2	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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: Terra Associates Inc.
Project Number: 6672-1
Project Name: ——
Project Manager: Chuck Liu
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
☒ Same Day ☒ ~~1 Day~~ NO
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 09-264

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC 8260		TOTAL LEAD		% Moisture
1	9-25-1	9/25/14	7:50	Soil	2		X		X																		X
2	9-25-2	↓	9:20	↓	↓		X																(X)		(X)		X
3	9-25-3		~~10:35~~				X																				X
4	9-25-4		11:45				X																				X
5	9-25-5		14:05				X		X														(X)		(X)		X

	Signature	Company	Date	Time
Relinquished		TAI	9/25/14	15:50
Received		OSE	9/25/14	1550
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
(X) Added 10/1/14. DB (2 day TAT)

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

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

September 29, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-289

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 26, 2014.

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 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

Case Narrative

Samples were collected on September 26, 2014 and received by the laboratory on September 26, 2014. 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.

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 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-26-1**					
Laboratory ID:	09-289-01					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.061	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	6.1	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				
Client ID:	**9-26-2**					
Laboratory ID:	09-289-02					
Benzene	**0.17**	0.060	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**1.1**	0.30	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.30	EPA 8021B	9-26-14	9-26-14	
Gasoline	**150**	30	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*117*	*71-121*				
Client ID:	**9-26-3**					
Laboratory ID:	09-289-03					
Benzene	**0.22**	0.067	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.34	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**3.3**	0.34	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**8.3**	0.34	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**0.34**	0.34	EPA 8021B	9-26-14	9-26-14	
Gasoline	**250**	34	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*71-121*				

Date of Report: September 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0926S1					
Benzene	**ND**	0.020	EPA 8021B	9-26-14	9-26-14	
Toluene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-26-14	9-26-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-26-14	9-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-260-01										
	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	**0.0562**	**0.0545**	NA	NA		NA		NA	3	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*95*	*89*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0926S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.04**	**1.03**	1.00	1.00		**104**	**103**	73-121	1	10	
Toluene	**1.06**	**1.04**	1.00	1.00		**106**	**104**	75-124	2	10	
Ethyl Benzene	**1.07**	**1.05**	1.00	1.00		**107**	**105**	75-125	2	9	
m,p-Xylene	**1.08**	**1.06**	1.00	1.00		**108**	**106**	75-126	2	9	
o-Xylene	**1.02**	**1.01**	1.00	1.00		**102**	**101**	74-123	1	8	
Surrogate:											
Fluorobenzene						*95*	*95*	*71-121*			

Date of Report: September 29, 2014
Samples Submitted: September 26, 2014
Laboratory Reference: 1409-289
Project: 6672-1

% MOISTURE

Date Analyzed: 9-26-14

Client ID	Lab ID	% Moisture
9-26-1	09-289-01	12
9-26-2	09-289-02	14
9-26-3	09-289-03	18

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 09-289

Company: Terra Associates Inc.
Project Number: 6672-1
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)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	9-26-1	9/26/14	9:25	Soil	2		X																				X
2	9-26-2	↓	10:30	↓	↓		X																				X
3	9-26-3	↓	12:15	↓	↓		X																				X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/26/14	15:22
Received	[signature]	Onsite	9-26-14	1522
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 2, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-303

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2014.

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 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

Case Narrative

Samples were collected on September 29, 2014 and received by the laboratory on September 29, 2014. 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.

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.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 9-29-4. The sample was therefore extracted from a 4-ounce jar and analyzed.

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 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.4	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	8.3	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-300-01										
	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						*105*	*94*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Methyl t-Butyl Ether	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0013	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1002S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0435**	**0.0431**	0.0500	0.0500	87	86	56-141	1	15	
Benzene	**0.0453**	**0.0458**	0.0500	0.0500	91	92	70-121	1	15	
Trichloroethene	**0.0496**	**0.0499**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0461**	**0.0472**	0.0500	0.0500	92	94	75-120	2	15	
Chlorobenzene	**0.0446**	**0.0449**	0.0500	0.0500	89	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*98*	*100*	*65-129*			
Toluene-d8					*97*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*99*	*73-124*			

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-303-02					
Client ID:	**9-29-4**					
Lead	**ND**	6.5	6010C	10-1-14	10-1-14	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-1-14
Date Analyzed:	10-1-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1001SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**228**	91	**223**	89	2	

Date of Report: October 2, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

% MOISTURE

Date Analyzed: 9-29-14

Client ID	Lab ID	% Moisture
9-29-1	09-303-01	15
9-29-4	09-303-02	23

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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: 09-303

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC 8260		TOTAL LEAD		% Moisture
1	9-29-1	9/29/14	11:15	Soil	2		X		X																		X
2	9-29-4	9/29/14	14:30	Soil	2		X		X														⊗		(X)		X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/29/14	16:57
Received	[signature]	OSE	9/29/14	1657
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
⊗ Added 10/1/14. DB (2 day TAT)

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

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

October 1, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-303

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2014.

Please note that the added analyses will follow in the final report.

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 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

Case Narrative

Samples were collected on September 29, 2014 and received by the laboratory on September 29, 2014. 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.

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 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.064	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.4	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.083	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	8.3	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-300-01										
	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						*105*	*94*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-29-1**					
Laboratory ID:	09-303-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				
Client ID:	**9-29-4**					
Laboratory ID:	09-303-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 1, 2014
Samples Submitted: September 29, 2014
Laboratory Reference: 1409-303
Project: 6672-1

% MOISTURE

Date Analyzed: 9-29-14

Client ID	Lab ID	% Moisture
9-29-1	09-303-01	15
9-29-4	09-303-02	23

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 09-303

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC 8260		TOTAL LEAD		% Moisture
1	9-29-1	9/29/14	11:15	Soil	2		X		X																		X
2	9-29-4	9/29/14	14:30	Soil	2		X		X														⊗		(X)		X

	Signature	Company	Date	Time
Relinquished		TAI	9/29/14	16:57
Received			9/29/14	1657
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
⊗ Added 10/1/14. DB (2 day TAT)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 1, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1409-318

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 30, 2014.

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 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

Case Narrative

Samples were collected on September 30, 2014 and received by the laboratory on September 30, 2014. 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.

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 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-30-1**					
Laboratory ID:	09-318-01					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.069	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	6.9	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				
Client ID:	**9-30-2**					
Laboratory ID:	09-318-02					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	10-1-14	
Toluene	**ND**	0.059	EPA 8021B	9-30-14	10-1-14	
Ethyl Benzene	**0.19**	0.059	EPA 8021B	9-30-14	10-1-14	
m,p-Xylene	**0.20**	0.059	EPA 8021B	9-30-14	10-1-14	
o-Xylene	**ND**	0.059	EPA 8021B	9-30-14	10-1-14	
Gasoline	**ND**	5.9	NWTPH-Gx	9-30-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S2					
Benzene	**ND**	0.020	EPA 8021B	9-30-14	9-30-14	
Toluene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
o-Xylene	**ND**	0.050	EPA 8021B	9-30-14	9-30-14	
Gasoline	**ND**	5.0	NWTPH-Gx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-309-01										
	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*	*102*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB0930S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.02**	1.00	1.00		**108**	**102**	73-121	6	10	
Toluene	**1.09**	**1.03**	1.00	1.00		**109**	**103**	75-124	6	10	
Ethyl Benzene	**1.10**	**1.04**	1.00	1.00		**110**	**104**	75-125	6	9	
m,p-Xylene	**1.12**	**1.05**	1.00	1.00		**112**	**105**	75-126	6	9	
o-Xylene	**1.06**	**1.00**	1.00	1.00		**106**	**100**	74-123	6	8	
Surrogate:											
Fluorobenzene						*94*	*92*	*71-121*			

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**9-30-1**					
Laboratory ID:	09-318-01					
Diesel Range Organics	**ND**	30	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-14	9-30-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-14	9-30-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-303-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *70*	*50-150*			

Date of Report: October 1, 2014
Samples Submitted: September 30, 2014
Laboratory Reference: 1409-318
Project: 6672-1

% MOISTURE

Date Analyzed: 9-30-14

Client ID	Lab ID	% Moisture
9-30-1	09-318-01	16
9-30-2	09-318-02	11

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Liu
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: 09-318

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	9-30-1	9/30/14	11:50	Soil	2		X		X													X
2	9-30-2	9/30/14	13:30	Soil	2		X															X

	Signature	Company	Date	Time
Relinquished		TAI	9/30/14	15:25
Received		OSE	9/30/14	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date | Reviewed/Date | Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 2, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-008

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 1, 2014.

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 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

Case Narrative

Samples were collected on October 1, 2014 and received by the laboratory on October 1, 2014. 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.

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.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 10-1-2. The sample was therefore extracted from a 4-ounce jar and analyzed.

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 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-1**					
Laboratory ID:	10-008-01					
Benzene	**0.035**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.052	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**3.8**	0.052	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**15**	0.26	EPA 8021B	10-1-14	10-2-14	
o-Xylene	**4.6**	0.052	EPA 8021B	10-1-14	10-1-14	
Gasoline	**220**	5.2	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Benzene	**ND**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.049	EPA 8021B	10-1-14	10-1-14	
Gasoline	**ND**	4.9	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				
Client ID:	**10-1-3**					
Laboratory ID:	10-008-03					
Benzene	**0.88**	0.022	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.11	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**13**	0.27	EPA 8021B	10-1-14	10-2-14	
m,p-Xylene	**0.58**	0.11	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.11	EPA 8021B	10-1-14	10-1-14	
Gasoline	**1500**	27	NWTPH-Gx	10-1-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1001S1					
Benzene	**ND**	0.020	EPA 8021B	10-1-14	10-1-14	
Toluene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-1-14	10-1-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-322-01										
	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						*96*	*93*	*71-121*			
MATRIX SPIKES											
Laboratory ID:	09-322-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**1.02**	**1.07**	1.00	1.00	ND	**102**	**107**	64-130	5	18	
Toluene	**1.03**	**1.07**	1.00	1.00	ND	**103**	**107**	71-133	4	15	
Ethyl Benzene	**1.01**	**1.04**	1.00	1.00	ND	**101**	**104**	72-133	3	17	
m,p-Xylene	**1.04**	**1.03**	1.00	1.00	ND	**104**	**103**	74-131	1	20	
o-Xylene	**1.04**	**1.11**	1.00	1.00	ND	**104**	**111**	69-133	7	12	
Surrogate:											
Fluorobenzene						*93*	*99*	*71-121*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-1**					
Laboratory ID:	10-008-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Diesel Range Organics	**ND**	47	NWTPH-Dx	10-1-14	10-1-14	U1
Lube Oil	**260**	55	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**10-1-3**					
Laboratory ID:	10-008-03					
Diesel Range Organics	**760**	27	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil	**2600**	55	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1001S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-1-14	10-1-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-1-14	10-1-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-008-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*91*	*93*	*50-150*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-1-2**					
Laboratory ID:	10-008-02					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1002S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-2-14	10-2-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0435**	**0.0431**	0.0500	0.0500	87	86	56-141	1	15	
Benzene	**0.0453**	**0.0458**	0.0500	0.0500	91	92	70-121	1	15	
Trichloroethene	**0.0496**	**0.0499**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0461**	**0.0472**	0.0500	0.0500	92	94	75-120	2	15	
Chlorobenzene	**0.0446**	**0.0449**	0.0500	0.0500	89	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*98*	*100*	*65-129*			
Toluene-d8					*97*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*99*	*73-124*			

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-008-02					
Client ID:	**10-1-2**					
Lead	**ND**	5.5	6010C	10-1-14	10-1-14	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-1-14
Date Analyzed:	10-1-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1001SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-1-14
Date Analyzed: 10-1-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-271-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**228**	91	**223**	89	2	

Date of Report: October 2, 2014
Samples Submitted: October 1, 2014
Laboratory Reference: 1410-008
Project: 6672-1

% MOISTURE

Date Analyzed: 10-1-14

Client ID	Lab ID	% Moisture
10-1-1	10-008-01	10
10-1-2	10-008-02	9
10-1-3	10-008-03	8

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-008

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		MTBE, EDB, EDC		TOTAL LEAD		% Moisture
1	10-1-1	10/1/14	7:30	Soil	2		X		X																		X
2	10-1-2		10:12				X		X														X		X		X
3	10-1-3		10:30				X		X																		X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	10/1/14	15:25
Received	[signature]	OBE	10/1/14	1525
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

~~will email analysis~~
~~request shortly~~ DB

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 6, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-043

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2014.

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 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

Case Narrative

Samples were collected on October 2, 2014 and received by the laboratory on October 3, 2014. 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 chromatogram for sample 10-2-4 is similar to mineral spirits with diesel.

Volatiles EPA 8260C Analysis

Method 5035A VOA vials containing stir bars were not provided for sample 10-2-3. The sample was therefore extracted from a 4-ounce jar and analyzed.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-1**					
Laboratory ID:	10-043-01					
Benzene	**0.78**	0.023	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.11	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**1.2**	0.11	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.78**	0.11	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.11	EPA 8021B	10-3-14	10-3-14	
Gasoline	**330**	11	NWTPH-Gx	10-3-14	10-3-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*71-121*				
Client ID:	**10-2-2**					
Laboratory ID:	10-043-02					
Benzene	**0.40**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.054	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**2.0**	0.054	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.99**	0.054	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.054	EPA 8021B	10-3-14	10-3-14	
Gasoline	**350**	5.4	NWTPH-Gx	10-3-14	10-3-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*71-121*				
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.057	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.7	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-4**					
Laboratory ID:	10-043-04					
Benzene	**ND**	0.023	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.12	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**0.83**	0.12	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**1.2**	0.12	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**1.8**	0.12	EPA 8021B	10-3-14	10-3-14	
Gasoline	**3000**	290	NWTPH-Gx	10-3-14	10-3-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S1					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-03										
	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						*92*	*87*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1003S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.07**	**1.11**	1.00	1.00		**107**	**111**	73-121	4	10	
Toluene	**1.06**	**1.09**	1.00	1.00		**106**	**109**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-125	4	9	
m,p-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-126	4	9	
o-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	74-123	4	8	
Surrogate:											
Fluorobenzene						*97*	*99*	*71-121*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-1**					
Laboratory ID:	10-043-01					
Diesel Range Organics	**640**	140	NWTPH-Dx	10-3-14	10-6-14	
Lube Oil	**5400**	280	NWTPH-Dx	10-3-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**10-2-2**					
Laboratory ID:	10-043-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil	**490**	57	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**10-2-4**					
Laboratory ID:	10-043-04					
Diesel Range Organics	**900**	28	NWTPH-Dx	10-3-14	10-3-14	M
Lube Oil	**630**	56	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-04										
	ORIG	DUP									
Diesel Range Organics	**796**	**677**	NA	NA		NA		NA	16	NA	M
Lube Oil	**556**	**522**	NA	NA		NA		NA	6	NA	
Surrogate:											
o-Terphenyl						*78*	*75*	*50-150*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-2-3**					
Laboratory ID:	10-043-03					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*65-129*				
Toluene-d8	*103*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1003S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*65-129*				
Toluene-d8	*113*	*77-122*				
4-Bromofluorobenzene	*115*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1003S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0406**	**0.0413**	0.0500	0.0500	81	83	56-141	2	15	
Benzene	**0.0449**	**0.0450**	0.0500	0.0500	90	90	70-121	0	15	
Trichloroethene	**0.0490**	**0.0489**	0.0500	0.0500	98	98	74-118	0	15	
Toluene	**0.0466**	**0.0466**	0.0500	0.0500	93	93	75-120	0	15	
Chlorobenzene	**0.0442**	**0.0448**	0.0500	0.0500	88	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*99*	*101*	*65-129*			
Toluene-d8					*98*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*101*	*73-124*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-043-03					
Client ID:	**10-2-3**					
Lead	**7.7**	5.7	6010C	10-6-14	10-6-14	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-14
Date Analyzed:	10-6-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1006SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**6.80**	**6.70**	2	5.0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**238**	93	**237**	92	0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-043
Project: 6672-1

% MOISTURE

Date Analyzed: 10-3-14

Client ID	Lab ID	% Moisture
10-2-1	10-043-01	11
10-2-2	10-043-02	12
10-2-3	10-043-03	12
10-2-4	10-043-04	11

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 with diesel.

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

Laboratory Number: 10-043

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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)
☐ ASAP (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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)	TCLP Metals	HEM (oil and grease) 1664A	8260C MTBE, EDB, EDC	Total Lead				% Moisture
1	10-2-1	10/2/14	7:30	Soil	2		X		X																	X
2	10-2-2	↓	10:22	↓	↓		X		X																	X
3	10-2-3	↓	10:40	↓	↓		X		X												X	X				X
4	10-2-4	↓	13:20	↓	2		X		X																	X

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	10/3/14	6:00
Received	Dyan McCloskey	TAI	10-3-14	6:00
Relinquished	Dyan McCloskey	TAI	10-3-14	7:37
Received	[signature]	OSE	10.3.14	7:37A
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ ———

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

October 6, 2014

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

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1410-055

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2014.

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 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

Case Narrative

Samples were collected on October 3, 2014 and received by the laboratory on October 3, 2014. 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.

Volatiles EPA 8260C Analysis

Some MTCA Method A cleanup levels are non-achievable for sample 10-3-1 due to the necessary dilution of the sample.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Benzene	**0.050**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.066	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**0.43**	0.066	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**0.094**	0.066	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.066	EPA 8021B	10-3-14	10-3-14	
Gasoline	**97**	6.6	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*71-121*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S1					
Benzene	**ND**	0.020	EPA 8021B	10-3-14	10-3-14	
Toluene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-3-14	10-3-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-043-03										
	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						*92*	*87*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1003S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.07**	**1.11**	1.00	1.00		**107**	**111**	73-121	4	10	
Toluene	**1.06**	**1.09**	1.00	1.00		**106**	**109**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-125	4	9	
m,p-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	75-126	4	9	
o-Xylene	**1.04**	**1.08**	1.00	1.00		**104**	**108**	74-123	4	8	
Surrogate:											
Fluorobenzene						*97*	*99*	*71-121*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Diesel Range Organics	**ND**	46	NWTPH-Dx	10-3-14	10-3-14	U1,M1
Lube Oil	**140**	61	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-3-14	10-3-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-056-08									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*71* *75*	*50-150*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-3-1**					
Laboratory ID:	10-055-01					
Methyl t-Butyl Ether	ND	0.070	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.070	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.070	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*99*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1003S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	10-3-14	10-3-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*65-129*				
Toluene-d8	*113*	*77-122*				
4-Bromofluorobenzene	*115*	*73-124*				

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1003S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0406**	**0.0413**	0.0500	0.0500	81	83	56-141	2	15	
Benzene	**0.0449**	**0.0450**	0.0500	0.0500	90	90	70-121	0	15	
Trichloroethene	**0.0490**	**0.0489**	0.0500	0.0500	98	98	74-118	0	15	
Toluene	**0.0466**	**0.0466**	0.0500	0.0500	93	93	75-120	0	15	
Chlorobenzene	**0.0442**	**0.0448**	0.0500	0.0500	88	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*99*	*101*	*65-129*			
Toluene-d8					*98*	*99*	*77-122*			
4-Bromofluorobenzene					*98*	*101*	*73-124*			

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-055-01					
Client ID:	**10-3-1**					
Lead	**8.1**	6.1	6010C	10-6-14	10-6-14	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-14
Date Analyzed:	10-6-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1006SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**6.80**	**6.70**	2	5.0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-6-14
Date Analyzed: 10-6-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-043-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**238**	93	**237**	92	0	

Date of Report: October 6, 2014
Samples Submitted: October 3, 2014
Laboratory Reference: 1410-055
Project: 6672-1

% MOISTURE

Date Analyzed: 10-3-14

Client ID	Lab ID	% Moisture
10-3-1	10-055-01	19

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 10-055

Company: Tarra Associates Inc.
Project Number: 6672-1
Project Name: ____
Project Manager: Chuck Lie
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)
(Check One)
- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [X] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] ____ (other)

TOTAL LEAD

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	X/MTBE, EDB, EDC	X/Total Lead				% Moisture
1	10-3-1	10/3/14	~~13:02~~ 11:20	Soil	3		X		X													X	X				X

	Signature	Company	Date	Time
Relinquished		TAI	10/3/14	15:24
Received		CSR	10/3/14	1524
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ ____

90c

OnSite Environmental Inc.

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

October 7, 2014

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

Re: Analytical Data for Project T-6672
Laboratory Reference No. 1410-068

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 2014.

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 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

Case Narrative

Samples were collected on October 6, 2014 and received by the laboratory on October 6, 2014. 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 chromatogram for sample 10-6-2 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 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-6-2**					
Laboratory ID:	10-068-02					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.080	EPA 8021B	10-6-14	10-6-14	
Gasoline	**29**	8.0	NWTPH-Gx	10-6-14	10-6-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*71-121*				
Client ID:	**10-6-3**					
Laboratory ID:	10-068-03					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.067	EPA 8021B	10-6-14	10-6-14	
Gasoline	**ND**	6.7	NWTPH-Gx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1006S1					
Benzene	**ND**	0.020	EPA 8021B	10-6-14	10-6-14	
Toluene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-6-14	10-6-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-063-01										
	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						*101*	*100*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1006S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.08**	**1.04**	1.00	1.00		**108**	**104**	73-121	4	10	
Toluene	**1.06**	**1.03**	1.00	1.00		**106**	**103**	75-124	3	10	
Ethyl Benzene	**1.04**	**1.01**	1.00	1.00		**104**	**101**	75-125	3	9	
m,p-Xylene	**1.05**	**1.00**	1.00	1.00		**105**	**100**	75-126	5	9	
o-Xylene	**1.05**	**1.02**	1.00	1.00		**105**	**102**	74-123	3	8	
Surrogate:											
Fluorobenzene						*94*	*93*	*71-121*			

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-6-2**					
Laboratory ID:	10-068-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	10-6-14	10-7-14	
Lube Oil Range Organics	**110**	66	NWTPH-Dx	10-6-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**10-6-3**					
Laboratory ID:	10-068-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-6-14	10-6-14	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1006S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-6-14	10-6-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-6-14	10-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-059-02										
	ORIG	DUP									
Mineral Oil	**84.9**	**78.9**	NA	NA		NA		NA	7	NA	X1
Surrogate:											
o-Terphenyl						*105*	*98*	*50-150*			

Date of Report: October 7, 2014
Samples Submitted: October 6, 2014
Laboratory Reference: 1410-068
Project: T-6672

% MOISTURE

Date Analyzed: 10-6-14

Client ID	Lab ID	% Moisture
10-6-2	10-068-02	24
10-6-3	10-068-03	21

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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

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: Terra Associates, Inc.
Project Number: T-1672
Project Name:
Project Manager: Charles Lee
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-068

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-6-1	10-6-14	1256	Soil	5																	
2	10-6-2	10-6-14	1305	Soil	5		X		X													X
3	10-6-3	10-6-14	1435	Soil	5		X		X													X

	Signature	Company	Date	Time
Relinquished		Environmental Field Sm	10-6-14	1545
Received		Onsite Env	10/6/14	1545
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

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

October 8, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-078

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 7, 2014.

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 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

Case Narrative

Samples were collected on October 7, 2014 and received by the laboratory on October 7, 2014. 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.

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 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-7-1**					
Laboratory ID:	10-078-01					
Benzene	**ND**	0.020	EPA 8021B	10-7-14	10-7-14	
Toluene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
Ethyl Benzene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
m,p-Xylene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
o-Xylene	**ND**	0.060	EPA 8021B	10-7-14	10-7-14	
Gasoline	**ND**	6.0	NWTPH-Gx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*71-121*				

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1007S1					
Benzene	**ND**	0.020	EPA 8021B	10-7-14	10-7-14	
Toluene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-7-14	10-7-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-078-01										
	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						*103*	*103*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1007S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.05**	**1.03**	1.00	1.00		**105**	**103**	73-121	2	10	
Toluene	**1.04**	**1.01**	1.00	1.00		**104**	**101**	75-124	3	10	
Ethyl Benzene	**1.02**	**0.995**	1.00	1.00		**102**	**100**	75-125	2	9	
m,p-Xylene	**1.02**	**0.991**	1.00	1.00		**102**	**99**	75-126	3	9	
o-Xylene	**1.02**	**0.994**	1.00	1.00		**102**	**99**	74-123	3	8	
Surrogate:											
Fluorobenzene						*97*	*95*	*71-121*			

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-7-1**					
Laboratory ID:	10-078-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-7-14	10-7-14	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1007S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-7-14	10-7-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-7-14	10-7-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-074-05,06 Comp.										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Lube Oil	**250**	**206**	NA	NA		NA		NA	19	NA	
Surrogate:											
o-Terphenyl						*76*	*71*	*50-150*			

Date of Report: October 8, 2014
Samples Submitted: October 7, 2014
Laboratory Reference: 1410-078
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-7-14

Client ID	Lab ID	% Moisture
10-7-1	10-078-01	10

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates, Inc
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lie
Sampled by: Terry Bukowski

Turnaround Request (in working days)

(Check One)

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 10-078

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	10-7-1	10-7-14	1125	Soil	5		X		X																		X

	Signature	Company	Date	Time
Relinquished	Terry Bukowski	Environmental Technologies	10-7-14	1540
Received			10/7/14	1540
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 9, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-110

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 8, 2014.

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 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

Case Narrative

Samples were collected on October 8, 2014 and received by the laboratory on October 8, 2014. 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 chromatogram for sample 10-8-1 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 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-8-1**					
Laboratory ID:	10-110-01					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.088	EPA 8021B	10-8-14	10-8-14	
Gasoline	**16**	8.8	NWTPH-Gx	10-8-14	10-8-14	Z
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*114*	*71-121*				
Client ID:	**10-8-3**					
Laboratory ID:	10-110-03					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.072	EPA 8021B	10-8-14	10-8-14	
Gasoline	**ND**	7.2	NWTPH-Gx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*71-121*				

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S1					
Benzene	**ND**	0.020	EPA 8021B	10-8-14	10-8-14	
Toluene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-8-14	10-8-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-083-01										
	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*	*96*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1008S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.03**	**1.09**	1.00	1.00		**103**	**109**	73-121	6	10	
Toluene	**1.02**	**1.07**	1.00	1.00		**102**	**107**	75-124	5	10	
Ethyl Benzene	**0.998**	**1.06**	1.00	1.00		**100**	**106**	75-125	6	9	
m,p-Xylene	**0.998**	**1.06**	1.00	1.00		**100**	**106**	75-126	6	9	
o-Xylene	**1.00**	**1.08**	1.00	1.00		**100**	**108**	74-123	8	8	
Surrogate:											
Fluorobenzene						*96*	*97*	*71-121*			

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-8-1**					
Laboratory ID:	10-110-01					
Diesel Range Organics	**ND**	47	NWTPH-Dx	10-8-14	10-9-14	U1,M1
Lube Oil Range Organics	**190**	69	NWTPH-Dx	10-8-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**10-8-3**					
Laboratory ID:	10-110-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-8-14	10-9-14	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	10-8-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-8-14	10-8-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-8-14	10-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-070-09										
	ORIG	DUP									
Diesel Fuel #2	**80.6**	**68.2**	NA	NA		NA		NA	17	NA	N
Lube Oil	**806**	**784**	NA	NA		NA		NA	3	NA	
Surrogate:											
o-Terphenyl						*106*	*82*	*50-150*			

Date of Report: October 9, 2014
Samples Submitted: October 8, 2014
Laboratory Reference: 1410-110
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-8-14

Client ID	Lab ID	% Moisture
10-8-1	10-110-01	28
10-8-3	10-110-03	21

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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

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

Laboratory Number: 10-110

Company: Terra Associates, Inc.
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lie
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
☒ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-8-1	10-8-14	1420	Soil	5		X		X													X
2	10-8-2	↓	1430	↓	↓																	10-8 X
3	10-8-3	↓	1450	↓	↓		X		X													X

	Signature	Company	Date	Time
Relinquished		Environmental Field Services LLC	10-8-14	1540
Received		ONE	10/8/14	1540
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 10, 2014

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

Re: Analytical Data for Project T-6672-1
Laboratory Reference No. 1410-123

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 9, 2014.

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 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

Case Narrative

Samples were collected on October 9, 2014 and received by the laboratory on October 9, 2014. 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.

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 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-1**					
Laboratory ID:	10-123-01					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.064	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	6.4	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*71-121*				
Client ID:	**10-9-2**					
Laboratory ID:	10-123-02					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.082	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	8.2	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-9-3**					
Laboratory ID:	10-123-03					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.077	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	7.7	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-121*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-4**					
Laboratory ID:	10-123-04					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.060	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	6.0	NWTPH-Gx	10-9-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*71-121*				
Client ID:	**10-9-5**					
Laboratory ID:	10-123-05					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-10-14	
Toluene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
Ethyl Benzene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
m,p-Xylene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
o-Xylene	**ND**	0.054	EPA 8021B	10-9-14	10-10-14	
Gasoline	**ND**	5.4	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*71-121*				
Client ID:	**10-9-6**					
Laboratory ID:	10-123-06					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-9-14	
Toluene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
Ethyl Benzene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
m,p-Xylene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
o-Xylene	**ND**	0.051	EPA 8021B	10-9-14	10-9-14	
Gasoline	**ND**	5.1	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-121*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1009S1					
Benzene	**ND**	0.020	EPA 8021B	10-9-14	10-9-14	
Toluene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
o-Xylene	**ND**	0.050	EPA 8021B	10-9-14	10-9-14	
Gasoline	**ND**	5.0	NWTPH-Gx	10-9-14	10-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*71-121*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-120-01										
	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						*97*	*98*	*71-121*			
SPIKE BLANKS											
Laboratory ID:	SB1009S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.980**	**1.05**	1.00	1.00		**98**	**105**	73-121	7	10	
Toluene	**0.985**	**1.04**	1.00	1.00		**99**	**104**	75-124	5	10	
Ethyl Benzene	**0.969**	**1.02**	1.00	1.00		**97**	**102**	75-125	5	9	
m,p-Xylene	**1.01**	**1.04**	1.00	1.00		**101**	**104**	75-126	3	9	
o-Xylene	**0.970**	**1.01**	1.00	1.00		**97**	**101**	74-123	4	8	
Surrogate:											
Fluorobenzene						*91*	*95*	*71-121*			

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**10-9-1**					
Laboratory ID:	10-123-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**10-9-2**					
Laboratory ID:	10-123-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**130**	65	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**10-9-3**					
Laboratory ID:	10-123-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**10-9-4**					
Laboratory ID:	10-123-04					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**10-9-5**					
Laboratory ID:	10-123-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**10-9-6**					
Laboratory ID:	10-123-06					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1010S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-10-14	10-10-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-10-14	10-10-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-123-05									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*78* *82*	*50-150*			

Date of Report: October 10, 2014
Samples Submitted: October 9, 2014
Laboratory Reference: 1410-123
Project: T-6672-1

% MOISTURE

Date Analyzed: 10-9-14

Client ID	Lab ID	% Moisture
10-9-1	10-123-01	13
10-9-2	10-123-02	23
10-9-3	10-123-03	22
10-9-4	10-123-04	14
10-9-5	10-123-05	14
10-9-6	10-123-06	9

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 10-123

Company: Terra Associates Inc
Project Number: T-6672-1
Project Name:
Project Manager: Charles Lee
Sampled by: Terry Bukowski

Turnaround Request (in working days)
(Check One)
☑ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	10-9-1	10-9-14	1254	Soil	5		X		X													X
2	10-9-2		1300																			
3	10-9-3		1315																			
4	10-9-4		1330																			
5	10-9-5		1340																			
6	10-9-6		1415																			

	Signature	Company	Date	Time
Relinquished	Terry A Bukowski	Environmental Field Manager	10-9-14	1555
Received		ORE	10/9/14	1555
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 9, 2015

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1510-023

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 2015.

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 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

Case Narrative

Samples were collected on October 5, 2015 and received by the laboratory on October 6, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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.

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 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-101-7.5'**					
Laboratory ID:	10-023-02					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.049	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**0.17**	0.049	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**0.47**	0.049	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.049	EPA 8021B	10-8-15	10-8-15	
Gasoline	**7.0**	4.9	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*68-123*				
Client ID:	**MW-101-10'**					
Laboratory ID:	10-023-03					
Benzene	**0.10**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**2.3**	0.056	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**0.89**	0.056	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**3.2**	0.056	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**1.3**	0.056	EPA 8021B	10-8-15	10-8-15	
Gasoline	**27**	5.6	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*108*	*68-123*				
Client ID:	**MW-101-12.5'**					
Laboratory ID:	10-023-04					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.7	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-123*				

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-101-17.5'**					
Laboratory ID:	10-023-06					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.058	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.058	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.058	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.058	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.8	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*107*	*68-123*				
Client ID:	**MW-102-7.5'**					
Laboratory ID:	10-023-08					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.7	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-123*				
Client ID:	**MW-102-10'**					
Laboratory ID:	10-023-09					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.6	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-123*				

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-102-12.5'**					
Laboratory ID:	10-023-10					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.057	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.7	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*68-123*				

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S1					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.0	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-026-02										
	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	**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*	*103*	*68-123*			
MATRIX SPIKES											
Laboratory ID:	10-059-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**1.16**	**1.15**	1.00	1.00	ND	**116**	**115**	71-122	1	21	
Toluene	**1.17**	**1.15**	1.00	1.00	ND	**117**	**115**	77-124	2	17	
Ethyl Benzene	**1.16**	**1.14**	1.00	1.00	ND	**116**	**114**	77-121	2	19	
m,p-Xylene	**1.17**	**1.14**	1.00	1.00	ND	**117**	**114**	78-124	3	19	
o-Xylene	**1.15**	**1.13**	1.00	1.00	ND	**115**	**113**	75-117	2	13	
Surrogate:											
Fluorobenzene						*103*	*108*	*68-123*			

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-023
Project: 6672-1

% MOISTURE

Date Analyzed: 10-8-15

Client ID	Lab ID	% Moisture
MW-101-7.5'	10-023-02	9
MW-101-10'	10-023-03	14
MW-101-12.5'	10-023-04	14
MW-101-17.5'	10-023-06	10
MW-102-7.5'	10-023-08	13
MW-102-10'	10-023-09	6
MW-102-12.5'	10-023-10	6

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

Page 1 of 2

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

Company: Terra Associates Inc
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lia
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: 10-023

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-101 -5'	10/5/15	9:50	Soil	2																	
2	MW-101 -7.5'		10:10				X															X
3	MW-101 -10'		10:20				X															X
4	MW-101 -12.5'		10:30				X															X
5	MW-101 -15'		10:40																			
6	MW-101 -17.5'		11:10				X															X
7	MW-102 -5'		13:40																			
8	MW-102 -7.5'		13:50				X															X
9	MW-102 -10'		14:00				X															X
10	MW-102 -12.5'		14:10				X															X

	Signature	Company	Date	Time
Relinquished		TAI	10/6/15	7:00
Received		"	"	"
Relinquished		"	"	1230
Received		OnSite Env.	10/6/15	1230
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X Added 10/7/15. DB (STA)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

Chain of Custody

Page 2 of 2

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

Company: Tarra Associates Inc
Project Number: 6672-1
Project Name: —
Project Manager: Chuck Lio
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: 10-023

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
11	MW-102 -15'	10/5/15	14:20	Soil	2																	
12	MW-102 -17.5'		14:30		2																	
13	MW-102 -20'		14:40		2																	

	Signature	Company	Date	Time
Relinquished		TAI	10/5/15	7:00
Received		TAI	"	"
Relinquished		TAI	"	1230
Received		OnSite Env	10/6/15	1230
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

October 9, 2015

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6672-1
Laboratory Reference No. 1510-026

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 2015.

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 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-026
Project: 6672-1

Case Narrative

Samples were collected on October 6, 2015 and received by the laboratory on October 6, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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.

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 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-026
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-103-7.5'**					
Laboratory ID:	10-026-02					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.063	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.063	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.063	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.063	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	6.3	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-123*				
Client ID:	**MW-103-10'**					
Laboratory ID:	10-026-03					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.060	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.060	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.060	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.060	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	6.0	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*102*	*68-123*				
Client ID:	**MW-104-5'**					
Laboratory ID:	10-026-07					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.055	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.055	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.055	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.055	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.5	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*68-123*				

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-026
Project: 6672-1

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-104-10'**					
Laboratory ID:	10-026-08					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.056	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.6	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*68-123*				

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-026
Project: 6672-1

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1008S2					
Benzene	**ND**	0.020	EPA 8021B	10-8-15	10-8-15	
Toluene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
o-Xylene	**ND**	0.050	EPA 8021B	10-8-15	10-8-15	
Gasoline	**ND**	5.0	NWTPH-Gx	10-8-15	10-8-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-059-01										
	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						*113*	*120*	*68-123*			
MATRIX SPIKES											
Laboratory ID:	10-059-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**1.16**	**1.15**	1.00	1.00	ND	**116**	**115**	71-122	1	21	
Toluene	**1.17**	**1.15**	1.00	1.00	ND	**117**	**115**	77-124	2	17	
Ethyl Benzene	**1.16**	**1.14**	1.00	1.00	ND	**116**	**114**	77-121	2	19	
m,p-Xylene	**1.17**	**1.14**	1.00	1.00	ND	**117**	**114**	78-124	3	19	
o-Xylene	**1.15**	**1.13**	1.00	1.00	ND	**115**	**113**	75-117	2	13	
Surrogate:											
Fluorobenzene						*103*	*108*	*68-123*			

Date of Report: October 9, 2015
Samples Submitted: October 6, 2015
Laboratory Reference: 1510-026
Project: 6672-1

% MOISTURE

Date Analyzed: 10-8-15

Client ID	Lab ID	% Moisture
MW-103-7.5'	10-026-02	11
MW-103-10'	10-026-03	11
MW-104-5'	10-026-07	17
MW-104-10'	10-026-08	12

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6672-1
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: 10-026

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-103 -5'	10/6/15	8:35	Soil	2																	
2	MW-103 -7.5'		8:45				X															X
3	MW-103 -10'		8:55				X															X
4	MW-103 -12.5		9:05																			
5	MW-103 -15'		9:15																			
6	MW-103 -20'		9:25																			
7	MW-104 -5'		12:15				X															X
8	MW-104 -10'		12:25				X															X
9	MW-104 -15'		12:50																			
10	MW-104 -17.5	↓	13:00	↓	↓																	

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	10/6/15	16:05
Received	[signature]	OSE	10/6/15	1605
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

~~Hold pending analysis for vest~~

X Added 10/7/15. DB (STA)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-1
Project Name: ———
Project Manager: Chuck Lia
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: 10-026

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
11	MW-104 -20'	10/6/15	13:10	Soil	2																						

	Signature	Company	Date	Time
Relinquished		TAI	10/6/15	16:05
Received		OSE	10/6/15	1605
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
Hold pending analysis request

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

December 30, 2015

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6672-2
Laboratory Reference No. 1512-149

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 14, 2015.

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 30, 2015
Samples Submitted: December 14, 2015
Laboratory Reference: 1512-149
Project: 6672-2

Case Narrative

Samples were collected on December 14, 2015 and received by the laboratory on December 14, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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.

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 30, 2015
Samples Submitted: December 14, 2015
Laboratory Reference: 1512-149
Project: 6672-2

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105-12.5'**					
Laboratory ID:	12-149-05					
Benzene	**0.075**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**0.19**	0.082	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**0.41**	0.082	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**1.6**	0.082	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**0.35**	0.082	EPA 8021B	12-24-15	12-24-15	
Gasoline	**16**	8.2	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*117*	*68-129*				
Client ID:	**MW-105-15'**					
Laboratory ID:	12-149-06					
Benzene	**0.29**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.080	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**0.76**	0.080	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**2.9**	0.080	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**0.65**	0.080	EPA 8021B	12-24-15	12-24-15	
Gasoline	**20**	8.0	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*68-129*				
Client ID:	**MW-105-20'**					
Laboratory ID:	12-149-07					
Benzene	**ND**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.053	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**ND**	0.053	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**0.17**	0.053	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**ND**	0.053	EPA 8021B	12-24-15	12-24-15	
Gasoline	**ND**	5.3	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*108*	*68-129*				

Date of Report: December 30, 2015
Samples Submitted: December 14, 2015
Laboratory Reference: 1512-149
Project: 6672-2

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105-25'**					
Laboratory ID:	12-149-08					
Benzene	**ND**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.051	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**ND**	0.051	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**ND**	0.051	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**ND**	0.051	EPA 8021B	12-24-15	12-24-15	
Gasoline	**ND**	5.1	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*68-129*				
Client ID:	**MW-105-35'**					
Laboratory ID:	12-149-10					
Benzene	**ND**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.058	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**ND**	0.058	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**ND**	0.058	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**ND**	0.058	EPA 8021B	12-24-15	12-24-15	
Gasoline	**ND**	5.8	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*108*	*68-129*				
Client ID:	**MW-105-45'**					
Laboratory ID:	12-149-11					
Benzene	**ND**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.059	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**ND**	0.059	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**ND**	0.059	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**ND**	0.059	EPA 8021B	12-24-15	12-24-15	
Gasoline	**ND**	5.9	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*68-129*				

Date of Report: December 30, 2015
Samples Submitted: December 14, 2015
Laboratory Reference: 1512-149
Project: 6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1224S1					
Benzene	**ND**	0.020	EPA 8021B	12-24-15	12-24-15	
Toluene	**ND**	0.050	EPA 8021B	12-24-15	12-24-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	12-24-15	12-24-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	12-24-15	12-24-15	
o-Xylene	**ND**	0.050	EPA 8021B	12-24-15	12-24-15	
Gasoline	**ND**	5.0	NWTPH-Gx	12-24-15	12-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*68-129*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-149-10										
	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						*108*	*112*	*68-129*			
SPIKE BLANKS											
Laboratory ID:	SB1224S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.15**	**1.04**	1.00	1.00		**115**	**104**	76-124	10	17	
Toluene	**1.15**	**1.03**	1.00	1.00		**115**	**103**	78-124	11	16	
Ethyl Benzene	**1.10**	**0.991**	1.00	1.00		**110**	**99**	77-123	10	17	
m,p-Xylene	**1.12**	**1.00**	1.00	1.00		**112**	**100**	78-124	11	17	
o-Xylene	**1.10**	**0.982**	1.00	1.00		**110**	**98**	76-123	11	18	
Surrogate:											
Fluorobenzene						*112*	*103*	*68-129*			

Date of Report: December 30, 2015
Samples Submitted: December 14, 2015
Laboratory Reference: 1512-149
Project: 6672-2

% MOISTURE

Date Analyzed: 12-24-15

Client ID	Lab ID	% Moisture
MW-105-12.5'	12-149-05	24
MW-105-15'	12-149-06	22
MW-105-20'	12-149-07	10
MW-105-25'	12-149-08	9
MW-105-35'	12-149-10	6
MW-105-45'	12-149-11	10

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

Page 1 of 2

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

Company: Terra Associates Inc
Project Number: 6672-2
Project Name: ———
Project Manager: Chuck Lio
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: 12-149

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-105 -2.5'	12/14/15	9:05	Soil	2																	
2	MW-105 -5'		9:20																			
3	MW-105 -7.5'		9:30																			
4	MW-105 -10'		9:40																			
5	MW-105 -12.5'		9:45				X															X
6	MW-105 -15'		9:55				X															X
7	MW-105 -20'		10:05				X															X
8	MW-105 -25'		10:15				X															X
9	MW-105 -30'		10:30																			
10	MW-105 -35'		10:35				X															X

	Signature	Company	Date	Time
Relinquished		TAI	12/14/15	15:03
Received			12/14/15	1503
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
Hold
X Added 12/23/15 STA

Chromatograms with final report ☐

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6672-2
Project Name: ———
Project Manager: Chuck Lio
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: 12-149

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
11	MW-105 -45'	12/14/15	10:50	Soil	2		(X)															(X)
12	MW-105 -50'	12/14/15	11:25	Soil	2																	

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	12/14/15	15:03
Received	[signature]	CORE	12/14/15	1503
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Hold

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

APPENDIX F

ANALYTICAL TEST RESULTS-GROUNDWATER

OnSite Environmental Inc.

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

October 30, 2015

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project 6672-2
Laboratory Reference No. 1510-188

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 23, 2015.

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 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

Case Narrative

Samples were collected on October 23, 2015 and received by the laboratory on October 23, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-103**					
Laboratory ID:	10-188-01					
Benzene	**ND**	0.50	EPA 8021B	10-27-15	10-27-15	
Toluene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
o-Xylene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
Gasoline	**ND**	100	NWTPH-Gx	10-27-15	10-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*71-111*				
Client ID:	**MW-104**					
Laboratory ID:	10-188-02					
Benzene	**ND**	0.50	EPA 8021B	10-26-15	10-26-15	
Toluene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
o-Xylene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
Gasoline	**ND**	100	NWTPH-Gx	10-26-15	10-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-111*				

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1026W1					
Benzene	**ND**	0.50	EPA 8021B	10-26-15	10-26-15	
Toluene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
o-Xylene	**ND**	1.0	EPA 8021B	10-26-15	10-26-15	
Gasoline	**ND**	100	NWTPH-Gx	10-26-15	10-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-111*				
Laboratory ID:	MB1027W1					
Benzene	**ND**	0.50	EPA 8021B	10-27-15	10-27-15	
Toluene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
o-Xylene	**ND**	1.0	EPA 8021B	10-27-15	10-27-15	
Gasoline	**ND**	100	NWTPH-Gx	10-27-15	10-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-111*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-188-01										
	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						*98*	*94*	*71-111*			
MATRIX SPIKES											
Laboratory ID:	10-188-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**58.0**	**58.2**	50.0	50.0	ND	**116**	**116**	83-123	0	15	
Toluene	**55.7**	**55.7**	50.0	50.0	ND	**111**	**111**	83-124	0	16	
Ethyl Benzene	**54.9**	**53.7**	50.0	50.0	ND	**110**	**107**	82-123	2	15	
m,p-Xylene	**54.3**	**53.2**	50.0	50.0	ND	**109**	**106**	81-125	2	17	
o-Xylene	**53.9**	**52.5**	50.0	50.0	ND	**108**	**105**	82-123	3	15	
Surrogate:											
Fluorobenzene						*95*	*98*	*71-111*			

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-103**					
Laboratory ID:	10-188-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	10-29-15	10-29-15	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	10-29-15	10-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**MW-104**					
Laboratory ID:	10-188-02					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	10-29-15	10-29-15	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	10-29-15	10-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1029W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	10-29-15	10-29-15	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	10-29-15	10-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-188-02									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*85* *87*	*50-150*			

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-188-01					
Client ID:	**MW-103**					
Lead	**ND**	1.1	200.8	10-27-15	10-27-15	
Lab ID:	10-188-02					
Client ID:	**MW-104**					
Lead	**ND**	1.1	200.8	10-27-15	10-27-15	

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-27-15
Date Analyzed:	10-27-15
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1027WM1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 10-27-15
Date Analyzed: 10-27-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-188-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.1	

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 10-27-15
Date Analyzed: 10-27-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-188-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	111	**116**	104	**109**	98	6	

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

DISSOLVED LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-188-01					
Client ID:	**MW-103**					
Lead	**ND**	1.0	200.8		10-28-15	
Lab ID:	10-188-02					
Client ID:	**MW-104**					
Lead	**ND**	1.0	200.8		10-28-15	

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

DISSOLVED LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Filtered:	10-22-15
Date Analyzed:	10-28-15
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1022F1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.0

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

DISSOLVED LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Filtered: 10-22-15
Date Analyzed: 10-28-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-178-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**5.54**	**5.46**	1	1.0	

Date of Report: October 30, 2015
Samples Submitted: October 23, 2015
Laboratory Reference: 1510-188
Project: 6672-2

DISSOLVED LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Filtered: 10-22-15
Date Analyzed: 10-28-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-178-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	200	**203**	99	**195**	95	4	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Chain of Custody

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

Company: Tarra Associates Inc.
Project Number: 6672-2
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: 10-188

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total and Dissolved Lead					% Moisture
1	MW-103	10/23/15	11:15	Water	7		X		X													X					
2	MW-104	10/23/15	12:15	Water	7		X		X													X					

	Signature	Company	Date	Time
Relinquished		TAI	10/23/15	1332
Received			10/23/15	1332
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
1 poly field filtered per sample

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

February 8, 2016

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project T-6672-2
Laboratory Reference No. 1602-015

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 2, 2016.

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 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

Case Narrative

Samples were collected on February 2, 2016 and received by the laboratory on February 2, 2016. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-103**					
Laboratory ID:	02-015-01					
Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Toluene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Gasoline	**ND**	100	NWTPH-Gx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				
Client ID:	**MW-104**					
Laboratory ID:	02-015-02					
Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Toluene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Gasoline	**ND**	100	NWTPH-Gx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*71-111*				
Client ID:	**MW-105**					
Laboratory ID:	02-015-03					
Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Toluene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Gasoline	**ND**	100	NWTPH-Gx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*71-111*				

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-102**					
Laboratory ID:	02-015-04					
Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Toluene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Gasoline	**ND**	100	NWTPH-Gx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*79*	*71-111*				

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0203W1					
Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Toluene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
o-Xylene	**ND**	1.0	EPA 8021B	2-3-16	2-3-16	
Gasoline	**ND**	100	NWTPH-Gx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	01-220-22										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**1.09**	**1.10**	NA	NA		NA		NA	1	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						*77*	*78*	*71-111*			

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-103**					
Laboratory ID:	02-015-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	2-3-16	2-3-16	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**MW-104**					
Laboratory ID:	02-015-02					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	2-3-16	2-3-16	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**MW-105**					
Laboratory ID:	02-015-03					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	2-3-16	2-3-16	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**MW-102**					
Laboratory ID:	02-015-04					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	2-3-16	2-3-16	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0203W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	2-3-16	2-3-16	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	2-3-16	2-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	01-232-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	X1
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	X1
Surrogate:											
o-Terphenyl						*101*	*109*	*50-150*			

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	02-015-01					
Client ID:	**MW-103**					
Lead	**ND**	1.0	200.8	2-3-16	2-3-16	
Lab ID:	02-015-02					
Client ID:	**MW-104**					
Lead	**7.1**	1.0	200.8	2-3-16	2-3-16	
Lab ID:	02-015-03					
Client ID:	**MW-105**					
Lead	**ND**	1.0	200.8	2-3-16	2-3-16	
Lab ID:	02-015-04					
Client ID:	**MW-102**					
Lead	**1.7**	1.0	200.8	2-3-16	2-3-16	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	2-3-16
Date Analyzed:	2-3-16
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0203WH1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.0

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 2-3-16
Date Analyzed: 2-3-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 02-015-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.0	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 2-3-16
Date Analyzed: 2-3-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 02-015-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	100	**106**	106	**114**	114	7	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	02-015-01					
Client ID:	**MW-103**					
Lead	**ND**	1.0	200.8		2-3-16	
Lab ID:	02-015-02					
Client ID:	**MW-104**					
Lead	**ND**	1.0	200.8		2-3-16	
Lab ID:	02-015-03					
Client ID:	**MW-105**					
Lead	**ND**	1.0	200.8		2-3-16	
Lab ID:	02-015-04					
Client ID:	**MW-102**					
Lead	**ND**	1.0	200.8		2-3-16	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Analyzed: 2-3-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 02-015-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	400	**378**	94	**376**	94	0	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Analyzed: 2-3-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 02-015-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.0	

Date of Report: February 8, 2016
Samples Submitted: February 2, 2016
Laboratory Reference: 1602-015
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Analyzed: 2-3-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 02-015-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	400	**378**	94	**376**	94	0	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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: Terra Assoc.
Project Number: T-6672-2
Project Name: Skyway
Project Manager: Chuck Lie
Sampled by: Pat Reed

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: 02-015

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Pb	Dissolved Pb *				% Moisture
1	MW-103	2/2/16	11:15	W	7		X		X													X	X				
2	MW-104	2/2/16	12:30	W	7		X		X													X	X				
3	MW-105	2/2/16	14:00	W	7		X		X													X	X				
4	MW-102	2/2/16	1500	W	7		X		X													X	X				

	Signature	Company	Date	Time
Relinquished	Pat Reed	Terra Assoc.	2/2/16	1610
Received		OSE	2/2/16	1610
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
* Dissolved Lead samples are field filtered

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

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

May 6, 2016

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project T-6672-2
Laboratory Reference No. 1604-248

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on April 29, 2016.

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 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

Case Narrative

Samples were collected on April 28, 2016 and received by the laboratory on April 29, 2016. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-104**					
Laboratory ID:	04-248-01					
Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Toluene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Gasoline	**ND**	100	NWTPH-Gx	5-2-16	5-2-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-111*				
Client ID:	**MW-103**					
Laboratory ID:	04-248-02					
Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Toluene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Gasoline	**ND**	100	NWTPH-Gx	5-2-16	5-2-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-111*				
Client ID:	**MW-102**					
Laboratory ID:	04-248-03					
Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Toluene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Gasoline	**ND**	100	NWTPH-Gx	5-2-16	5-2-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-111*				

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105**					
Laboratory ID:	04-248-04					
Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Toluene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Gasoline	**ND**	100	NWTPH-Gx	5-2-16	5-2-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-111*				

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0502W1					
Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Toluene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
o-Xylene	**ND**	1.0	EPA 8021B	5-2-16	5-2-16	
Gasoline	**ND**	100	NWTPH-Gx	5-2-16	5-2-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*71-111*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-248-04										
	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*	*89*	*71-111*			
MATRIX SPIKES											
Laboratory ID:	04-248-04										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**53.7**	**51.2**	50.0	50.0	ND	**107**	**102**	83-123	5	15	
Toluene	**53.6**	**50.9**	50.0	50.0	ND	**107**	**102**	83-124	5	16	
Ethyl Benzene	**53.5**	**50.5**	50.0	50.0	ND	**107**	**101**	82-123	6	15	
m,p-Xylene	**53.6**	**50.5**	50.0	50.0	ND	**107**	**101**	81-125	6	17	
o-Xylene	**53.2**	**50.3**	50.0	50.0	ND	**106**	**101**	82-123	6	15	
Surrogate:											
Fluorobenzene						*95*	*93*	*71-111*			

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-104**					
Laboratory ID:	04-248-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-4-16	5-4-16	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-4-16	5-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW-103**					
Laboratory ID:	04-248-02					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-4-16	5-4-16	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-4-16	5-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MW-102**					
Laboratory ID:	04-248-03					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-4-16	5-4-16	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-4-16	5-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				
Client ID:	**MW-105**					
Laboratory ID:	04-248-04					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-4-16	5-4-16	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-4-16	5-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0504W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	5-4-16	5-4-16	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	5-4-16	5-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-248-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*94*	*83*	*50-150*			

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	04-248-01					
Client ID:	**MW-104**					
Lead	**ND**	1.1	200.8	4-29-16	4-29-16	
Lab ID:	04-248-02					
Client ID:	**MW-103**					
Lead	**ND**	1.1	200.8	4-29-16	4-29-16	
Lab ID:	04-248-03					
Client ID:	**MW-102**					
Lead	**2.5**	1.1	200.8	4-29-16	4-29-16	
Lab ID:	04-248-04					
Client ID:	**MW-105**					
Lead	**ND**	1.1	200.8	4-29-16	4-29-16	

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-29-16
Date Analyzed:	4-29-16
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0427W1&MB0429WM1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 4-29-16
Date Analyzed: 4-29-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-204-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.1	

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 4-29-16
Date Analyzed: 4-29-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-204-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	111	**115**	104	**114**	103	1	

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	04-248-01					
Client ID:	**MW-104**					
Lead	**ND**	1.0	200.8		4-29-16	
Lab ID:	04-248-02					
Client ID:	**MW-103**					
Lead	**ND**	1.0	200.8		4-29-16	
Lab ID:	04-248-03					
Client ID:	**MW-102**					
Lead	**ND**	1.0	200.8		4-29-16	
Lab ID:	04-248-04					
Client ID:	**MW-105**					
Lead	**ND**	1.0	200.8		4-29-16	

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Analyzed: 4-29-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0429D1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.0

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Analyzed: 4-29-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-204-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.0	

Date of Report: May 6, 2016
Samples Submitted: April 29, 2016
Laboratory Reference: 1604-248
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Analyzed: 4-29-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-204-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	200	**188**	94	**187**	94	0	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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: Terra Assoc. Inc.
Project Number: T-6672-2
Project Name: Skyway Library
Project Manager: Chuck Lie
Sampled by: Pat Reed

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: 04-248

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Lead *	Dissolved Lead *				% Moisture
1	MW-104	4/28/16	12:15	W	7		X		X													X	X				
2	MW-103	4/28/16	1430	W	7		X		X													X	X				
3	MW-102	4/28/16	1600	W	7		X		X													X	X				
4	MW-105	4/28/16	1730	W	7		X		X													X	X				

	Signature	Company	Date	Time
Relinquished	Patricia L. Reed	Terra Assoc.	4/29/16	9:30
Received		COG	4/29/16	0930
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
* Field Filtered

Reviewed/Date
Reviewed/Date
Chromatograms with final report ☐

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

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

July 21, 2016

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project T-6672-2
Laboratory Reference No. 1607-118

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on July 15, 2016.

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 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

Case Narrative

Samples were collected on July 14, 2016 and received by the laboratory on July 15, 2016. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-102**					
Laboratory ID:	07-118-01					
Benzene	**ND**	0.50	EPA 8021B	7-15-16	7-15-16	
Toluene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
o-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Gasoline	**ND**	100	NWTPH-Gx	7-15-16	7-15-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-111*				
Client ID:	**MW-103**					
Laboratory ID:	07-118-02					
Benzene	**ND**	0.50	EPA 8021B	7-15-16	7-15-16	
Toluene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
o-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Gasoline	**ND**	100	NWTPH-Gx	7-15-16	7-15-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-111*				
Client ID:	**MW-104**					
Laboratory ID:	07-118-03					
Benzene	**ND**	0.50	EPA 8021B	7-15-16	7-15-16	
Toluene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
o-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Gasoline	**ND**	100	NWTPH-Gx	7-15-16	7-15-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-111*				

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105**					
Laboratory ID:	07-118-04					
Benzene	**ND**	0.50	EPA 8021B	7-15-16	7-15-16	
Toluene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
o-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Gasoline	**ND**	100	NWTPH-Gx	7-15-16	7-15-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*71-111*				

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0715W2					
Benzene	**ND**	0.50	EPA 8021B	7-15-16	7-15-16	
Toluene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
o-Xylene	**ND**	1.0	EPA 8021B	7-15-16	7-15-16	
Gasoline	**ND**	100	NWTPH-Gx	7-15-16	7-15-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*71-111*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-118-01										
	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						*84*	*84*	*71-111*			
SPIKE BLANKS											
Laboratory ID:	SB0715W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**51.8**	**51.4**	50.0	50.0		**104**	**103**	83-119	1	13	
Toluene	**51.8**	**51.1**	50.0	50.0		**104**	**102**	83-120	1	13	
Ethyl Benzene	**51.6**	**51.0**	50.0	50.0		**103**	**102**	82-120	1	12	
m,p-Xylene	**51.5**	**50.7**	50.0	50.0		**103**	**101**	80-122	2	13	
o-Xylene	**51.2**	**50.8**	50.0	50.0		**102**	**102**	80-120	1	10	
Surrogate:											
Fluorobenzene						*85*	*85*	*71-111*			

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-102**					
Laboratory ID:	07-118-01					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	7-18-16	7-18-16	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	7-18-16	7-18-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW-103**					
Laboratory ID:	07-118-02					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	7-18-16	7-18-16	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	7-18-16	7-18-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**MW-104**					
Laboratory ID:	07-118-03					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	7-18-16	7-18-16	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	7-18-16	7-18-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**MW-105**					
Laboratory ID:	07-118-04					
Diesel Range Organics	**ND**	0.28	NWTPH-Dx	7-18-16	7-18-16	
Lube Oil Range Organics	**ND**	0.45	NWTPH-Dx	7-18-16	7-18-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0718W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-18-16	7-18-16	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	7-18-16	7-18-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-118-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*94*	*99*	*50-150*			

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	07-118-01					
Client ID:	**MW-102**					
Lead	**ND**	1.1	200.8	7-20-16	7-20-16	
Lab ID:	07-118-02					
Client ID:	**MW-103**					
Lead	**ND**	1.1	200.8	7-20-16	7-20-16	
Lab ID:	07-118-03					
Client ID:	**MW-104**					
Lead	**2.5**	1.1	200.8	7-20-16	7-20-16	
Lab ID:	07-118-04					
Client ID:	**MW-105**					
Lead	**ND**	1.1	200.8	7-20-16	7-20-16	

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	7-20-16
Date Analyzed:	7-20-16
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0720WM1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 7-20-16
Date Analyzed: 7-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-118-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.1	

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 7-20-16
Date Analyzed: 7-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-118-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	222	**221**	100	**216**	97	2	

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	07-118-01					
Client ID:	**MW-102**					
Lead	**ND**	1.0	200.8		7-20-16	
Lab ID:	07-118-02					
Client ID:	**MW-103**					
Lead	**ND**	1.0	200.8		7-20-16	
Lab ID:	07-118-03					
Client ID:	**MW-104**					
Lead	**ND**	1.0	200.8		7-20-16	
Lab ID:	07-118-04					
Client ID:	**MW-105**					
Lead	**ND**	1.0	200.8		7-20-16	

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Analyzed: 7-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0720D1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.0

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Analyzed: 7-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-131-04

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.0	

Date of Report: July 21, 2016
Samples Submitted: July 15, 2016
Laboratory Reference: 1607-118
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Analyzed: 7-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-131-04

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	200	**181**	90	**182**	91	1	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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: Terra Assoc. Inc.
Project Number: T-6672-2
Project Name: Skyway Library
Project Manager: Chuck Lie
Sampled by: Pat Reed

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: 07-118

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Lead	Dissolved Lead				% Moisture
1	MW-102	7/14/16	1530	W	7		X		X													X	X				
2	MW-103	↓	1330	↓			X		X													X	X				
3	MW-104		1045				X		X													X	X				
4	MW-105		1215				X		X													X	X				
		OSR																									

	Signature	Company	Date	Time
Relinquished	Patrick L Reed	Terra Assoc. Inc.	7/15/16	9:00
Received		OSR	7/15/16	900
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
Dissolved Lead sample has been filtered in the field with QED 0.45 micron Filter.

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☑ Yes

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

October 26, 2016

Chuck Lie
Terra Associates, Inc.
12220 113th Avenue NE, Suite 130
Kirkland, WA 98034

Re: Analytical Data for Project T-6672-2
Laboratory Reference No. 1610-189

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 18, 2016.

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 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

Case Narrative

Samples were collected on October 18, 2016 and received by the laboratory on October 18, 2016. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105**					
Laboratory ID:	10-189-01					
Benzene	**ND**	0.50	EPA 8021B	10-20-16	10-20-16	
Toluene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
o-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Gasoline	**ND**	100	NWTPH-Gx	10-20-16	10-20-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				
Client ID:	**MW-102**					
Laboratory ID:	10-189-02					
Benzene	**ND**	0.50	EPA 8021B	10-20-16	10-20-16	
Toluene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
o-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Gasoline	**ND**	100	NWTPH-Gx	10-20-16	10-20-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*61-118*				

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1020W1					
Benzene	**ND**	0.50	EPA 8021B	10-20-16	10-20-16	
Toluene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Ethyl Benzene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
m,p-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
o-Xylene	**ND**	1.0	EPA 8021B	10-20-16	10-20-16	
Gasoline	**ND**	100	NWTPH-Gx	10-20-16	10-20-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*61-118*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-191-01										
	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						*88*	*90*	*61-118*			
MATRIX SPIKES											
Laboratory ID:	10-191-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**45.7**	**46.4**	50.0	50.0	ND	**91**	**93**	80-120	2	13	
Toluene	**45.1**	**45.7**	50.0	50.0	ND	**90**	**91**	81-115	1	14	
Ethyl Benzene	**46.3**	**46.9**	50.0	50.0	ND	**93**	**94**	81-114	1	12	
m,p-Xylene	**43.3**	**43.7**	50.0	50.0	ND	**87**	**87**	81-114	1	13	
o-Xylene	**45.2**	**45.3**	50.0	50.0	ND	**90**	**91**	81-113	0	11	
Surrogate:											
Fluorobenzene						*95*	*91*	*61-118*			

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-105**					
Laboratory ID:	10-189-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	10-24-16	10-24-16	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	10-24-16	10-24-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				
Client ID:	**MW-102**					
Laboratory ID:	10-189-02					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	10-24-16	10-24-16	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	10-24-16	10-24-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*118*	*50-150*				

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1024W2					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	10-24-16	10-24-16	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	10-24-16	10-24-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	10-189-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*100*	*98*	*50-150*			

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-189-01					
Client ID:	**MW-105**					
Lead	**1.4**	1.1	200.8	10-20-16	10-20-16	
Lab ID:	10-189-02					
Client ID:	**MW-102**					
Lead	**ND**	1.1	200.8	10-20-16	10-20-16	

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-20-16
Date Analyzed:	10-20-16
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1020WM1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 10-20-16
Date Analyzed: 10-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-189-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**1.36**	**1.36**	0	1.1	

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 10-20-16
Date Analyzed: 10-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-189-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	222	**222**	100	**213**	95	4	

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-189-01					
Client ID:	**MW-105**					
Lead	**ND**	1.0	200.8		10-20-16	
Lab ID:	10-189-02					
Client ID:	**MW-102**					
Lead	**ND**	1.0	200.8		10-20-16	

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Analyzed:	10-20-16
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1020D1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.0

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Analyzed: 10-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-189-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.0	

Date of Report: October 26, 2016
Samples Submitted: October 18, 2016
Laboratory Reference: 1610-189
Project: T-6672-2

DISSOLVED LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Analyzed: 10-20-16

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-189-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	200	**187**	94	**188**	94	0	

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.

X1- Sample extract treated with a Sulfuric acid/Silica gel 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 -

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

Laboratory Number: 10-189

Company: Terra Assoc.
Project Number: T-6672-Z
Project Name: Skyway Library
Project Manager: Chuck Lee
Sampled by: Patricia Reed

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (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	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Lead	Dissolved Lead				% Moisture
1	MW-105	10/18/16	11:45	W	7	X	X		X													X	X				
2	MW-102	10/18/16	13:00	W	7		X		X													X	X				

	Signature	Company	Date	Time
Relinquished	Patricia L Reed	Terra Assoc.	10/18/16	14:50
Received		OSE	10/18/16	1450
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
Dissolved Lead is field-filtered.

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

APPENDIX G

TERRESTRIAL ECOLOGICAL EVALUATION (TEE)

T-6672-2
KCLS

Table 749-1
Simplified Terrestrial Ecological Evaluation - Exposure Analysis Procedure under WAC 173-340-7492 (2)(a)(ii).[a]

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre). "Undeveloped land" means land that is not covered by existing buildings, roads, paved areas or other barriers that will prevent wildlife from feeding on plants, earthworms, insects or other food in or on the soil.	
1) From the table below, find the number of points corresponding to the area and enter this number in the box to the right.	
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	6
2) Is this an industrial or commercial property? See WAC 173-340-7490 (3)(c). If yes, enter a score of 3 in the box to the right. If no, enter a score of 1.	3
3) Enter a score in the box to the right for the habitat quality of the site, using the rating system shown below[b]. (High = 1, Intermediate = 2, Low = 3)	1
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. See footnote c.	2
5) Are there any of the following soil contaminants present: Chlorinated dibenzo-p-dioxins/dibenzofurans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2 through 5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified terrestrial ecological evaluation may be ended under WAC 173-340-7492 (2)(a)(ii).	10

Footnotes:

a It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score (1) for questions 3 and 4.

b Habitat rating system. Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:
Low: Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.
High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington department of fish and wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.
Intermediate: Area does not rate as either high or low.

c Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use by mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

APPENDIX H

REMEDIAL COSTS

Beisley Inc.
CCD 002 REV 4/2/2015

Phone 360-275-5783
Fax 360-275-8531
bbeisley@beisleyinc.com

This CCD 2 Revision was completed to show the following:

Incorporation of COP 012 (Delay Letter 3) onto CCD 002 as it was a direct result of CCD 002 work and schedule delay.

Revision of P&O to be 5% blanket profit per contract documents and extended overhead as reviewed and approved by URS.

**Note that the Corliss amount from COP 012 was added to the Corliss line on this CCD 002 revision.

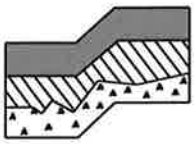
	QTY	UNIT	DECRIPTION Material & Consumables & Storage	Item Cost	COP #	Total
1	1	ls	**National Baricades** - Construction Aids			$978.65
			Not Included in COP 3A or 3B charges			
	1	ls	**Corliss Resources** - Fill Material as Directed by Geotech.		*COP 12: $518*	$88,289.88
			Included in COP 3A: $ 996.98			
			Included in COP 3B: $ 86,774.90			
	1	ls	**Mitchel Lumber** - Stockpile Protection			$410.00
			Not Included in COP 3A or 3B charges			
	1	ls	**ModSpace** - Storage of UST Material Before Disposal			$255.00
			Not Included in COP 3A or 3B charges			
	1	ls	**Grainger** - PPE during Fuel Soils Removal			$525.25
			Not Included in COP 3A or 3B charges			
				Subtotal		**$90,458.78**
			Description Subcontractors			
2	1	ls	**Marine Vac** - Removal and Disposal of Contaminated Water			$56,771.75
			Included in COP 3A: $ 24,420.23			
			Included in COP 3B: $ 32,351.52			
	1	ls	**Pile King** - Remobilization Charge			$1,500.00
			Not Included in COP 3A or 3B charges			
	1	ls	**Contour Engineering** - Restake Piles			$1,392.00
			Included in COP 3B: $ 1,392.50			
				Subtotal		**$59,663.75**
			Description Equipment & Labor for Beisley Inc. Portions of CCD 2.			
3	1	ls	Equipment Rental			$114,932.85
			Excavators, Dozer, Front Loaders, Machine			
			Compactors (Hoepac), Reversible Plate Compactors.			
			Labor To Perform Work			
	136	mh	Skilled Labor - Equipment Operators	68.36		$9,296.96
	400	mh	Laborer	56.88		$22,752.00
	6	mh	Overtime Skilled Labor - Pumping Labor Day Wkd.	105.66		$633.96
	1	ls	Fuel for Machines			$5,150.00
	1	ls	Delivery/Pick-up and Environmental Charges			$2,390.00
				Subtotal		**$155,155.77**
			Description Rhine		COP #	
4	1	ls	Rhine Demolition - Base Contaminated Soils Removal	66205.09	*003A*	$66,205.09
	3819.5	Ton	Rhine Demolition - Per Ton Overage Soils Removal	94.58	*003B*	$361,248.31
	1	ls	Rhine Demolition - Remove Asbestos in Ground	32898.97	*003A*	$32,898.97
	1	ls	Rhine Demolition - Remove and dispose UST	11969	*003A*	$11,969.00
				Subtotal		**$472,321.37**

1	Total Materials	$90,458.78
3	Total Equipment & Labor for Beisley Inc. Portions of CCD 2.	$155,155.77
2	Total Subcontractors	$59,663.75
4	Total Rhine	$472,321.37
	Subtotal:	**$777,599.67**
	Profit at 5% for work performed:	**$38,879.98**

Total Material, Subcontractor, Labor, Equipment, Rhine			Subtotal	**$816,479.65**
.471 % B & O Tax	Does Not Include Added Days			$3,845.62
Added Contract Days of Extended Overhead:		**83 Days**	**$ 638.30**	**$52,978.90**
Added Days: 78, CCD 2; 5, Delay Letter 3	Subtotal	(Incl. Days)		**$873,304.17**
	Less Previous Payment (003A)			*$136,490.27*
	Less Previous Payment (003B)			*$468,559.05*
Total Cost of Change Order	(After 2 Draws on Pay App 3 & 5)			**$268,254.85**

Thank You For Your Business!

MEMO



TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

TO: **Mr. Greg Smith**
KCLS

Peri Gilani
KCLS

Alyssa Moir
KL Gates

FROM: **Charles R. Lie, Terra Associates, Inc.**

DATE: **January 26, 2016**

RE: **Budget Summary**
New King County Branch Library
Renton Avenue South
King County, Washington
Terra Associates Project T-6672-1 and T-6672-2

Peri,

This memo transmits our current status on our project budget for the new Skyway Library. This memo supersedes our memo dated January 21, 2016, expands the discussion of the additional costs, and corrects typographical errors in the costs. The additional work outlined in this memo consists of:

1. The installation and sampling of soil vapor probes around the perimeter of the new building. The installation was completed last fall. Sampling has been deferred until the building has had its heating and ventilation system turned on. Vapor sampling from the probes is expected to occur during the last week of January. This work is being billed under our account number of 6672-1. The projected costs of this work were presented as being $13,000.

2. The construction of new monitoring wells to obtain soil samples from the perimeter of the project, to establish new groundwater monitoring points, and prepare a new site closure report for Ecology. This work is being billed under our account number 6672-2. The projected costs of this phase of work was presented as being $37,000.

3. Our prior budget summary memo was dated November 13, 2015. Our November memo addressed additional costs for the current site exploration and characterization. Due to new groundwater depth data, revised deeper drilling depths were needed that increased our costs. The November memo presented our proposed revision as including of an additional $12,000 for the drilling cost increases.

4. Subsequently, a drilling obstruction was found in one of the borings that prevented the completion of that boring and required predrilling, and the borings were extended deeper than anticipated. We had anticipated that the maximum depth of drilling would range from 30 to 40 feet below site grades. The final two borings along the south margin of the site had final depths of 55 feet. The final drilling costs were $18,668. In addition, our field time increased by 16 hours. With this memo, we request that our budget be increased by $6,668 for the drilling costs and $1,344 for our additional time in the field. The total for this requested revision is an additional $8,012.

The prior approved total amount was $68,540; the revised total for work discussed in this memo is $147,552.

We trust this summary is adequate for your current needs. Please call, if you have any questions.

Terra Associates, Inc.

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

Sent Via Email Only

Budget Summary

Skyway Library Project

Task	Change Order Amount	CO Date	Invoice Number	Invoice Date	Invoice Amount	Notes
Abandon wells	$3,800	11-22-2014	42848	1/23/2014	$3,475	One well not found.
Abandon last well	$1,750	7-16-2014	43723	8/16/2014	$9,522.98	Well abandonment costs $1,664.88.
Observe test pits and sample for contamination	$6,000 ROM	8-11-2014				Soil observation and testing costs $7,881.
Sample and prepare asbestos report	$3,000	9-24-2014	43989 44011	10/3/2014 10/18/2014	$21,205.27 $20,626.36	Includes supplemental sampling on November 7, 2014 and February 26, 2015.
Observe removal of rubbish and contaminated soils, prepare report for submittal to Ecology	$50,000	9-24-2014	44156 44272 44372 44501 44705 44775	11/15/2014 12/13/2014 1/6/2014 2/14/2015 3/14/2015 4/18/2015	$6,029.44 $1,542.10 $231.00 $220.00 $1,067.50 $188.65	
Remove EIM data management costs	($2,260)	6-2-2015	N/A	N/A	N/A	EIM data upload deferred to final reporting for revised site assessment.
Additional site visit and analytical testing costs	$3,250	6-2-2015	N/A	N/A	N/A	Included in prior invoices.
Supplemental consultation regarding site closure options	$3,000	6-2-2015	44909 45027 45164 45303 45427	5/20/2015 6/17/2015 7/23/2015 45303 45247	$355.85 $1,573.00 $1,066.45 $55.00 $737.00	
Soil vapor probe installation and sampling	$13,000	5-20-2015 Request date email approval 5-20-2015	45781	11/18/2015	$4,540.10	Does not include sampling or analytical testing services or soil vapor report.

Budget Summary (continued)

Skyway Library Project

Task	Change Order Amount	CO Date	Invoice Number	Invoice Date	Invoice Amount	Notes
New monitoring wells and RI/FS	$37,000	7-9-2015 request date email approval 8-24-2015	45782 45912	11/14/2015 12/22/2015	$15,770.87 $22,509.31	
Revised drilling costs	$21,000	11-13-2015 Request date email approval dated 10-22-2015	N/A	N/A	N/A	Included in prior invoices and in pending invoices.
Revised drilling and field costs	$8,012	1/26/2016 request	N/A	N/A	N/A	Invoice pending.
Revised Total	***$147,552***					

APPENDIX I

PROJECTED COSTS

Table I-1
Projected Remedial Action Costs-Option 2/3
MTCA Method A or B Cleanup Option

Task	Unit Cost	Quantity	Units	Subtotal
Geotechnical design engineering for temporary shoring wall	$4,000.00	1	Report	$4,000.00
Structural design engineering for temporary shoring wall	$4,000.00	1	Design-plans	$4,000.00
King County Building Permit for temporary shoring wall.	$3,000.00	1	Estimate	$3,000.00
King County Transportation Shoring Permit	$3,000.00	1	Estimate	$3,000.00
Street use fees	$3,000.00	1	Estimate	$3,000.00
Replacement of pipe piles placed prior to discovery of widespread PCS	53,000	1	From Bid	$53,000
Shoring of streets	$100,000.00	1	Estimate	$100,000.00
Traffic control during shoring and export	$900.00	14	Days	$12,600.00
Excavation-trackhoe with operator	$1,300.00	7	Days	$9,100.00
PCS disposal	$65.00	670	Tons	$43,550.00
Import backfill and compact	$50.00	970	Tons	$48,500.00
Confirmation samples	$150.00	40	Rush samples	$6,000.00
Confirmation monitoring	$900.00	7	Days	$6,300.00
Project management costs during remedial excavation	$15,000.00	1	Month	$15,000.00
Total				$363,700.00
15% contingency				$54,555.00
Grand Total				**$418,255.00**

Table I-2
Projected Remedial Action Costs-Option 4
MTCA Method A or B Cleanup Option

Task	Unit Cost	Quantity	Units	Subtotal
Vapor extraction test/production wells (includes Terra Associates 15% markup)	$7,751	1	Estimate from Holocene	$7,751
Street use permit including Terra Associates time	$3,000.00	1	Estimate	$3,000.00
Soil vacuum extraction pilot test-includes Terra field time and contractor time	$5,000.00	1	Estimate	$5,000.00
Production SVE unit	$36,372	1	Estimate from Seneca	$36,372.00
Installation of permanent pipe and SVE unit installation with security fence, new sidewalk panels, and patch of parking lot pavement	$20,000	1	Estimate	$20,000
New electrical service to SVE unit	$5,000	1	Estimate	$5,000
Monthly samples by Terra-field cost including memo (assumes two-year duration)	$600	24	Per visit	$14,400
Monthly samples-analytical costs (assumes two-year duration)	$115	24	Per sample	$2,760
Electricity (assumes two-year duration, 1,500 watts and $0.12 per Kw)	135	24	Per Month	$3,240
Demobilization (assumes secondary market for SVE unit will pay for demobe)	0	1		0
Final report (assumes no field sampling)	$4,000	1	Estimate	$4,000
Total				$101,523
15% contingency				$15,228.45
Grand Total				**$116,751.45**

Holocene Drilling, Inc.

11412 62nd. Ave. E.
Puyallup, WA 98373
253-848-6500 ph
253-848-6515 fax
jpender@holocenedrillinginc.com

Estimate

Date	Estimate #
10/11/2016	462

Name / Address
TERRA ASSOCIATES INC Chuck Lie 12220 113th Ave NE Suite 130 Kirkland, WA 98034

HOLOCENE DRILLING
Licensed To Drill™

Project
Renton VES wells

Description	Quantity	U/M	Rate	Total
Scope: Mobe Truck auger rig to site in Renton, WA. Drill, sample at 5 ft intervals, and install two (2) 4" diameter sched 40 PVC VES wells to 18 ft bgs w/ 10 ft #20 slot screen. Install 12" flush mount traffic rated monument. Concrete coring required. Decon and Drum IDW.				
Mobilization/Demobilization	1		500.00	500.00T
Additional Man per Hour	10		75.00	750.00T
Drill & Sample HSA, 6-1/4"	39		26.00	1,014.00T
Concrete Cores, 16", per Each	2		300.00	600.00T
Decon Trailer per Day	1		185.00	185.00T
Moving, Set Up, Clean Up & Decon Hourly	2.5		185.00	462.50T
Installation, Hourly	2		185.00	370.00T
4" PVC Sch 40 - Screen (per Foot)	20		12.00	240.00T
4" PVC Sch 40 - Casing (per Foot)	20		9.00	180.00T
4" Cap & Plug	2		50.00	100.00T
Colorado Sand 10/20	28		20.00	560.00T
Bentonite Chips	12		15.50	186.00T
Redimix	8		11.00	88.00T
Monument Steel Skirt 12"x12"	2		225.00	450.00T
Drums Left on Site	4		85.00	340.00T
DOE Fees - Wells	2		65.00	130.00T
This quote is valid for 60 days, assumes no work hour restrictions and standard labor rates (no prevailing wage or Davis-Bacon rates). Client is responsible for ensuring adequate access for a truck mounted drill with no overhead obstructions within 10ft., and for conducting public and private utility locate.				

Subtotal	$6,155.50
Sales Tax (9.5%)	$584.77
Total	$6,740.27

Subsurface Exploration Specialists

Drill. Sample. Install. Develop. Abandon.

Geotechnical
Environmental
Construction

www.holocenedrillinginc.com

Seneca Companies
The Complete Solution

HEADQUARTERS
Des Moines, Iowa

P.O. Box 3360
Des Moines, Iowa
50313-0360

4140 E. 14th Street
Des Moines, Iowa 50313
Phone: 515-262-5000
Toll-Free: 800-369-5500
Fax: 515-262-4951

October 17, 2016

Chuck Lie
Terra-Associates
12525 Willows Road Suite 101
Kirkland, WA 98032

Reference: SVE Skid with Sound Enclosure

Seneca is pleased to present our quotation submittal of products and services:

Seneca is the nation's leading remediation service and equipment supplier

Proven Experience: Over 1,389 turnkey packaged systems installed since 1987. Over 31 years of construction experience.

Customer Service: Seneca provides on-site Electrical, Mechanical, and Operations and Maintenance Services including a 24-Hour Rapid Response Service # 800-369-3500.

Money: Seneca will help you save money in operations and maintenance.

Safety: Safety is mandatory and Seneca's construction professionals are 40 hr OSHA trained. Seneca designs and builds for safe operations and maintenance to meet local building and national electric codes (NEC) for Class 1, Division 1 and Class 1, Division 2 Areas.

Drawings: Seneca provides Mechanical/Electrical Drawings and Manuals. You will have accurate information including a project "Bill of Materials," complete with part numbers for operations and maintenance references.

Valued Engineering: Seneca can design/build complete projects or assist your design for proven results.

Easy: It is easy to work with Seneca. Purchase or Lease options, customer service, guaranteed construction, experienced staff is why we are the nation's leader.

Sincerely,

Dan Nolan
Technical Sales

Seneca Companies

The Complete Solution

SENECA CONTRACT AGREEMENT # 2011118

THIS AGREEMENT, entered into at Des Moines, Iowa on the day of , 20 between, Terra-Associates called "Customer," and Seneca Environmental Services, Inc., called "Seneca," is as follows:

GENERAL CONDITIONS

Terms of Payment:	Net 30
Billing Method:	Standard
Shipping & Handling:	Line Item Included
Taxes:	Not Included
Pricing:	Good for 120 Days
Down Payment:	0

The Customer retains Seneca to perform construction services as described in Seneca's Proposal and Budget **No.** 2011118 called the "Project." Seneca will submit drawings to the customer and fabrication will start when Seneca receives approved drawings. The approved drawings become the technical standard from which the performance of this contract is based upon.

The customer will pay Seneca $ _____ for the products defined in the project. The Seneca Contract Terms and Conditions are incorporated into this agreement.

APPROVED BY:

CUSTOMER	**SENECA ENVIRONMENTAL SERVICES, INC.**
By _____	By _____
Title _____	Title _____
Date _____	Date _____

SITE INFORMATION

State Funding Agency _____

Site I. D. Number _____

Agency Contact _____ **Phone**_____

Job Site Owner of Record _____

Address _____ **Phone**_____

_____

Seneca Companies

The Complete Solution

SENECA CONTRACT AGREEMENT TERMS AND CONDITIONS

1. Payment. Customer shall pay Seneca Environmental Services, Inc. (hereafter "Seneca") for the services in the amounts and at the times set forth in the Contract Agreement. Balances not received in full shall bear an interest charge of 1.5% per month (18% per year). Customer is responsible for all applicable taxes.

2. Price. The price covers only those items which are specifically set forth in the Contract Agreement for this project. All other items will be billed to Customer on a time and materials basis.

3. Returns and Cancellation. All sales to Customer are final and no returns or cancellations will be allowed except at the discretion and upon terms acceptable to Seneca.

4. Third Party Payment. Customer is responsible for full and timely payment of account balances regardless of whether Customer has received payment under any insurance policy, or from any third person or entity who may agree to or may be legally required to pay Customer's account balance. Upon request of Seneca, Customer shall assign to Seneca any and all rights it may have to third party payments. Upon assignment, Seneca is entitled to seek any remedies that Customer would have had for third party payments.

5. Purchase Money Security Interest. Customer grants to Seneca a purchase money security interest in all goods sold to Customer, including all proceeds, accessories, and replacements (collectively "Collateral"). Customer hereby appoints Seneca as its attorney in fact to execute and file any documents necessary to perfect its security interest in the Collateral. Customer shall not grant a security interest in the Collateral to any other party and shall keep the Collateral insured for its replacement value, naming Seneca as a loss payee and additional insured. The Collateral shall not be removed or moved except upon notice to Seneca. If Customer fails to pay Seneca in a timely manner, Customer consents to and authorizes Seneca to exercise all self-help remedies allowed under law, including without limitation, dismantling and removal of the Collateral or otherwise disabling the Customer's use of the collateral and Seneca shall not be liable for any incidental or consequential damages as a result thereof. Upon payment in full, Seneca agrees to transfer title to Customer, if applicable.

6. Authorization and Access. Customer shall provide Seneca with all necessary access to the property upon which services are to be performed. Customer warrants that it has obtained or will obtain prior to performance of the services all necessary permits, licenses, consents, and authorizations required in connection with performance of services set forth in the Proposal.

7. Warranties. Seneca sells all goods as is. All goods sold are warranted only by the manufacturer's warranty, if any, and such warranties are passed from Seneca to the Customer according to the manufacturer's policy. No other warranty, expressed or implied, is made or intended by Seneca including the warranty of merchantability or fitness for a particular purpose.

8. Utilities and Underground Structures. Customer shall identify the location of all utilities and underground structures. Seneca will take reasonable precautions to avoid damage to utilities or other underground structures. Customer shall indemnify, defend, and hold Seneca harmless for any damage to utilities or underground structures, and from any claims, liability, or damages resulting from utilities or underground structures that were not properly called to Seneca's attention. Such indemnity shall include payment of litigation costs, experts fees, and attorneys fees incurred by Seneca.

9. Conditions and Reporting. In performing the services set forth in the Contract Agreement, Seneca shall be acting as an independent contractor and this Agreement does not create an employment, partnership, agency, joint venture, or any other relationship between the Parties. Customer acknowledges that Seneca has neither created nor contributed to the creation or existence of any contamination at the site. Customer shall be responsible for complying with all reporting requirements under applicable law. If Customer fails to report a condition which may pose a threat to human health or the environment, Seneca may, but is not required to report the same.

10. Force Majeure. Seneca shall not be liable for failure or delay in performing under this Agreement to the extent that such failure or delay is caused by an event or causes beyond Seneca's control.

11. Unforeseen Conditions. If unforeseen conditions arise that affect the scope of services, price of services, time for performance, or the risk involved, Seneca shall notify Customer. Seneca may then, at its sole discretion, modify the scope of work, modify the price, stop work until arrangements satisfactory to Seneca have been made, or terminate the services by notifying Customer in writing. Seneca shall be entitled to the fair and reasonable value of its services through the time of termination.

12. Limitation of Liability. Seneca shall be liable only for damages that are a direct result of the negligence of Seneca except that Customer agrees that Seneca's total liability to Customer for claims arising out of or arising from Seneca's sale of goods or performance of services under this Agreement shall not exceed $50,000 or the total fees payable to Seneca for the particular project, whichever is less, and Seneca shall not be liable for any special, punitive, incidental, or consequential damages (including without limitation, loss of profits or income, loss of use of property, business interruption, cost of replacing goods or services, or third party claims). Customer recognizes that the work set forth in the Contract Agreement may effect, alter, or damage the property and Seneca shall not be responsible for such damage unless it is a direct result of negligence of Seneca.

13. Remedies and Indemnity. In the event of breach of this Agreement by Customer, Seneca may proceed in law or equity to enforce its rights hereunder. Seneca, at its discretion, may elect to proceed by arbitration which shall be binding on the Parties. Customer shall pay all costs and expenses, including attorneys fees, incurred by Seneca in enforcing its rights hereunder. Customer shall indemnify, defend, and hold harmless Seneca from and against all claims, demands, and causes of actions arising out of or resulting from Customer's breach of this Agreement or Seneca's performance of services hereunder.

14. Termination. Seneca may, without prejudice to any right or remedy, terminate its relationship with Customer and to suspend all work or delivery of goods upon notice to Customer.

15. Assignment. This Agreement may not be assigned by Customer without written consent of Seneca. If assigned, Customer will continue to be bound by this Agreement and will be liable for all terms and conditions contained herein.

16. Jurisdiction and Venue. Customer agrees that this Agreement shall be governed by Iowa law and jurisdiction and venue shall be with the Iowa District Court for Polk County or as otherwise required by law.

17. Entire Agreement. The written Contract Agreement for work, together with any referenced attachments, these terms and conditions, and any applicable Seneca Customer Application Agreement shall constitute the entire agreement between the parties, and any other understanding or representation of any kind shall not be binding upon either party.

18. Amendments. Any modification of this Agreement shall be binding only if evidenced in writing signed by each Party.

19. Severability. Should any provision herein be deemed invalid or unenforceable, all other provisions shall remain in effect.

Seneca Companies

The Complete Solution

CORPORATE HEADQUARTERS • DES MOINES, IOWA

P.O. Box 3360
Des Moines, IA 50316-0360

4140 E. 14th Street
Des Moines, IA 50313-3804
Phone: 515-262-5000
Toll-Free: 800-369-5500
Fax: 515-262-4951

QTY	Description	Manufacturer	Part Number
	SVE Inlet		**Sch 80 PVC**
1	Vacuum Gage - Low Pressure	Ashcroft	25-1490A-02L-100"H20
	Moisture Separator	**Rated for 350 CFM**	
1	Air/Water Separator	Ametek Rotron	MS350BS
1	Mist Eliminator	Ametek Rotron	Included
1	Vacuum Relief Valve	Ametek Rotron	Included
1	1" Drain Valve	Ametek Rotron	Included
1	High-High Level Switch	Seneca	Custom Stainless Steel
1	Site Tube	Seneca	Custom
	Air Bleed Valve with Filter/Silencer		
1	Inlet Filter/Silencer	Stoddard	F64-1
1	Gate Valves	Jomar	103-305 1"
	Inline Filter/Silencer		
1	Inline Filter	Stoddard	F75-4 NPT W/ Poly Filter
2	Vacuum Gage - Low Pressure	Ashcroft	25-1490A-02L-100"H20
	SVE Blower	**50 CFM @ 60"WC**	
1	High PSI Switch	Dwyer	1950P-8-2F 1.5 - 8 PSID
1	Regen Blower 1.75kW 1 Phase	Busch	SB0200.D0H0.UFXX
1	Motor	Busch	1.6kW 115V
1	Intake Silencer	Busch	Included
1	Discharge Silencer	Busch	Included
	Discharge		
1	Rain Cap	Stoddard	3"
	Non-Rated Enclosure	**4' X 6' X 8'**	
1	Steel Skid w/ Tie Downs	Seneca	4' X 6'
1	Enclosure with Exhaust Fan	Seneca	4' X 6'
1	Door	Seneca	Included

CORPORATE HEADQUARTERS • DES MOINES, IOWA

Seneca Companies

P.O. Box 3360
Des Moines, IA 50316-0360

4140 E. 14th Street
Des Moines, IA 50313-3804
Phone: 515-262-5000
Toll-Free: 800-369-5500
Fax: 515-262-4951

The Complete Solution

QTY	Description	Manufacturer	Part Number
	Panel Hardware		
1	Enclosure	Hoffman	C-SD363612
1	Sub Panel	Hoffman	C-P3636
1	Sub Panel	Hoffman	C-SP3636
1	Drawing Pocket	Hoffman	A-DP2
1	Door Handle	Hoffman	C-WHK
	Panel Switches		
1	Pushbutton Operator	Telemecanique	ZB4BA2
1	Contact Block N.O.	Telemecanique	ZB4BZ101
1	Hand-Off-Auto Switch - Momentary	Telemecanique	ZB4BD7
1	Contact Block	Telemecanique	ZB4BZ103
	Panel Lights-Meters		
2	Pilot Light Assembly-Lens Red 24vdc	Telemecanique	XB4BVB4
1	Pilot Light Assembly-Lens White 24vdc	Telemecanique	XB4BVB1
1	Pilot Light Assembly-Lens Blue 24vdc	Telemecanique	XB4BVB6
	Panel Labels		
1	Legend Plate Hand/Off/Auto	Telemecanique	ZBY2387
1	Legent Plate Reset	Telemecanique	ZBY2322
	SVE Blower		
1	Motor Starter 3.0 HP	Telemecanique	LUB32
1	Overload Relay (4.5-18A)	Telemecanique	LUCA18FU
1	Auxillary Contacts	Telemecanique	LUFN20
1	Overload Module	Telemecanique	LUA1C20
	Panel Protection		
1	Surge Arrestor	IT Technologies	HS-120-10A
	Misc. Panel Items		
5	Auxillary Relay	IDEC	RY4S-ULC-DC24V
5	Relay Socket	IDEC	SY4S05
1	Din Rail	IDEC	BNDN-1000
4	Din Rail Retainers	IDEC	BNL-5
1	Power Distribution 3P	Ferraz / Shawmut	63133
1	Power Distribution 1P	Ferraz / Shawmut	63131
1	Grounding Bus Bar	Square-D	PK15GTAL
15	Terminal Blocks	Square-D	9080-GR6
2	End Barrier	Square-D	9080-GM6B
1	Circuit Breaker GFI Recep. 1P	Square-D	QOU120
1	Circuit Breaker Control Power 1P	Square-D	QOU110
1	GFI Receptacle	P&S	2091W
1	Weatherproof Box	Bell	5385-0
1	GFI Cover	Red Dot	DCCGV
1	Emergency Stop Switch	Crouse Hinds	EDS271

Subtotal	**$34,372**
Freight Estimated to Site-Freight will be prepaid and added to invoice	**$2,000**
Total	**$36,372**
Sales Tax	**NOT INCLUDED**

Exceptions:

Freeze protection is Not included. Heater and or Heat Trace can be provided at additonal cost.
Main Power Disconnect is Not Included

Appendix C

County Information

Department of Assessments

201 South Jackson Street, Room 708
Seattle, WA 98104

Office Hours: Mon - Fri 8:30 a.m. to 4:30 p.m.

TEL: 206-296-7300
FAX: 206-296-5107
TTY: 206-296-7888

Send us mail

- New Search
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- Map This Property
- Glossary of Terms
- Area Report
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PARCEL DATA

Parcel	758020-0190	**Jurisdiction**	KING COUNTY
Name	U S BANK CORPORATE PROPS	**Levy Code**	4205
Site Address	12610 76TH AVE S 98178	**Property Type**	C
Geo Area	70-15	**Plat Block / Building Number**	4
Spec Area		**Plat Lot / Unit Number**	1-2
Property Name	U.S. BANK	**Quarter-Section-Township-Range**	SE-12-23-4

Legal Description
SCENIC RIDGE HEIGHTS ADD 1 LESS POR SWLY OF LN BEG N 00-25-53 E 26.53 FT FR SW COR TH S 54-55-24 E & ALL 2
PLat Block: 4
Plat Lot: 1-2

LAND DATA

Highest & Best Use As If Vacant	COMMERCIAL SERVICE	**Percentage Unusable**	
Highest & Best Use As Improved	PRESENT USE	**Unbuildable**	NO
Present Use	Bank	**Restrictive Size Shape**	YES
Land SqFt	25,119	**Zoning**	CBPSO
Acres	0.58	**Water**	WATER DISTRICT
		Sewer/Septic	PUBLIC
		Road Access	PUBLIC
		Parking	ADEQUATE
		Street Surface	PAVED

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Waterfront

Waterfront Location	
Waterfront Footage	0
Lot Depth Factor	0
Waterfront Bank	
Tide/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	NO
Proximity Influence	NO

Designations

Historic Site	
Current Use	(none)
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	NO
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Nuisances

Topography	
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrency	NO
Other Problems	NO

Environmental

Environmental	NO

BUILDING

Building Number	1
Building Description	BRANCH BANK
Number Of Buildings Aggregated	1
Predominant Use	BANK (304)
Shape	Rect or Slight Irreg
Construction Class	MASONRY
Building Quality	AVERAGE
Stories	1
Building Gross Sq Ft	4,568

Click the camera to see more pictures.
Picture of Building 1

Reference Links:

- King County Tax Links
- Property Tax Advisor
- Washington State Department of Revenue (External link)
- Washington State Board of Tax Appeals (External link)
- Board of Appeals/Equalization
- Districts Report
- iMap
- Recorder's Office

Scanned images of surveys and other map documents

Scanned images of plats

Building Net Sq Ft	4,568
Year Built	1960
Eff. Year	1985
Percentage Complete	100
Heating System	WARMED AND COOLED AIR
Sprinklers	No
Elevators	

Section(s) Of Building Number: 1

Section Number	Section Use	Description	Stories	Height	Floor Number	Gross Sq Ft	Net Sq Ft
1	BANK (304)	960 sf is mezzanine	1	20		4,568	4,568

TAX ROLL HISTORY

Account	Valued Year	Tax Year	Omit Year	Levy Code	Appraised Land Value ($)	Appraised Imps Value ($)	Appraised Total Value ($)	New Dollars ($)	Taxable Land Value ($)	Taxable Imps Value ($)	Taxable Total Value ($)	Tax Value Reason
758020019009	2020	2021		4205	433,300	434,600	867,900	0	433,300	434,600	867,900	
758020019009	2019	2020		4205	364,200	435,200	799,400	0	364,200	435,200	799,400	
758020019009	2018	2019		4205	351,600	447,800	799,400	0	351,600	447,800	799,400	
758020019009	2017	2018		4205	339,100	391,700	730,800	0	339,100	391,700	730,800	
758020019009	2016	2017		4205	326,500	358,700	685,200	0	326,500	358,700	685,200	
758020019009	2015	2016		4205	301,400	255,200	556,600	0	301,400	255,200	556,600	
758020019009	2014	2015		4205	301,400	269,800	571,200	0	301,400	269,800	571,200	
758020019009	2013	2014		4205	301,400	279,300	580,700	0	301,400	279,300	580,700	
758020019009	2012	2013		4205	301,400	298,200	599,600	0	301,400	298,200	599,600	
758020019009	2011	2012		4205	301,400	320,300	621,700	0	301,400	320,300	621,700	
758020019009	2010	2011		4205	301,400	314,000	615,400	0	301,400	314,000	615,400	
758020019009	2009	2010		4205	301,400	350,700	652,100	0	301,400	350,700	652,100	
758020019009	2008	2009		4205	301,400	354,600	656,000	0	301,400	354,600	656,000	
758020019009	2007	2008		4205	238,600	356,500	595,100	0	238,600	356,500	595,100	
758020019009	2006	2007		4205	200,900	341,400	542,300	0	200,900	341,400	542,300	
758020019009	2005	2006		4205	150,700	422,800	573,500	0	150,700	422,800	573,500	
758020019009	2004	2005		4205	125,600	447,900	573,500	0	125,600	447,900	573,500	
758020019009	2003	2004		4205	125,600	447,900	573,500	0	125,600	447,900	573,500	
758020019009	2002	2003		4205	125,600	433,700	559,300	0	125,600	433,700	559,300	
758020019009	2001	2002		4205	125,600	433,700	559,300	0	125,600	433,700	559,300	
758020019009	2000	2001		4305	125,600	433,700	559,300	0	125,600	433,700	559,300	
758020019009	1999	2000		4305	125,600	433,700	559,300	0	125,600	433,700	559,300	
758020019009	1998	1999		4305	125,600	433,400	559,000	0	125,600	433,400	559,000	
758020019009	1997	1998		4305	0	0	0	0	125,600	343,200	468,800	
758020019009	1996	1997		4305	0	0	0	0	125,600	343,200	468,800	
758020019009	1994	1995		4305	0	0	0	0	125,600	343,200	468,800	
758020019009	1992	1993		4305	0	0	0	0	125,600	341,100	466,700	
758020019009	1990	1991		4305	0	0	0	0	125,600	321,400	447,000	
758020019009	1988	1989		4305	0	0	0	0	125,600	321,400	447,000	
758020019009	1986	1987		4305	0	0	0	0	103,900	234,200	338,100	
758020019009	1985	1986		4305	0	0	0	0	113,000	254,600	367,600	
758020019009	1984	1985		4320	0	0	0	0	113,000	254,600	367,600	
758020019009	1983	1984		4320	0	0	0	0	110,400	210,200	320,600	
758020019009	1982	1983		4320	0	0	0	0	110,400	210,200	320,600	

SALES HISTORY

REVIEW HISTORY

Tax Year	Review Number	Review Type	Appealed Value	Hearing Date	Settlement Value	Decision	Status
2019	1800283	Local Appeal	$799,400	1/1/1900	$0		Completed
2018	1700408	Local Appeal	$730,800	1/1/1900	$730,800	SUSTAIN	Completed
1985	8402226	Local Appeal	$0	1/1/1900	$0	REVISE	Completed

PERMIT HISTORY

Permit Number	Permit Description	Type	Issue Date	Permit Value	Issuing Jurisdiction	Reviewed Date
SIGN17-0039	OTCP: Removal and replacement of existing ATM drive-thru sign at existing bank.,		9/15/2017	$1,250	KING COUNTY	7/5/2018

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King County Records

Opened Date	Record Number	Record Type	Project Name	Address	Status	Short Notes
9/11/2017	SIGN17-0039	Signs	OTCP--US BANK ATM SIGN REPLACEMENT	12610 76TH AVE S, 98178	Permit Completed	
5/28/1998	B98A1731	Building/Historical/NA/NA	WALL SIGN 4 US BANK DRIVE-THRU	12610 76TH AVE S, King County WA	Permit Completed	
11/19/1996	F96X1094	Building/Historical/NA/NA	US BANK /SKYWAY BRANCH	12610 76TH AVE S, King County WA	PASSED	
9/26/1995	B95A4591	Building/Historical/NA/NA	HVAC UNIT REPLACEMENTS	12610 76TH AVE S, King County WA	Permit Completed	
5/3/1990	C86-1179	Building/Historical/NA/NA	PEOPLES BANK	12610 76TH AVE S, King County WA	Canceled	
2/23/1990	C87-1714	Building/Historical/NA/NA	POLE	12610 76TH AVE S, King County WA	Permit Completed	

Appendix D

Aerial Photographs

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

2019

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

2013

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle 12610 76th Avenue South Seattle, WA	N	**2009** HIG Project # 2051580 Client Project # 227702984 Approximate Scale 1: 6,000 (1"=500') www.historicalinfo.com	HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

2006

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1990

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1980

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

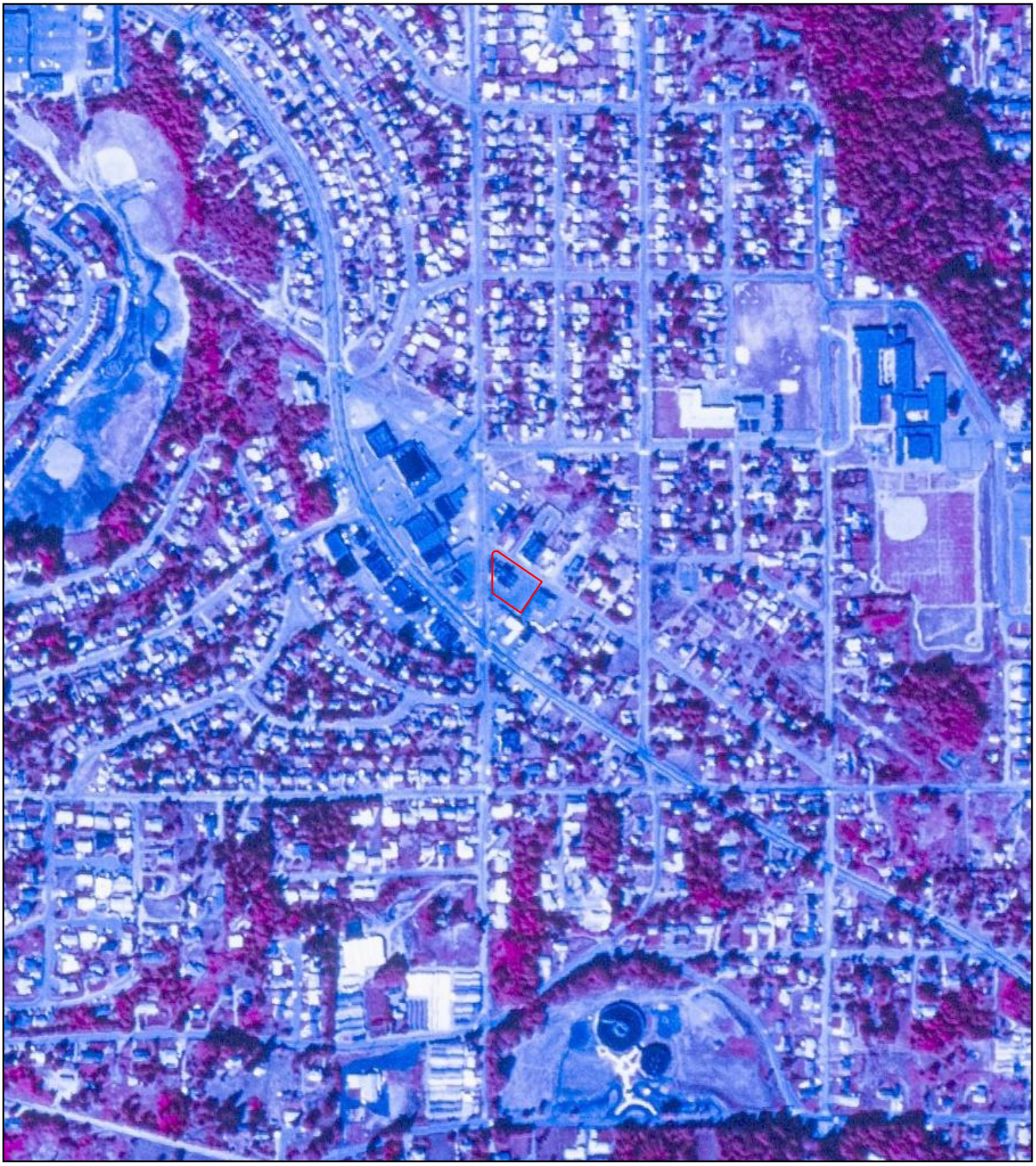
Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1977

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com



Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1972

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1968

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle
12610 76th Avenue South
Seattle, WA

N

1943

HIG Project # 2051580
Client Project # 227702984
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Site boundaries shown in red are approximate

Seattle 12610 76th Avenue South Seattle, WA	N	**1936** HIG Project # 2051580 Client Project # 227702984 Approximate Scale 1: 6,000 (1"=500') www.historicalinfo.com	HIG

Appendix E

City Directories

2923 ..... NP

-30TH AVE NW INTS

3001 Dean Ramsey Fuller (6/10) . . . 10●206.257.0023
Melissa P Fuller (6/10) . . . . . 10●206.257.0023
3002◊ Jan Vontehe (5/05) . . . . . 05● NP
3007 Janice Kay Janofsky (10/99) . . 89● NP
3008 ..... NP
3011 Claude W Ginsburg (11/89) . . . 89●206.782.2390
3014 Cathleen M Branom . . . . . 08 NP
3017 Barry Rellis . . . . . + NP
3020 Joel R Stimson (4/17) . . . . . +● NP
3023◊ April R Meyer (6/16) . . . . . +● NP
◊ Bradley S Meyer (5/16) . . . . . +● NP

-31ST AVE NW INTS

3101 ..... NP
3102 Brian E Cromer (4/05) . . . . . 05● NP
Renee A Devine (4/05) . . . . . 05● NP
. . 3106 Lance Montgomery Martin . . 92● NP
Madeleine Ann Martin. . . . . 92● NP
3107 Jake Dickey 09 206.782.2505
3110 John Benjamin Morris (12/11). 11●206.729.5069
Susan Marie Morris (12/11) . . 11●206.729.5069
3111 ..... NP
3117 Keri Segna Livingston (2/11) . . 11● NP
3118 Darci Dumbar (2/12) . . . . . 12●206.325.7009
Darci Ilene Lee (2/12). . . . . 12●206.325.7009

-32ND AVE NW INTS

3202 ..... NP
3211 John Marshall Martin (8/98) . . 94●206.297.0478
Nancy Harriet Martin (8/98) . . 94●206.297.0478
3215 Cathy L Downes (5/16). . . . . 16● NP
Dr Lee Lee Williams (5/16) . . . 16● NP
3221 Erin J Weir. . . . . 16 NP

-33RD AVE NW INTS

3301 Courtney Becker (5/14) . . . . . 14● NP
Damon Paul Cortesi (5/14) . . . 14● NP
3306 John P Murphy (9/06) . . . . . 06●206.781.5226
Margaret Mary Murphy (9/06). . 06●206.781.5226
3307 Anna Karin Roo . . . . . 94●206.784.8644
Gale E Roo. . . . . 94●206.784.8644
3311 Michelle Lefebvre McIntire . . 01 NP
Robert W McIntire . . . . . 01 NP
3314 Donalee M Rutledge (5/78) . . . 98● NP
Frederic B Rutledge (5/78) . . . 98● NP

-34TH AVE NW INTS

227 RESIDENCE 5 BUSINESS

●76TH AVE S

CT 260.01 10401 - 12256 $B
CT 261.00 12715 - 13221 $C
10401 - 11315 98178

-S RYAN ST INTS

10401◊ Gilbert S Gasca (8/00) . . . . . 00●206.772.4974
◊ Rachelle Marie Gasca (8/00). . 00●206.772.4974
10417 Eric Hal Legrand (1/08) . . . . . 01● NP
Alex R McGavin (1/08) . . . . . 01● NP
10423 Darlene Kampsen (7/06). . . . . 06●206.772.3893
Darren E Kampsen (7/06) . . . . 06●206.772.3893
10429 Alejandro Villagran . . . . . + NP
10435 Kam Wong (9/06) . . . . . 06● NP
Liane Wong (9/06) . . . . . 06● NP
10436 Eshak Endrawes (11/11). . . . . 11● NP

-GARDEN PL S INTS

-S 112TH ST INTS

11315 Aliana Weinstein Ustanik (12/92) 92● NP
Roderick W Ustanik (12/92) . . 92● NP
0 11433 - 11433 98101
11433★♣ 24 7 Locksmith 15 206.504.7317
★♣ Lakeridge Swim Club . . 13 206.772.1950
11529 - 13221 98178

-S 115TH ST INTS

11529 Hoa Ai Cao . . . . . 16 NP
Kelly Le . . . . . 16 NP
11541 Hiro K Takahashi (9/86) . . . . . 85● NP
Kazuko Sotozaki Takahashi (9/86) 85● NP

-S 115TH PL INTS

-S 116TH ST INTS

11625 Michael M Gerred (2/00) . . . . 00● NP
11631 Afrodite I Pastroumas . . . . . + NP
11637 Maragaret Gasetoto . . . . . 09 NP

-S 116TH PL INTS

11730 Howard Thordarson (8/97) . . . 97●206.772.2262
Tammie V Thordarson (8/97). . 97●206.772.2262
11801 Theresa M Callahan . . . . . 92 NP
11802 Bettilyn Clingman (11/00) . . . . 00●206.772.3778
Mike Edward Clingman (11/00) 00●206.772.3778
11808 Celia Cabitatzan Domondon (11/77) 77●206.772.9583
Reynaldo S Domondon (11/77) 77●206.772.9583
11809 Donna M Fratzier (4/03) . . . . . 03● NP
Donell D Frazier (4/03) . . . . . 03● NP
11814 Josefa P Sangalang . . . . . 94● NP
11820 Derek D Green Jr (1/79) . . . . . 79● NP
Joyce M Green (1/79) . . . . . 79● NP
★Quick Garage Door Repair 13 206.777.8627

-S 118TH PL INTS

11826 Gary Warren Martin (4/88) . . . 88● NP
Pamella L Martin (4/88) . . . . . 88● NP
11829 Nikole Page . . . . . 13 NP
11832 Cherie M McCulloch (6/86). . . 86●206.772.4915
James I McCulloch (6/86). . . . 86●206.772.4915
11833 Michael C Keels (9/91). . . . . 91●206.772.0470
Roberta V Keels (9/91). . . . . 91●206.772.0470
11836 Jennifer Tamayo Francisco (4/01) 01●206.420.7455
11840 Leslie Renee Merklin 06 206.906.9268
11841 Fidel Alfonso Vera (9/94) . . . . 94● NP
11844 Angela M Claro . . . . . 12 NP

-S 120TH ST INTS

12004 Cruz Ortiz (10/14) . . . . . 14● NP
Paula Santos-Ortiz (10/14) . . . 14● NP
12005 Steven Nguyen (12/16). . . . . +● NP
12009 Jathan M Hall (8/12) . . . . . 12● NP
12010 David Jau Lin (6/06). . . . . 06● NP
Xian O Ouyang (6/06). . . . . 06● NP
12015 Daniel Mukasa. . . . . + NP
12016 Bryce Anthony Beamish . . . . 14 NP
Shawna Marie Beamish . . . . 14 NP
12019 Weldegebreal Afrwerki . . . . . + NP
12025 Lisa M Gremling (9/15). . . . . 12● NP
12028 Hallma A Elmi (6/05) . . . . . 05● NP
12029 Emily B Binongcal (12/01) . . . 92● NP
Robert C Binongcal (12/01) . . 92● NP
12034 Samuel L Lowe Jr (2/17) . . . . +● NP
12035 Sheree Chante McClendon . . 98● NP
12038 Jingwen Chen (12/16) . . . . . +● NP
Christopher McAnally (12/16) . +● NP
12044 Cynthia B Mason (3/92) . . . . 92●206.772.4804
Fred G Mason (3/92) . . . . . 92●206.772.4804
12045 Xiao Y Ma (10/07) . . . . . 07● NP
12050 Leah S Franada . . . . . 89●206.772.4650
Marvin Sumibcay Franada . . 89●206.772.4650
12051 Michael Allen McCoy (2/96) . . 96● NP
12056 Domingo Pena (3/17). . . . . +● NP
Soledad Pena (3/17) . . . . . +● NP

-S 122ND ST INTS

12204 Paul M Woods Sr (6/04). . . . . 02●206.420.1044
Priscilla A Woods (6/04). . . . . 02●206.420.1044
12207 Severina Valdovinos . . . . . 16 NP
12210 Sierra Glessner . . . . . 16 NP
12213 Chad Lee Smithson (6/07) . . . 07● NP
Shlon Latrees Smithson (6/07) 07● NP
12216 Glordan Paolo Montero (1/03). 03● NP
Tim C Montero (1/03) . . . . . 03● NP
12219 Larry R Lafrance . . . . . 82●206.772.0524
Stephanie L Lafrance . . . . 82●206.772.0524
12222 Mohamath Asarl (6/15) . . . +● NP
12228 Nem Vin (9/04) . . . . . 02● NP
Vantha Vin (9/04). . . . . 02● NP
12231 Michael C Hopt (3/15) . . . . . 15● NP
12234 Chris Rudesill (4/00) . . . . . 94● NP
Christopher Clayton Rudesill (4/00) 94● NP
12237 Djibril Thioune (6/08) . . . . . 07● NP
Damika R Trimble (6/08) . . . . 07● NP
12238 Blake E Voorhees. . . . . + NP
12243 Phuong Chung. . . . . 14 NP
12244 Laura L Harding. 93 206.772.6848
12250 Claire Rebecca Covert (11/15) 13● NP
Ryan P Salem (11/15) . . . . . 13● NP
12256 Venessa Angel Davis . . . . . 06 NP

-S 124TH ST INTS

12417★King County Fire Protection District
15 206.772.1430

-S 126TH ST INTS

12610★Us Bank. . . . . + 253.608.7348
★Us Bank. 15 206.772.1457

-RENTON S INTS

12704★Renton Area Youth & Family Service
14 206.772.2050
12715 Randle I Miller (6/87) . . . . . 87● NP
12721 Michael W Acord (3/11) . . . . . 11● NP
Oanh K Acord (3/11) . . . . . 11● NP
12722 Apartments
205 Lasandra Boyd. . . . . 15 NP
3 Marie A Chrisp. 10 206.772.0553
3 Nicole P Chrisp 10 206.772.0553
204 Merrydean Edwards. . . . . 07 NP
204 Merrydean Elizabeth Grant . . 07 NP
202 Paul Anthony Hale . . . . . 13 NP
1 Doree Anna Handford. . . . . 07 NP
105 E Hawk 00 206.772.3276
203 Joe Moore. . . . . 12 NP
203 Ocie Earl Moore. . . . . 12 NP
4 Willa B Reynolds . . . . . 15 NP
2 Rachel Wanganga . . . . . 07 NP
12726 Kevin Scott Lewandowski . . . + NP
12744 Colin Andrew Knight (8/15) . . 14● NP

-S 127TH ST INTS

-S 128TH ST INTS

12816 David Tu (9/16) . . . . . +● NP
12826 Albert V Wicker . . . . . 67●425.255.5592
Tony Michael Wicker . . . . . 67●425.255.5592
12900♣ Walter D Davis. 14 425.254.1431

-S 129TH ST INTS

12914 Dorothy Ng (12/04) . . . . . 04● NP
13010 Alfonsina Depasquale. . . . . 04 NP
John Depasquale . . . . . 04 NP
13020 Jeff S Rasor (4/10) . . . . . 10● NP

-S LANGSTON RD INTS

13221 Kenneth V Leach . . . . . 99 NP

-S 132ND ST INTS

118 RESIDENCE 7 BUSINESS

●N 76TH ST

CT 29.00 102 - 147 $A
CT 28.00 312 - 756 $A
CT 27.00 902 - 1326 $A
102 - 1326 98103

-1ST AVE NW INTS

102 Jeanie M Watkins . . . . . 68●206.789.0911
106 Robert Brown . . . . . + NP
110 Elaine D Peretti (3/07) . . . . . 07● NP
Paul M Peretti (3/07) . . . . . 07● NP
111♣ Anne McBride . . . . . 85● NP
112 Adam J Louvau (7/16) . . . . . 15● NP
Lauren E Louvau (7/16) . . . . . 15● NP
116◊ Peggy Peifun Lee (8/04). . . . . 04● NP
◊ Daniel J Vonseggern (8/04) . . 04● NP
117 Kathleen Ann Kutz (5/88) . . . . 88● NP
118 Alison L Maddox (6/05) . . . . . 05● NP
Charlie David Maddox (6/05) . 05● NP
121 Carol Joy Lundemo (5/97) . . . . 97● NP
Mark W Lundemo (5/97) . . . . 97● NP
122 John F Sifferle . . . . . 81●206.783.3370
Madonna M Sifferle . . . . . 81●206.783.3370
126 Benjamin A Haber (11/14) . . . 13● NP
Carrie J Haber (11/14) . . . . . 13● NP
127◊ Suzanne D Duroux. . . . . 86●206.789.7750
◊ Barry W Stoner . . . . . 86●206.789.7750
130 Ellen A Steele (6/03) . . . . . 02●206.632.4338
Matthew Stephen Steele (6/03) 02●206.632.4338
131 Rose Catherine Mateo (11/15) 15● NP
135 Nichole M Blomquist (2/17) . . +● NP
Peter F King (2/17) . . . . . +● NP
137 Susan Elizabeth Selman (10/11) 11● NP
138 Kendall George Magnuson (3/00) 00● NP
Stephanie Kay Nelson (3/00) . 00● NP
141 Hugh Edward Morrison Jr. . . . 05 NP
Pat Jean Morrison . . . . . 05 NP
142 Erika L Stanley (4/10) . . . . . 10● NP
Kyle Robert Stanley (4/10) . . . 10● NP
143 Stephanie Marie Seigle (5/13) 13● NP
William Robbins Seigle (5/13). 13● NP
146 Lauralee L Smith (1/88) . . . . . 88● NP
Richard Elliott Smith (1/88) . . 88● NP
147 Roberta J Hilton. . . . . 84● NP
William R Hilton. . . . . 84● NP

-GREENWOOD AVE N INTS

312 Apartments
103 Rylan Bauermeister . . . . . 16 NP
301 Joshua P Hammar. . . . . 06 NP
301 Whitney B Hammar . . . . . 06 NP
B Jeremy P Harris. . . . . + NP
202 Aaron Jones . . . . . + NP
101 ◊ Jillian S Mednick . . . . . 15 NP
302 Sarala Puthuval . . . . . 15 NP
316 Brooke A Avery . . . . . 89● NP
Alex W Wheeler. . . . . 89● NP
317 Ilga S Westberg (4/11). . . . . 92● NP
319★24 All Day Locksmith 09 206.708.2344
Andrew Michael Chiodi (4/10) 10● NP
Vida A Towne (4/10) . . . . . 10● NP
321 Lauri Kraemer Kraemer (7/88) 88● NP
324 Daniel Scott Mayberry . . . . . 11 NP
325 Nicolas Alejandro Vivas (11/15) 13● NP
326 Dennis Michael Lussier (6/15) 14● NP
332 May Greg (4/86) . . . . . 86●206.783.2483
Greg L May (4/86). . . . . 86●206.783.2483
333 Nancy Lynne Greffin. . . . . 08 NP
334 Robert A Yuen (7/15). . . . . 15● NP
Shannon Elizabeth Yuen (7/15) 15● NP
337 Lillian C Yetter (4/87). . . . . 87●206.782.2832
Robert L Yetter Jr (4/87) . . . . 87●206.782.2832
340◊ Martin S Morris (12/02) . . . . 02● NP
342◊ Christopher J Burrows (3/06) . 06● NP
◊ Kieran M Snyder (3/06) . . . . 06● NP
343 Albert B Sather . . . . . 70●206.784.9760
Rose May Sather . . . . . 70●206.784.9760
347 Becky L Kantor (9/01) . . . . . 01●206.784.5877
Kevin Lederman (9/01) . . . . . 01●206.784.5877
348 Kathleen V Vance (8/01) . . . . 99●206.706.2895
David James Wirth (8/01) . . . 99●206.706.2895
350◊ Chris Cohen (2/07) . . . . . 06● NP
◊ Steve H Cohen (2/07) . . . . . 06● NP
353◊ Graydon Dale Britton (4/02) . . 02● NP
354 Caroll Sue Zander (6/92) . . . . 92●206.782.3828
355 Kashmira Gadgil . . . . . +● NP
Rohit Kale . . . . . +● NP
358 J Sexton (7/99) . . . . . 99● NP
Jane E Sexton (7/99). . . . . 99● NP
359 Emma B Timmins-Schiffman (9/06 07● NP
Ethan R Timmins-Schiffman (9/06 07● NP
360◊ Oddvar Kjell Huslid (2/08) . . . 05● NP
◊ Reying R Huslid (2/08) . . . . . 05● NP
361 Catherine M Jackson (11/00) . . 94● NP
James A Jackson (11/00) . . . . 94● NP
362 Kathy Wagner (7/93) . . . . . 93●206.782.5109
Stan D Wagner (7/93) . . . . . 93●206.782.5109
363 Laura A Gerwitz. . . . . + NP

-DAYTON AVE N INTS

503 Luke Larson . . . . . + NP
504 Joanne V Fraser . . . . . +● NP
William H Fraser . . . . . +● NP
506 ..... NP
509 Lauren M Ausmus (10/14) . . . 12● NP
510 Mayrie Chapman . . . . . 72●206.789.1437
Virginia Lynn Chapman . . . . 72●206.789.1437
511 Holly Elizabeth Eydenberg (10/12 12● NP
Steven Kyle Luke (10/12) . . . . 12● NP
512 Teresa D Lanigan-Sintay (2/91) 91● NP
Stephen Sintay Jr (2/91) . . . . 91● NP
514 Pete L Colbeck . . . . . 91● NP
Terri Grace Colbeck . . . . . 91● NP
★Colbeck & Company Inc. . 94 206.781.2200
515 ..... NP
518 Jan E Davis. . . . . 98● NP
Marcy Ann Kutok. . . . . 98● NP
520◊ John M Ilich (11/99) . . . . . 99● NP
◊ Donna C Stephan (11/99). . . . 99● NP
521 Peggy A Halwachs (2/13). . . . 13●206.922.3454
Gail Ann Houser (2/13) . . . . . 13●206.922.3454
524 Charlene M Kern (10/03) . . . . 03● NP
525 ..... NP
528½ Alexa L Berlow . . . . . 03 NP
Katharine Chludzinski. 02 206.706.5326
Kathleen Ann Chludzinski . . 02 206.706.5326
529 Judith Ann Howard (1/02) . . . 94●206.706.1026
531 Raymond G Russell (3/92) . . . . 92● NP
Sandy D Russell (3/92) . . . . . 92● NP
532 Maureen L Beaulieu (5/91). . . 91● NP
Francis R Iaconelli (5/91) . . . . 91● NP
536 Palge E Phillips (9/12) . . . . . 11● NP
537◊ Cindy Schneider . . . . . 98● NP
◊ Eric J Schneider . . . . . 98● NP
541 Marshay A Mitchell 08 206.432.9412
544 Jonah H Goldman (5/13) . . . . 13● NP
Jacqueline K Payne (5/13) . . . 13● NP
547 Claude P Iosso (4/01) . . . . . 01●360.297.6278
Holly Iosso (4/01) . . . . . 01●360.297.6278
548◊ James T Keithly (3/01). . . . . 01● NP
◊ Melissa A Weiland (3/01). . . . 01● NP
551 Joann L Ware (1/16) . . . . . 16● NP
560 Lara J Igfitzin (5/06) . . . . . 06● NP
Vladimir V Raskin (5/06) . . . . 06● NP

-FREMONT AVE N INTS

701 Apartments
A ◊ Clare McCabe . . . . . 09 NP
A ◊ Jacqueline Claire McCabe . . 09 NP
Bruce Miller . . . . . + NP
Rhoda M Stockwell . . . . . 03● NP
William P Stockwell . . . . . 03● NP
710 Michael A Pautsmeyer (10/13) 13● NP
711 Diane Smoak Brinson (3/11) . 11● NP
James Randall Brinson Jr (3/11) 11● NP
712 Kim H Laine (5/16) . . . . . 16● NP
Megan J Laine (5/16) . . . . . 16● NP
715 Alicia Sarakina Nicas . . . . . 11 NP
716 Celina K Glassburn (7/06) . . . 06●206.706.5339
Samuel B Glassburn (7/06) . . 06●206.706.5339
719 ..... NP
720 Jordan Spore . . . . . + NP
724 Jessie Gray . . . . . 12 NP
725 Jennifer Papahronis (1/12). . . 09● NP
Thomas Papahronis (1/12). . . 09● NP
731 Kerry Frances Sturgill (4/05) . 05● NP
732 Kenneth V Fry Jr (9/15) . . . . 15● NP
733 Margaret Mary Ward (4/90) . . 90● NP
734 ..... NP
736 Isak D Bressler 11 206.403.1118
Sheley M Bressler 11 206.403.1118
737 Jean S Chen. . . . . 15● NP
741 T Watson (7/03) . . . . . 02● NP
742 Janet Diane Stone (4/16). . . . 16● NP
Thomas C Stone Jr (4/16) . . . 16● NP
743◊ James Buchan (5/16) . . . . . 16● NP
◊ Lauren Michelle Miles (5/16) . 16● NP
746 Charles O Pietzsch . . . . . + NP
748 ..... NP
749 Thomas J Hoover (5/16) . . . . +● NP
Athena Sears (5/16) . . . . . +● NP
750 Melissa Lynn Patterson (12/12) 12● NP
751 Julia H Becke (6/07) . . . . . 05●206.784.5366
Michael A Becke (6/07) . . . . . 05●206.784.5366
756 Apartments
A Sarah Schroeder . . . . . 14 NP

-LINDEN AVE N INTS

902 David Brian Swenson (12/10). 10● NP
Nancy D Swenson (12/10) . . . 10● NP
906 Christopher Alexander Demas (9/12 12● NP
Sarah E Demas (9/12). . . . . 12● NP
909 ..... NP
910 Eric E Aman (9/02) . . . . . 00●206.789.2124
Heather L Aman (9/02) . . . . . 00●206.789.2124
911 Alicia Karabetyan Arsene (9/07) 15● NP
Harry Raffy Arsene (9/07) . . . 15● NP
912 Gemma Diane Gillespie . . . . 15 NP
914♣ Mark G Adlerbert (12/13). . . . 13● NP
920 Lani H Banting (10/07) . . . . . 04● NP
Derek Michael Wolcoski (10/07) 04● NP
923 Therapon Skotinlotis (11/15) . 14● NP
Virginia Nicole Walker (11/15) 14● NP
924 Barbara Lee Leischner (9/08). 96● NP
Gary D Leischner (9/08) . . . . 96● NP
927 Ellis C Witherspoon (4/98) . . . 98● NP
929 ASA Michael Cummings . . . 06 206.420.2003
930♣ Anastacia S Nevius (8/16) . . . +● NP
♣ Peter Nevius (8/16). . . . . +● NP
931◊ Diane Dolores Steen . . . . . 82●206.784.2455
933◊ Marta C Cuenca . . . . . 13● NP
◊ Patrick Fitzgerald Dwyer . . . 13● NP
934 Lauren Ashley Sinclair . . . . + NP
936 Peter C Nevius (8/04) . . . . . 04● NP
Susan Nevius (8/04) . . . . . 04● NP
940½◊ Andy D Jackson . . . . . 07 NP
940½◊ Ian R Jackson . . . . . 07 NP
◊ September S Secrist (9/05) . . 05● NP
941 Joseph M Rodriguez (1/99) . . 99● NP
Marisa J Rodriguez (1/99) . . . 99● NP
943 N A Thompson . . . . . 84● NP
946 Daniel Lee Fife (2/12) . . . . . 12● NP
Kelly A Fife (2/12). . . . . 12● NP
947 Christopher John Harp (7/14). 14● NP
949 Matthew Michael Mayhan . . 04 NP

-AURORA AVE N INTS

1111 Richard Haderll . . . . . 16 NP
Travis Haderli . . . . . 16 NP
1115 Lara Long (8/04). . . . . 04● NP
Brian J McCormick (8/04) . . . 04● NP
1119 Matthew B Bowman (3/17) . . +● NP
Sarah J Converse (3/17) . . . . +● NP
1120◊ Dylan Bandy . . . . . 06●206.913.2072
◊ Richard C Bandy . . . . . 06●206.913.2072
1123 Kristan E Lortz (5/04) . . . . . 04● NP
Peter H Lortz (5/04). . . . . 04● NP
1124 Carol R Franzen . . . . . 81●206.524.1833
Clifford Roy Jonas . . . . . 81●206.524.1833
1127 Greg Scott Metcalf (12/04). . . 02● NP
Kristin E Metcalf (12/04) . . . . 02● NP
1128 Mary P Callahan (3/01) . . . . . 99● NP
James Roberts Powers (3/01) 99● NP
1131 Irawan Rahardja (4/11) . . . . . 11● NP
Maria S Rahardja (4/11) . . . . . 11● NP
1132 Colleen McShane . . . . . 84●206.524.9018
Mary Colleen McShane . . . . 84●206.524.9018
1135 Andrea Boughton Murray (7/12 12● NP
Rodney W Murray (7/12) . . . . 12● NP
1136 Jaime Arturo Suarez (8/08) . . 08● NP
Nicole M Suarez (8/08) . . . . . 08● NP
1139◊ Sabine R Friedman (5/08) . . . 07● NP
◊ Will M Friedman (5/08) . . . . 07● NP
1140◊ Okashi R Robles (3/93) . . . . . 93● NP
1143 ..... NP
1144 Diane Virginia Smith . . . . . 79●206.523.0585
1148 Kevin J Graham. . . . . 08●206.527.3232
Lori M Graham . . . . . 08●206.527.3232
1152 David M Fries . . . . . 99●206.523.6279
Mary O Okane. . . . . 99●206.523.6279
1156 Diane Kawabata (12/96) . . . . 88●206.527.9652
Dave Andrew Waataja (12/96) 88●206.527.9652
1160 ..... NP
1164 Michelle L Caulfield (8/03) . . . 03● NP
Michael C Lafon (8/03) . . . . . 03● NP

-WINONA AVE N INTS

1304 Jeremy E Farkas (1/15) . . . . . 12● NP
Loan T Nguyen DDS (1/15) . . . 12● NP
1310 Leonard Louis Cereghino . . . . + NP
Diane Adele McGinnis . . . . . 12● NP
Donna Lynn McGinnis . . . . . 06● NP
Loy McGinnis . . . . . 12● NP
1314 Diane M Ack (3/96). . . . . 96● NP
David A Tadlock (3/96) . . . . . 96● NP
1318 Rev Xiaodong Xu (6/12). . . . . 12● NP
Xiumei Xu (6/12). . . . . 12● NP
1322◊ Jennifer M Walsh (9/06) . . . . 06● NP
◊ Sam Walsh (9/06). . . . . 06● NP
★Washington Girls Soccer Camp 98 206.633.1595
1326 Jeffrey S Ward 05 206.588.0004
Nancy M Ward 05 206.588.0004

-KEEN WAY N INTS

257 RESIDENCE 3 BUSINESS

ADDRESS

-26TH AVE NW INTS
-EARL AVE NW INTS
2757 Robert D Flamiatos ... 94 ● 206.784.4341
Susan P Pearson ... 94 ● 206.784.4341
-28TH AVE NW INTS
2800 Thomas R Osborn ... +
2813 Stephen Andrew Saville (7/10) 10 ●
2815 ...
2816 Zachary T Altenau ... +
2820 Karen M Solne (5/01) ... 01 ● 206.297.0249
2823 ...
2824 Elton McAlpin ... 63 ● 206.783.9158
2827 Daniel B Millar (8/02) ... 02 ●
Peggy E Millar (8/02) ... 02 ●
-29TH AVE NW INTS
2905 David G Christensen (11/88) ... 88 ● 206.784.4304
2908 Angela Pedersen (5/00) ... 00 ●
Jon E Pedersen (5/00) ... 00 ●
2909 Michelle M Berger ... 98 206.782.0981
Debbie M Fetherston ... 98 206.782.0981
2914 Brian A Kinnear ... 08
2915 Karen Jean Fossum ... 98 ● 206.297.1595
Connon O Price ... 98 ● 206.297.1595
2920 Melanie A Hayes ... 11
2923 Paul R Vogt ... 64 ● 206.783.8316
Perry R Vogt ... 64 ● 206.783.8316
-30TH AVE NW INTS
3001 Dean Ramsey Fuller (6/10) ... 07 ● 206.257.0023
Melissa L Fuller (6/10) ... 07 ● 206.257.0023
3002 Mary J Kochendorfer ... 08
3007 Janice S Janofsky (10/89) ... 07 ●
3008 James Richard Blissett (3/06) ... 06 ●
Jeanne T Tsai (3/06) ... 06 ●
3011 Claude W Ginsburg (11/89) ... 93 ● 206.782.2390
3017 Sofia Rals Michelakis ... 12
3020 Kevin L Freeman (9/03) ... 73 ● 206.783.3529
Wanda L Freeman (9/03) ... 73 ● 206.783.3529
3023 Marilyn Lee McCarthy (2/98) ... 95 ● 206.789.9437
Timothy C McCarthy (2/98) ... 95 ● 206.789.9437
-31ST AVE NW INTS
3101 Ame Eric Anderson ... 65 ● 206.784.8680
Mary M Anderson ... 65 ● 206.789.5844
3102 Brian E Cromer (4/05) ... 05 ●
Renee A Devine (4/05) ... 05 ●
3106 Andrew R Martin ... 92 ●
Madeleine Ann Martin ... 92 ●
3107 Jason Robert Dickey ... 08
3110 ...
3111 Kenneth Ray Higgins ... 06
3117 Andrea Joyce Learned ... +
3118 Anthony Olmstead ... +
-32ND AVE NW INTS
3202 3211 ...
3215 Mary L Markey ... 65 ● 206.783.9173
3221 ...
-33RD AVE NW INTS
3301 Noriyoshi Sato ... 94
3306 John P Murphy (9/06) ... 05 ● 206.781.5226
Michael S Thacker (9/06) ... 05 ● 206.781.5226
3307 Anna Karin Roo ... 94 ● 206.784.8644
Gale E Roo ... 94 ● 206.784.8644
3311 Darlene Vera Westphal ... 66 ● 206.784.8637
Robert W Westphal ... 66 ● 206.784.8637
3314 Donalee Rutledge (5/78) ... 98 ●
Frederic B Rutledge (5/78) ... 98 ●
-34TH AVE NW INTS
230 RESIDENCE 5 BUSINESS

●76TH AVE S

CT 260.01 10401 - 12256 $C
CT 119.00 E 12066 - 12066 $D
CT 261.00 12715 - 13221 $D
10401 - 13221 98178

-S RYAN ST INTS
10401 ...
10417 Eric Hal Legrand (1/08) ... 01 ●
Alex R McGavin (1/08) ... 01 ●
10423 Carla Christina Kampsen (7/06) 06 ● 206.772.3893
Darren E Kampsen (7/06) ... 06 ● 206.772.3893
10429 Chris Marie Arace ... +
Matthew S Lewis ... +
10435★Hilite Seafood ... + 206.829.8962
Kam Wong (9/06) ... 06 ● 206.829.8962
Liane Wong (9/06) ... 06 ● 206.829.8962
10436 Joun Lamey ... 12
-GARDEN PL S INTS
-S 112TH ST INTS
11315 Allana Weinstein Ustanik (12/92) 92 ●
Roderick W Ustanik (12/92) ... 92 ●
-S 113TH ST INTS
-S 115TH ST INTS
11529 Jeanellen C Hendrickson ... 62 ● 206.772.1241
11541 Jason H Takahashi (9/86) ... 85 ● 206.772.1139
Yumi Y Takahashi (9/86) ... 85 ● 206.772.1139
-S 115TH PL INTS
-S 116TH ST INTS
11625 Michael M Gerred (2/00) ... 00 ● 206.772.9784
11631 Afrodite Pastroumas (3/13) ... + ●
11637 Maragaret Gasetoto ... 09
Kell Sane ... 09
-S 116TH PL INTS
11730 Howard Thordarson (8/97) ... 97 ● 206.772.2262
Tammie V Thordarson (8/97) ... 97 ● 206.772.2262
11801 ...
11802 Bettilyn Clingman (11/00) ... 00 ● 206.772.3778
Mike Edward Clingman (11/00) 00 ● 206.772.3778
11808 Celia Cabiltatzan Domondon (11/7) 93 ● 206.772.9583
Reynaldo S Domondon (11/7) 93 ● 206.772.9583
11809 Donell D Frazier (4/03) ... 01 ● 206.772.1089
Liza Anne Frazier (4/03) ... 01 ● 206.772.1089
11814 Josefa P Sangalang ... 96 ●
11820 Derek D Green Jr (1/79) ... 84 ●
Joyce M Green (1/79) ... 84 ●
-S 118TH PL INTS
11826 Gary Warren Martin (4/88) ... 92 ●
Pamella L Martin (4/88) ... 92 ●
11829 Keniquea Jean Mitchell ... 11
11832 Cherie M McCulloch (6/86) ... 88 ●
James I McCulloch (6/86) ... 88 ●
11833 Michael C Keels (9/91) ... 91 ● 206.772.0470
Roberta V Keels (9/91) ... 91 ● 206.772.0470
11836 Jennifer Tamayo Francisco (4/01) 01 ● NP
Ruperto F Francisco (4/01) ... 01 ● NP
11840 Leslie Renee Merklin ... 06 206.906.9268
11841 Albert McWhorter ... 11 NP
11844 Angela M Claro ... + NP
-S 120TH ST INTS
12004 Ann Frederick ... 09 ● NP
Paul F Frederick Jr ... 09 ● NP
12009♣ Jathan M Hall (8/12) ... + ● NP
12010 David Jau Lin (6/06) ... 06 ● NP
Xian O Ouyang (6/06) ... 06 ● NP
12015 Mukasa Balikuddembe (9/98) ... 98 ● 206.772.9593
Barbara Jeanine Daniel (9/98) 98 ● 206.772.9593
12016 ... NP
12019 Berhane Mengisteab Kifle (3/05) 05 ● 206.721.1897
Mebrat M Kifle (3/05) ... 05 ● 206.721.1897
12025 ... NP
12028 Halima A Elmi (6/09) ... 05 ● NP
12029 Emily B Binongcal (12/01) ... 92 ● NP
Robert C Binongcal (12/01) ... 92 ● NP
12034 12035 ... NP
12038◊ Denise L Elder (6/07) ... 07 ● 206.772.1263
◊ James Earl Elder Jr (6/07) ... 07 ● 206.772.1263
12044 Cynthia B Mason (3/92) ... 96 ● 206.772.4804
Fred G Mason (3/92) ... 96 ● 206.772.4804
12045 ... NP
12050 Amelia Franada ... 89 ● NP
Marvin Sumibcay Franada ... 89 ● NP
12051 ... NP
12056 Vickie L Rowe ... 06 NP
12066♣ Kao Saelee ... 05 NP
-S 122ND ST INTS
12204 Paul M Woods Sr (6/04) ... 02 ● NP
Priscilla A Woods (6/04) ... 02 ● NP
12207 Charlene Frances Edmondson (9/98) 99 ● 206.772.8354
Damon C Edmondson (9/96) ... 99 ● 206.772.8354
12210 Anthony Noccolino ... + NP
12213 ... NP
12216♣ May V Alipao (1/03) ... 03 ● NP
♣ Tim C Montero (1/03) ... 03 ● NP
12219 Larry R Lafrance ... 82 ● 206.772.0524
Stephanie L Lafrance ... 82 ● 206.772.0524
12222 Kelly R Guy (12/04) ... 03 ● 206.772.4854
12228 Nem Vin (9/04) ... 02 ● NP
Vantha Vin (9/04) ... 02 ● NP
12231 K Bailey ... 04 NP
12234 Chris Rudesill (4/00) ... 94 ● NP
Christopher Clayton Rudesill (4/00) 94 ● NP
12237 Djibril Thioune (5/08) ... 07 ● NP
Damika R Trimble (5/08) ... 07 ● NP
12238 Tim S Murphy ... 12 NP
12244 Laura L Harding ... 93 206.772.6848
12250 ... NP
12256 Venessa Angel Davis ... 06 NP
-S 124TH ST INTS
12417★King County Fire Protection District
11 206.772.1430
-S 126TH ST INTS
12610★US Bank ... 12 206.772.1457
-RENTON AVE S INTS
12715 Randle I Miller (6/87) ... 92 ● 206.772.4724
Wanda Leona Miller (6/87) ... 92 ● 206.772.4724
12721 Michael W Acord (3/11) ... 10 ● NP
Oanh K Acord (3/11) ... 10 ● NP
12722 Apartments
1 Robert Blazuk ... 11 NP
3 Marie A Chrisp ... 10 NP
3 Nicole P Chrisp ... 10 NP
2 Geneva F Decuire ... 07 NP
203 Anna Maree Gamble ... 09 206.772.1555
203 Steve Gamble ... 09 206.772.1555
105 E Hawk ... 00 206.772.3276
104 John Walter Minaker ... 08 206.772.4569
4 Sergey Velev ... + NP
5 Rachel Wanganga ... 07 206.772.6375
12726 Tanya H Draper ... 10 NP
12727 Lois Jean Englund ... 68 ● 206.772.6165
12744 Laray Gaither ... + NP
Monette Gaither ... + NP
-S 127TH ST INTS
-S 128TH ST INTS
12816 Karen J Candland ... 66 ● 206.772.4442
Wendell Rex Candland ... 66 ● 206.772.4442
12826 Albert V Wicker ... 67 ● 425.255.5592
12900 Grace Beeler ... 02 NP
12901 James J Barron ... 03 425.226.9796
Juantia Barron ... 03 425.226.9796
★Erik Nye The Tree Guy ... + 206.384.1008
-S 129TH ST INTS
12914 PHY Ban ... 11 NP
★Reinhart Electric ... 11 206.242.1853
13010 Michael Brendon Jorgenson ... + NP
13020 Jeff S Rasor (4/10) ... 08 ● NP
-S LANGSTON RD INTS
13221 ... NP
-S 132ND ST INTS
119 RESIDENCE 5 BUSINESS

●N 76TH ST

CT 29.00 102 - 147 $B
CT 28.00 312 - 949 $B
CT 35.00 0 727 - 727 $A
CT 27.00 1111 - 1326 $A
102 - 1326 98103

-1ST AVE NW INTS
102 Jeanie M Watkins ... 68 ● 206.789.0911
106 Ashley Elizabeth Claybaugh ... 06 NP
Erin Spruce Leonard ... 06 NP
110 Elaine D Peretti (3/07) ... 05 ● 206.659.0420
Paul M Peretti (3/07) ... 05 ● 206.659.0420
111 Anne McBride (10/85) ... 85 ● 206.782.5908
112 David Mingeaud ... 11 206.466.2645
116 Chiu Yang Lee (8/04) ... 08 ● 206.782.1870
Peggy Peifun Lee (8/04) ... 08 ● 206.782.1870
117 ... NP
118 Stephen D Maddox ... 07 NP
122 John F Sifferle ... 81 ● 206.783.3370
Madonna M Sifferle ... 81 ● 206.783.3370
126 ... NP
127 Suzanne D Duroux ... 86 ● 206.789.7750
Barry W Stoner ... 86 ● 206.789.7750
130 Ellen A Steele (6/03) ... 02 ● NP
Matthew Stephen Steele (6/03) 02 ● NP
131 Patricia A Holmes ... 64 ● 206.783.9320
Schylor P Holmes ... 64 ● 206.783.9320
135 Cori K Hagen (3/04) ... 02 ● NP
Mark E Hagen (3/04) ... 02 ● NP
137 Susan Elizabeth Selman (10/11) 11 ● NP
138 Kendall George Magnuson (3/00) 00 ● 206.781.9083
Stephanie Kay Nelson (3/00) ... 00 ● 206.781.9083
141 Hugh Edward Morrison Jr ... 05 NP
Pat Jean Morrison ... 05 NP
142 ... NP
147 Apartments
UPPR Tara Mary Bergin ... 04 NP
Gary F Euse ... 99 ● NP
Roberta J Hilton ... 84 NP
-GREENWOOD AVE N INTS
312 Joshua P Hammar ... 06 NP
Whitney B Hammar ... 06 NP
♣ Jillian S Mednick ... 04 206.297.1093
316 Alex W Wheeler ... 89 ● 206.784.6595
Brooke A Wheeler ... 89 ● 206.784.6595
317 ... NP
319★24 All Day Locksmith ... 09 206.708.2344
Nancy A McNulty ... 06 NP
William H McNulty ... 06 NP
321 Peter W Serafin ... 98 NP
324 ... NP
325 Andrea S Althauser (12/06) ... 06 ● NP
Derek Charles Althauser (12/06) 06 ● NP
326 Dorothy G Burnet (1/08) ... 08 ● NP
Esperie M Burnet (1/08) ... 08 ● NP
329 Renee Sikorra ... 04 NP
Jennifer Simpson ... 04 NP
332 May Greg ... 86 ● 206.783.2483
Greg L May ... 86 ● 206.783.2483
333 Nancy Lynne Greffin ... 08 NP
334 Brenda Isabel Cram (7/98) ... 97 ● 206.783.0479
Jennifer M Wallace (7/98) ... 97 ● 206.783.0479
337 Lillian C Yetter (4/87) ... 94 ● 206.782.2832
Robert L Yetter Jr (4/87) ... 94 ● 206.782.2832
340 Mary L Carlson ... 05 NP
342◊ Christopher J Burrows (3/06) ... 06 ● NP
◊ Kieran M Snyder (3/06) ... 06 ● NP
343 Albert B Sather ... 70 ● 206.784.9760
Rose May Sather ... 70 ● 206.784.9760
347 Becky L Kantor (9/01) ... 01 ● 206.784.5877
Kevin Lederman (9/01) ... 01 ● 206.784.5877
348 David James Wirth (8/01) ... 99 ● 206.706.2895
Kathleen V Wirth (8/01) ... 99 ● 206.706.2895
350◊ Steve M Cohen (2/07) ... 06 ● NP
353 ... NP
354 Carol Sue Zander (6/92) ... 92 ● 206.782.3828
355 Kim T Le (11/07) ... 07 ● NP
Tuan Q Le (11/07) ... 07 ● NP
358 J Sexton (7/99) ... 99 ● 206.782.1754
Jane E Sexton (7/99) ... 99 ● 206.782.1754
359◊ Emma B Timmins-Schiffman (9/08) 07 ● NP
◊ Ethan R Timmins-Schiffman (9/08) 07 ● NP
360◊ Melina May Husfid (2/06) ... 05 ● NP
◊ Oliver A Husfid (2/06) ... 05 ● NP
361 ... NP
362 Anna Christine Wagner (7/93) 93 ● 206.782.5109
Courtney D Wagner-Robinson (7/93) 93 ● 206.782.5109
363 Cathy C Hahn (5/99) ... 99 ● 206.789.6913
-DAYTON AVE N INTS
503 Andrea L Siderius ... + NP
504 Roger Lee Dyment ... 69 ● 206.782.3563
William F Dyment ... 69 ● 206.782.3563
509 Eugene D Smith (6/91) ... 91 ● 206.789.1088
Linda L Smith (6/91) ... 91 ● 206.789.1088
510 Mayrie Chapman ... 72 ● 206.789.1437
Virginia Lynn Chapman ... 72 ● 206.789.1437
511 Holly Elizabeth Eydenberg (10/12) 11 ● NP
Steven Kyle Luke (10/12) ... 11 ● NP
512 Teresa D Lanigan-Sintay (2/91) 93 ● NP
Stephen Sintay (2/91) ... 93 ● NP
514 Pete L Colbeck ... 91 ● 206.781.7242
Terri Grace Colbeck ... 91 ● 206.781.7242
★Colbeck & Company Inc ... 94 206.781.2200
518 Jan E Davis ... 98 ● NP
Marcy Ann Kutok ... 98 ● NP
520◊ John M Ilich (11/99) ... 99 ● NP
◊ Donna C Stephan (11/99) ... 99 ● NP
521♣ Peggy A Halwachs (2/13) ... + ● NP
♣ Gail Ann Houser (2/13) ... + ● NP
524 Charlene M Kern (10/03) ... 03 ● NP
Timothy Sherman (10/03) ... 03 ● NP
525 Ron Keith Borrevik (4/94) ... 94 ● NP
528◊ Alexandra Brenton ... 07 NP
◊ Kathleen Ann Chludzinski ... 02 206.706.5326
◊ L Chludzinski ... 02 206.706.5326
529 Judith A Howard (1/02) ... 94 ● 206.706.1026
531 Sandy D Russel (3/92) ... 99 ● 206.784.6006
Raymond G Russell (3/92) ... 99 ● 206.784.6006
532 Maureen L Beaulieu (5/91) ... 95 ● NP
Francis R Iaconelli (5/91) ... 95 ● NP
536 Dawn R Abbott ... 10 NP
537 541 ... NP
547 Claude P Iosso (4/01) ... 01 ● 206.297.6278
Holly Iosso (4/01) ... 01 ● 206.297.6278
548 ... NP
551 Catherine G Coombs (6/04) ... 04 ● NP
Matthew D Coombs (6/04) ... 04 ● NP
560 Lara E Igfitzin (5/06) ... 06 ● 206.782.5446
Vladimir V Raskin (5/06) ... 06 ● 206.782.5446
-FREMONT AVE N INTS
701 Rachel Marie Trudelle ... 10 206.402.6970
Stephen Joseph Trudelle ... 10 206.402.6970
706 ... NP
707 Amy R Cutter ... 07 NP
710 ... NP
711 Diane Smoak Brinson (3/11) ... 08 ● 206.466.1723
James Randall Brinson Jr (3/11) 08 ● 206.466.1723
712 ... NP
715 Andrew Dylan Myers ... 09 206.402.4355
716 Celina K Glassburn (7/06) ... 06 ● 206.706.5339
Samuel B Glassburn (7/06) ... 06 ● 206.706.5339
719 Jessica Nowakowski Szelag (10/09) 08 ● NP
Matthew J Szelag (10/09) ... 08 ● NP
720 Marlene H Gaw ... 82 ● 206.784.2514
721 Carolyn Anne Busby (3/05) ... 05 ● NP
724 725 ... NP
726 Lisa Anne Sassi (3/99) ... 92 ● 206.782.4669
727♣ Craig M Suhadolnik ... 04 ● NP
731 Kerry Frances Sturgill (4/05) ... 04 ● NP
733 Peggy Sue Wolf ... 99 NP
734◊ Edna L Clem ... 62 ● 206.784.9473
◊ Joseph L Clem ... 62 ● 206.784.9473
736 ... NP
737 Katharine C Kingery ... + NP
741 Benjamin L Chobot (7/03) ... 02 ● NP
T Watson (7/03) ... 02 ● NP
742 ... NP
743 Brian J McConaghy (4/08) ... 07 ● 206.922.3566
Shirin McConaghy (4/08) ... 07 ● 206.922.3566
746 Jessica E Young ... 05 NP
748◊ Gina S Franco ... 11 206.547.2824
◊ John Clinton Franco ... 11 206.547.2824
749 ... NP
750 Melissa Lynn Patterson (12/12) + ●
751 Julia H Becke (6/07) ... 05 ● 206.829.8647
Michael A Becke (6/07) ... 05 ● 206.784.5366
756♣ Kathryn E Giannaros ... 95 ● NP
♣ Niko K Giannaros ... 95 ● NP
Carrie J Glover ... 05 NP
Trish Marie Glover ... 05 NP
-LINDEN AVE N INTS
902 David Brian Swenson (12/10) ... 07 ● NP
Nancy D Swenson (12/10) ... 07 ● NP
906 Christopher Alexander Demas (9/12) 09 ● NP
Jana A Demas (9/12) ... 09 ● NP
909 ... NP
910 Eric E Aman (9/02) ... 00 ● 206.789.2124
Heather L Aman (9/02) ... 00 ● 206.789.2124
911 ... NP
912 Christy Marie Severance ... 02 NP
914♣ Coralie A Smith ... 84 ● 206.782.4338
♣ Michael I Smith ... 84 ● 206.782.4338
919 ... NP
920 Lani H Banting (10/07) ... 04 ● NP
Derek Michael Wolcoski (10/07) 04 ● NP
923 Karl J Reinke (8/02) ... 02 ● 206.417.4620
924 Barbara Lee Leischner (9/08) 96 ● NP
Gary D Leischner (9/08) ... 96 ● NP
927 Kelly L Curtis ... 01 NP
929 ... NP
930 James C Dean ... 75 ● 206.783.8623
Patricia R Dean ... 75 ● 206.783.8623
931◊ Patrick F Dwyer (9/78) ... 82 ● 206.784.2455
◊ Paul W Dwyer (9/78) ... 82 ● 206.784.2455
933 Maria Cristina Cuenca ... 10 NP
936 Peter C Nevius (8/04) ... 04 ● NP
Anastacia S Ruiz (8/04) ... 04 ● NP
940◊ Michelle S Evans ... 07 NP
◊ Ian R Jackson ... 07 NP
941 Joseph M Rodriguez (1/99) ... 99 ● NP
Marisa J Rodriguez (1/99) ... 99 ● NP
943 ... NP
946 Daniel Lee Fife (2/12) ... 11 ● NP
947 Arthur Richard Chaffee Jr ... 84 ● NP
Richard A Chaffee ... 84 ● NP
949 Matthew Michael Mayhan ... 04 NP
-AURORA AVE N INTS
1111 Heather M Hiromoto ... 06 NP
1112 Brian A Jones ... 01 ● 206.526.7061
Glyn H Jones ... 01 ● 206.526.7061
1115 Lara Long (8/04) ... 04 ● 206.397.3475
Brian McCormick (8/04) ... 04 ● 206.397.3475
1116 Jodi B Ginsberg ... +
1119 Danelle W Heatwole (5/01) ... 00 ● NP
Ryan Trent Heatwole (5/01) ... 00 ● NP
1120◊ Richard C Bandy (1/06) ... 06 ● 206.913.2072
◊ Sonya Lea Ralph (1/06) ... 06 ● 206.913.2072
1123 Kristan E Lortz (5/04) ... 04 ● NP
Peter H Lortz (5/04) ... 04 ● NP
1124 Clifford Roy Jonas ... 81 ● 206.524.1833
Carol C Jones ... 81 ● 206.524.1833
1127 Greg Scott Metcalf (12/04) ... 02 ● NP
Kristin E Metcalf (12/04) ... 02 ● NP
1128 James Roberts Powers (3/01) 99 ● NP
Nancy C Powers (3/01) ... 99 ● NP
1131 Irawan Rahardja (4/11) ... 11 ● NP
Marla S Rahardja (4/11) ... 11 ● NP
1132 Colleen McShane ... 84 ● 206.524.9018
Mary Colleen McShane ... 84 ● 206.524.9018
1135 Andrea Boughton Murray (7/12) 11 ● NP
Rodney W Murray (7/12) ... 11 ● NP
1136 Jaime Arturo Suarez (8/08) ... 07 ● NP
Nicole M Suarez (8/08) ... 07 ● NP
1139◊ Sabine R Friedman (5/08) ... 07 ● NP
◊ Will A Friedman (5/08) ... 07 ● NP
1140◊ Okashi R Salguero (3/93) ... 93 ● NP
1143 Alejandro J Samano (2/02) ... 00 ● 206.524.4192
Chelsea Linn Samano (2/02) ... 00 ● 206.524.4192
1144 Diane Virginia Smith ... 79 ● 206.523.0585
1148 Kevin J Graham ... 06 ● 206.527.3232
Lori M Graham ... 06 ● 206.527.3232
1152★David Fries Electrical Services
04 206.522.9925
David N Fries ... 99 ● 206.523.6279
Mary O Okane ... 99 ● 206.523.6279
1156 Diane Kawabata (12/96) ... 88 ● 206.527.9652
Dave Andrew Waatala (12/96) 88 ● 206.527.9652
1160 Tiller L Beauchamp ... + NP
1164 Michael C Lafon ... 03 ● NP
Michelle L Lafon ... 03 ● NP
-WINONA AVE N INTS
1310 Donna Lynn McGinnis ... 06 ● NP
Scott Jay McGinnis ... 06 ● NP
Holly Sato ... + NP
1314 Dr Diane M Ack (3/96) ... 96 ● NP
David A Tadlock (3/96) ... 96 ● NP
1318 Ying Zheng ... 11 NP
1322◊ Jennifer M Fagen (9/06) ... 06 ● NP
◊ Andrew Royer Walsh (9/06) ... 06 ● NP
★Washington Girls Soccer Camp 98 206.633.1595
1326 Jeffrey S Ward ... 05 206.588.0004
Nancy M Ward ... 05 206.588.0004
-KEEN WAY N INTS
245 RESIDENCE 4 BUSINESS

CT - Census Tract $ASB,Etc. - Census Tract Home Value Rating ★ - Business Listing ⊙ - Duplicate Phone Number At This Business Address ◊ - No Mail Solicitation

814 ..... NP
815 Jeffrey Lin Hall ..... 84●206.783.9060
Roger Gary Lackman ..... 84●206.783.9060
★Landscapes By Lackman . 93 206.783.9060
818 ..... NP
-DIBBLE AVE NW INTS
852◊ Sandra G Olson ..... 03●206.783.3750
856 ..... NP
865 Claudia Jean Glaze ..... 94●206.706.9824
-9TH AVE NW INTS
902 Kendra Andrea Howe ..... 00● NP
906 James M Gurley ..... 94●206.706.1061
-10TH AVE NW INTS
1002 Daniel V Carbone ..... 62●206.783.2476
Ruth H Carbone ..... 62●206.783.2476
-11TH AVE NW INTS
1102 Paul R Kent ..... 92● NP
Rebecca R Kent ..... 92● NP
1106 Ellen Cragg ..... 75●206.784.8624
John Robert Cragg ..... 75●206.784.8624
1110◊ Larry J Pendleton ..... 76●206.789.3983
◊ Timothy M Pendleton ..... 76●206.789.3983
1116 Diane Elizabeth Oneill ..... 87●206.783.5772
Michael P Oneill ..... 87●206.783.5772
-12TH AVE NW INTS
1202 Esther Lorraine Rockwell ..... 93● NP
Glen Ellis Rockwell ..... 93● NP
1206★TC Legal Services Llc 00 206.782.2203
1210 Catharine L Cuenca ..... 89●206.784.7688
Edison A Cuenca ..... 89●206.784.7688
1216 Bill Roger Dunnell ..... 95●206.781.1794
Diana Marlene Dunnell ..... 95●206.781.1794
-13TH AVE NW INTS
1320★Seattle Public Schools ... 01 206.252.1660
★Seattle School DIS 1 King Cty 04 206.252.1650
-14TH AVE NW INTS
1406 Michael Robert Gunderson .. 03●206.783.5123
Patricia A Gunderson ..... 03●206.783.5123
1410 Jennifer L Force ..... 97●206.783.9426
Schreiber Force ..... 97●206.783.9426
1427♣ David Dickerson ..... 06 NP
-ALONZO AVE NW INTS
1452◊ Frederick D Huntsman ..... 89●206.784.6054
◊ Barbara J Roberts ..... 89●206.784.6054
-MARY AVE NW INTS
1470 Stephen G Rice ..... 94●206.783.8125
Raymond Lee Spizman ..... 94●206.783.8125
1478◊ Amber Lyn Hahto ..... 99●206.782.4059
◊ Kevin Paul Pelletier ..... 99●206.782.4059
1482 Chris Peterson ..... 95●206.782.9643
Kim M Peterson ..... 95●206.782.9643
1484 Gabriela I Decastro ..... 04● NP
-15TH AVE NW INTS
1501 M L Holloway ..... 05 NP
1503 ..... NP
1505 Ron Wirt Sr 95 206.789.9734
1507 Richard E Rodgers ..... 06 NP
1509 Joseph Mills ..... 02 NP
1525♣ Corey D Evans ..... 04● NP
-16TH AVE NW INTS
-19TH AVE NW INTS
1910 ..... NP
1911 David A Patton Sr ..... 06● NP
Sarah B Patton ..... 06● NP
-20TH AVE NW INTS
-21ST AVE NW INTS
2115 Dennis Michael Chandler ... 93●206.784.2403
Miste Chandler ..... 93●206.784.2403
-22ND AVE NW INTS
2209★Clearpoint Appraisals Inc . 98 206.789.7400
-23RD AVE NW INTS
-JONES AVE NW INTS
2359 James S Ormiston ..... 03● NP
-24TH AVE NW INTS
2405 Apartments
Hawa Issack ..... 04 NP
B ♣James M Peterson ..... 04 NP
A ♣Kyle M Wailor ..... 02 NP
2408 ..... NP
-25TH AVE NW INTS
2515 Ruth D Teichroeb ..... 92●206.706.0275
-26TH AVE NW INTS
-EARL AVE NW INTS
2757 Robert D Flamiatos ..... 94●206.784.4341
Susan P Pearson ..... 94●206.784.4341
-28TH AVE NW INTS
2800 Dan L Tibbles ..... 92●206.789.5327
Holly K Tibbles Atty ..... 92●206.789.5327
2813 Polly C Johnson ..... 97●206.781.3413
Robert B Johnson ..... 97●206.781.3413
2815 ..... NP
2816 Gary Philip Smaby ..... 05●206.282.2821
Nancy Kristen Smaby ..... 05●206.282.2821
★Sunshine Yoga Llc ..... + 206.282.2821
2820 Karen M Soine ..... 01●206.297.0249
2823◊ Matthew L Koenig ..... 04●206.281.7143
◊ Sara Malmin Koenig ..... 04●206.281.7143
2824 Elton L McAlpin ..... 63●206.783.9158
2827 Daniel Millar ..... 02● NP
Peggy E Millar ..... 02● NP
-29TH AVE NW INTS
2905 David G Christensen ..... 88●206.784.4304
2908 Jon E Pedersen ..... 00●206.784.5566
2909 Michelle M Berger 98 206.782.0981
D Fetherston 98 206.782.0981
2914 Kirsten B Burt ..... 03● NP
2915◊ Karen J Fossum ..... 98●206.297.1595
◊ Connon O Price ..... 98●206.297.1595
2923 Marie P Vogt ..... 64●206.783.8316
Paul R Vogt ..... 64●206.783.8316
-30TH AVE NW INTS
3001 June Marguth Steinke ..... 68●206.784.6309
3002 ..... NP
3007 Janice S Janofsky ..... 99● NP
3008★The Design Collective Inc . + 206.282.2730
3011◊ Claude W Ginsburg ..... 93●206.782.2390
3014 Erin Day 05 206.523.4860
★System Design Sciences Llc 04 206.781.5100
3020 Kevin Freeman ..... 73●206.783.3529
Wanda L Freeman ..... 73●206.783.3529
3023 Marilyn C McCarthy ..... 95● NP
Timothy C McCarthy ..... 95● NP
-31ST AVE NW INTS
3101◊ Arne Eric Anderson ..... 65●206.784.8680
◊ Maribeth Lien Kristjanson ... 65●206.789.5844
3102◊ Brian W Cromer ..... 05● NP
◊ Renee M Devine ..... 05● NP
3107♣ Larico David Evans ..... 99 NP
3110 ..... NP
3111 Peter M Ness ..... 62● NP
Ragna L Ness ..... 62● NP
3117◊ William F Jenkins ..... 62●206.782.3139
3118◊ Jennifer L Busch ..... 01●206.783.3614
◊ Justin G Busch ..... 01●206.783.3614
★Busch & Son Inc 02 206.706.7376
-32ND AVE NW INTS
3202 Patrick J McMahon 02 206.789.1987
3211◊ John J Martin ..... 94●206.297.0478
◊ Nancy Harriet Martin ..... 94●206.297.0478
3221 ..... NP
-33RD AVE NW INTS
3301 ..... NP
3306 John P Murphy ..... 06●206.781.5226
Margaret Mary Treleven ..... 06●206.781.5226
3307★Oceanview RV Village Part 95 206.784.8644
Anna Karin Roo ..... 94●206.784.8644
Gale E Roo ..... 94●206.784.8644
3311 Darlene V Westphal ..... 66●206.784.8637
3314 Frederic B Rutledge Sr ..... 98● NP
Mary Donalee Rutledge ..... 98● NP
-34TH AVE NW INTS
217 RESIDENCE 17 BUSINESS

● 76TH AVE S

CT 260.01 10401 - 12740 $D
CT 261.00 12704 - 13221 $E
10401 - 13221 98178

-S RYAN ST INTS
10401◊ Gilbert S Gasca ..... 02●206.772.4974
◊ Rachelle M Gasca ..... 02●206.772.4974
★Grg Nutrition ..... 04 ..
★Grg Sales. 05 206.772.4974
10417 Eric H Legrand ..... 01● NP
Alex R McGgavin ..... 01● NP
10423 Anthony Bernik ..... 55●206.772.2023
◊ Carta Ann Kampsen ..... 06● NP
◊ Frank B Kampsen ..... 06● NP
10429 Alexander C Callahan ..... 07●206.275.3934
Deborah A Callahan ..... 07●206.275.3934
10435 Anh L NGO ..... 06●206.829.8962
Kam Wong ..... 06●206.829.8962
10436 D Morton ..... 04●206.772.2699
Darla S Morton ..... 04●206.772.2699
-GARDEN PL S INTS
-S 112TH ST INTS
11315 Aliana W Ustanik ..... 92●206.772.7449
Roderick W Ustanik ..... 92●206.772.7449
-S 113TH ST INTS
-S 115TH ST INTS
11529 Robert H Hendrickson ..... 62●206.772.1241
11541 Hiro K Takahashi ..... 85●206.772.1139
Kazuko S Takahashi ..... 85●206.772.1139
★Takahashi Consultant.... 02 206.772.1139
-S 115TH PL INTS
-S 116TH ST INTS
11625 Michael M Gerred ..... 00●206.772.9784
11631 Ceya M Blakey ..... 95●206.772.2521
James E Blakey ..... 95●206.772.2521
11637 ..... NP
-S 116TH PL INTS
11730 Tammie V Huff ..... 97●206.772.2262
Howard Thordarson ..... 97●206.772.2262
11801 Theresa Callahan 05 206.772.5128
11802 Bettilyn Clingman ..... 00●206.772.3778
Mike E Clingman ..... 00●206.772.3778
★Clingman Drywall 98 206.276.2878
11808 Celia C Domondon ..... 93● NP
Reynaldo S Domondon ..... 93● NP
11809 Liza T Frazier ..... 03●206.772.1089
Lisa A Thomas ..... 03●206.772.1089
11814 Felipe C Sangalang ..... 96● NP
Josefa P Sangalang ..... 96● NP
11820 Joyce M Green ..... 84● NP
-S 118TH PL INTS
11826 Gary W Martin ..... 92● NP
Pamella L Martin ..... 92● NP
11829 Khoa Nguyen ..... 04●206.772.4243
11832 Cherie M McCulloch ..... 88●206.772.4915
James I McCulloch ..... 88●206.772.4915
11833 Michael C Keels ..... 91●206.772.0470
Roberta V Keels ..... 91●206.772.0470
11836 Jennifer T Francisco ..... 01● NP
Ruperto F Francisco ..... 01● NP
11840 Emelita R Barber ..... 91●206.772.5191
Ernest C Barber ..... 91●206.772.5191
11841 Adriana H Vera ..... 94● NP
Fidel Alfonso Vera ..... 94● NP
-S 120TH ST INTS
12004 Charles B Chase ..... 02● NP
Edwards Christopher ..... 03 NP
Harriet Mooregarcia ..... 02 NP
Ronald N Pleasant ..... 01● NP
Stefanie M Pleasant ..... 01● NP
12009 Hai M Nguyen ..... +● NP
Thuy H Tran ..... +● NP
12010 Xian Ouyang ..... 06● NP
★Worldlink Investment Group Llc 07 206.778.5359
12015★Am PM Exterminators Llc 06 206.571.7580
Mukasa Balikuddembe ..... 98●206.772.9593
★Buildup Llc 07 206.382.0401
Barbara Jeanine Daniel ..... 98●206.772.9593
12016 Aaron Ross ..... 07●206.772.2303
12019♣ Berhane M Kifle ..... 05●206.721.1897
♣ Mebrat M Kifle ..... 05●206.721.1897
12022♣ Judy S Parker ..... + NP
♣ Gordon J Scott ..... + NP
12025 Speedy Harris ..... + 206.328.2429
12029 Geralynne B Oligo ..... 92● NP
Robert S Oligo ..... 92● NP
12034 Ton C Duong ..... 07● NP
12035 Sheree Chante McClendon .. 98● NP
12038 Denise L Elder ..... 07● NP
James Earl Elder Jr ..... 07● NP
12039 Olive Kamau ..... 02●206.772.6669
Robert N Kamau ..... 02●206.772.6669
12044 Cynthia B Mason ..... 96●206.772.4804
Fred G Mason ..... 96●206.772.4804
12045 ..... NP
12050 Laurita Sumibcay Franada .. 89●206.772.4650
Melidon S Franada ..... 89●206.772.4650
12066♣ Kao Saelee ..... 05 NP
-S 122ND ST INTS
12204 Paul M Woods ..... 02● NP
Priscilla A Woods ..... 02● NP
12207 Carol A Edmondson ..... 99●206.772.8354
Damon C Edmondson ..... 99●206.772.8354
12210 Maria Sifuentez ..... + NP
12213 Cortez Charles ..... + NP
12216 May R Alipao ..... 03●206.772.8448
12219 Judith Lafrance ..... 82●206.772.0524
Larry R Lafrance ..... 82●206.772.0524
12222 Kelly R Guy ..... 03● NP
12225 Jillian Moore ..... 04●206.772.2894
Robert Earl Moore ..... 04●206.772.2894
12228 Sngoeun Tomg ..... 02●206.772.3661
Nem Vin ..... 02●206.772.3661
12231 K Bailey ..... 04 NP
12234 Christopher C Rudesill ..... 94● NP
12237 James W Laremore ..... 07● NP
12238 Jeanne M Robbins ..... 04● NP
12243 Kendra Lonning ..... 06 NP
12244 Laura L Harding 93 206.772.6848
12250 Willie L Mills ..... 05 NP
12256 BA Chi Nguyen ..... 94●206.772.1067
Cuong Chi Nguyen ..... 94●206.772.1067
-S 124TH ST INTS
12424★King County Fire District 20 97 206.772.1430
-S 126TH ST INTS
12610★U S Bank 98 206.772.1457
★US Bank National Association 03⊙206.772.1457
★US Bank Ubank Atms At Branch Ls 02⊙206.772.1457
-RENTON AVE S INTS
12704★♣ Rays West Hill Family Enr 94 206.772.2050
★♣ Renton Area Yoth&Fml Serv 05⊙206.772.2050
12715 Randle I Miller ..... 92● NP
Wanda Leona Williams ..... 92● NP
12721 ..... NP
12722 Apartments
204 Merrydean Edwards ..... + NP
204 Merrydean Grant ..... + NP
1 Adam L Handford ..... + NP
105 E Hawk 00 206.772.3276
104 Amy J Jennings ..... 00 NP
101 John W Minaker 99 206.772.4569
205 Brenda L Nelson 05 206.772.2777
205 Zena Rene Nelson 05 206.772.2777
♣ Samele Paulos 07 206.772.6066
1048 Selamawit Paulos 02 206.772.2976
3 Toy Rodriguez ..... + NP
202 Sophia Yohannes ..... 04 NP
12726 Lia Fua ..... + 206.708.6958
Sam Johnson ..... 07 NP
Medhanit Meshesha ..... 06● NP
Salaia Nukutala ..... + NP
W W Parkhurest 04 206.772.6787
12727 Eric P Englund ..... 68● NP
Lois Jean Englund ..... 68● NP
12740♣ Leon Halelaaiberti ..... 02 NP
-S 127TH ST INTS
-S 128TH ST INTS
12816 Karen J Candland ..... 66●206.772.4442
Wendell Rex Candland ..... 66●206.772.4442
12826 Albert V Wicker ..... 67●425.255.5592
Olpha C Wicker ..... 67●425.255.5592
12900 ..... NP
12901 Ashlie Barron 03 425.226.9796
James J Barron 03 425.226.9796
-S 129TH ST INTS
12914★Reinhart Electric And Service 03 206.242.1853
◊ Virginia A Volin ..... 04 NP
13020 Koua L Nirapienranant ..... 92● NP
Ratchnaee Nirapienranant .. 92● NP
-S LANGSTON RD INTS
13221 Ken V Leach 99 425.255.3019
TJ J Leach 99 425.255.3019
-S 132ND ST INTS
135 RESIDENCE 14 BUSINESS

● N 76TH ST

CT 29.00 102 - 147 $B
CT 35.00 172 - 1310 $A
CT 28.00 312 - 949 $B
CT 27.00 1111 - 1326 $A
102 - 1326. 98103

-1ST AVE NW INTS
102 Jeanie M Watkins ..... 68●206.789.0911
106 ..... NP
110 Elaine D Peretti ..... 06● NP
111 Anne McBride ..... 85● NP
112 Michele C Meske ..... + 206.729.2471
Gregor A Moulton ..... + 206.729.2471
116◊ Peggy Peifun Lee ..... 04●206.782.1870
◊ Daniel J Vonseggern ..... 04●206.782.1870
117 Kathleen Ann Kutz ..... 89● NP
118 ..... NP
121★65th Street Investments Llc + 206.789.1718
122◊ John F Sifferle ..... 81●206.783.3370
◊ Madonna M Sifferle ..... 81●206.783.3370
126 Ellen Davis ..... 96●206.783.2235
Patricia Esther Davis ..... 96●206.783.2235
127◊ Barry W Stoner ..... 86●206.789.7750
◊ Suzanne Stoner ..... 86●206.784.7372
130 Ellen A Steele ..... 02● NP
Matthew S Steele ..... 02● NP
131◊ Patricia A Holmes ..... 64●206.783.9320
◊ Schylor P Holmes ..... 64●206.783.9320
135 Mark E Hagen ..... 02●206.297.1998
Cori K Zukeran ..... 02●206.297.1998
137◊ Kathleen S Kemper ..... 79●206.789.9255
◊ Kraig A Kemper ..... 79●206.789.9255
138◊ Kendall George Magnuson .. 00●206.781.9083
◊ Stephanie Kay Nelson ..... 00●206.781.9083
141 Frank Donald Strack 06 206.913.2112
142 Nathan B Hollifield ..... + NP
143 ..... NP
146◊ Lauralee Smith ..... 89● NP
◊ Richard Elliott Smith ..... 89● NP
147 Gary F Euse ..... 99● NP
Roberta J Hilton ..... 84 NP
172♣ E C Greig ..... 01● NP
♣ Richard Greig ..... 01● NP
-GREENWOOD AVE N INTS
312 Apartments
♣ Faye Fry ..... 07 NP
301 Whitney Hammar ..... + NP
303 Amy Beth Hendrickson ..... 04 NP
201 Douglas E Lockhart 05 206.282.9794
♣ Jillian S Mednick 04 206.297.1093
102 Brad Smarjesse 02 206.706.7846
♣ Morag K Stewart 07 206.297.6375
1 C S Timm ..... 00 NP
316 Brad C Wheeler ..... 89●206.784.6595
Brooke A Wheeler ..... 89●206.784.6595
317 Martin J Walz III ..... 92●206.784.2599
Westberg M Walz ..... 92●206.784.2599
321◊ Laun J Kraemer ..... 98● NP
324 Robin A Pederson ..... 84●206.784.9462
325 Andrea S Althauser ..... 06● NP
Derek C Althauser ..... 06● NP
326 Dorothy G Burnet ..... +● NP
Esperie I Burnet ..... +● NP
329 Renee Sikorra 04 206.789.0771
332 Greg L May ..... 86●206.783.2483
334 Brenda Isabel Cram ..... 97●206.783.0479
Jennifer M Wallace ..... 97●206.783.0479
337★The Route 66 Big Ben.... 06 206.782.2832
Jr Yetter ..... 94●206.782.2832
Lilian C Yetter ..... 94●206.782.2832
340◊ Martin S Morris ..... 02● NP
342 Christopher J Burrows ..... 06● NP
Kieran M Snyder ..... 06● NP
343 Lisa Marie Sather ..... 70●206.784.9760
Rose May Sather ..... 70●206.784.9760
347 Becky L Kantor ..... 01●206.784.5877
Kevin Lederman ..... 01●206.784.5877
348 David James Wirth ..... 99●206.706.2895
Kathleen V Wirth ..... 99●206.706.2895
350◊ ♣ Steven M Cohen ..... 06●206.706.0518
353 ..... NP
354 Caroli S Zander ..... 92●206.782.3828
355 ..... NP
358 J Sexton ..... 99●206.782.1754
Jane E Sexton ..... 99●206.782.1754
359 Brenda W Kramer ..... 86●206.784.5018
James V Kramer ..... 86●206.784.5018
★Kramer Consulting Inc ... + 206.784.5018
360 Oddvar K Huslid ..... +● NP
Reying Huslid ..... +● NP
361♣ James A Jackson ..... 94●206.783.6809
♣ Mary T Jackson ..... 94●206.783.6809
362 Kathleen T Wagner ..... 93●206.782.5109
Stan D Wagner ..... 93●206.782.5109
363 Cathy C Hahn ..... 99● NP
-DAYTON AVE N INTS
503 ..... NP
504 William F Dyment ..... 69●206.782.3563
506 Andrew Walsh ..... + 206.545.1863
509 Linda L Smith ..... 91●206.789.1088
510 Virginia Lynn Chapman ..... 72●206.789.1437
511 Gregory Colin Narver ..... 95●206.706.7593
Priscilla Narver ..... 95●206.706.7593
512 Teresa L Lanigan-Sintay ... 94● NP
Stephen Sintay Jr ..... 94● NP
514 Pete L Colbeck ..... 91● NP
Terri G Colbeck ..... 91● NP
★Colbeck Co Inc 95 206.781.2200
515 Vatsek V Parda ..... 62●206.782.4056
518 Jan E Kutok ..... 98●206.781.2084
Marcy Ann Kutok ..... 98●206.781.2084
520◊ John M Ilich ..... 99● NP
◊ Donna C Stephan ..... 99● NP
521 ..... NP
524 Charlene M Kern ..... 03● NP
★Stylish Solutions Inc .... + ..
525 Ron Keith Borrevik ..... 94●206.789.9508
528◊ Kathleen A Chludzinski 02 206.706.5326
◊ L Chludzinski 02 206.706.5326
529 Judith A Howard ..... 94●206.706.1026
531 Raymond G Russell ..... 99●206.784.6006
Sandy Russell ..... 99●206.784.6006
532 Maureen L Beaulieu ..... 95● NP
Francis R Iaconelli ..... 95● NP
536◊ Janneke Hillerislambers 94 206.784.3913
◊ A Runte 94 206.784.3913
537◊ Carrie D Cole ..... 00● NP
◊ David B Cole ..... 00● NP
541★Jessica Ryan ..... + 206.678.0720
544 Joanne N Fairleigh ..... 88●206.789.1072
547★Clove Designs Llc..... + ..
Claude P Iosso ..... 01●206.297.6278
Holly Nelson ..... 01●206.297.6278
548 Melissa A Weiland ..... 01●206.297.2242
551 Catherine G Coombs ..... 04● NP
Matthew D Coombs ..... 04● NP
560 Lara E Iglitzin ..... 06●206.782.5446
Vladimir V Raskin ..... 06●206.782.5446
-FREMONT AVE N INTS
701 Rhoda M Stockwell ..... 03● NP
William P Stockwell ..... 03● NP
706★Musicians Photo Service . 96 206.783.3216
Dennis R Shadduck ..... 73●206.783.3216
707 ..... NP
710 Stephen J Melson ..... 06 NP
711 ..... NP
712 John L Hynd ..... 84● NP
V E Hynd ..... 84● NP
715 Adam Reuhl ..... + NP
716 Celina K Glassburn ..... 06●206.706.5339
Samuel B Glassburn ..... 06●206.706.5339
719 Karolyn Hicks ..... 06● NP
720◊ Marlene H Gaw ..... 82●206.784.2514
721 Carolyn A Busby ..... 05● NP
David Busby ..... 05● NP
724 ..... NP
725◊ Edward A Carr ..... 82●206.789.0355
◊ Elizabeth H Carr ..... 82●206.789.0355
726 Lisa N Sassi ..... 92●206.782.4669
727♣ Craig M Suhadolnik ..... 04● NP
731 Kerry Frances Sturgill ..... 05● NP
733 Peggy Sue Wolf 99 206.789.3660
734◊ Edna L Clem ..... 62●206.784.9473
◊ Joseph L Clem ..... 62●206.784.9473
736 737 ..... NP
741 Benjamin L Chobot ..... 02● NP
T Watson ..... 02● NP
742 ..... NP
743 Brian McConaghy ..... +● NP
Shirin Tabrizi ..... +● NP
746 Sandy Austin ..... + 206.708.1207
748◊ Steven E Mathiesen 06 206.789.1676
749◊ Alfred D Tietjen ..... 82●206.789.2905
750 Kelly J McGhee ..... 03● NP
Ronna Sue McGhee ..... 03● NP
★The Metta Group Inc .... 04 ..
751 ..... NP
756 Keri E Burns ..... 04 NP
♣ Randai Richardson 05 206.789.0632
-LINDEN AVE N INTS
902 Teresa Demel ..... 07 NP
906 Kirk S Daniels ..... 04● NP
Jamie Feist ..... 04● NP
909 Winnifred M Maillinson ..... 62●206.783.5978
910 Eric E Aman ..... 00●206.789.2124
Heather L Aman ..... 00●206.789.2124
912 Lem Bartley ..... + 206.782.7752
Marybeth Bartley ..... + 206.782.7752
914 Coralie A Smith ..... 84●206.782.4338
Mary L Smith ..... 84●206.782.4338
919 Madeleine Pauline Neault .. 02●206.784.9164
Pauline M Neault ..... 02●206.784.9164
920 Lani Banting ..... +● NP
Derek M Wolcoski ..... +● NP
923 Karl J Reinke ..... 02●206.417.4620
924 Barbara Lee Leischner ..... 96●206.783.0875
Gary D Leischner ..... 96●206.783.0875
927 ..... NP
929 P W Dwyer ..... 02● NP
930 James W Dean ..... 75●206.783.8623
Patricia R Dean ..... 75●206.783.8623
931◊ Diane Dolores Steen ..... 82●206.784.2455
933 Josh Zimmerman ..... + NP
934 John M Gooding ..... 82●206.784.0440

ADDRESS

NE 75TH ST — 98115

5824 Apartments
Cher Kier . . . . . + NP ◇
John Kier . . . . . + NP ◇
D206 Denise L McCarty .93 ● 206-523-7568
114 Karin M Pipkin . .88 206-527-6554
Mara A Seeley . . + NP
D104 Holly E Smith . .00 ● 206-525♦2538
D104 Mark S Smith . .00 ● 206-525♦2538
D201 A Soroczak . . . .89 ● 206-523-5446
D201 Gerald Soroczak .89 ● 206-523-5446
D107 Exaltac Staley . .84 ● 206-524-9850
D107 Rose J Staley . .84 ● 206-524-9850
D202 Steihen G Tenge .77 ● 206-524◇7716
D303 Celeste Vanvliet . . + 206-525-3886
D307 Glen W White . .85 206-525-4168
D307 Rod G White . . .85 206-525-4168
D301 Brent J Wolf . . .01 206-525-6506
D301 Christie Wolf . . .01 206-525-6506

5829 Apartments
446 Miguel Aivarado .00 206-527-2765
439 Tresa Babcock . . + 206-676-0143
440 Andrew H Barclay . + 206-729-3982
A I Ceaicovschi . . + 206-729-1875
445 Sheena K Ciani . .01 NP
328 Scott B Evans . .01 NP
441 Robert C Faucett .96 NP
Gary J Frye . . . .00 NP
448 Jesse Greenfield . + NP
Shane Hoffman . . + NP ◇
Jim Janakievski . . + NP
335 Matt Jenkins . . . + 206-729-6268
335 Matthew Jenkins . + 206-729-6268
447 Heeok Jung . . . + 206-524-5055
Fumie Kamata . . + NP
Reese Lindquist . . + 206-524-6564
331 L Manzo 01 206-524-6091
334 Peter J Siegel . .91 206-526-5852
444 Nicole A Smythe .95 NP
332 Shane Wade . . .01 206-527-2279
Mark Wascher . . + 206-834-0308
Mark Wascher . . + 206-664-8691

5832 Apartments
Karen L Bass . . .01 206-527♦9529
E305 Benj Baumgardner . + NP
E106 Emery M Duquet . + NP
Janelle J Fecht . + NP
E302 James D Flory . .96 ● 206-729-2317
S J Garretson . .00 NP
E205 Cynthia L Graff . .98 206-528♦1920
E301 Bruce P Henry . .00 206-525-1736
E301 Katie Henry . . .00 206-525-1736
E203 Frank H Kleschen .90 206-527-0460
E203 Zeita H Kleschen .90 206-527-0460
E204 Tani Michal . . + ● NP
E204 Tani L Michal . . + ● NP
E304 John C Newman .00 206-529-1690
E307 Shelley S Pierce .00 206-526-1495
E206 J C Redinger . . + 206-524-4892
E306 P L Saunders . . .97 ● NP
E308 Addy G Sylla . . + NP
E308 Nywe N Sylla . . + NP
E202 Dominique Vann . .99 ● NP
E202 Judith A Vann . .99 ● NP
E102 Linda K Vesper . .96 ● 206-729-1388
E103 Diep T Vu . . . + ● NP
E103 Van H Vu . . . + ● NP
5 Mikell M Wick . .92 206-985-1276

5834 Apartments
B202 Dean T Askew . .95 ● 206-527-9561
B308 Emily C Behm . .01 NP
B302 Jonathon Castro . + 206-523-0335
B306 Kate W Chan . . + NP
B108 Molly B Clynch . + ● NP
B101 Kathryn A Dugaw .92 ● 206-522◇0012
B303 Geneva Gay . . . .89 ● NP
B204 James Helgeby . .01 NP
B203 Demetri Jackson .01 NP
B203 Naomi M Jackson .01 NP
B304 Anne Kastrinos . .01 NP
B205 Barbara A Petite .94 ● NP
B305 Laurice G Rizk . .92 ● NP
B107 Lara C Rooke . . + NP
Rong Xu . . . . . + 206-523-6252
Hye Yi . . . . . + NP ◇

5842 Apartments
C Ann M Bardue . .95 NP
C201 Alexander Estrada .97 206-517-5682
C305 C Geitz . . . . . + 206-523-4765
C305 Christian P Geitz . + 206-523-4765
Andrea Haddade .01 NP
C206 Rebecca L Irving .00 ● 206-524-4474
C207 Chun K Ko 94 206-985-6948
C105 George Limantzakis + 206-522-9122
Dana Luthy . . . . + NP ◇
C302 Julia A MacPhee .91 ● 206-522-4887
C104 Rachel Rodriguez . + ● NP
C202 Renate E Rose . . + NP
C202 William R Rose . . + NP
C301 Emma J Russell . .01 ● 206-985◇4174
C301 Stephen D Russell 01 ● 206-985◇4174
C306 Alicia M Simpson .94 NP
C106 Amy P Voitin . . .00 NP

5844
A213 K G Apostolou . .96 ● NP
A213 Tina N Apostolou .96 ● NP
David S Bardue . .01 ● NP
Mollie P Bardue . .01 ● NP
E Karen Bass . . . . + ● NP
A302 Colleen S Blake .00 ● NP
A316 Kiyoung Y Choi . .00 206-985-0845
A206 Beverly D Clark . .84 ● NP
A206 John M Clark . . .84 ● NP
A301 Tina Z Dacanay . .99 ● 206-522-1827
A301 V L Dacanay . . .99 ● 206-522-1827
B104 Karen Dunning . .01 ● NP
A211 Susan Gygi . . . .94 ● 206-522-1835
307 Janet L Hesness .99 ● NP
A101 David C Hobbs . .00 ● NP
C203 Kristi D Ingle . . . + 206-525-2837
A103 Linda K Jansen . .94 ● 206-524-2207
A210 Dorothy H Klinger .89 ● 206-522-5186
A311 Valery M Klionsky .93 ● 206-524-4307
A311 Yelena J Klionsky .93 ● 206-524-4307
A205 Brian Lundstrom . + 206-523-0084
A205 Erik Lundstrom . . + 206-523-0084
A305 Nanette J Macy . .98 ● NP
A207 Jon D McCue . . .01 ● 206-729-3533
A304 Tammy L McKaskle + NP ◇
A107 Andrew P McLellan 01 ● 206-517-9927
A107 Ani C McLellan . .01 ● 206-517-9927
A103 Doug Nielson . . .94 ● 206-524-2207
A201 Casey OConnor . .01 NP
A203 R Phimviengkham .94 ● 206-524-3280
A209 G B Preston . . .94 ● 206-523-7162
A209 Gerry Preston . . .94 ● 206-523-7162
Romina Rafer . . . + 206-985-7502
David S Rodgers . .00 NP
Ann M Rogers . .00 NP
A202 Carolyn J Rutter . + ● 206-985-9432
A202 Matthew J Rutter . + ● 206-985-9432
A308 Solveig K Sieberts .94 ● 206-524-0328
101 Nancy Thorpe . . . + ● NP
A208 Brian R Trimble . .99 ● 206-528-0417
A314 Eugene Turner . .98 ● 206-525-1359
A314 Fanaye N Turner .98 ● 206-525-1359
A306 Justin Wettstein . + ● 206-523-4838
D203 Cath L Whitley . .99 ● NP
A310 Lisa M Wick . . .96 ● 206-523-9749
Lizbeth H Willis .01 ● NP
Richard C Willis .01 ● NP
A214 Michael L Wilson .99 NP
A108 Richard Wise . . . + ● 206-528-2853
A212 Jenni R Wood . . .99 206-985-7775
Robert Wood . . .00 206-517-4361
★ Sandpiper A Comdo 206-525-6736

5847
221 Christina Abrames . + 206-528-3725
211 Jaime Clark . . .00 206-529-0636
337 Lydia Fort . . . . + NP
223 Jayme Groseclose . + NP
213 Matthew Hanna . . + 206-524-5578
218 Samuel Herschbein 83 206-524-3109
Charles A Hibbitts + NP
106 Crista B Kem . . . + NP
222 Andreas Klust . .01 206-527♦1206
108 Sean Lindberg . .01 NP
108 Shawn Lindberg . .01 NP
219 T Martin-Mccoy .00 NP ◇
101 Casey McNellis . . + 206-834-0807
107 Daniel Potts . . . + 206-834-0330
214 K Riley . . . . . + 206-729-0131
220 Kathie Sckog . . . + 206-834-0857
Manju Sharma . . + 206-674-5584
210 Kay S Slonim . . .87 ● 206-523-6302
210 Marc D Slonim . .87 ● 206-523-6302
226 Trent D Veltkamp .01 206-527-3228
103 K Wangsujaritkarn . + NP
102 Lorna J Wolf . . .01 206-985-2245
Dongxiao Zhang . .00 NP
Wei Zhang . . . .00 NP
★ Viewpoint Apt . . 206-527-0127
447 RESIDENCE 9 BUSINESS

NW 75TH ST — 98117

100- 699 CT 29 $D..
800- 1999 CT 30 $C..
2100- 3399 CT 31 $C..

101 N A Voneckenfels .82 ● NP
104 Gail L Gensler . .97 ● 206-789-7944
105 Carla M Wiechman .92 206-781-9772
108 Scott L Powell . .87 ● 206-784-7672
109 Cheryl I Evensen .62 ● 206-783-5296
Harry A Evensen .62 ● 206-783-5296
114 H L Casselman . .98 ● 206-789-8669
J M Casselman . .98 ● 206-789-8669
115 James R Brewer .00 NP
116 Scott Jordan . . .01 NP
Karen Majewicz . . + NP ◇
119 Brigid T McFadden + NP ◇
120 Leland F Gilbert . .98 206-297-0808
121 Viana R Paulson .82 ● 206-783-8067
125 Philip B Molin . .81 ● 206-784◇2033
128 Bruce L Damon . .01 206-784-1450
131 Anne L Kannapell .00 ● 206-788-0880
Tuney Kannapell .00 ● 206-788-0880
134 . . . . . NP
135 Bryan L Cooper . . + ● NP
Mary S Cooper . . + ● NP
137 Mark E Sauer . . .92 ● NP

140 Apartments
½ Brenda C Clifton . .98 206-781-0360
G D Emshwiller . .99 NP
142 . . . . . NP
143 Jim P Weaver . . . + NP
145 . . . . . NP
146 Douglas K Stelling + ● 206-784-9042
Linda J Stelling . . + ● 206-784-9042
148 . . . . . NP
149 Alan G Nissen . . .98 ● NP
Pamela K Nissen .98 ● NP
301 Chris A Airola . . .98 206-781-8073
Qathi J Gallaher . .01 NP
305 Cheryl A Frederick .99 206-782-7342
309 James T Schmid . .91 ● 206-789-8143
Mary C Schmid . .91 ● 206-789-8143
310 Sandra L Barnard . + NP
314 Kathleen Pruzan . .79 ● 206-784◇8270
Kathy A Pruzan . .79 ● 206-784◇8270
317 Thomas P Matz . .91 ● NP
Virginia J Matz . .91 ● NP
318 . . . . . NP
320 K L Labossiere . .88 ● 206-782◇4600
P L Labossiere . .88 ● 206-782◇4600
321 Vic Berman . . . .88 206-789◇6819
324 Heidi S Schneider .94 ● 206-783-1574
Tyler J Thomas . .94 ● 206-783-1574
325 John D Duffy . . . + ● 206-782-5799
Nadia K Duffy . . + ● 206-782-5799
328 Richard Ravin . . .97 206-782◇3842
329 Robert A Schmieder + ● 206-783◇9098
Heidi E Turner . . + ● 206-706◇6793
330 Ilona Banat . . . .84 NP
331 M N Botsford . . .99 ● 206-706-2927
335 Randy W Knowles .84 ● 206-784-1805
336 Nicholas G Stoll . + NP
341 Scott H Mathews .95 206-706-3145
342 Eric O Klineberg .01 ● NP
Joy V Klineberg .01 ● NP
345 Beth E David . . .94 ● NP
346 Alice M Robb . . .78 ● NP
Dennis G Robb . .78 ● NP
347 E C Clark . . . . + 206-706-4030
Elaine C Clark . . + 206-706-4030
351 C A MacMillan . .00 ● 206-781-7964
352 . . . . . NP
354 Howard E Barkhoff 00 206-781-1377
356 Madeline Genette .94 206-706♦0505

358 Apartments
5 Chia S Chiang . . .00 206-784-7838
5 Kathy Chiang . . .00 206-784-7838

359 Apartments
7 Michael P Whalen .94 ● 206-781-8861
7 Rose M Whalen . .94 ● 206-781-8861
360 . . . . . NP
362 David P Persson . .01 NP
609 Anita A Braddock .96 ● 206-784-4652
Brian D Braddock .96 ● 206-784-4652
610 Jane L Keller . . .95 ● NP
610 A Stevens . . . .95 ● NP
611 C H Trumbauer . .89 ● 206-782-5161
J A Trumbauer . .89 ● 206-782-5161
614 Rita M Brown . . .00 206-782-8458
Samuel J Emmo . .00 206-782-8458
615 Tyrell A Nowlan . + 206-706-5722
617 Murray J Stopherd .01 NP
Vicki L Stopherd .01 NP
★ Bbg Corp Main Ofc 206-706-9221
618★ Salmon Bay Techlgy 206-706-5474
619 . . . . . NP
622 Stacey Harlson . . + NP
623 Julia K Parrish . .89 ● 206-783-0972
626 . . . . . NP
629 Victoria J Clarke .00 ● 206-706◇0464
632 Rebecca E Evans .92 ● 206-781◇9665
Edwin J Gossett .92 ● 206-781◇9665
633 C Rankin . . . . + ● NP
636 Chris Shaules . . + ● NP
637 Joy Martinelli . . + NP ◇
639 Mary A German . .82 ● 206-784-1113
640 Anthony A Mills . .95 206-784◇6654
Lauren C Slauson .95 206-784◇6654
644 Leticia R Lawitzke .00 ● NP
645 Ron E Pedersen . .65 ● 206-783-0987
Shirley A Pedersen 65 ● 206-783-0987

648 Apartments
117 John T Cannon . .99 ● NP
117 Margaret L Cannon 99 ● NP
649 Amanda Tobier . . + NP ◇

➖ 8TH AVE NW INTS
802 John W Gee . . .96 NP
Mary A Gee . . . .96 NP
814 Angela J Swensen . + NP
815 Jeffrey L Hall . .84 ● 206-783-9060
Roger G Lackman .84 ● 206-783-9060
818 Richard C Stuart . + 206-781-7916
852 Brian R Fifer . . .00 ● NP
Lisa M Fifer . . . .00 ● NP
856 Cody L Thornton . + 206-783-3674
Leah S Thornton . + 206-783-3674
865 Claudia J Glaze . .94 ● NP
902 Kendra A Howe .00 ● NP
906 James M Gurley .94 ● 206-706-1061
1002 Ruth H Carbone .62 ● 206-783-2476
1102 John P Kent . . .92 ● 206-781-3139
Rebecca R Kent .92 ● 206-781-3139
1106 Ellen Cragg . . . .75 ● 206-783-8331
Robert J Cragg . .75 ● 206-783-8331
1110 Larry J Pendleton .76 ● 206-789◇3983
T M Pendleton .76 ● 206-789◇3983
1116 Diane E ONeill . .87 ● 206-783-5772
Michael P ONeill .87 ● 206-783-5772
1202 Esther L Rockwell .93 ● NP
Glen E Rockwell .93 ● NP
1210 . . . . . NP
1216 Bill R Dunnell . .95 ● 206-781-1794
Diana M Dunnell .95 ● 206-781-1794
1320 Timothy P Graber .99 NP
★ A Wld Wonder Kids 206-789-7591
★ NW Ltchky Inc A ⊙ 206-789-7591
★ Seattle Pub Schls 206-252-1650

➖ ALONZO AVE NW INTS
1406 S Briggs . . . . + 206-783-4202
1410 Jennifer L Force .97 ● 206-783-9426
Schreiber Force . .97 ● 206-783-9426
1452 Fredk D Huntsman 89 ● 206-784◇6054
Barbara J Roberts .89 ● 206-784◇6054
1470 Stephen G Rice . .94 ● 206-783-8125
Raymond L Spizman 94 ● 206-783-8125
1476 Benjamin Jones . .00 206-706-7246
1478 Amber L Hahto . .99 ● 206-782-4059
Kevin P Pelletier .99 ● 206-782-4059
1482 Chris Peterson . .95 ● NP
Chris M Peterson .95 ● NP
1484 Shawn Swanson . . + ● NP
1501 Nay Myo . . . . .00 NP
1503 David J Bedwell . + ● NP
Heidi M Bedwell . + ● NP
Jessica A Bradford + NP
Kris Johnson . . . + 206-781-5012
1505 Ron Wirt 95 206-789-9734
1507 Heather K Schmidt + NP
1509 Jill A Charles . . .00 NP
1910 Martin J Bailey . .95 206-789-1772
1911 Bruce R Detert . . + 206-789♦5784
2115 Dennis M Chandler 93 ● 206-784-2403
Miste Chandler . .93 ● 206-784-2403
2359 James S Ormiston 98 ● 206-789-5752
2406 . . . . . NP
2408 M Morlock . . . . + NP
2515 Dwight C Scott . .97 ● 206-706-0275

2643 Apartments
A Michael Olofsson . + ● NP
2800 Doug R Newman .92 ● 206-789♦5327
Holly K Newman .92 ● 206-789♦5327
2813 Robert B Johnson 97 ● 206-781-3413
2815 . . . . . NP
2816 Marjorie M Chapin 62 ● 206-783-2129
2820 Karen M Soine . .01 206-297-0249
2823 L J Francis . . . + 206-784-9233
L J Francis . . . + 206-782-9361
2824 Elton L McAlpin .63 206-783-9158
2827 Daniel Millar . . + ● NP
Peggy E Millar . . + ● NP

➖ 28TH AVE NW INTS
2901 Verle D Yeager . .82 ● 206-782◇5447
2905 D G Christensen .88 ● 206-784-4304
2908 Jon E Pedersen . .00 ● 206-784-5566
2914 David A Morrison .93 ● 206-783-5140
P L Morrison . . .93 ● 206-783-5140
2915 Karen J Fossum . .98 ● 206-297◇1595
Osborne C Price .98 ● 206-297◇1595
2923 Paul R Vogt . . .64 ● 206-783-8316
Perry R Vogt . . .64 ● 206-783-8316
3001 June M Steinke .68 ● 206-784-6309
3002 Audrey Lyle . . .93 ● 206-782◇3987
3007 Janice K Janofsky 99 ● NP
3008 John I Bechtel . .62 ● 206-783-8753
3011 Claude W Ginsburg 93 ● NP
3014 Kevin Pitman . . .97 206-783-1283
3017 . . . . . NP
3020 Wanda L Freeman .73 ● 206-783-3529
3023 Marilyn C McCarthy 98 ● NP
Timothy C McCarthy 98 ● NP

➖ 32ND AVE NW INTS
3101 Arne E Anderson .65 ● 206-784◇8680
Mary M Anderson 65 ● 206-789◇5844
3106 Andrew R Martin .94 ● NP
Madeleine A Martin 94 ● NP
3107 Larico D Evans . .99 NP
3110 . . . . . NP
3111 Peter M Ness . . .62 ● 206-782-3606
Ragna L Ness . . .62 ● 206-782-3606
3117 William F Jenkins .62 ● 206-782◇3139
3118 Jennifer L Busca . + ● 206-783◇3614
Justin G Busch . . + ● 206-783◇3614
★ Busch & Son Inc 206-706-7376
3202 Alison H Fuson . .98 206-789-2686
Alison H Fuson . .98 206-706-5586
3211 John M Martin . .94 ● 206-297◇0478
Nancy H Martin . .94 ● 206-297◇0478
3215 Darrell N Markey .65 ● 206-783-9173
3221 Anna Aurdal . . .67 NP

➖ 34TH AVE NW INTS
3301 . . . . . NP
3306 Alex J Stpeter . .83 206-782-6358
3307 Eugenia A Roo . .94 ● 206-784-8644
Gale E Roo . . . .94 ● 206-784-8644
3311 . . . . . NP
3314 F B Rutledge . . .98 ● NP
Mary D Rutledge .98 ● NP
217 RESIDENCE 6 BUSINESS

76TH AVE S — 98178

10400-12699 CT 260.01 $D..
12700-13199 CT 261 $E..

➖ GARDEN PL S INTS
10401 Gilbert S Gasca . . + ● 206-772-4974
Rachelle M Gasca . + ● 206-772-4974
10417 Alex McGavin . . .01 ● NP
10423 Regina M Randall . + NP
10429 Bill S Tulloch . . .84 ● NP
Susie Tulloch . . .84 ● NP
10435 John K Wimpress .70 ● 206-772♦2583

➖ S 112TH ST INTS
11225 David G Giannini .01 ● NP
Suzanne W Giannini 01 ● NP

98178

11315 Aliana W Ustanik .92 ● 206-772-7449
Roderick W Ustanik 92 ● 206-772-7449
11433♣ ★ Lakeridge Swim Clb 206-772-1950

➖ S 115TH PL INTS
11529 J C Hendrickson .62 ● 206-772-1241
Robt H Hendrickson 62 ● 206-772-1241
11541 Hiro K Takahashi .85 ● 206-772-1139
Kazuko S Takahashi 85 ● 206-772-1139

➖ S 116TH ST INTS
11625 Dwight M Gerred .00 ● 206-772-9784
Michael Gerred . .00 ● 206-772-9784
11631 Ceya M Blakey . .95 ● 206-772-2521
James E Blakey . .95 ● 206-772-2521
11637 F D Cambronero .93 ● NP
Jose E Cambronero 93 ● NP
11730 Howard Thordarson 97 ● 206-772-2262
11801 . . . . . NP
11802 Bettilyn Clingman .00 ● NP
Michael E Clingman 00 ● NP
11809 Don J Clayton . .00 ● NP ◇
Dov J Clayton . . .00 ● NP ◇
11814 Felipe C Sangalang 96 ● NP
Josefa P Sangalang 96 ● NP
11820 Joyce M Green . .84 ● NP

11826 Apartments
76 Gary W Martin . .92 ● NP
76 Pamela L Martin .92 ● NP
11829 C Vongphakdy . .90 ● 206-772-8304
Keo Vongphakdy .90 ● 206-772-8304
11832 Cherie M McCulloch 88 ● 206-772-4915
James I McCulloch 88 ● 206-772-4915
11833 Michael C Keels .91 ● 206-772-0470
Roberta V Keels .91 ● 206-772-0470
11836 J T Francisco . .01 ● NP
R F Francisco . . .01 ● NP
11840 Emelita R Barber .91 ● 206-772-5191
Ernie C Barber . .91 ● 206-772-5191
11841 A V Vera-Leon . .98 ● NP
Fidel A Vera-Leon .98 ● NP
12004 Charles B Chase . + ● NP
Maura A Chase . . + ● NP
Stefanie Pleasant .01 ● NP
12009 Henry F Lee . . .00 ● 206-772-2529
Kimberly J Lee . .00 ● 206-772-2529
12015 Barbara J Daniel .98 ● NP
12016 Patricia A Dunn . .98 ● 206-772◇1617
Stephanie Dunn . .98 ● 206-772◇1617
12019 . . . . . NP
12022 Glen Tyree . . . . + NP
12025 Latoya M Alexander + NP
12028 . . . . . NP
12029 Emily Binongal . . + ● NP
Robert C Binongal . + ● NP
12034 Edgar G Lyons . .98 ● NP
Ondra J Lyons . . .98 ● NP
12035 Sheree C McClendon 98 ● NP
12038 Larry E Henderson 95 ● NP
Queen E Henderson 95 ● NP
12039 Charity Kamau . . + ● NP
12044 Cynthia B Mason . .96 ● NP
Fred G Mason . . .96 ● NP
12045 Ruben C Chen . . .97 ● NP
Trang Chen . . . .97 ● NP
12050 Laurita S Franada .89 ● 206-772-4650
Melidon S Franada 89 ● 206-772-4650
12051 Michael A McCoy .96 ● 206-772-6211
Michael A McCoy .96 ● 206-664-8791
12056 Muang S Saephanh 98 ● NP

➖ S 122ND ST INTS
12204 Paul Woods . . . + 206-505-8921
12207 12210 . . . . . NP
12213 Kathleen E Hoffman 55 ● 206-772-6087
12216 12219 . . . . . NP
12225 Sandra M Stigen .84 ● NP
12231 Maria M Calimlim .98 ● 206-772-1033
Sergio A Calimlim .98 ● 206-772-1033
12234 C C Rudesill . . .94 ● NP
Chris C Rudesill .94 ● NP
12237 Godofredo A Tabile 92 ● NP
Tami T Tabile . . .92 ● NP
12238 Elizabeth C Duat . + NP
12243 Glenda Q Diga . .01 206-772-1559
Nostriano D Diga .01 206-772-1559
12244 Laura L Harding .93 206-772-6848
Laura L Harding .93 206-772-6933
12250 A Brueckner . . .94 ● NP
Joann Brueckner .94 ● NP
12256 Ba C Nguyen . . .94 ● 206-772-1067

➖ RENTON AVE S INTS
12610★ U S Bk Br Offices 206-772-1457
★ U S Bank Sttl Ar ⊙ 206-772-1457
★ Ubank Atms Bmchs ⊙ 206-772-1457
12617 Tim Ewings 01 206-772-1480
★ Fire Prtct Dstrcts 206-772-1430

➖ S 128TH ST INTS
12704★ Rays W Hill Fmly 206-772-2050
★ W Hill Fmly Ctr . ⊙ 206-772-2050
12715 Randle I Miller . .99 ● NP

ADDRESS

+ — New Listing 95,96,Etc. — Year First Listed 1995,96,Etc. ● — Verified Homeowner ♣ — Postal Delivery Questionable

98178
12715 Wanda L Miller .99● NP
12721 Janet C Hartshorn +● NP
Nels P Hartshorn +● NP
12722 Apartments
M Flores +● 206-772-3936
N Flores +● 206-772-3936
201 Suzanne P Fritch .95 NP
105 E Hawk .00 206-772-3276
104 Amy J Jennings .00 NP
101 John W Minaker .99 206-772-4569
1 Irene Orosco +● 206-772-3881
205 John T Walsh .97 206-772-7067
12726 NP
12727 Eric P Englund .68● 206-772-6165
Lois J Englund .68● 206-772-6165
12744 Jesse L Harris .98● NP
Regina L Harris .98● NP
12816 Karen J Candland .66● 206-772-4442
Wendall R Candland 66● 206-772-4442
12826 Albert V Wicker .67● 425-255-5592
Olpha C Wicker .67● 425-255-5592

— S LANGSTON RD INTS
12900 Louise Beeler +● 425-235-3799
12901 NP
12914 Alfred R Reinhart .85● NP
★ Rnhrt Electr&Svc 206-242-1853
13010 Rose Holmes .00 NP
Tra Holmes .00 NP
13020 K L Nirapienranant .92● NP
R Nirapienranant .92● NP
123 RESIDENCE 8 BUSINESS

N 76TH ST 98103

100- 199 CT 29 $D..
300- 999 CT 28 $D..
1100- 1398 CT 27 $B..

102 Cecil Watkins .68● 206-789-0911
Jeanie M Watkins 68● 206-789-0911
106 Jonathan Little .01 NP
110 Bruce S Ainslie .00● 206-297-3353
Kristin Ainslie .00● 206-297-3353
111 Anne McBride .85● NP
117 Kathleen A Kutz .89● NP
118 Lauren Caldarera .99 206-782-1911
Meghan L McDermott 99 206-782-1911
121 Carol J Lundemo .97● 206-789-1718
Mark W Lundemo .97● 206-789-1718
122 John F Sifferle .81● 206-783◇3370
Madonna M Sifferle 81● 206-783◇3370
126 Patricia E Davis .96● 206-783-2235
Rico M Francisco .96● 206-783-2235
127 Barry W Stoner .86● 206-789◇7750
Barry W Stoner .86● 206-784◇7372
130 Gail J Gordon .94● NP
131 Patricia A Holmes 64● 206-783◇9320
Schylor P Holmes .64● 206-783◇9320
135 Max Elsberry +● 206-784-3250
Tom M Elsberry +● 206-784-3250
137 Kathleen S Kemper 79● NP
Kraig A Kemper .79● NP
138 Kendall G Magnuson 00● 206-781◇9083
141 Lara E Iglitzin .96● 206-782♦5446
Vladimir Raskin .96● 206-782♦5446
142 Erika C Greig .94● 206-781-0202
Louis R Greig .94● 206-781-0202
143 Mike J McEvoy .96● NP◇
Sheila A McEvoy .96● NP◇
146 Lauralee Smith .89● NP◇
Richard E Smith .89● NP◇
147 Gary F Euse .99● NP
Roberta J Hilton .84 206-782-6621
172 E C Greig +● NP
Richard Greig +● NP
312 Apartments
Arthur A Bloom .00 NP
Niall Bloom .00 NP
202 Ross Carmichael +● 206-789-8039
B John B Gillett .95 NP
Anna Mockler +● NP◇
Reuben Radding +● 206-706-0534
102 Brad Smanesse +● 206-706-7846
103 Jessica L Thompson 00 NP
301 Paul A Wakefield .94 206-706-0250
316 Amanda Wheeler .89● NP
Brooke A Wheeler 89● NP
317 Martin J Walz .94● 206-784-2599
Westberg M Walz .94● 206-784-2599
319 Margot H Sims .87● 206-789-8818
321 Lauri J Kraemer .98● NP◇
324 Robin A Pederson 84● 206-784-9462
325 Carol J Pearl .83 206-783-6419
326 Philippa Robison +● NP
329 333 NP
334 Jennifer M Wallace 98● NP
337 Lillian C Yetter .94● NP
340 Dan Condylis +● 206-706-4603
342 Erik S Bennigson .93● 206-789-2053
343 Lisa M Sather .70● 206-784-9760
Rose M Sather .70● 206-784-9760
347 Kevin Lederman .01● 206-784-5877
Rebecca L Lederman 01● 206-784-5877
348 David J Wirth .99● 206-706♦2895
Kathleen V Wirth .99● 206-706♦2895
350 Helen M Fermstad 68● 206-783-1062
353 Graydon Britton +● NP
Graydon D Britton +● NP
354 Deborah A Phelan 95 NP
355 David A Gould .99 206-297-7216
358 J Sexton .99● 206-782-1754
Jane E Sexton .99● 206-782-1754
359 NP
360 Dianna K Edelstein 01● 206-781-8678
Noah B Edelstein .01● 206-781-8678
361 Apartments
Cath M Collins .94● 206-783-6809
Chris W Collins .94● 206-783-6809
BSMNT Katrina J Gilman .98 NP◇
James A Jackson .01 NP
Mary T Jackson .01 NP
362 Kathleen T Wagner 93● 206-782-5109
Stan D Wagner .93● 206-782-5109
363 Janice L Cox .91● NP
503 Aaron S Burby .94● NP
Rob D Leonard .94● NP
504 William F Dyment .69● 206-782-3563
506 E Tafoya +● 206-297-0446
509 Lin L Smith .91● 206-789-1088
Linda L Smith .91● 206-789-1088
510 Joseph P Chapman 72● 206-789-1437
511 Gregory C Narver .95● 206-706-7593
512 Steve Sintay .94● NP
514 Pete L Colbeck .91● 206-781-7242
Terri G Colbeck .91● 206-781-7242

514★ **Colbeck&Co Inc 206-781-2200**
515 Vatsek V Parda .62● 206-782-4056
518 Jan E Kutok .98● NP
Marcy A Kutok .98● NP
520 Donna C Stephan .99● NP◇
521 Jolene L Coulter .98● NP
Wayne L Coulter .98● NP
524 Dale F Creager .84 206-784-6390
525 Ron K Borrevik .94● NP
528 Apartments
LOWER J T Barrickman .99 NP
K Chludzinski +● 206-706-5326
L Chludzinski +● 206-706-5326
Dennis J Hanson +● NP◇
529 Judith A Howard .94● NP
531 S Treeratpitak +● NP
532 F R Iaconelli .95● NP
536 A Runte .94 206-784-3913
537 Carrie D Cole .00● NP◇
David B Cole .00● NP◇
541 NP
544 Joanne N Fairleigh 88● 206-789-1072
547 Claude P Iosso .01● 206-297-6278
548 Melissa A Weiland 01● NP
551 Johann I Johnson 58● NP
560 Joseph M Puggelli 91● 206-784-6269
701 NP
706 Dennis R Shadduck 73● 206-783-3216
707 Katherine O Keller 01 NP
Eric M Phillips +● 206-783-0066
710 Kathleen A Jensen 94● NP
711 NP
712 V E Hynd .84● NP
Virginia E Hynd .84● NP
715 Shireen K Saugen .00 206-781-4629
716 Thomas Horne +● NP
719 NP
720 Eileen L McLeod .00 NP
721 Eric P Lee .98 206-706-7974
Liza A Lee .98 206-706-7974
724 Craig M Suhadolnik 90● 206-789-3057
725 Edward A Carr .82● 206-789-0355
Elizabeth H Carr .82● 206-789-0355
726 Lisa N Sassi .92● NP
731 Maureen M Neal .00● NP
Peter D Neal .00● NP
733 Steve K Michael .97 NP
734 Edna L Clem .62● 206-784-9473
Joseph L Clem .62● 206-784-9473
736 Apartments
401 Beth S Dombrowski 97 206-624-5024
737 Michelle Trua +● 206-706-0730
741 Howard W Wells .91● 206-783-4190
Karen M Wells .91● 206-783-4190
742 Anthony W Krol .94● 206-783-2898
Hanna K Krol .94● 206-783-2898
743 Christopher J Cox 82● 206-784-7384
Patric Cox .82● 206-784-7384
746 Edward M Medlin .98● NP
Jan Y Medlin .98● NP
748 Aaron W Lavin .01● 206-706-3975
749 Alfred D Tietjen .82● 206-789◇2905
750 NP
751 Amy L Prestia .01● NP
William J Prestia .01● NP
902 Harold L Spilde .82● 206-784◇4879
Lillian R Spilde .82● 206-784◇4879
906 NP
909 Arch J Mallinson .62● 206-783-5978
W Mallinson .62● 206-783-5978
910 Eric A Aman +● 206-789-2124
Eric E Aman +● 206-789-2124
911 NP
912 Julyne E Derrick .99● 206-297◇0745
914 C Smith .84● NP
919 Evelyn M Morseth 55● 206-782-1568
920 Bree S Self .96● NP
923 NP
927 E J Witherspoon .98● NP
Tim L Witherspoon 98● NP
929 Leslie A Sacha .86 206-784-0891
930 James W Dean .75● 206-783-8623
Patricia R Dean .75● 206-783-8623
931 Diane Dwyer .82● 206-784◇2455
Paul W Dwyer .82● 206-784◇2455
933 Kate Gavigan .99 NP◇
Kathryn M Gavigan 99 NP◇
934 John M Gooding .82● 206-784-0440
936 Arne C Moen .94● 206-784-3652
940 Perry A McIntyre .94 206-782-4884
941 Marisa A Rodriguez 99● 206-789-0572
943 N A Thompson .84● NP
946 John P Hellwege .96 206-781◇3660
Sarah Hellwege .96 206-781◇3660
947 Richard A Chaffee 84● NP
949 Ondine Webb-Demar 94 206-783-4112
★ The Gift Musc Pno 206-783-4112
1111 Mark Brinn +● NP
1112 Brian Jones .01● 206-526-7061
Glyn H Jones .01● 206-526-7061
1115 David M Schmidt .94● NP
1116 Lars H Henrikson .99 206-527♦7227
1119 Danelle W Heatwole 00 206-985-6738
Ryan T Heatwole .00 206-985-6738
1123 Fred A Smith .55● 206-522-7230
1124 Carol R Jones .81● 206-524-1833
Clifford R Jones .81● 206-524-1833
1127 Joseph R Small +● 206-523-3664
Mercionila G Small +● 206-523-3664
1128 Mary P Callahan .01 206-985-6994
1131 B Inman-Marshall .00 206-524-3836
L Inman-Marshall .00 206-524-3836
1132 Batchelde McShane 84● 206-524◇9018
Mary C McShane .84● 206-524◇9018
1135 Alice Lee .99● 206-524◇3681
Jesse R Lee .99● 206-524◇3681
1136 Jeffrey G Blumer +● NP
1139 Rebecca L Stuart +● NP
Scott R Stuart +● NP
1140 Carin Crowder +● NP◇
1143 Chelsea L Bashor .00● NP
1144 Diane V Smith .79● 206-523◇0585
1148 Donald H Meyer .82● 206-522-2162
Laura M Meyer .82● 206-522-2162
1152 NP
1156 Diane Kawabata .88● 206-527-9652
David A Waataja .88● 206-527-9652
1160 Karl Arne .01● NP
1164 James F Sutterman 66● 206-525-3299
M F Sutterman .66● 206-525-3299

— E GREEN LAKE DR N INTS
1304 Mel C Rowland .74● 206-525-4326
Richard N Stanford 74● 206-525-4326
1310 Caren E Taylor .99 206-527-4412
William J Taylor .99 206-527-4412

1311♣ B G Marshall-Inman + NP
♣ D Marshall-Inman + NP
1322 Jane W Power .97 206-526-5290
★ Wa Girls Sccr CMP 206-633-1595
1326
B Thomson-Herbert 99 206-522◇3055
100 **★ Nwgrnd Investment 206-522-1944**
★ Thomson-Hrbrt BRC 206-522-3055
230 RESIDENCE 5 BUSINESS

NE 76TH ST 98115

300- 399 CT 27 $B..
0 401- 499 CT 28 $D..
600- 699 CT 27 $B..
1500- 1599 CT 26 $B..

— LATONA AVE NE INTS
306 Lorna L MacKenzie 88● 206-524-6457
312 Jerry W Germeau .92● NP◇
313 Coralynn L Foss .60● 206-526♦9549
H J Foss .60● 206-526♦9549
317 Marc T Beck .99● 206-526♦5064
S Beck .99● 206-526♦5064
318 Monica G Hinckley 94● 206-523-2396
Peter J Hinckley .94● 206-523-2396
319 John P McNamee .95● NP
Victoria W McNamee 95● NP
320 NP
323 Gaynor B Garris .99 206-729-1107
Jason T Garris .99 206-729-1107
326 Mark Cates +● 206-729-1263
329 Karl Eberhardt +● NP
333★ Seattle Frmsn Ch 206-522-8084
342 Raymond G Stromer 96● NP
350 Kevin J Lee .99● 206-233-9231
Kevin J Lee .99● 206-985-7597
356 P Rowell .00 NP
Stanton I Rowell .00 NP

— 4TH AVE NE INTS
401 Samantha L Taylor + NP
601 K R Rodabaugh .94● NP
610 Harvey M Funai .96 206-523♦7212
614 Bruce H Carroll .80● 206-527-7025
615 Susan L Guthrie .98● NP
619 Shawn McCrady +● NP
621 E Mezistrano-Wolf +● NP
622 Jill A Watson .96● NP
624 Rudy R Bell .95● NP
Sherri R Bell .95● NP
625 NP
632 Michael H Larkin + NP
Sharon T Larkin + NP
1506 Andrea L Larson .84● 206-526-8120
C P Larson .84● 206-526-8120
1507 Apartments
4 Gail M Vasilnek .98● NP
1511 Mina J Smith .00● 206-985-2122
Philip G Smith .00● 206-709-9552
1515 Erika Smith +● 206-526-2922
1518 Apartments
2 Larisa Vercamer .94 NP
2 Marco R Vercamer 94 NP
1522 Andrew Schmid +● NP
1523 Colleen F Johnson 73● 206-526◇9769
Heather J Johnson 73● 206-527◇9488
1527 Stephanie J Cogen 98● 206-985◇2054
1528 Douglas Leale .94● NP
1533 Peggy E Armstrong 60● 206-522-6124
R R Armstrong .60● 206-522-6124
1534 NP
1540 Ann F Fosso +● NP
Brent J Fosso +● NP
1541 Maurice C Clark .60● 206-523-5022
1542 Jason C Rogstad .62● 206-523♦1889
Susan F Wessman 62● 206-523♦1889
1545 Joyce M Anderson 87● 206-525-9443
Scott T Anderson .87● 206-525-9443
1549 Della Hurt .01● NP
1550 Pat Kelly .79● 206-527◇8504
1552 Barbara J Nelson +● NP
1557 John H Irby .88● 206-523-0867
1558 R A Meistrell .98● NP
Terra M Meistrell .98● NP
62 RESIDENCE 1 BUSINESS

NW 76TH ST 98117

100- 799 CT 29 $D..

101 S E Balberman .95● 206-783-4220
102 Peter A Lancaster 97● 206-706◇0037
Melba S Wallace .97● 206-706◇0037
105 Lori A Gradinger .96● 206-706-0565
108 Apartments
B Adamsen +● NP
Gordon Assadi +● 206-297-1869
1 Colleen O McClure 89● 206-784-8760
1 Steven F McClure .89● 206-784-8760
2 Sharon A Schmitt +● NP
2 Warren J Schmitt +● NP
109 Tab Kiesel .90● 206-783-1160
Tabitha I Kiesel .90● 206-783-1160
112 B J Purington .94● NP
Scott E Purington .94● NP
113 Robert F Howell .68● 206-784-0224
116 Sanford Farrier .94● NP◇
117 Chris Kent +● NP
122 David L Lonczak .98 NP
Heather S Lonczak 98 NP
125 Beth L Flynn .99 NP
128 G D Phillips .01 206-782♦8524
131 David A Neri +● NP
132 Sharon L Mason .84● 206-783-2344
135 David R Pullin .73● NP
Elizabeth Pullin .73● NP
136 Joanne Jensen .01● 206-782-2751
140 P E Horgan .91● 206-782-2678
Patricia E Horgan .91● 206-782-2678
141 Kelly W Mullins +● 206-706-7711
Kirsten M Mullins +● 206-706-7711
144 145 NP
148 Travis R Applegate 01 NP
149 Clark E Campbell .97● 206-782-8448
Erin R Campbell .97● 206-782-8448
151 Mark A Lesina +● NP◇
152 Louis S Barkley .66● 206-784-6697
Marylou D Barkley 66● 206-784-6697
156 Julie Knutson .00 206-297♦0183
304 Tracy A Chollak .00● 206-297◇7616
J L Hayden .00● 206-297◇7616
307 Gordon J Pederson 62● 206-782-3541
M P Pederson .62● 206-782-3541
311 Terri A Parsons .98● NP
312 Christina Brams +● NP
317 Frank S Martin .96● 206-781◇0324
317 Maille Martin .96● 206-781◇0324
320 Todd Goddard +● 206-297-1164
323 Dana C Iorio .82 206-784◇7939
Paula Iorio .82 206-784◇7939
324 Lillian T Yamamoto 92● NP
327 Debra J OConnell .90● 206-782-9022
John J OConnell .90● 206-782-9022
★ Ballard Pref Move 206-782-0309
328 Saloua Laalami .00 206-783-0912
330 NP
331 Anita Epler +● NP◇
334 NP
335 Clinton J Watkis .95● 206-782-7327
338 NP
339 Robert H Scribner 94 206-781♦8633
342 L Csokasy .98● 206-781♦1978
John P Valko .98● 206-781♦1978
343 Nancy D Cutting .91● 206-784-1439
346 Blanca S Drumm .99● NP
347 Brian Congleton +● NP
Sundae Congleton +● NP
351 Kasey C Davis +● NP
352 Apartments
A Chuck P Frederick 95 206-789-5513
A Nancy L Fredrick .95 206-789-5513
353 Colleen E Wylde .98● 206-789-7468
Colleen E Wylde .98● 206-706-9009
356 S Self-Bence +● NP◇
359 Anita L Burkhart .99 NP
606 Dawna E Shinkle +● NP
610 Colleen A OLeary .98● 206-782◇9149
614 615 NP
618 Charles B Kolesar .99● 206-789-6208
619 Shawn McRedy .99 206-297-7012
Shawn McRedy .99 206-297-2041
622 Rachel F Boudin +● NP
625 NP
628 Gerald V Harris .62● 206-784-0688
629 Heather J Thompson +● 206-706-6029
633 NP
636 John B Randolph +● NP
637 Tiberio M Simone .91● 206-783-5071
640 S M Jaouen .94 NP
641 Rene K Walker .79● 206-784◇5552
Scott D Walker .79● 206-784◇5552
642 Erin Carlucci +● 206-706-3181
643 Kristina L Ray .96● 206-706-9373
646 Steven A Lind .98● 206-789-9314
647 Clifford L Olson .62● 206-783-8470
650 Don A Glover .98● 206-297◇0954
Vicki M Glover .98● 206-297◇0954
651 William J Klinger +● NP
652 Girish K Kavi .96● 206-789-6170
Kirti J Kavi .96● 206-789-6170
655 B K Hallonquist .98● 206-789◇8500
R M Hallonquist .98● 206-789◇8500
656 John N Breen .73● 206-783-5592
Rosalyn M Breen .73● 206-783-5592
103 RESIDENCE 1 BUSINESS

77TH AVE S 98178

11600-12299 CT 260.01 $D..
12800-12899 CT 261 $E..

— S 117TH ST INTS
11625 Sidonia S Berglund 94● NP
— S 118TH ST INTS
11701 NP
11707 Daniel Bedasso .01 NP
11715 Alfonzo Shannon .99● NP
Bibiana C Shannon 99● NP
11720 George Beppu .81● 206-772-1134
Reiko Beppu .81● 206-772-1134
11721 Donald Richard .00 206-772-6992
11803 Hal H Ise .94● NP
11808 Lawr K Yokoyama .85● 206-772-0969
Suzanne L Yokoyama 85● 206-772-0969
11809 Maricel Rabino +● 206-664-7696
11814 Frank R Biesold .77● NP
11815 Binh H Pham .80● 206-772-7053
Xuan H Pham .80● 206-772-7894
11820 Donald I Suyetani .62● 206-772◇0343
Yaeko N Suyetani .62● 206-772◇0343
11821 NP
11826 Tak T Tsuchida .67● 206-772-1716
Takishi Tsuchida .67● 206-772-1716
11827 Apartments
1182 Jesse A Descargar 97● 206-772-1874
1182 L A Descargar .97● 206-772-1874
11832 Samuel H Shinozaki 67● 206-772-6984
11833 Albert Xiong .01● 206-772-1826
Doua P Xiong .01● 206-772-1826
11837 Arturo S Englis .97● NP
Irmalene F Englis .97● NP
11838 Bj Budde .01 206-772-0423
Cathleen Budde .01 206-772-0423
11841 Andrea T Aquino .95● NP
Lou M Aquino .95● NP
11842 May E Zier .66● 206-772-5688
Vernon E Zier .66● 206-772-5688
11845 Tomoaki Yuzuri .01 NP
12003 12004 NP
12009 Elezabeth V Martin 76● 206-772-1117
12010 Jeffrey D Leinen +● NP
12015 Douglas P Fowler +● NP
Mark A Fowler +● NP
12021 Susie L Jenkins .94● NP
12022 Brooks Samples .00 NP
Leanne B Samples 00 NP
12027 Angela R Graves +● 206-772◇4269
Damon W Graves +● 206-772◇4269
12028 Annabelle D May .82● 206-772-6584
12033 Arnold R Cherullo .90● NP
Helen M Cherullo .90● NP
12034 Nancy J Braaten .89● NP
12037 Eucrezaida F Dulay 87● 206-772-3101
Roland C Dulay .87● 206-772-3101
12038 James T McCracken 67● 206-772-6577
12043 Edith Brunson .99● 206-772-5534
Wayne A Brunson .99● 206-772-5534
12049 Charles P Moore .90● NP
Ora B Moore .90● NP
12050 Angela E Smokov .98● NP
Robert J Smokov .98● NP
12055 Apartments
1 F P Tuiaana .91 206-772-7466
12056 Huong T Tran +● NP
Nhon H Tran +● NP
12203 Merch L Degrasse 90● 206-772-2856
12204 Arthur R Davis .96 NP
12209 Roberta Wilson +● NP
Sammie Wilson +● NP
206-772-6766
★ King George Eng .98 206-772-3717
12210 Alberto Medrano .98 206-772-3717
Leopoldo Medrano .98 206-772-3717

CT — Census Tract $ASB,Etc — Census Tract Wealth Rating ★ — Business Listing ⊙ — Duplicate Phone Number At This Business Address ♦ — No Phone Solicitation ◇ — No Phone/ Mail Solicitation

76TH AVE S

98178

11802 Robert E Stowers .97 772-0063
11808 11809 11814 NP
11808 NP
11820 11826 NP
11820 C Vongphakdy .91 772-8304
11829 James I McCulloch .88 772-4915
11832 ★Tops TK Off Pnds .87 772-4525
11832 Michael Keels .92 772-0470
11833 NP
11836 E Barber .92 772-5191
11840 11844 NP
11841 NP
S 120TH ST INTS
12004 12009 12010 NP
12015 12016 12017 NP
12019 C B Smith .80 772-4680
12022 NP
12025 George Pascut .93 772-2140
12028 Vun Chea .97 772-3583
12029 12034 12035 NP
12038 NP
12239 Percy McVey .96 772-1272
12044 NP
12045 Jing X Chen .95 772-6909
12050 Melidon Franada .90 772-4650
12051 12056 NP
S 122ND ST INTS
12204 12207 NP
12210 Donald Whitford .55 772-5327
12213 Robert E Hoffman .55 772-6087
12216 12219 NP
12222 Harvis Wainright .88 772-4833
Harvis Wainright ⊡ 772-7901
12225 12228 12231 NP
12234 William L Davis .97 772◇3170
12237 12243 NP
12244 L L Harding .94 772-6933
Laura Harding .94 772-6848
12250 A Brueckner ⊡ 772-2010
12256 Ba C Nguyen .96 772-1067
S 124TH ST INTS
S 126TH ST INTS
12610★US Bank Ubnk Mach ⊡ 772-1457
★US Bk Br Lctns New .95 ⊙ 772-1457
★U S Bank Br Lctns .97 ⊙ 772-1457
12617★Fire Prtct Dstrcts .96 772-1430
RENTON AVE S INTS
12704★The W Hll Fmly Ctr ⊡ 772-2050
12715 12721 NP
S 127TH ST INTS
S 128TH ST INTS
12722 Skyview Apt Motel
Craig Dyer .97 772-5981
Mark Goodman .91 772-3318
1 Ronald L Heric .90 772-5711
105 Jerry Puckett .97 772-2612
Toby D Rodriguez ⊡ 772-6808
2 Henry C Schaefer .79 772-5424
12726 NP
12727 Eric P Englund .69 772-6165
12744 NP
12816 W R Candland .66 772-4442
12826 Albert Wicker .67 255-5592
S 129TH ST INTS
12900 Walter Davis - 254◇1431
12901 NP
12914★Rnhrt Electr&Svc .95 242-1853
13020 R Nirapienranant .97 277-1655
81 RESIDENCE 8 BUSINESS

N 76TH ST 98103

E From 7600 1st NW
100- 139 CT 29 $D..D13
300- 399 CT 28 $D..D13
E 500- 598 CT 29 $D..D13
O 501- 599 CT 28 $D..D13
E 700- 798 CT 29 $D..D13
O 701- 799 CT 27 $B..D14
900- 999 CT 28 $D..D13
1100- 1399 CT 27 $B..D14
● THOMAS BROS MAP LOC K 534-H2
Jan Cox .90 781-1759
102 Cecil Watkins .69 789-0911
106 Matt Oldenburg ⊡ 782-5898
Richard Oldenburg - 782-5898
110 B D Levine .93 781-0820
111 NP
112 R Marks-Nicholes .92 783-2595
116 117 NP
118 David W Emery .96 706-7387
121 Mark Lundemo - 789-1718
122 John F Sifferle .81 783◇3370
126 Patricia Davis .97 783-2235
127 Barry Stoner .86 789◇7750
Barry Stoner ⊡ 784◇7372
130 NP
131 Schylor P Holmes .64 783◇9320
135 Paul Whitney - 789-3934
137 138 NP
141 Lara Igtizin .97 782-5446
142 Richard Greig .97 781-0202
143 146 NP
147 R Hilton .85 782-6621
302 306 NP
DAYTON AVE N INTS
312 Apartments
Arthur A Bloom - 783-8671
B Jodi Boehm ⊡ 784-8569
201 M Godfrey .79 782-3605
B Joseph Haran ⊡ 784-8569
202 M Radley .93 782-2993
A A Timm .87 782◆7490
103 William S Tyner .94 782-6729
301 Paul A Wakefield .95 706-0250
314 316 NP
317 Martin J Walz III .96 784-2599
318 NP
319 M H Sims .88 789-8818
321 NP
324 R Pederson .85 784-9462
325 C J Pearl .90 783-6419
326 NP
329 K Sticklin .90 789-9180
332 Greg May .87 783-2483
333 Nancy L Greffin .95 782-6517
334 Steve Kom - 706-9620
337 NP
340 G E Dowie .74 784-1445
342 Erik S Bennigson .94 789-2053
Gwen Drolet .97 789-2053
343 Albert B Sather .70 784-9760
347 Jim B Flint .97 783◇3667
Elizabeth Ling ⊡ 783◇3667
348 Brian Bennink ⊡ 297-2911
★Groove Ln Prdctns ⊡ 297-2611

350 H M Fermstad .69 783-1062
353 354 NP
355 Kyle Cruver .92 783-2914
358 M K Isaman .94 782-5240
359 Jim Kramer .88 784-5018
360 Kenneth C Pavic .94 784-0198
361 Ken Moriarty .91 789-8489
362 Stan D Wagner .94 782-5109
503 Jeffrey E Berg - 781-2231
504 William F Dyment .70 782-3563
506 Chris Collins .96 783-6809
509 Gene D Smith .92 789-1088
510 Joseph P Chapman .73 789-1437
511 David R Debusk ⊡ 781-9733
Gregory C Narver .96 706-7593
514 Pete L Colbeck .92 781-7242
★Colbeck&Co Inc .93 781-2200
515 Vatsek Parda .55 782-4056
518 520 521 NP
524 D Creager .97 784-6390
525 Ron Borrevik .95 789-9508
528 Kirk H Howe .92 783◇7621
529 531 532 NP
536 A Deklerk .95 784-3913
537 NP
541 M D Hardman - 783◆6902
544 J N Fairleigh .89 789-1072
547 548 NP
551 Johann I Johnson .58 782-0911
560 Joseph M Puggelli .92 784-6269
FREMONT AVE N INTS
701 NP
706 Dennis R Shadduck .74 783-3216
707 David McCarty ⊡ 789-3997
710 711 712 NP
715 Pat Bertrand .94 781-8203
716 719 720 NP
721 Lynn Webber .87 782-6968
724 Steve A Hart ⊡ 706-1581
Craig Suhadolnik .91 789-3057
725 Edward Carr .86 789-0355
726 NP
731 Greg Rutar .91 784◇7596
733 NP
734 Joseph L Clem .67 784-9473
736 Elisabeth Archer ⊡ 782-4151
Eric Krauss ⊡ 782-4151
737 Sean Kliger ⊡ 789-9008
Matt Worley - 789-9008
741 Howard Wells .92 783-4190
742 NP
743 Christopher Cox .85 784-7384
746 NP
748 Amy Clarfeld ⊡ 706-5454
749 Alfred D Tietjen .82 789◇2905
750 Thomas H Carlson .87 789-9004
756 Andrew Ford ⊡ 782-9031
Costas Giannaros .97 706-1210
LINDEN AVE N INTS
902 Harold L Spilde .62 784◇4879
906 Darrell Willers .76 783-3462
909 A J Mallinson .63 783-5978
910 M Rosa .96 789-7631
911 NP
912 William Doherty ⊡ 783-8577
J D Martinsen ⊡ 781-1949
914 NP
919 Louis J Morseth .55 782-1568
920 Bree Self .97 706-2838
923 Carl F Anderson .55 784-5363
924 NP
927 Joe Malono .89 789-2337
929 L A Sacha .87 784-0891
Leslie Sacha .96 789-6926
930 James Dean .76 783-8623
931 P Dwyer .78 784-2455
D Steen .85 784-2455
933 NP
934 John R Carmack .96 706-8829
John M Gooding .88 784-0440
936 Arne Moen .94 784-3652
940 Apartments
½ Perry McIntyre - 782-4884
Dale Wilson .90 781-1795
941 Mamie Boomer .96 784-5863
K Strating .93 784-9063
943 NP
946 Steve Cheek .95 781◇4860
Randi Ponek .93 781-4860
947 NP
949 Mar O Webb-De ⊡ 783-4112
★The Gift Musc Pno .94 783-4112
AURORA AVE N INTS
1111 Mark T Uihlein .96 523-7793
1112 1115 NP
1116 Greg Larratt ⊡ 528-4912
1119 Harold J Hillard .55 523-6890
1120 Samuel J Caldwell .89 526-5063
1123 Fred A Smith .55 522-7230
1124 C Franzen .82 524-1833
Clifford Jones .82 524-1833
1127 NP
1128 Brian Placzek .91 524-7893
1131 Richard C Hammett .91 526-1929
1132 M C McShane .84 524◇9018
1135 Jack Schwaegler .94 527-4704
1136 NP
1139 N R Healy .81 524-1328
1140 NP
1143 Kevin Mounts .97 524-7701
1144 D V Smith .79 523-0585
1148 Donald Meyer .83 522-2162
1152 Rosemary Dunn .96 522-9131
1156 Diane Kawabata .89 527-9652
Dave Waataja .97 527-9652
1160 NP
1164 James F Sutterman .67 525-3299
WINONA AVE N INTS
KEEN WAY N INTS
1304 Mel C Rowland .79 525-4326
Richard N Stanford .75 525-4326
1310 Neil Bauersfeld ⊡ 526-9912
Holly Bottman ⊡ 526◆9912
1314 1318 NP
1322 P A Baccili - 525-9599
J W Power - 526-5290
★Wa Girls Scer Cmp .97 633-1595
1326 Richard Powell .90 523-2384
187 RESIDENCE 4 BUSINESS

NE 76TH ST 98115

E From 7600 Latona NE
300- 399 CT 27 $B..D14
O 401- 499 CT 29 $D..D13
600- 699 CT 27 $B..D14
1500- 1599 CT 26 $B..D14
● THOMAS BROS MAP LOC K 535-B2
306 Danny Clemans - 729-6802
Lorna MacKenzie .88 524-6457
312 NP
313 Arthur N Foss .97 522-6017
317 NP
318 Rick Riedel .85 523-6493
320 Beverly J Myers .93 524-5422
323 NP
326 Stacey Hannah .96 528-4980
329 L E Williams .88 523-5375
333★Seattle Frmsn Ch .96 522-8084
342 NP
350 James L Bellessa .95 524-5003
5TH AVE NE INTS
4TH AVE NE INTS
601 Marybeth Selby .97 517-5277
610 NP
614 B H Carroll .80 527-7025
615 NP
621 E Mezistrano .96 527-4434
622 624 625 NP
15TH AVE NE INTS
1506 C P Larson .85 526-8120
1507 1514 NP
1515 Peter Oppenheimer .95 524-6554
1518 1519 NP
1522 Steve Macias .94 528-5363
1523 Colleen F Johnson .78 527-9488
1527 NP
1528 Bradley Hooper .97 729-1279
Michael Worona ⊡ 527-6250
1533 R R Armstrong .87 522-6124
1534 1537 NP
1540 K W Stewart-Gordon .85 522-9433
1541 Maurice C Clark .60 523-5022
1542 C A Rogstad .63 523◆1889
S F Wessman .80 523◆1889
1545 Scott Anderson .87 525-9443
1549 Mike Barlia .68 524-5575
1550 Kenneth B Allison .79 527◇8504
Pat Kelly .85 527◇8504
1552 George C Dick .60 523-1494
1557 John Irby .88 523-0867
1558 NP
45 RESIDENCE 1 BUSINESS

NW 76TH ST 98117

W From 7600 1st NW
100- 799 CT 29 $D..D13
● THOMAS BROS MAP LOC K 534-G2
1ST AVE NW INTS
101 Sheldon Balberman .96 783-4220
102 Peter Lancaster - 706-0037
Melba Wallace ⊡ 706◇0037
105 L Gradinger .97 706-0565
108 Apartments
2 Patrick Mahoney .93 782-1164
1 Steven F McClure .90 784-8760
Andrea Perlaki ⊡ 781-4628
109 Tab Kiesel .91 783-1160
111 112 NP
113 Robert F Howell .68 784-0224
116 Robert W Birkeland .94 781◇0148
117 122 123 125 NP
128 A Sutphen - 782◇8524
131 David A Colpo .96 789◇7176
132 S Mason .86 783-2344
135 NP
136 Paul Reitz - 706-4627
140 P Horgan .92 782-2678
141 Boyd H Loper .62 784-4287
144 Patrick Downs - 706-4507
145 J K Smiley .68 783-0261
148 J Oswald - 783-5937
149 Clarke Campbell - 782-8448
152 Louis S Barkley .66 784-6697
156 Michael Ruggiero .96 784-3106
3RD AVE NW INTS
304 Curtis P Jensen .75 789-2448
307 Gordon Pederson .62 782-3541
311 312 NP
317 Claire T Heineman .97 781-0324
Frank S Martin .97 781-0324
★Rstrctrs Dsgn Bld .97 706-1047
320 A M Naumann .96 706-9407
323 324 NP
327 John OConnell .91 782-9022
★Ballard Pref Move .97 782-0300
328 Lottie C Brickert ⊡ 706◆2964
Gary C Huie .97 706◆2966
330 Mark R Lee .95 782-3654
331 M Fletcher .95 706◇1390
334 NP
335 C J Watkis Jr .96 782-7327
338 NP
339 Robert Scribner .95 781-8633
342 L Valko ⊡ 781◆1978
343 N Cutting .93 784-1439
346 Virginia Mendez .97 783-9447
347 NP
351 Shawna McHatton - 781-1650
352 Thomas Burns .94 789-1981
S Pagel ⊡ 706-4758
353 356 359 NP
6TH AVE NW INTS
606 NP
610 William J Harris .97 781-0894
C M Kaufman .97 781-0894
611 Shannon S Cassady ⊡ 781-7860
614 615 NP
618 Jean Baker .95 783-3708
619 NP
622 John B Maggiore .95 782-2414
625 C J Harris .93 781-7679
L Johnson .94 784-0618
628 Gerald V Harris .62 784-0688
629 Rod F Morden .97 781-5521
630 633 NP
636 James Johnson .93 784-3818
637 Tiberio Simone .92 783-5071
640 NP
641 Scott D Walker .79 784◇5552
642 NP
643 Kristina Ray .97 706-9373
646 NP
647 Clifford L Olson .63 783-8470
650 651 NP
652 Kirti Kavi .97 789-6170
655 NP
656 John N Breen .74 783-5582
85 RESIDENCE 2 BUSINESS

N 77TH ST

77TH AVE S 98178

At 7700 S 118th
11600-12299 CT 260.01 $D..B31
12800-12899 CT 261 $E..B31
● THOMAS BROS MAP LOC K 655-J1
● THOMAS BROS MAP LOC K 625-J7
11701 11707 NP
11715 Phyllis Cravens .97 772-3375
11720 George Beppu .90 772-1134
11721 NP
S 118TH ST INTS
11803 NP
11808 S Yokoyama .87 772-0969
11809 Joyce M Sims .96 772-5593
11815 Binh H Pham .81 772-7053
Xuan H Pham .89 772-7894
11820 Donald I Suyetani .67 772-0343
11821 NP
11826 Tak Tsuchida .68 772-1716
11827 Mar Descargar .86 772-1874
11832 Samuel H Shinozaki .74 772-6694
11833 NP
11838 Robert A Vickers .67 772-1775
11841 NP
11842 Vernon E Zier ⊡ 772-5688
11845 NP
S 120TH ST INTS
12003 A V Swafford .88 772-6080
12004 NP
12009 E V Martin .88 772-1117
12010 Curtis J Hill .55 772-4871
12015 Max J Traxel ⊡ 772-1323
12016 12021 NP
12022 Mac L Pitre Sr - 772-5342
12027 NP
12028 Curtis D May .62 772-6584
12033 NP
12034 N J Braaten .90 772-2960
12037 Roland C Dulay .87 772-3101
12038 James T McCracken .67 772-6577
12043 NP
12044 K M Dalvit .64 772-5575
12049 12050 NP
12055 I M Tuiaana .92 772-2744
12056 NP
12203 Merch L Degrasse .91 772-2856
12204 NP
12209★King George Eng ⊡ 772-6766
12210 12215 12216 NP
12221 Terry Moore .97 772-7992
12222 12227 12228 NP
12233 NP
12234 B C Vanausdal .79 772-5080
12237 Michael Fisher .94 772-0960
12238 NP
12243 A Alexander .96 772-4748
12244 Abel Fortune .82 772-2476
12249 H D Borsvold .64 772-4912
12250 L L McGinnis .80 772-5328
12255 Daniel R Bennett .86 772-2712
12256 L F Kuwitzky .85 772-2793
S 124TH ST INTS
12814 J E Campbell .81 772-5285
12824 J C Yardy .81 772-5855
12839 NP
12840 Yngvar Berre .83 772-4492
12843 NP
12844 Rick K Abe .85 271-9418
12846 Thomas T Hisayasu .73 226-9514
66 RESIDENCE 1 BUSINESS

N 77TH ST 98103

N From 7700 1st NW
100- 199 CT 29 $D..D13
300- 599 CT 28 $D..D13
E 700- 798 CT 29 $D..D13
O 701- 799 CT 27 $B..D14
900- 999 CT 28 $D..D13
1100- 2499 CT 27 $B..D14
● THOMAS BROS MAP LOC K 534-A2
● THOMAS BROS MAP LOC K 535-H2
101 Archie McDonald .55 783-5861
102 B Nevitt .97 783-1187
106 NP
107 Dennis Noson .91 782◇5876
110 Regan McClellan .95 784◆6846
★McClellan Archtcts ⊡ 783◆7341
111 Robin Pinne - 783-9862
114 NP
117 Keith Felton - 784◇7355
119 NP
120 Susan Dyer .94 782-5196
123 Chris V Pitre .97 782◇5025
S R Wilhelm .97 782◇5025
W G Bille .71 782-3061
125 126 NP
130 V Teuscher .95 706-0298
131 J A Hecht .89 781◇1253
132 Coral Olson .95 789-4142
135 Kelly M Kasper .94 789-8972
John B Mirkovich .94 789-8972
136 Steven C Mork .84 789-6162
★Cemco ⊡ 783-6306
137 John M Rutherford .92 783-4462
141 NP
145 C A Creasey .93 784-5649
148 151 NP
303 Aimee Harris ⊡ 297-1231
305 NP
306★Faine/ Oller Inc .95 781-6882
307 Jim Blair - 706-8546
Chris Lew ⊡ 297◇1441
308 NP
310 Robert A Henry .91 783-2406
DAYTON AVE N INTS

ADDRESS

■ — Most Recent Movers ⊡ — New Listing To Directory -- — New Listing To Street 95,96,Etc. — Year First Listed 1995,96,Etc.

S 76TH AVE *cont'd*

Address		Zip+4	CarrRte	Phone
12051	Coale G D	-4421	C010	772-4974
	Lovin Mark	-4421	C010	772-5824
12056	Harmon Kenneth R	-4420	C010	772-2587
12204	McKinney Melissa	-4401	C007	772-0570
	McKinney Walter	-4401	C007	772-0570
12210	Whitford Donald	-4401	C007	772-5327
12213	Hoffman Robert E	-4402	C007	772-6087
12222	Wainright Harvis	-4401	C007	772-4833
	Wainright Lavern	-4401	C007	772-4833
12244	Harding L L	-4401	C007	772-6933
	Harding Laura	-4401	C007	772-6848
12250	Seitz Richard D	-4401	C007	772-7483
12256	Nguyen Ba C	-4401	C007	772-1067
	Versoza D J	-4401	C007	772-0917
12424	SKYWAY HOME FURNISHINGS	-4809	C007	575-8268
12610	U S BANK	-4857	C007	227-4770
12617	KING COUNTY FIRE DEPT	-4810	C007	772-1430
	Autry Eric W	-4810	C007	772-1677
	Dyer Craig	-4810	C007	772-5981
	Mackie Duane	-4810	C007	772-1540
12722	Goodman Mark	-4851	C007	772-3318
	Goodman Michael	-4851	C007	772-3318
	Heric Ronald L	-4851	C007	772-5711
	Kruse Kim	-4851	C007	772-3438
	Mitchell Thay M	-4851	C007	772-9057
	Schaefer Henry C	-4851	C007	772-5424
	Shelton Wayne T	-4851	C007	772-2506
	West A	-4851	C007	772-5447
	Wilson Cynthia	-4851	C007	772-2689
	Wilson Kenneth	-4851	C007	772-2689
12726	Parkhurst W W	-4811	C007	772-6787
12727	Englund Eric P	-4813	C007	772-6165
12816	Candland W R	-4815	C007	772-4442
12826	Wicker Albert	-4815	C007	255-5592
12900	Hanson Geoffrey	-4816	C007	227-5335
	Hanson Loretta	-4816	C007	227-5335

BUSINESSES 5 HOUSEHOLDS 62

N 76TH ST *(S)* 98103

Address		Zip+4	CarrRte	Phone
102	Watkins Cecil	-4604	C005	789-0911
110	Levine B D	-4604	C005	781-0820
112	Markanicholes Robert	-4604	C005	783-2595
117	Kutz K A	-4603	C005	782-2909
118	Emery David W	-4604	C005	706-7387
121	Weaver Scott	-4603	C005	781-6933
122	Sifferle John F	-4604	C005	783-3370
127	Stoner Barry	-4603	C005	789-7750
130	Morgan Thane	-4604	C005	784-2925
131	Holmes Schylor P	-4603	C005	783-9320
135	Jones Alan K	-4603	C005	783-6316
138	Gunder Sandra	-4604	C005	782-3056
	Gunder Thomas	-4604	C005	782-3056
142	Landguth Earl F	-4604	C005	783-0308
	Landguth Fred A	-4604	C005	783-0308
143	Obrien Bernie	-4603	C005	789-4472
147	Hilton R	-4603	C005	782-6621
312	Collins Rosella	-4647	C025	783-2242
	Godfrey M	-4647	C025	782-3605
	Hatley Steve	-4647	C025	781-7146
	Radley M	-4647	C025	782-2993
	Timm A A	-4647	C025	782-7490
	Torgerson Bridget	-4647	C025	783-2290
	Tyner William S	-4647	C025	782-6729
	Wakefield Paul A	-4647	C025	706-0250
317	Walz Martin J	-4613	C025	784-2599
319	Sims M H	-4613	C025	789-8818
324	Pederson R	-4614	C025	784-9462
325	Pearl C J	-4613	C025	783-6419
329	Campbell David	-4613	C025	789-9180
	Stickley K	-4613	C025	789-9180
332	May Greg	-4614	C025	783-2483
333	Greffin Nancy L	-4613	C025	782-6517
	Walton Kristi	-4613	C025	783-6022
340	Dowie G E	-4614	C025	784-1445
342	Bennigson Erik S	-4614	C025	789-2053
343	Sather Albert B	-4613	C025	784-9760
347	Rowlett Deborah O	-4613	C025	789-1806
350	Fermstad H M	-4614	C025	783-1062
355	Burgess Parke G	-4613	C025	783-6249
	Cruver Kyle	-4613	C025	783-2914
	Robinson Joelle	-4613	C025	783-6249
358	Isaman M K	-4614	C025	782-5240
359	Kramer Brenda	-4613	C025	784-5018
	Kramer Jim	-4613	C025	784-5018
360	Pavic Kenneth C	-4614	C025	784-0198
361	Moriarty Bridget	-4613	C025	789-8489
	Moriarty Ken	-4613	C025	789-8489
362	Wagner Stan D	-4614	C025	782-5109
503	Biswell Kenneth C	-4701	C044	784-7311
	Farr Shelly	-4701	C044	784-7311
504	Dyment William F	-4702	C044	782-3563
506	Collins Chris	-4702	C044	783-6809
509	Smith Gene D	-4701	C044	789-1088
	Smith Lin	-4701	C044	789-1088
510	Chapman Joseph P	-4702	C044	789-1437
511	Narver Gregory C	-4701	C044	706-7593
514	COLBECK & CO	-4702	C044	781-2200
	Colbeck Pete L	-4702	C044	781-7242
	Colbeck Terri	-4702	C044	781-7242
515	Parda Vatsek	-4701	C044	782-4056
525	Borrevik Ron	-4701	C044	789-9508
528	Howe Anne	-4702	C044	783-7621
	Howe Kirk H	-4702	C044	783-7621
536	Deklerk A	-4702	C044	784-3913
544	Fairleigh J N	-4702	C044	789-1072
547	Granberg Paul	-4701	C044	781-1254
	Johnson Blake	-4701	C044	781-1254
551	Johnson Johann I	-4701	C044	782-0911
560	Puggelli Jessie	-4702	C044	789-5451
	Puggelli Joseph M	-4702	C044	784-6269
706	Shadduck Dennis R	-4723	C045	783-3216
715	Bertrand Pat	-4722	C045	781-8203
716	Crofton Sandy	-4723	C045	789-1852
719	Brown Tom	-4722	C045	782-4909
720	Gaw George P	-4723	C045	784-8824
721	Webber Lynn	-4722	C045	782-6968
724	Houghton Ross E	-4723	C045	784-6796
	Suhadolnik Craig	-4723	C045	789-3057
	Thomas Jamie L	-4723	C045	706-8770
725	Carr Edward	-4722	C045	789-0355
731	Rutar Greg	-4722	C045	784-7596
734	Clem Joseph L	-4723	C045	784-9473
737	Braun Karl	-4722	C045	782-6302
741	Wells Howard	-4722	C045	783-4190
	Wells Karen	-4722	C045	783-4190
742	Buchner Phillip	-4723	C045	783-3061
743	Cox C	-4722	C045	784-7384
	Cox P	-4722	C045	784-7384
746	Medlin Ed	-4723	C045	789-3385
748	Slick Brian J	-4723	C045	784-0730
	Slick Elizabeth M	-4723	C045	784-0730
749	Tietjen Alfred D	-4722	C045	789-2905
750	Carlson Katie	-4723	C045	789-9004
	Carlson Thomas H	-4723	C045	789-9004
756	Boyle Kevin J	-4723	C045	782-9031
	Giannaros Costas	-4723	C045	706-1210
902	Splide Harold L	-4725	C045	784-4879
	Splide Lillian	-4725	C045	784-4879
906	Willers Darrell	-4725	C045	783-3462
909	Mallinson A J	-4724	C045	783-5978
910	Rosa Margaret	-4725	C045	789-7631
911	Lorenson Adners	-4724	C045	781-8237
912	Long Richard	-4725	C045	782-5944
914	Smith Marion I	-4725	C045	782-4338
919	Morseth Louis J	-4724	C045	782-1568
920	Delaney James	-4725	C045	706-1898
923	Anderson Carl F	-4724	C045	784-5363
924	Leischner Gary D	-4725	C045	784-1877
	Oar D	-4725	C045	789-8241
927	Malone Joe	-4724	C045	789-2337
929	Sacha L A	-4724	C045	784-0891
	Sacha Leslie	-4724	C045	789-6926
930	Dean James	-4725	C045	783-8623
931	Dwyer P	-4724	C045	784-2455
	Steen D	-4724	C045	784-2455
934	Carmack John R	-4725	C045	706-8829
	Gooding John M	-4725	C045	784-0440
936	Christianson Jennifer	-4725	C045	781-3251
	Moen Arne	-4725	C045	784-3652
	Wesson Matt	-4725	C045	781-3251
940	Wilson Dale	-4725	C045	781-1795
	Wilson Sherrie	-4725	C045	781-1795
941	Boomer Mamie	-4724	C045	784-5863

N 76TH ST *cont'd*

Address		Zip+4	CarrRte	Phone
	Strating K	-4724	C045	784-9063
946	Cheek Steve	-4725	C045	781-4860
	Ponek Randi	-4725	C045	781-4860
949	GIFT OF MUSIC PIANO STUDIO	-4724	C045	783-4112
	Webbdemar Ondine	-4724	C045	783-4112
1111	Uhlein Mark T	-4803	C055	523-7793
1116	Cryan Katie	-4804	C055	526-9633
	Farber George	-4804	C055	526-9633
	Otoole Catherine	-4804	C055	526-9633
1119	Hillard Harold J	-4803	C055	523-6890
1120	Caldwell Samuel J	-4804	C055	526-5063
	Coats L	-4804	C055	525-6763
1123	Smith Fred A	-4803	C055	522-7230
1124	Franzen C	-4804	C055	524-1833
	Jones Clifford	-4804	C055	524-1833
1128	Placzek Brian	-4804	C055	524-7893
1131	Hammett Richard C	-4803	C055	526-1929
1132	McShane M C	-4804	C055	524-9018
1135	Schwaegler Becky	-4803	C055	527-4704
	Schwaegler Jack	-4803	C055	527-4704
1136	Boyd Stacy	-4804	C055	528-4881
1139	Healy N R	-4803	C055	524-1328
1140	Salguero Okashi R	-4804	C055	524-5842
1143	Coffey Bruce	-4803	C055	525-5069
	Coffey Lynn	-4803	C055	525-2820
	Coffey Lynn	-4803	C055	525-5069
1144	Smith D V	-4804	C055	523-0585
1148	Meyer Donald	-4804	C055	522-2162
	Meyer Laura	-4804	C055	522-2162
1152	Badgett Lona G	-4804	C055	526-5270
	Dunn Rosema	-4804	C055	522-9131
	Perkins K	-4804	C055	526-5270
1156	Kawabata Diane	-4804	C055	527-9652
1160	Hobson Chuck	-4804	C055	517-5122
	Hobson Dajana	-4804	C055	517-5122
1164	Sutterman James F	-4804	C055	525-3299
1304	Rowland Mel C	-4806	C055	525-4326
	Stanford Richard N	-4806	C055	525-4326
1310	Lorentzen K	-4806	C055	526-0988
1326	Powell Richard	-4806	C055	523-2384

BUSINESSES 2 HOUSEHOLDS 162

NE 76TH ST *(S)* 98115

Address		Zip+4	CarrRte	Phone
306	Mackenzie Lorna	-4026	C004	524-6457
313	Foss H J	-4025	C004	522-0223
318	Riedel Marcia	-4026	C004	523-6493
	Riedel Rick	-4026	C004	523-6493
320	Myers Beverly J	-4026	C004	524-5422
326	Hannah Stacey	-4026	C004	528-4980
	Meyers Stephan	-4026	C004	523-3685
329	Holzer Klaus	-4025	C004	523-5375
	Holzer Lora	-4025	C004	523-5375
333	SEATTLE FORMOSAN CHRISTIAN CHR	-4025	C004	522-8084
350	Bellessa James L	-4026	C004	524-5003
614	Carroll B H	-4146	C073	527-7025
621	Mezistrano E	-4145	C073	527-4434
	Schroth Ramona	-4145	C073	526-8756
	Schroth Ted	-4145	C073	526-8756
632	Larkin Michael	-4146	C073	454-4805
	Larkin Sharon	-4146	C073	454-4805
1506	Larson C P	-4374	C073	526-8120
	Wilson Andrea	-4374	C073	526-8120
1507	McClellan John	-4373	C073	528-6013
1514	Gerson Charles	-4374	C073	523-3626
1515	Oppenheimer Peter	-4373	C073	524-6554
1518	Sumboru Karl W	-4374	C073	524-1336
1519	Cartwright Daniel	-4373	C073	524-8990
1522	Cooper K	-4374	C073	528-5363
	Macias Steve	-4374	C073	528-5363
1523	Johnson Colleen F	-4373	C073	527-9488
1528	Leale Douglas M Jr	-4374	C073	517-5930
	Leale Douglas M Jr	-4374	C073	522-5653
1533	Armstrong Raymond R	-4373	C073	522-6124
1534	Bird Erin	-4374	C073	527-7099
1540	Stewartgordon K W	-4374	C073	522-9433
1541	Clark Maurice C	-4373	C073	523-5022
1542	Rogstad C A	-4374	C073	523-1889
	Wessman S F	-4374	C073	523-1889
1545	Anderson Joyce	-4373	C073	525-9443
	Anderson Scott	-4373	C073	525-9443
1549	Barlia Mike	-4373	C073	524-5575
1550	Allison Kenneth B	-4374	C073	527-8504
	Kelly Pat	-4374	C073	527-8504
1552	Dick George C	-4374	C073	523-1494
1557	Irby John	-4373	C073	523-0867

BUSINESSES 1 HOUSEHOLDS 41

NW 76TH ST *(S)* 98117

Address		Zip+4	CarrRte	Phone
102	Donohue Thomas F	-3015	C004	784-4191
105	Cooper Gregory	-3016	C004	784-0909
108	Mahoney Patrick	-3015	C004	782-1164
	McClure Steven F	-3015	C004	784-8760
	Wallis Peter	-3015	C004	782-3341
109	Kiesel Tab	-3016	C004	783-1160
113	Howell Robert F	-3016	C004	784-0224
116	Birkeland Robert W	-3015	C004	781-0148
117	Nelson Stephen	-3016	C004	781-1955
125	Corthell Lesli	-3016	C004	781-1027
	Meyers Peter	-3016	C004	781-1027
128	Howey Glenna M	-3015	C004	784-4559
	Sutton William J	-3015	C004	784-4559
131	Colpo David A	-3016	C004	789-7176
	Sullivan Cornel	-3016	C004	784-6827
132	Bixler Joseph B	-3015	C004	783-2344
	Mason S	-3015	C004	783-2344
136	Reitz Paul A	-3015	C004	782-6810
	Poe Gregory	-3015	C004	784-4983
	Roe Heather	-3015	C004	784-4983
140	Horgan P	-3015	C004	782-2678
141	Loper Louise	-3016	C004	784-4287
144	Brown D	-3015	C004	784-0289
	Parker David A	-3015	C004	782-5139
145	Smiley J K	-3016	C004	783-0261
148	Parrish K	-3015	C004	783-2341
	Prince Joanna	-3015	C004	782-1676
149	Bell Caroline	-3016	C004	783-4503
	Bell Greg	-3016	C004	783-4503
152	Barkley Louis S	-3015	C004	784-6697
	Barkley Marylou	-3015	C004	784-6697
156	Ruggiero Michael	-3015	C004	784-3106
304	Jensen Curtis P	-4060	C014	789-2448
307	Pederson Gordon	-4010	C014	782-3541
311	Duyck William	-4010	C014	784-2119
	McGregor B A	-4010	C014	781-8456
317	Davis Leila	-4010	C014	784-4716
	Davis Raymond	-4010	C014	784-4716
320	Johnson Kirk L	-4060	C014	789-4185
	Naumann A M	-4060	C014	706-9407
327	Oconnell John	-4010	C014	782-9022
330	Lee Mark R	-4060	C014	782-3654
	Peterson P L	-4060	C014	782-3654
331	Fletcher E	-4010	C014	706-1390
	Fletcher M	-4010	C014	706-1390
335	Watkis Clinton J Jr	-4010	C014	782-7327
339	Scribner Robert	-4010	C014	781-8633
342	Bordner M	-4060	C014	706-8502
	Swinford J O	-4060	C014	783-2565
343	Cutting N	-4010	C014	784-1439
351	Gray Ethan M	-4010	C014	784-3745
	Radloff C	-4010	C014	784-7753
	Radloff Dawn	-4010	C014	784-1569
352	Burns Thomas	-4060	C014	789-1981
353	Mitchell Diane	-4010	C014	782-0901
	Walker Skye	-4010	C014	782-0901
359	Brainard Mary	-4010	C014	789-6613
611	Oneil Tomie	-4045	C014	789-0097
	Stanley Jeff	-4045	C014	789-4431
618	Baker Jean	-4044	C014	783-3708
621	Carlson Alisa L	-4045	C014	525-7018
622	Magglore John B	-4044	C014	782-2414
625	Harris C J	-4045	C014	781-7679
	Johnson L	-4045	C014	784-0618
628	Harris Gerald V	-4044	C014	784-0688
629	Hedelund J	-4045	C014	783-2441
633	Engelhardt D R	-4045	C014	784-1803
636	Moriarty Nora	-4044	C014	784-8728
	Walker Suzann	-4044	C014	784-3818
637	Simone Rebecca	-4045	C014	783-5071
	Simone Tiberio	-4045	C014	783-5071
641	Walker Rene	-4045	C014	784-5552
	Walker Scott D	-4045	C014	784-5552

NW 76TH ST *cont'd*

Address		Zip+4	CarrRte	Phone
642	Kennison Gary	-4044	C014	783-8119
	Kennison Karri	-4044	C014	783-8119
647	Olson Clifford L	-4045	C014	783-8470
651	Gallagher M	-4045	C014	784-9671
655	Jensen Michael	-4045	C014	789-7963
656	Breen John N	-4044	C014	783-5582

HOUSEHOLDS 79

S 77TH AVE *(S)* 98178

Address		Zip+4	CarrRte	Phone
11701	Halfon Jim	-3807	C010	772-4160
11715	Suyama Minoru	-3807	C010	772-5246
	Suyama Toshie	-3807	C010	772-5246
11720	Beppu George	-3806	C010	772-1134
11808	Yokoyama L	-3808	C010	772-0969
	Yokoyama S	-3808	C010	772-0969
11809	Boyett Jack G	-3809	C010	772-5252
	Sims Joyce M	-3809	C010	772-5593
11815	Pham Binh H	-3809	C010	772-7053
	Pham Xuan H	-3809	C010	772-7894
11820	Suyetani Donald I	-3808	C010	772-0343
11826	Tsuchida Tak	-3808	C010	772-1716
11827	Descargar Mar	-3809	C010	772-1874
11832	Shinozaki Samuel H	-3808	C010	772-6694
11838	Vickers Robert A	-3808	C010	772-1775
11841	Aquino Lou	-3809	C010	772-5868
11842	Zier Vernon E	-3808	C010	772-5688
12003	Swafford A V	-4423	C010	772-6080
12009	Martin E V	-4423	C010	772-1117
12010	Hill Curtis J	-4422	C010	772-4871
12022	Valiant Catherine	-4422	C010	772-5640
	Valiant Robert	-4422	C010	772-5640
12028	May Curtis D	-4422	C010	772-6584
12034	Braaten N J	-4422	C010	772-2960
12037	Dulay Roland C	-4423	C010	772-3101
12038	McCracken James T	-4422	C010	772-6577
12044	Dalvit K M	-4422	C010	772-5575
12049	Moore Ora B	-4423	C010	772-4989
12050	Vold Robert H	-4422	C010	772-4792
12055	Tuiaana I M	-4423	C010	772-2744
12203	Degrasse Merch L	-4404	C007	772-2856
12204	Palmer Richard D	-4403	C007	772-4011
12209	King George E	-4404	C007	772-6766
12215	Sisk Faye	-4404	C007	772-3047
12222	Herring G	-4403	C007	772-7846
12234	Vanausdal B C	-4403	C007	772-5080
12238	Luangphakdy O	-4403	C007	772-3522
12243	Alexander A	-4404	C007	772-4748
12244	Fortune Abel	-4403	C007	772-2476
	Fortune Dandi	-4403	C007	772-2476
12249	Borsvold H D	-4404	C007	772-4912
12250	McGinnis L L	-4403	C007	772-5328
12255	Bennett Daniel R	-4404	C007	772-2712
12256	Kuwitzky L F	-4403	C007	772-2793
12814	Campbell J E	-4818	C007	772-5285
12824	Yardy J C	-4818	C007	772-5855
12839	Maekawa Ken	-4819	C007	772-6690
12840	Berre Yngvar	-4818	C007	772-4492
12844	Abe Rick K	-4818	C007	271-9418
12846	Hisayasu Thomas T	-4818	C007	226-9514

HOUSEHOLDS 50

N 77TH ST *(S)* 98103

Address		Zip+4	CarrRte	Phone
101	McDonald Archie	-4605	C005	783-5861
102	Hack Brenda	-4606	C005	781-1845
	Hack Greg	-4606	C005	781-1845
106	Brown Warren P	-4606	C005	783-4590
107	Noson Dennis	-4605	C005	782-5876
110	McClellan Lodi	-4606	C005	784-6846
	McClellan Regan	-4606	C005	783-7341
	McClellan Regan	-4606	C005	784-6846
114	Stevens Gordon F	-4606	C005	782-8508
	Stevens Helen	-4606	C005	782-8508
117	Nickel C	-4605	C005	784-1628
	Zantello Susan	-4605	C005	784-1628
120	Dyer Susan	-4606	C005	782-5196
123	A C HENNE DIESEL ENGINE CO	-4605	C005	782-4321
	Henne Alfred C Jr	-4605	C005	782-8249
125	Bille W G	-4605	C005	782-3061
130	Teuscher V	-4606	C005	706-0298
131	Hecht J A	-4605	C005	781-1253
132	Olson Coral	-4606	C005	789-4142
135	Kasper Kelly M	-4605	C005	789-8972
	Mirkovich John B	-4605	C005	789-8972
136	Mork Kathryn	-4606	C005	789-6162
	Mork Steven C	-4606	C005	789-6162
137	Rutherford John M	-4605	C005	783-4462
145	Creasey C A	-4605	C005	784-5649
148	Flackus Ronald	-4606	C005	784-7869
151	Coombs Julie	-4605	C005	782-6320
	Coombs Reed	-4605	C005	782-6320
	Mackenzie Billie	-4605	C005	781-9686
303	Nemetz Stacy	-4615	C025	706-8790
	Sabaric Steve	-4615	C025	782-8471
306	FAINE OLLER PRODUCTIONS	-4616	C025	781-6882
307	Johnson Donald L	-4615	C025	784-0712
308	Sherman J M	-4616	C025	783-7328
310	Henry Robert A	-4616	C025	783-2406
311	Thomas Jeff	-4651	C025	782-5993
315	Reinhardt David	-4615	C025	783-3359
316	Freeman Scott M	-4616	C025	784-1984
317	Allen Daniel W	-4615	C025	789-2137
	Throness Gary	-4615	C025	789-2137
320	Wilson Lester D	-4616	C025	782-2151
321	Gaw G R	-4615	C025	789-9742
	McQuay Michael	-4615	C025	781-8836
324	Pitts Rondal E	-4616	C025	783-3747
328	Schalkau Paul R	-4616	C025	782-7220
334	Woodward Ann	-4616	C025	782-6532
	Woodward David	-4616	C025	782-6532
335	Reeder David	-4615	C025	781-4832
336	Blair Chris S	-4616	C025	782-5406
337	Bartlett Arthur C	-4615	C025	782-4809
340	Thoreson R	-4616	C025	783-7905
346	Jakubowski James S	-4616	C025	783-0018
349	Sivert S	-4615	C025	789-8903
350	Dawson M J	-4616	C025	783-9052
354	Higbee Dewayne V	-4616	C025	789-6521
	Parpart John	-4616	C025	783-5069
355	Andersen Michael E	-4615	C025	782-7020
356	Arnim Dana	-4616	C025	783-6938
361	Butcher Monica	-4615	C025	706-8463
	Newman Dave	-4615	C025	706-8737
362	Sullivan M L	-4616	C025	784-8295
364	Coffman Melissa	-4616	C025	782-2789
503	Rich L	-4703	C025	781-9183
504	Kim Jung	-4704	C025	783-1613
506	Bergman Tony	-4704	C025	782-6188
507	Bigelow William	-4703	C025	783-5554
509	Klein Richard R	-4703	C025	784-5079
516	Moore Phillip H	-4704	C025	784-5322
519	Hokoda Steven C	-4703	C025	789-7992
520	Badner G	-4704	C025	782-1957
524	Wallace C	-4704	C025	782-6898
529	Soderquist Elsie	-4703	C025	782-2015
	Soderquist Henry	-4703	C025	782-2015
534	Rosen P	-4704	C025	781-0468
537	Clarkson John	-4703	C025	789-7076
	Gilchrist E A	-4703	C025	789-7076
538	Foster Thomas P	-4704	C025	784-5124
544	Larson Gordon N	-4704	C025	784-0248
546	Chau William C	-4704	C025	789-7439
	Rivas Ricardo	-4704	C025	789-7439
549	Bolden Arthur	-4703	C025	789-1624
702	Coombe A L	-4727	C045	784-1028
705	Lacey Megan	-4726	C045	782-3382
708	Nathan L	-4727	C045	706-9274
	Nelson Cynthia	-4727	C045	784-2923
709	Lunda K	-4726	C045	784-7228
712	Jaffe Bryce	-4727	C045	784-0765
	Jobe Lloyd	-4727	C045	781-8520
	Rodriguez J	-4727	C045	789-0572
	Rodriguez M	-4727	C045	789-0572
	Savage Christy	-4727	C045	781-8520
715	Hyre George	-4726	C045	783-7674
	Hyre Margaret	-4726	C045	783-7674
718	Cooper Laura K	-4727	C045	782-1494
	Klusman Steven	-4727	C045	706-1569
719	Ballkov M	-4726	C045	789-2063
	Ballkov S	-4726	C045	789-2063
723	Oleson Barbara	-4726	C045	781-1789
	Oleson Roger	-4726	C045	781-1789

N 77TH ST *cont'd*

Address		Zip+4	CarrRte	Phone
725	OUTDOOR PHOTO	-4726	C045	782-4460
728	Bailey Melissa	-4727	C045	781-9497
	Miracle N	-4727	C045	781-5244
729	Dauble Diana C	-4726	C045	706-9235
	Lacey Ann	-4726	C045	783-0220
	Miller Lewis	-4726	C045	789-9842
	Rodenborn Marcy	-4726	C045	706-9235
	Tjan Andi	-4726	C045	782-0695
732	Branberg Robert	-4727	C045	784-3973
739	Meyer M	-4726	C045	781-2055
742	Schmitz Lou	-4727	C045	789-0486
	Schmitz Martin	-4727	C045	789-0486
746	Miller Michael W	-4727	C045	789-5233
751	Parker Lewis B	-4726	C045	782-4184
910	PATERNO IMPORTS	-4729	C045	789-8807
	Simpson Michael A	-4729	C045	782-6719
	Simpson Peggy	-4729	C045	782-6719
911	Baumgartner Fred	-4728	C045	789-4555
914	Pistoresi Barbara	-4729	C045	784-0334
	Pistoresi Denis	-4729	C045	784-0334
915	VISIONS MARKETING SVC	-4728	C045	789-2594
	Knapp C	-4728	C045	789-2594
	Knapp Caunee	-4728	C045	782-5929
	Knapp K	-4728	C045	789-2594
	Knapp Kevin	-4728	C045	782-5929
	Knapp Kevin P	-4728	C045	782-5929
918	Williams Larry	-4729	C045	789-7273
	Williams Melanie	-4729	C045	789-7273
919	Usitalo Daniel	-4728	C045	781-8941
924	Bordeaux Robert	-4729	C045	783-7227
	Bordeaux Shelli	-4729	C045	783-7227
925	Snider Michael	-4728	C045	781-5198
930	Crane Don A	-4729	C045	782-0340
935	Johnson Kevin	-4728	C045	789-5994
	Smith Mary H	-4728	C045	789-2060
941	Milne Earl G	-4728	C045	783-5827
945	Stuberg Dexter L Jr	-4728	C045	783-9835
948	White Homer	-4729	C045	784-8805
1110	Franco Ray	-4808	C055	527-8161
	Smith Julia D	-4808	C055	527-8161
1113	Haukaas John H	-4807	C055	524-4216
1114	Henderson Kelly	-4808	C055	522-5848
	Rite James E	-4808	C055	517-7850
1118	Burbank Walter R	-4808	C055	522-3388
1121	Andrus Pat	-4807	C055	522-3183
	Lennon Lawrence	-4807	C055	522-3183
1128	Mjelde Erin	-4808	C055	522-4564
	Patrick Cara	-4808	C055	527-1342
1129	Stuart On	-4807	C055	524-0990
	Stuart Ron	-4807	C055	524-0990
1132	Davison S	-4808	C055	729-1065
	King Jeremy	-4808	C055	517-5419
	Rosse Philip	-4808	C055	528-4793
1133	Cole Edward N	-4807	C055	523-3633
1137	Hoagland Mark	-4807	C055	525-6441
	Hoagland Pamila	-4807	C055	525-6441
1141	Hakala Lynn	-4807	C055	524-4356
1145	Walker Thomas	-4807	C055	524-2951
1150	Pohl Clive	-4808	C055	525-7016
	Pohl Lissa	-4808	C055	525-0249
1154	Philip Donald	-4808	C055	527-1671
1159	Peterson Gerald D	-4807	C055	523-7056
1301	WOODWRIGHT CONSTRUCTION	-4809	C055	525-2242
	Canfield T K	-4809	C055	523-2880
	Hansen R S	-4809	C055	523-2880
1302	Coffey Michael	-4810	C055	524-3898
	Grigsby J S	-4810	C055	523-2599
1304	Davis J I	-4810	C055	527-4670
1305	Tucker R	-4809	C055	526-2624
1308	Wheeler Karin	-4810	C055	523-0435
	Wheeler Scott T	-4810	C055	523-0435
1309	H CARTALES & ASSOC	-4809	C055	526-0621
	Cartales K A	-4809	C055	525-5682
1312	Segalla W F	-4810	C055	522-0887
1313	Schilperoort William J	-4809	C055	523-3802
1316	Elms Ron	-4810	C055	522-2713
1317	Cheung Beth	-4809	C055	527-2655
	Cheung Richard	-4809	C055	527-2655
1321	Townsend J R	-4809	C055	522-1123
1324	King Emil A	-4810	C055	523-6598
	Santoy Grace	-4810	C055	528-0701
	Vinther Kari	-4810	C055	523-6430
1330	Sullivan A J	-4810	C055	524-8548
	Weinberg John	-4810	C055	523-9044
	Weinberg Margie	-4810	C055	523-9044
1334	Lieberman Daniel	-4810	C055	523-0460
	Mak C	-4810	C055	517-5150
	Mak J	-4810	C055	517-5150
1338	Denney Mike	-4810	C055	527-6368
2014	Brunvand Mark	-4906	C065	524-1906
	Oconnell Shelmar	-4906	C065	524-1906
2017	Roach Claudia	-4905	C065	525-3105
	Roach William T	-4905	C065	525-3105
2021	Cole Kristin M	-4905	C065	523-6248
	Schmeer Ron	-4905	C065	523-6248
2029	Gross Jeff	-4905	C065	524-3225
	Gross Kimberly	-4905	C065	524-3225
2030	Kelly Carol	-4906	C065	517-4537
	Kelly James L	-4906	C065	517-4537
2040	Podoll Daniel	-4906	C065	525-6057
2041	Gilmore Katherine	-4905	C065	524-0652
2044	Bender M A	-4906	C065	525-2001
2047	Huwe Ruth	-4905	C065	522-7326
	Woollen Jeffrey K	-4905	C065	528-5739
2101	Pelles Audrey	-4925	C075	524-2342
	Pelles Eugene	-4925	C075	524-2342
2107	Knowles Esther	-4925	C075	522-7479
2110	Grossinger Walter F	-4926	C075	523-8168
2115	Nagel Charles A	-4925	C075	524-2202
2116	Metzler Stephen	-4926	C075	524-5244
2200	Avnet A	-4928	C075	522-7099
	Macconnell James	-4928	C075	522-7099
2204	Stanger John A	-4928	C075	524-2103
2208	Verhoeff Leonard	-4928	C075	525-6439
2212	D J REMLINGER	-4928	C075	525-7451
	Remlinger Ervin	-4928	C075	522-7224
2215	Dibernardo Joseph G	-4927	C075	525-6062
	Tucker Alison	-4927	C075	525-6062
	Tucker N A	-4927	C075	525-6062
	Tucker Nancy A	-4927	C075	525-6062
2217	Davies Mark D	-4927	C075	526-2776
2220	Macdonald Bill	-4928	C075	523-1742
2302	Hagedorn William H	-4929	C075	522-3541
	Pickar Judy	-4929	C075	525-4203
2306	Perret J	-4929	C075	523-8408
2312	Russell H J	-4929	C075	525-2474
2411	Grow Becky	-4930	C075	523-0906
	Grow Terry	-4930	C075	523-0906
	Hurlburt Merse M	-4930	C075	527-5599
2412	Bonjouklian D	-4931	C075	527-7632

BUSINESSES 8 HOUSEHOLDS 221

NE 77TH ST *(S)* 98115

Address		Zip+4	CarrRte	Phone
100	Keegan Joseph	-4029	C004	527-8037
107	Carbone James L	-4028	C004	524-2125
	Lovering Bradford	-4028	C004	527-4131
111	Hunt Amy	-4028	C004	526-8270
	Hunt Justin	-4028	C004	526-8270
118	Rundell S O	-4029	C004	526-5590
123	Mattarrazzo Ronald J	-4028	C004	525-5722
207	Grantham C P	-4030	C004	524-0971
	McCullough Kevin	-4030	C004	523-4839
	Peter Mark	-4030	C004	527-0553
212	Burnett Bill	-4031	C004	522-1457
	Burnett Lynn	-4031	C004	522-1457
214	Malnar J A	-4031	C004	524-8117
215	Norman D	-4030	C004	524-5314
218	Faulstich L A	-4031	C004	524-6630
	Frogge Gene	-4031	C004	524-6630
219	Ivancic Mary	-4030	C004	522-7116
	Ivancic Michael J	-4030	C004	522-7116
300	Osaulenko A	-4065	C004	527-2058
305	Schultz Lester D	-4065	C004	524-9098
313	Oliphint George L	-4065	C004	524-2288
516	Hadden Julie	-4147	C073	525-4282
	Reilly C	-4147	C073	525-4368
	Roosa Donald	-4147	C073	527-1182
	Shoop Kristi A	-4147	C073	525-4368
606	Girard Jennifer	-4149	C073	524-8958
	Huang Victor W	-4149	C073	523-1373
615	Litz Ben	-4148	C073	526-1288
618	Vavrik Andrew A	-4149	C073	524-3574
619	Stream W J	-4148	C073	527-3589
621	Goodwin Rick	-4148	C073	523-4330

NE 77TH ST *cont'd*

Address		Zip+4	CarrRte	Phone
	James Bryan	-4148	C073	525-1287
624	Duffield Thomas	-4149	C073	522-7991
625	Doubt John	-4148	C073	522-1405
	Doubt Roark	-4148	C073	522-1405
1209	Shong Merrill W	-4309	C073	523-1061
1210	Ridenour Barbara	-4347	C073	525-5576
	Ridenour C	-4347	C073	528-1243
1220	Butler R L	-4347	C073	522-8736
1226	Knight Sunny	-4347	C073	525-7752
1513	Brown O M	-4375	C073	522-3885
1523	Hua Trung	-4375	C073	525-3698
	Hua Trung	-4375	C073	526-1458
	Leimkuhler Ron	-4375	C073	526-1458
1546	Gilchrist Dan	-4376	C073	440-1437
1603	Rozmyn Edward J	-4445	C073	524-5978
1607	McNish P E	-4445	C073	524-4296
1611	Fraser Phillip R	-4445	C073	524-5177
1617	Batie Gary D	-4445	C073	523-6589
1623	Shockey Stanley	-4445	C073	527-8876
1702	Harpster R H	-4448	C073	523-2624
1705	Schmidt Frank J	-4447	C073	522-1879
2017	TOM ROBINSON	-4573	C014	522-5236
	Robinson Tom	-4573	C014	522-5236
2115	Walters Adam E	-4571	C014	528-0105
2250	Nash S C	-4613	C014	525-3834
2267	Thompson George J	-4610	C014	528-7786
	Thompson V A	-4610	C014	524-5783
2306	Potts Carl H	-4672	C054	522-9272
	Potts Marilyn	-4672	C054	522-9272
2309	Wallerstein George	-4671	C054	527-0678
2401	Muoth P A	-4669	C054	523-5164
2414	Eligio Clarita C	-4670	C054	525-1874
2801	Pesce M B	-4645	C054	524-5795
2806	Dickhaut Merle	-4646	C054	527-7014
2809	Hill Larry	-4645	C054	525-7327
3203	Mayer Cheryl	-4715	C064	522-7163
	Mayer Edward	-4715	C064	522-7163
3414	Heilman K	-4836	C064	522-3558
3513	Nehring Paul	-4837	C064	522-5033
3605	Farrell Dave	-4838	C064	522-1046
	Farrell Kathy	-4838	C064	522-1046
3705	Downing B	-8030	C074	522-0560
	Xiangling Zhen	-8030	C074	523-9396
3715	Cargile W L	-8029	C074	525-3085
	Nakano Kazue	-8029	C074	527-4378
	Nakano Kenji	-8029	C074	527-4378
	Shelley Robin	-8029	C074	522-6895
3719	Cahan Phillip	-8028	C074	517-4813
	Cahan Rebecca	-8028	C074	517-4813
	Kennedy Peter	-8028	C074	527-3071
	Miyagiwa Emily	-8028	C074	523-6462
	Stabler Nora	-8028	C074	525-8955
3723	Bunn David J	-8027	C074	522-1567
	Bunn Valarie	-8027	C074	522-1567
	Chun Seungho	-8027	C074	526-8035
	Froissart P	-8027	C074	524-3820
	Hyeon Kim	-8027	C074	522-3982
	Kamara I M	-8027	C074	523-2078
3801	Aditya Don A	-8035	C074	527-1538
	Anderson Eric J	-8035	C074	528-2913
	Bassera Ezrael	-8035	C074	528-1318
	Brown E A	-8035	C074	527-8093
	Brown Gary C	-8035	C074	527-8165
	Choi Sonhi	-8035	C074	525-3206
	Dawson Kenneth H	-8035	C074	527-6127
	Dixon Charles E	-8035	C074	522-0980
	Dodds John J	-8035	C074	522-5573
	Flom J R	-8035	C074	527-9460
	Fordham Elizabeth	-8035	C074	517-5377
	Fordham William	-8035	C074	517-5377
	Geisinger Thorst	-8035	C074	523-0064
	Hanby J D	-8035	C074	525-1509
	Hussey Martin	-8035	C074	517-2934
	Jones G L	-8035	C074	527-8093
	Kanai Jun	-8035	C074	523-4039
	Lee Steven	-8035	C074	523-0064
	Linde Audra	-8035	C074	522-6409
	Lupson Mitchell	-8035	C074	527-7587
	Lupson Ruth	-8035	C074	527-7587
	McCready Roy L	-8035	C074	523-6818
	Nadia Laurie	-8035	C074	528-7529
	Perry Kevin D	-8035	C074	522-2619
	Pham Viet	-8035	C074	524-8757
	Prut Yifat	-8035	C074	528-5741
	Shaw D	-8035	C074	528-5930
	Suzuki Yoshika	-8035	C074	522-4782
	Whitham William T	-8035	C074	525-8623
3811	Cho Namil	-8026	C074	526-5151
	Holter Oscar	-8026	C074	524-8198
	Johnson K	-8026	C074	517-8179
	Marchant Juanita	-8026	C074	524-8907
	Parker M	-8026	C074	517-8179
4113	Antonopoulos Costas	-5125	C074	527-6781
4303	Horton M K	-5126	C074	523-0128
4304	Weeks Gregory J	-5127	C074	523-2257
4316	Bell H J	-5127	C074	523-6290
4402	Burgess Lloyd W	-5128	C074	526-1823
4414	Dawson Laurel	-5128	C074	526-8394
	Dawson Mike	-5128	C074	526-8394
5600	Chalupnik James D	-6344	C053	523-5600
	Chalupnik James D	-6344	C053	523-5601
	Fields Jane	-6344	C053	524-7368
	Fields Stan	-6344	C053	524-7368
5601	Hetrick Diane	-6343	C053	524-7272
	Jacobs Todd	-6343	C053	527-2205
	Martynowych Denis	-6343	C053	524-7272
5710	Sienkiewicz Charles	-6346	C053	523-2949
5711	Stevens Alexander R	-6345	C053	525-8895
5725	Azose Rae	-6345	C053	522-2240
	Edwards Kay	-6345	C053	522-2240
	Sandstrom Alice W	-6345	C053	522-2240
5815	VIEW RIDGE SWIMMING & TENNIS	-6347	C094	524-3500

BUSINESSES 2 HOUSEHOLDS 141

NW 77TH ST *(S)* 98117

Address		Zip+4	CarrRte	Phone
105	Galligan Michael W	-3018	C005	781-3230
	Robinson Monty	-3018	C005	789-5746
106	Ultican T	-3017	C005	781-4937
110	Neal Randall	-3017	C005	784-7051
114	Weis John A	-3017	C005	782-7432
115	Weis Todd	-3018	C005	706-1603
117	Killian Kathryn	-3018	C005	783-4351
	Killian Robert	-3018	C005	783-4351
118	Weis B	-3017	C005	782-3517
	Weisclune B	-3017	C005	782-3517
123	Dean K	-3018	C005	784-5566
	Hutchings Kevin	-3018	C005	789-0797
126	Berman M	-3017	C005	706-1004
	Berman R	-3017	C005	706-1004
	Berman Robert S	-3017	C005	706-1004
	Woodruff M	-3017	C005	706-1004
133	Donohue Daniel G	-3018	C005	783-8287
134	Miller Joseph J	-3017	C005	783-5721
137	Baker Edwin C	-3018	C005	783-4713
140	Skaggs Daniel	-3017	C005	783-7219
	Skaggs Deena	-3017	C005	783-7219
146	Selland Robert R	-3017	C005	783-0966
152	Martinez Paul	-3017	C005	784-8510
153	Hoverson Zola E	-3018	C005	789-2729
156	Olson Ivan F	-3017	C005	783-5378
157	Ledbetter Louie	-3018	C005	784-6707
309	Jones Max	-4012	C014	782-9510
	Stein Nicole	-4012	C014	783-7729
310	Forland Arthur E	-4011	C014	789-4379
311	Jost Larry	-4012	C014	789-3979
315	Cohon Keith	-4012	C014	783-4772
	Cohon Yumi	-4012	C014	783-4772
322	Parry M A	-4011	C014	789-5867
	Potts L S	-4011	C014	789-5867
323	Olson Martin	-4012	C014	782-1792
	Olson Phyilis	-4012	C014	782-1792
326	Liebel Dwaine B	-4011	C014	783-7335
330	Long I	-4011	C014	789-7537
	Rathbun Richard	-4011	C014	789-7537
334	Froyen Henry	-4011	C014	781-7629
342	Shelton Kenneth W	-4011	C014	789-5437
343	Rothwell Lauren H	-4012	C014	783-4519
347	Heinz Henry J	-4012	C014	782-3144
349	Linebarger Charlie	-4012	C014	781-0294
350	Shelton Charles E	-4011	C014	783-7688
357	Starr Walter J	-4012	C014	784-4066
608	Read Brad	-4046	C014	789-2592
609	Cooper Carol	-4047	C014	781-7840
	Rickards Keith	-4047	C014	781-7840

3111 Peter M Ness .62 782-3606
3117 W F Jenkins .62 782-3139
3118 Clarence H Rolph .76 789-4399

7500 32ND NW

3202 Marci J Elliott ⌗ 789-3850
3215 Darrell N Markey .65 783-9173
3221 Anna Aurdal .68 782-7741

7500 33RD NW

3301 NP
3306 Alex J St Peter .73 782-6358
3307 Bryan K Johnson ■ 789-1323
3311 Robert W Westphal .66 784-8637
3314 NP

7500 34TH NW

168 RESIDENCE 1 BUSINESS

76TH AVE S 98178

10400–12699 CT 260.01 $D..B31
12700–13199 CT 261 $E..B31

● THOMAS BROS MAP LOC K 655-J2

10401 Edward L Arne .62 772-2068
K A Freberg .88 772-2068

10417 Condominium

Ⓒ Bill Morse .85 772-3161
Ⓒ Joan Tritchler .85 722-3161
10423 Anthony Bernik .70 772-2023
10429 NP
10435 J K Wimpress .70 772-2583
11315 Roderick Ustanik ■ 772-7449
11433★ Lakerdge Swim Club .80 772-1950
11529 Robt H Hendrickson .57 772-1241
11541 Hiro Takahashi .87● 772-1139
11625 Keith A Meadows – 772-4172
Matt Perrett ■ 772-9884
11631 11637 11801 NP
11802 11808 NP

11809 Condominium

Ⓒ T A Mulvihill .85● 772-2886
11814 11820 11826 NP
11829 C Vongphakdy .91● 772-8304
11832 James I McCulloch .88● 772-4915
★ Tops Tke Pnds Off .87 772-4525
11833 Michael Keels – 772-0470
11836 NP
11840 E Barber ⌗● 772-5191
11841 Bruce Christianson .55 772-1016
11844 Neil Ireland .89 772-4064
12004 12009 12010 NP
12015 Michael Bradshaw .90● 772-8209
12016 NP
12019 C B Smith .80 772-4680
12022 NP
12025 NP ●
12028 Nuon To ⌗ 772-4383
12029 NP ●
12034 James P Brooks .85● 772-7101
12035 12038 NP
12039 Robert Morse .91● 772-2852
12044 12045 NP
12050 Melidon Franada .90 772-4650
12051 G D Lovin .75 772-4974
Mark Lovin .89 772-5824
12056 Kenneth R Harmon .77 772-2587
12204 12207 NP
12210 Alfred S Johnson .55 772-5327
12213 Robert E Hoffman .55 772-6087
12216 12219 NP
12222 Harvis Wainright .88● 772-4833
12225 12228 NP
12231 W E McDermott .90● 772-0217
12234 NP
12237 Tim Flynn .84 772-2513
12243 NP
12244 Gary G Gable .91 772-6522
12250 NP
12256 D J Versoza .88● 772-0917
12610★ US Bank .89 461-7444
★ U S Bank ⌗ 227-4770
12617 William Armstrong ■ 772-7168
Craig Dyer ■ 772-5981
Duane Mackie ■ 772-1540
★ Fire Departments .91 772-1430
★ Co Fire Protection ⌗⊙ 772-1430
12704★ Dr Leo E Heye 772-4000
12715 NP
12721 E E Gifford .87 772-9068
12722 Skyview Apt Motel
105 Richard Coe .91 772-3463
102 Mark Goodman .91 772-3318
2 Henry C Schaefer .79 772-5424
101 Jeffrey Scott ■ 772-7071
103 Wayne T Shelton .85 772-2506
1 A West .84 772-5447
12726 W W Parkhurst .91 772-6787
12727 Eric P Englund .69 772-6165
12744 Thay M Mitchell – 772-9057
12816 W Rex Candland .66 772-4442
12826 Albert Wicker .67 255-5592
12900 NP
12901 Theodore Soweis .91 271-0873
12914 Alfred R Reinhart .86 226-1920
83 RESIDENCE 7 BUSINESS

N 76TH ST 98103

E From 7600 1st NW
100– 299 CT 29 $D..D13
300– 1099 CT 28 $D..D13
1100– 1399 CT 27 $B..D14

● THOMAS BROS MAP LOC K 534-G2
● THOMAS BROS MAP LOC K 534-H1

102 Cecil Watkins .69 789-0911
106 Joseph R Schmidt ■ 783-0816
110 NP
111 A McBride .86● 782-6256
112 R Marks-Nicholes – 783-2595
116 NP
117 K A Kutz .89● 782-2909
118 Douglas J Hunt – 783-9553
George Smith – 782-1405
121 Scott Weaver ⌗ 781-6933
122 John F Sifferle .81 783-3370
126 NP
127 Barry Stoner .86 789-7750
130 Thane Morgan .89 784-2925
131 Schylor P Holmes .64 783-9320
135 Alan K Jones .80 783-6316
M E Mattus .80 783-6316
137 NP
138 Thomas Gunder .88● 782-3056
141 Robert Wazeka ■ 782-2691
142 Earl F Landguth .67 783-0308
Mrs F A Landguth .65 783-0308
143 NP
146 Richard Smith .89● 782-3052
147 R Hilton .85 782-6621

7600 N GREENWOOD

302 306 NP

312 Apartments

301 Sally Board ⌗ 784-8536
M Godfrey .79 782-3605
302 Steve Hatley .91 781-7146
Mrs Billie Nichols .63 784-8971
202 M Radley ■ 782-2993
303 A A Timm .87 782-7490
314 NP
316 Brad Wheeler .89● 784-6595
317 318 NP
319 M H Sims .88 789-8818
321 NP
324 R Pederson .85● 784-9462
325 C J Pearl .90● 783-6419
326 K Ferre .91 789-5916
329 David Campbell .90 789-9180
332 Greg May – 783-2483
333 Jeanine M Andrina .87 782-3122
334 Surya S Indarta ■ 783-5937
Peggy Mueller ⌗ 782-7841
Winnie Y Tsai ■ 783-5751
337 NP
340 G E Dowie .74 784-1445
342 NP
343 Albert B Sather .70 784-9760
347 Matthew Buchman .88● 784-9621
348 NP
350 H M Fermstad .69 783-1062
353 354 NP
355 Kyle Cruver – 783-2914
358 M K Isaman ■ 782-5240
359 Jim Kramer .88● 784-5018
360 Paul Keller – 789-2007
361 Ken Moriarty .91● 789-8489

7600 N DAYTON

503 Leo F Vreeland .57 783-6762
504 William F Dyment .70● 782-3563
506 Jeffrey S Schuster .89● 784-6780
509 Gene D Smith – 789-1088
510 Joseph P Chapman .73 789-1437
511 NP
514 Pete L Colbeck ⌗● 781-7242
515 Vatsek Parda .55 782-4056
518 Greg Witter .91 783-1275
520 521 524 NP
525 J Blix .91 783-2818
David A Heitmiller .91● 783-2818
528 Kirk H Howe ⌗ 783-7621
529 Dick Davidson ■ 781-0646
531 Terry Russell ■ 783-3234
532 NP
536 Peter F Smith ⌗ 783-5718
537 John Crampton .87● 789-2450
541 NP
544 J N Fairleigh .89● 789-1072
547 Paul Granberg .89 781-1254
Blake Johnson .90 781-1254
548 NP
551 Johann I Johnson .58 782-0911
560 Jessie Puggelli ⌗ 789-5451
Joseph M Puggelli – 784-6269
701 Donald Legendre .91 783-9498
K Nelson ⌗ 783-9498
706 Dennis R Shadduck .74 783-3216
707 NP
710 Matt Barnhart .91 781-7145
Tim Davenport .91 781-7145
711 712 NP
715 Nelson N Aikins .55 783-1992
716 NP
719 Tom Brown .87 782-4909
720 George P Gaw .62 784-8824
721 Lynn Webber .87 782-6968
724 Mark W Albright ■ 781-2129
Craig Suhadolnik .91● 789-3057
725 Edward Carr .86● 789-0355
726 NP

7600 N FREMONT

731 Greg Rutar .91● 784-7596
733 NP
734 Joseph L Clem .67 784-9473
736 Russel N Wheeler .66 784-1027
737 Scott Irwin – 782-2467
Darrell Thomsen ⌗ 782-2467
Darcy Vaughan ■ 784-9874
Jeff Weiner – 782-2467
741 Howard Wells ⌗● 783-4190
742 Phillip Buchner ■ 783-9473
743 Christopher Cox .85● 784-7384
746 J E Earl .55 783-0204
748 NP
749 Alfred O Tietjen .82 789-2905
750 Thomas H Carlson .87● 789-9004

756 Apartments

John Barrow – 782-6608
UPR Mark Bruce ■ 783-3850
BSMT W Winterbottom ■ 782-0464

7600 N LINDEN

902 Harold L Spilde .62 784-4879
906 Darrell Willers .76 783-3462
909 A J Mallinson .63 783-5978
910 Brian R Jackson .85 784-9541
911 912 NP
914 Marion I Smith .55 782-4338
919 Louis J Morseth .55● 782-1568
920 D M Lawson .80 783-0578
Morgan T Thornton .72 783-0578
923 Carl F Anderson .55 784-5363
924 Gary D Leischner .76 784-1877
927 Joe Malono .89● 789-2337
929 L A Sacha .87 784-0891
930 Mrs James Dean .76 783-8623
931 P Dwyer .78 784-2455
D Steen .85 784-2455
933 Kathryn Gavigan .91 782-3086
William Weir .91 782-3086
934 John M Gooding .88 784-0440
936 Arthur W Smith .77 789-2668
940 Dale Wilson .90 781-1795
941 David K Knapman .84● 783-0808
K Strating ■ 784-9063
★ Grn Lk Constr ⌗ 783-0808
943 NP
946 James Coughlin .91 789-7863
Randi Trevino ■ 781-4860
947 NP
949 Ondine Webb ⌗ 783-4112

7600 N AURORA

1111 Brian Heaney ⌗ 522-7080
Renee Staton ⌗ 522-7080
1112 1115 NP
1116 Ed Liming ⌗ 522-7347
Jeff Shields .91 522-7347
George Vlaisavich .91 522-8975
1119 Harold J Hillard .55 523-6890
1120 Samuel J Caldwell .89● 526-5063
1123 Fred A Smith .55 522-7230
1124 C Franzen .82 524-1833
Clifford Jones .82 524-1833
1127 Thomas F Heslin .76 523-4258
1128 Brian Placzek .91 524-7893
1131 Richard C Hammett .91 526-1929
1132 M C McShane .84 524-9018
1135 NP
1136 Stacy Boyd ■ 528-5029
Stacy Boyd ■ 528-4881
Clay Wood .91 522-5366
1139 N R Healy .81 524-1328
1140 Steve Clark .90● 526-5547
1143 Bruce Coffey .85● 525-5069
1144 D V Smith .79 523-0585
1148 Donald Meyer .83● 522-2162
1152 NP
1156 Diane Kawabata .89 527-9652
1160 Andrew Subin ⌗ 528-2963
Cathy Zavis ⌗ 528-2963
1164 James F Sutterman .67 525-3299

7600 N WINONA

1304 Mel C Rowland .79 525-4326
Richard N Stanford .75 525-4326
1310 Leyla Klein – 527-4952
1314 1318 NP
1322 Brent R Smith ⌗ 524-2953
J Williams ■ 523-7853
1326 Richard Powell .90 523-2384
NO # Jan Cox .90 781-1759
193 RESIDENCE 1 BUSINESS

NE 76TH ST 98115

E From 7600 Latona NE
300– 799 CT 27 $B..D14
1500– 1699 CT 26 $B..D14

● THOMAS BROS MAP LOC K 535-B3

306 Lorna MacKenzie .88 524-6457
312 NP
313 H J Foss .84 522-0223
317 NP
318 Rick Riedel .85 523-6493
320 Leroy Allbee .60 524-5422
323 NP
326 Colin L Brooks ⌗ 523-0885
A L Hoffman ⌗ 527-0540
Shawn A McManus ⌗ 523-0885
329 K H Holzer .88● 523-5375
333★ Stl Formosan Chrt .88 522-8084
342 NP
350 James L Bellessa .72 524-5003

7600 4TH NW

610 NP
614 B H Carroll .80 527-7025
615 NP
621 K Haugen .89 524-0528
622 624 625 NP

7600 15TH NE

1506 C P Larson .85● 526-8120
Andrea Wilson .85 526-8120
1507 Tom Wedegaertner .90 525-7119
Tom Wedegaertner .90 525-7255
1514 NP
1515 Jeffrey Gay .82● 524-7606
1518 Karl W Sumboru .60 524-1336
1519 S E Davis ⌗ 528-0145
1522 Paul Bierman .90 527-1406
1523 Colleen F Johnson .78● 527-9488
1527 Kieran Sweeney ⌗ 528-1140
1528 Ronald Olsen .69 522-0292
1533 R R Armstrong .87 522-6124
1534 1537 NP
1540 K W Stewart-Gordon .85 522-9433
1541 Maurice C Clark .60● 523-5022
1542 C A Rogstad .63 523-1889
S F Wessman .80 523-1889
1545 Scott Anderson .87 525-9443
1549 Mike Barlia .68 524-5575
1550 Kenneth B Allison .79 527-8504
Pat Kelly .85 527-8504
1552 George C Dick .60 523-1494
1557 John Irby .88● 523-0867
1558 NP
46 RESIDENCE 1 BUSINESS

NW 76TH ST 98117

W From 7600 1st NW
100– 799 CT 29 $D..D13

● THOMAS BROS MAP LOC K 534-G2

102 Thomas F Donohue .63 784-4191
105 Gregory Cooper .91 784-0909
Gregory Cooper .81 784-6429

108 Apartments

1 Steven F McClure .90● 784-8760
3 Peter Wallis ■ 782-3341
109 Tab Kiesel .91 783-1160
112 NP
113 Robert F Howell .68 784-0224
116 Fritz Johnston ⌗ 782-4174
L L Wood – 782-4174
117 Barbara Purington ⌗ 789-3982
Verna Sylvester ⌗ 789-3982
122 123 NP
125 Lesli Corthell .91 781-1027
Peter Meyers .91 781-1027
128 Glenna M Howey .62 784-4559
William J Sutton .62 784-4559
131 Cornelius Sullivan .62 784-6827
132 Joseph B Bixler .91 783-2344
S Mason .86● 783-2344
135 David R Pullin .73 784-8514
136 Paul Armin Reitz .89● 782-6810
140 P Horgan ⌗ 782-2678
P Schlagel ⌗ 782-2678
141 Mrs Louise Loper .62 784-4287
144 David A Parker ■ 782-5139
145 J K Smiley .68 783-0261
148 B R McDaniel ■ 782-8502
149 NP
152 Louis S Barkley .66 784-6697
156 NP

7600 3RD NW

304 Curtis P Jensen .75 789-2448
307 Gordon Pederson .62 782-3541
311 William Duyck .62 784-2119
312 317 NP
320 Kirk L Johnson .91 789-4185
323 324 NP
327 John OConnell .91● 782-9031
328 NP
330 John E Olson .62 784-5711

331 Apartments

4 P K Forgey .91 789-5261
4 A J Puglisi .91● 789-5261
334 Marvin Pearson .88● 784-5734
338 339 NP
342 J O Swinford .78 783-2561
343 Henry Lewis ■ 783-4611
346 347 NP
351 Luis Soto ■ 789-8366

352 Apartments

LWR R Polet ■ 783-6911
353 Diane Mitchell ■ 782-0991
356 Jan Eadie .91 789-4084
Tony Hodgson .90 789-4084
359 Cory Allen ⌗ 783-7221
Thomas Burkhart ■ 782-4096

7600 6TH NW

606 Lewis Rowland .91 782-5265
610 Bill E Skaggs ⌗ 789-3015
611 614 615 NP
618 Nedra Chandler – 783-9554
Hal Fossum – 783-9554
619 Peter D Frazier ⌗ 784-9452
622 M Stephen .69 784-1651
625 Mark G Harris ■ 781-7879
Stephen Rice .88● 784-6268
628 Gerald V Harris .62 784-6388
629 Jerald Birt ■ 782-1325
630 NP
633 D Ray Engelhardt ■ 784-1009
C L Finlayson ■ 781-5158
636 J McGrath .91 784-3018
Suzannah Walker ■ 784-3018
637 Tiberio Simone ⌗ 783-5011
640 NP
641 Scott D Walker .79● 784-5552
642 643 646 NP
647 Clifford L Olson .63 783-8413
650 David S Obreen .75 782-8222
651 M Gallagher ■ 784-9511
655 Dr Michael Jensen .90 789-7562
656 John N Breen .74 783-5502
88 RESIDENCE

77TH AVE S 98178

At 7700 S 118th
11600–12399 CT 260.01 $D..B31
12800–12899 CT 261 $E..B31

● THOMAS BROS MAP LOC K 625-J7

11701 Glenn Hunsberger .87● 772-4085
11707 NP
11715 Karen L Suyama .89 772-5072
Minoru Suyama .79 772-5241
11720 George Beppu .90● 772-1124
11721 11803 NP
11808 S Yokoyama .87● 772-0961
11809 Jack G Boyett .78 772-5251
11815 Binh Huy Pham .81● 772-7651
Xuan Huong Pham .89● 772-7652
11820 Donald I Suyetani .67 772-0041
11821 NP
11826 Tak Tsuchida .68 772-1771
11827 Mar Descargar .86 772-1971
11832 Samuel H Shinozaki .74 772-6651
11833 Lavern E Birch .69 772-0551
11838 Robert A Vickers .67 772-1171
11841 Lou Aquino .89● 772-5981
11842 Vernon E Zier .67 772-5681
11845 NP
12003 A V Swafford .88 772-0106
12004 Joseph Sua .91 772-0571
12009 E V Martin .88 777-1111
12010 Curtis J Hill .55 772-4891
12015 Stacy Jackson .91 772-0761
12016 Sompho* Meuangkhot – ● 772-4861
12021 NP
12022 Gregory J Zirckel .88 772-9951
12027 NP
12028 Curtis D May .62 772-6581
12033 NP
12034 N J Braaten .90● 772-2951
12037 Roland C Dulay .87 772-0171
12038 James T McCracken .67 772-6871
12043 Steve Masterman ⌗ 772-5551
12044 K M Dalvit .64 772-4951
12049 Ora B Moore .90 772-4351
12050 Robert H Vold .55 772-1451
12055 E Dickerson – 772-1451
12056 C Barden .89 772-2651
12203 Merch L Degrasse .91● 772-2651
12204 NP
12209 George E King .84● 772-6251
12210 12215 NP
12216 R L Moodie .55 772-7251
12221 John Baird .85 772-7251
12222 12227 12228 NP
12233 Ceohissie Newsome ⌗ 772-5531
12234 B C Vanausdal .79 772-5371
12237 Donald E Norris .91 772-5371
12238 NP
12243 Lawr A Richmond .85 772-3351
12244 Abel Fortune .82 772-2411
12249 H O Borsvold .64 772-4951
12250 L L McGinnis .80 772-2171
12255 Daniel R Bennett .86● 772-2151
12256 L F Kuwitzky .85 772-5551
12814 J E Campbell .81 772-5551
12824 J C Yardy .81 772-6551
12839 Ken Maekawa .83 772-4451
12840 Yngvar Berre .81 772-5551
12843 NP
12844 Rick K Abe .85 271-9411
12846 Thomas T Hisayasu .73 226-9151
68 RESIDENCE

N 77TH ST 98177

N From 7700 1st NW
100– 299 CT 29 $D..B11
300– 1099 CT 28 $D..B11
1100– 2499 CT 27 $B..B11

● THOMAS BROS MAP LOC K 534-H1
● THOMAS BROS MAP LOC K 534-J1

101 Archie McDonald .55 783-5951
102 NP
106 Warren P Brown .88● 783-4151
107 Dennis Noson .91 783-2551
110 P M Egan .81 783-2551
111 Joel Vanetta .89● 782-4551
114 Gordon F Stevens .80 784-5151
117 Herman Hadaller .65 784-5151
119 NP

CT — Census Tract AB,Etc — Census Tract Wealth Rating ★ — Business Listing ⊙ — Duplicate Phone Number At This Business Address

12044 M A Smith .81 772-0156
12045 D E Coddington .71 772-5942
12050 Gary J Johnson ¤ 772-2679
12051 Larry Lovin .75 772-4974
12056 Kenneth R Harmon .77 772-2587
12204 William Dekker .84 772-6287
12207 John Holt ¤ 772-6074
12210 Alfred S Johnson .55 772-5327
12213 Robert E Hoffman .55 772-6087
12216 12219 NP
12222 Penny Aho .85 772-7771
12225 12228 12231 NP
12234 NP
12237 Tim Flynn .84 772-2513
12243 Fred Zimmerman - 772-7453
12244 Derwin Dressler - 772-4190
12250 Jos W Marchbanks .73 772-4297
12256 NP
12610★ Peoplesbank .70 344-4502
★ Peoplesbank .70 344-4504
12617★ Co Fire No 20 Bsns .85 772-1430
12704★ Dr Leo E Heye 772-4000
12715 Teague T Parker .79 772-2881
12721 Eric Nelson .81 772-4352
12722★ Skyview Apt Motel
Carl W Berner .85 772-3509
Phillip T Brandt .85 772-0732
Apt Kusske ¤ 772-2395
Tim K Otani .85 772-4656
Rick S Russell ¤ 772-9860
Henry C Schaefer .79 772-5424
Wayne T Shelton .85 772-2506
T Tarli .83 772-2761
A West .84 772-5447
12727 Eric P Englund .69 772-6165
12744 J M Greenwood ¤ 772-0996
Wayne R Schmidt ¤ 772-0996
12816★ Business Mgt Sys .72 772-1771
W Rex Candland .66 772-4442
12826 Albert Wicker .67 255-5592
12900 L Anderson .85 228-2332
12901 Louise Jordan .79 271-0873
12914 Alfred R Reinhart ¤ 226-1920
77 RESIDENCE 6 BUSINESS

N 76TH ST 98103

E From 7600 1st NW
1– 299 TZ 29 $D..D13
300– 1099 TZ 28 $E..D13
1100– 1499 TZ 27 $C..D14
● THOMAS BROS MAP LOC K 7–F6
● THOMAS BROS MAP LOC K 8–A5
102 Cecil Watkins .69 789-0911
106 NP
110 Robert H Crane .82 789-5698
111 A McBride ¤ 782-6256
112 A Jess .80 784-2005
116 Ken Western .85 783-1838
117 NP
118 G T Catalano .80 783-4350
121 Roger Wright .78 783-1968
122 John F Sifferle .81 783-3370
126 Dan B Berg .82 783-2235
127 Barry Stoner - 789-7750
130 B Schreiber .84 784-3064
131 Schylor P Holmes .64 782-6104
135 Alan K Jones .80 783-6316
M E Mattus .80 783-6316
137 Kraig Kemper .78 784-4578
138 Gregg Haughian .82 782-3833
141 Douglas Eglington .79 789-3564
142 Earl F Landguth .67 783-0308
Mrs F A Landguth .65 783-0308
143 NP
146 James McKeown .81 782-4470
147 Patsy Christgau .85 789-8174
R Hilton .85 782-6621
147½ NP

7600 N GREENWOOD

306 NP
312 A Dunatov .76 784-2391
M Godfrey .79 782-3605
Otto Hansen .79 782-7626
N Hume .73 782-6769
Hans J Nelson .73 782-5832
Mrs Billie Nichols .63 784-8971
314 NP
316 J L Thompson ¤ 783-6484
317 318 NP
319 Jim Barwell - 784-3274
321 V M Busby .65 782-1293
324 R Pederson .85 784-9462
325 C J Pearl .84 783-6419
326 329 NP
332 Merrill Olinger .71 782-8646
333 Dan Dudder ¤ 782-3122
334 Malcolm McPhee ¤ 789-0116
337 NP
340 G E Dowie .74 784-1445
342 NP
343 Albert B Sather .70 784-9760
347 K M Fairchild ¤ 784-9720
N D Tuttle ¤ 784-9720
348 Robert Frisbie .55 783-5938
350 H M Fermstad .69 783-1062
353 NP
354 Ernie P Wagner - 783-8690
355 Kemper H Jolliffe .55 782-4796
360 NP
½ Bruce Leigh .83 789-6831
361 Tully S Martin .71 783-8580

7600 N DAYTON

503 Leo F Vreeland .57 783-6762
504 William F Dyment .70 782-3563
506 Charles Moerk - 784-7216
509 G E Lamb .70 782-3227
510 Joseph P Chapman .73 789-1437
511 Peter C Rudloff .85 782-2072
S F Thompson .85 782-2072
514 Waldo O Sanders .57 782-8135
515 Vatsek Parda .55 782-4056
520 NP
521 W L Coulter .74 789-3655
524 D F Creager .71 783-2712
J E Johnson .81 782-5145
525 NP
528 Kerry Parsinen ¤ 789-1273
½ Charles R Lie .85 783-4899
531 Sik M Yan .73 783-2185
532 George E Godfrey .55 784-0270
536 537 541 544 NP
547 548 NP
551 Johann I Johnson .58 782-0911
701 B J Christensen .81 784-7959
701 Edward Wicklander .81 784-7959
706 Dennis R Shadduck .74 783-3216
707 Theodore Johnson .71 783-5772
710 Inez A Paul .59 783-9939
711 Craig M Kennedy ¤ 784-2661
712 John Hynd .55 782-5508
715 Nelson N Aikins .55 783-1992
716 Steve Andrews ¤ 784-1949
Brian Lenius ¤ 784-1949
Martin Willmarth ¤ 784-1949
719 David Stetter .85 782-5386
720 George P Gaw .62 784-8824
721 Ed Barstow .79 789-3525
724 Russell Black .67 783-0529
725 Edward Carr - 789-0355
726 R M Black .76 789-3380

7600 N FREMONT

731 Donald Peterson .83 789-2145
733 Thomas L Ellingson - 783-5335
734 Joseph L Clem .67 784-9473
736 Russel N Wheeler .66 784-1027
737 Ho B Park .85 789-5005
741 Jerry Bock .81 789-6430
Robert Sprecher .81 789-6430
742 J E Malestky .55 782-3699
743 Christopher Cox .85 784-7384
746 J E Earl .55 783-0204
748 NP
749 Alfred D Tietjen .82 789-2905
756 Barbara Dunn .85 783-1632
C Hains - 784-6212

7600 N LINDEN

902 Harold L Spilde .62 784-4879
906 Darrell Willers .76 783-3462
909 A J Mallinson .63 783-5978
910 Brian R Jackson .85 784-9541
911 Mark Keenholts - 789-5699
912 Mark Pringle .84 782-6042
914 Marion I Smith .55 782-4338
919 Louis J Morseth .55 782-1568
920 D M Lawson .80 783-0578
Morgan T Thornton .72 783-0578
923 Carl F Anderson .55 784-5363
924 Gary D Leischner .76 784-1877
927 NP
929 Mike J Bentley ¤ 783-3579
930 Mrs James Dean .76 783-8623
931 P Dwyer .78 784-2455
D Steen .85 784-2455
933 NP
934 Edwin E Webster .85 784-0440
936 Pierre Laplante ¤ 782-3830
Bruce Rash ¤ 784-9583
Arthur W Smith .77 789-2668
940 Brad Sturgill ¤ 784-9063
½ Sherry Sabour ¤ 788-2823
941 David K Knapman .84 783-0808
943 NP
946 James E Coughlin .75 784-8527
L Coughlin .81 789-2838
947 Rich Chaffee .76 782-6379
949★ Cameron Palmer .82 789-3074

7600 N AURORA

1111 Roy J Anderson .55 525-7540
1112 1115 NP
1116 P E Englert .55 523-2606
1119 Harold J Hillard .55 523-6890
1120 Ivan L Baggett .76 524-3947
1123 Fred A Smith .55 522-7230
1124 C Franzen .82 524-1833
Clifford Jones .82 524-1833
1127 Thomas F Heslin .76 523-4258
1128 Scott Tindall .81 523-9881
1131 Rev Stanley Fells - 526-1929
1132 M K Kissler - 524-9018
M C McShane .84 524-9018
1135 J E Matthies .78 523-7813
1136 Walter R Burbank .84 522-3388
1139 N R Healy .81 524-1328
1140 Michael Deeley .84 527-2203
K McKereghan .84 527-2203
1143 Lynn Coffey .85 525-5069
1144 O V Smith .79 523-0585
1148 Donald Meyer .83 522-2162
1152 NP
1156 Thos A Whitehouse .76 527-2136
1160 Jim Zahniser .83 527-8772
1164 James F Sutterman .67 525-3299

7600 N WINONA

1304 Mel C Rowland .79 525-4326
Richard N Stanford .75 525-4326
1310 Fred C Parker .68 523-2363
1314 Ben Lundberg .69 525-8885
1318 NP
1322 High Heermans .85 526-0793
1326 Lewis E Gilbert .62 522-4091
178 RESIDENCE 1 BUSINESS

NE 76TH ST 98115

E From 7600 Latona NE
1– 999 TZ 27 $C..D14
1000– 1999 TZ 26 $C..D14
● THOMAS BROS MAP LOC K 8–C6
306 John Wall .78 524-6457
312 Z G McWhinney .68 522-3235
313 H J Foss .84 522-0223
317 NP
318 Rick Riedel .85 523-6493
320 Leroy Allbee .60 524-5422
323 R G Claucherty ¤ 526-8261
D A Janelle ¤ 526-8261
326 Michael S Kanski .63 523-7526
329 Michael J Yantis .83 524-7353
333★ Elvth Ch Chst Scnt .76 523-0266
342 NP
350 James L Bellessa .72 524-5003

7600 4TH NW

401★ Cleaning Dynamics .84 525-3004
501 D F Quartermaine .85 525-4486
610 John Fisken .63 525-5894
614 B H Carroll .80 527-7025
615 S L Guthrie .81 524-3066
621 NP
622 Keiji Inoue ¤ 526-9690
624 Dennis A Smith .85 525-6069
625 NP

7600 15TH NE

1506 C P Larson .85 526-8120
Andrea Wilson .85 526-8120
1507 Thos E Verschueren .82 527-0331
1514 Charles Gerson .80 524-7922
1515 Jeffrey Gay .82 524-7606
1518 Karl W Sumboru .60 524-1336
1519 A N Johnson .72 523-8185
1522 NP
1523 Colleen F Johnson .78 527-9488
1527 Steve Harding .85 525-5990
1528 Ronald Olsen .69 522-0292
1533 R R Armstrong .60 522-6124
1534 Jim Tonkyn ¤ 527-9850
1537 NP
1540 K W Stewart-Gordon .85 522-9433
1541 Maurice C Clark .60 523-5022
1542 C A Rogstad .63 523-1889
S F Wessman .80 523-1889
1545 C E Douglass .60 523-5305
1549 Mike Barlia .68 524-5575
1550 Kenneth B Allison .79 527-8504
Pat Kelly .85 527-8504
1552 George C Dick .60 523-1494
1557 Paul Ross .84 527-3123
1558 NP
45 RESIDENCE 2 BUSINESS

NW 76TH ST 98117

W From 7600 1st NW
1– 799 TZ 29 $D..D13
● THOMAS BROS MAP LOC K 7–F6
102 Thomas F Donohue .63 784-4191
105 Gregory Cooper .81 784-6429
108 Eric Kohl .85 784-9079
James Wolfe .84 782-6927
108½ NP
109 Greg Roper ¤ 789-3943
112 Scott Purington .85 789-1320
113 Robert F Howell .68 784-0224
116 L A Kern - 784-0930
Jim Riker ¤ 784-0930
117 John L Kliewer .85 783-1902
122 Michael J Moffitt .77 782-6857
123 B Lautman ¤ 782-4073
125 B Panush .80 782-8283
G Shuler .80 782-8283
128 Glenna M Howey .62 784-4559
William J Sutton .62 784-4559
131 Cornelius Sullivan .62 784-6827
132 S Mason ¤ 783-2344
135 David R Pullin .73 784-8514
136 Bruce Jahn .81 783-8063
140 N C Wells .83 782-2641
141 Mrs Louise Loper .62 784-4287
144 Bonnie Barrs ¤ 782-4513
145 J K Smiley .68 783-0261
148 D L Meyer ¤ 789-0273
149 Bert W Hogue .82 789-5116
152 Louis S Barkley .66 784-6697
156 Michael McGarrah .85 784-6342

7600 3RD NW

304 Curtis P Jensen .75 789-2448
307 Gordon Pederson .62 782-3541
311 William Duyck .62 784-2119
312 317 NP
320 S Martin ¤ 782-5066
323 Dana Iorio .82 784-7939
324 NP
327 Steve J Kiesow .83 789-1859
329 NP
330 John E Olson .62 784-5771
331 G Gensler - 782-4736
Will Silva - 782-4736
334 Joan A Huber .81 789-1884
M L Ponto .81 789-1884
338 NP
339 Phyllis J Presba .67 782-9014
342 J O Swinford .78 783-2565
343★ Mawicke&Assoc .83 789-6189
★ Paul D Mawicke .80 789-6189
346 347 NP
351 Don Howard ¤ 789-4534
352 NP
353 Brian Popp .81 789-0453
356 359 NP

7600 6TH NW

606 A R Marquardt .85 784-8408
610 Mrs Naomi Olson .62 782-5551
611 Lura E Floyd .63 782-4990
614 615 618 NP
619 Melvin P Wilson .62 782-3593
622★ M Stephen .69 784-1651
625 NP
628 Gerald V Harris .62 784-0688
629 Susan Smith ¤ 782-3163
630 NP
636 Louise O Griffin .77 783-7026
637 John C Johnson .83 784-5327
640 R H Miller .62 782-6195
641 Scott D Walker .79 784-5552
642 Marge Devaney .82 783-1677
643 646 NP
647 Clifford L Olson .63 783-8470
650 David S Obreen .75 782-8223
651 Robert Ferron ¤ 783-1737
655 Jerry Graville - 783-9145
656 John N Breen .74 783-5582
77 RESIDENCE 3 BUSINESS

77TH AVE S 98178

At 7700 S 118th
11600–12699 TZ 26001 $C..B31
12800–12899 TZ 261 $D..B31
● THOMAS BROS MAP LOC K 34–C4
11625 Dale D Berglund .84 772-6264
11701 NP
11707 Larry Hall ¤ 772-4778
11715 Minoru Suyama .79 772-5246
Roger Suyama .79 772-3202
11720 George Beppu .82 772-1134
11721 S J Bautista .79 772-2918
11803 11808 NP
11809 Jack G Boyett .78 772-5252
11815 NP
11820 Donald I Suyetani .67 772-0343
11821 NP
11826 Tak Tsuchida .68 772-1716
11827 Mar Descargar - 772-1874
11832 Samuel H Shinozaki .74 772-6694
11833 Lavern E Birch .69 772-0556
11838 Robert A Vickers .67 772-1775
11841 K Yates .85 772-2396
11842 Vernon E Zier .67 772-5688
11845 George Suetsugu Jr .79 772-5275
12003 Rev A C Hartley .73 772-6080
12004 NP
12009 Gary E Martin .77 772-1117
12010 Curtis J Hill .55 772-4871
12015 David W Rankin .81 772-5604
12016 Gary Huff ¤ 772-3284
12021 NP
12022 Kevin McClaskey .84 772-0229
12027 Klaus Joeschke .77 772-5305
12028 Curtis D May .62 772-6584
12033 NP
12034 Michael W Koens .82 772-1865
12037 Robert W Dyckhoff .78 772-6447
12038 James T McCracken .67 772-6577
12043 Wayne A Brunson .83 772-0373
12044 K M Dalvit .64 772-5575
12049 NP
12050 Robert H Vold .55 772-4792
12055 L L Zimmerman .84 772-3380
12056 C Andergon ¤ 772-1489
12203 NP
12204 Pam Nelson - 772-7273
12209★ George King Eng .84 772-6766
12210 M Marten ¤ 772-6084
12215 NP
12216 R L Moodie .55 772-6560
12221 John Baird .85 772-7252
12222 12227 12228 NP
12233 NP
12234 B C Vanausdal .79 772-5080
12237 Donald E Norris .69 772-5773
12238 A M Bach .85 772-6200
12243 Lawr A Richmond .85 772-3304
12244 Abel Fortune .82 772-2476
12249 H D Borsvold .64 772-4912
12250 L L McGinnis .80 772-5328
12255 Daniel R Bennett - 772-2712
12256 L F Kuwitzky .85 772-2793
12814 J E Campbell .81 772-5285
12824 J C Yardy .81 772-5855
12839 Ken Maekawa .81 772-6690
12840 Yngvar Berre .83 772-4492
12843 Jessie B Norris .84 772-4691
12844 Rick K Abe .85 271-9418
12846 Thomas T Hisayasu .73 226-9514
67 RESIDENCE 1 BUSINESS

N 77TH ST 98103

N From 7700 1st NW
1– 299 TZ 29 $D..D13
300– 1099 TZ 28 $E..D13
1100– 2499 TZ 27 $C..D14
● THOMAS BROS MAP LOC K 7–F5
● THOMAS BROS MAP LOC K 8–A5
101 Archie McDonald .55 783-5861
102 Brad Rice .84 783-5656
R Rothrock .84 783-5656
106 NP
110 P M Egan .81 783-3533
111 Loran J Frye .55 782-6652
114 Gordon F Stevens .80 782-8508
117 Herman Hadaller .65 784-3203
119 Doug Callender .80 789-3439
120 Daniel Willott .82 782-5196
123 Alfred C Henne Jr .67 782-9249
125 W G Bille .71 782-3061
126 NP
130 Jeff Knudson .85 789-8318
131 D Kurtz .76 784-2671
132 K Sullivan ¤ 784-1256
135 I Head .70 783-5217
136 Steven C Mork .84 789-6162
137 D Saxton .85 789-3830
K Wardrop .85 789-3830
141 C J Williams .79 784-6779
145 E M Christensen .85 784-9961
Karl Dardick .77 784-2517
148 Doug Rosenzweig .85 789-7805
151 Alfred J Sholset .64 783-1907

7700 N GREENWOOD

303 305 NP
307 Donald L Johnson - 784-0712
308 Fred Denney .84 783-2856
310 Robert J Hoover .84 789-2312
311 Menneth W Pineda ¤ 782-4290
315 NP
316 Scott M Freeman .55 784-1984
317 Kelli A Nomura - 789-5049
Jerry A Sutton - 789-5049
320 Lester D Wilson .55 782-2151
321 NP
324 Rondal E Pitts .55 783-3747
328 Paul R Schalkau .55 782-7220
334 David Woodward .85 782-6532
335 Michael Lewis .78 783-7598
336 339 340 NP
345 L W Hoar ¤ 782-6505
K Hummel-Berry ¤ 782-6507
346 S J Jakubowski .55 783-0018
349 John D Kelly .85 783-2872
354 Mario R Isely .84 789-3126
355 Michael E Andersen .77 782-7020
356 Olaf Stava .59 783-7261
361 Hans Andersen .55 784-3380
362 L C Kaye - 783-6820
364 David Haas .85 782-0675

7700 N DAYTON

503 Deborah Danskin ¤ 789-0127
David Kimura .82 789-0127
Doug Wechsler ¤ 789-0127
Gary Yee ¤ 789-0127
504 Jung Kim .85 783-1613
506 M R Keller .85 789-4105
507 William Bigelow .55 783-5554
509 Richard R Klein .75 784-5079
William J Metz .81 784-5079
512 J Giater ¤ 783-7516
513 Elton Engstrom .55 784-1008
516 Phillip H Moore .72 783-7349
★ P H Moore Piano 784-5322
519 James Coyne .83 789-3902
520 NP
523 Laume Jansen ¤ 783-0991
524 Richard M Hampton .85 789-7889
526 S A Zitzer .78 784-3439
529 Henry Soderquist .79 782-2015
530 NP
533 John H Ransom .55 784-1834
534 Robert McLaren .85 783-7951
537 E A Gilchrist .85 789-7076
538 Thomas P Foster .82 784-5124
544 Gordon N Larson .55 784-0248
545 William D Hanna .82 784-2817
Shirley Johnson .82 784-2817
546 NP
549 Arthur Bolden .72 789-1624
555 M L Creed .65 784-4248

7700 N FREMONT

702 A L Coombe .55 784-1028
703 D Perla ¤ 789-6810
705 William N Day .83 783-9324
Tom Shuh .84 783-9324
706 V Robinson .79 789-1612
708 St Eve Malarkey - 782-6381

¤ — New Listing To The Directory - — New Listing To The Street ★ — Business Listing TZ — Trading Zone 83,84,85,Etc. — Year First Listed 1983,84,85,Etc $A9B,Etc — Census Tract Wealth Rating CL10 — Map Location

98178
NP
11631 Thomas C Dilworth 2 772-2787
11637 James Stucke 6 772-2994
11801 NP
11809 NP
11814
11820 John A Hughes 2 772-5982
11826 Douglas Jay Smith 9 772-5413
11829 Ralph Yorio 772-1252
11832 Robert E Fox 4 772-5455
11836 Richard Minerich 4 772-5774
11840 James M Dodobara 9 772-4364
11841 Bruce Christianson 772-1016
11844 Gordon Alberti 9 772-6101
12004 NP
12009 NP
12010 NP
12015 J L Packard 1 772-5317
12016 NP
12019 Carolyn Smith 3 772-4680
12022 James Vann 0 772-1191
12025 James Gordon ¤ 772-0573
12028 A D Stevens ¤ 772-0490
12029 NP
12034 NP
12035 Glenn D Lampert 4 772-5967
12038 Lowell E Reistad 772-5878
12039 Terry L Tangen 5 772-4698
12045 D E Coddington 1 772-5942
12050 Theodore Spearman 6 772-1947
12051 Larry Lovin 5 772-4974
12056 Kenneth R Harmon ¤ 772-2587
12204 David D Zimmerman 772-6769
12207 Donald E Spears 5 772-5984
12210 Alfred S Johnson 772-5327
12213 Robert E Hoffman 772-6087
12216 NP
12219 Larry Lafrance 4 772-0507
12222 M K Hoefner 772-6429
12225 Anita J Lamoureux ¤ 772-5903
12228 C L Guenther 3 772-5724
12231 Cornelius B Finn ¤ 772-4259
12234 Harold B Gunderson - 772-5108
John W Tusa Jr ¤ 772-5108
12237 Fred Vanderlip ¤ 772-5556
12243 Jay Gude ¤ 772-6388
12244 Norman W Sjogren 772-6639
12250 Jos W Marchbanks 3 772-4297
12256 NP
12424★The Golden Oven 772-2812
12610★Peoples Natl Bank 772-4573
12704★Dr Leo E Heye 772-4000
★Dr N L Nelson 772-4000
★Ridge Hgts Med Ctr 772-4000
12715 Robert C Machen 772-5237
12721 Allan Larson 0 772-4441
12722★Skyview Apt Motel
Dirk Berdan ¤ 772-5780
S M Games 6 772-6687
L Kirschbaum 6 772-6062
Roger Mahan 6 772-5599
Bob M Preston 6 772-0181
N O Schirman ¤ 772-0176
Stan M Simpkins ¤ 772-5436
M J Vessey ¤ 772-5542
E M Walker 6 772-5944
12727 Eric P Englund 9 772-6165
12744 NP
12816★Business Mgt Sys 772-1771
W Rex Candland 772-4442
12826 Albert Wicker 255-5592
12900 NP
12914 Alfred R Reinhart 226-1920
73 Residence 8 Business

SE 76TH
See Mercer Island
007690

76TH AVE SE
See Mercer Island
007700

76TH PL SE
See Mercer Island
007710

SE 76TH PL
See Mercer Island
007720

N 76TH
98103
E From 7600 1st NW
1- 299 TZ 29 $E..H 3
300- 1099 TZ 28 $E..H 3
1100- 1499 TZ 27 $E..H 4
007730
102 Cecil Watkins
106 Daniel T Thornton 9 789-0911
110 R A Schueller ¤ 783-9870
111 Arthur L Seils 9 784-3701
112 Robert L McClellan - 783-9845
116 David Hall 5 783-8657
117 Frank O Bergerson 4 784-6070
Lillian McLaughlin 782-4085
118 Douglas H McDonald 782-4085
121 Paul E Greene ¤ 784-2297
122 4 783-2362
126 NP
Rena Zallocco
127 Michael J Linehan 783-2235
130 Donald MacNaughton 5 783-8937
131 Schylor P Holmes 783-9206
135 Chester Bielby 782-6104
137 M Penhollow 783-8873
138 G F Haughian 6 789-3954
141 Ronald Jackson 784-1664
142 Earl F Landguth 3 789-3150
Mrs F A Landguth 783-0308
143 Merlin Rainwater 783-0308
Charles F Williams 6 783-8721
146 J D Murray 6 783-8721
147 Gary Euse 5 783-7797
Philip R Holland 6 784-4604
7600 N GREENWOOD
302 John A Backman 6 789-2203
306 Charlotte Kinsey 8 784-9433
312 A Dunatov 783-6483
Geoffry George 6 784-2391
N Hume ¤ 789-0108
M C Lischka 3 782-6769
Hans J Nelson 783-4129
Mrs Billie Nichols 3 782-5832
784-8971

312 M L Potter 6 783-1526
314 NP
316 Robt P St Germain ¤ 784-0532
317 NP
319 K K Bjarnason 782-6672
321 V M Busby 782-1293
324 NP
325 O A Lider 783-1851
326 Brian Parsons ¤ 783-3780
329 R Hartley 6 784-1849
332 J P Girard 6 784-2426
Merrill Olinger 1 782-8646
333 A K Parmelee ¤ 783-7887
334 James T Walker - 782-0107
337 R E Thornton 3 783-1614
340 G E Dowie 4 784-1445
342 Warren Gengler 3 784-7298
343 Albert B Sather 0 784-9760
347 Mary Boggs ¤ 782-5513
348 Robert Frisbie 783-5938
350 H M Fermstad 9 783-1062
353 Jorge Charlet-Jara ¤ 784-2769
354 R R Frane 9 782-3844
355 Kemper H Jolliffe 782-4796
360 S J Metzger ¤ 789-0160
½ NP
361 Tully S Martin 1 783-8580
7600 N DAYTON
503 Leo F Vreeland 783-6762
504 William F Dyment 0 782-3563
506 NP
509 G E Lamb 0 782-3227
510 Joseph P Chapman 3 789-1437
511 Ronald K Terry 6 783-1754
514 Waldo O Sanders 782-8135
515 Vatsek Parda 782-4056
520 Harold Jacoby ¤ 789-2406
521 E R Coulter 4 789-3655
W L Coulter 4 789-3655
524 D F Creager 1 783-2712
525 C Edward Mills 783-8184
528 K Clayton ¤ 783-4280
½ NP
531 Sik M Yan 3 783-2185
532 George E Godfrey 784-0270
536 NP
537 Arthur C Johnson 782-3014
541 Joseph L Miller 782-2864
544 M E Rogers 6 784-7967
547 B A Downs - 783-3656
548 David Fullerton 0 782-7581
551 Johann I Johnson 782-0911
701★Galactic Uphol Cln ¤ 784-5744
706 Dennis R Shadduck 4 783-3216
707 Theodore Johnson 1 783-5772
710 Inez A Paul 783-9939
711 Roy E McKeehan 784-3142
712 John Hynd 782-5508
715 Nelson N Aikins 783-1992
716 NP
719 NP
720 George P Gaw 784-8824
721 Mark H Houck ¤ 784-8449
M A Nolan ¤ 784-8449
724 Russell Black 783-0529
725 Gail Ferry 784-2105
726 R M Black 6 789-3380
7600 N FREMONT
731 James S Hendrix 3 784-0425
733 NP
734 Joseph L Clem 784-9473
736 Russel N Wheeler 784-1027
741 P Crouch ¤ 789-3659
742 J E Malestky 782-3699
743 Donald B Prindle 1 783-7773
746 J E Earl 783-0204
748 Lesley C Parker 784-4154
749 Jeffrey Runge - 789-1827
756 Costas Giannaros 5 784-0353
J Jordan ¤ 782-7365
7600 N LINDEN
902 Harold L Spilde 784-4879
906 Darrell Willers 6 783-3462
909 A J Mallinson 783-5978
P Mallinson ¤ 783-3579
910 E C Goodenbour 783-4168
911 Youssef Rafatjah ¤ 789-0787
912 Larry Smith 4 782-6042
914 Marion I Smith 782-4338
919 Louis J Morseth 782-1568
920 Morgan T Thornton 2 783-0578
923 Carl F Anderson 784-5363
924 Gary D Leischner 6 784-1877
927 W Mercier ¤ 784-4965
929 Carl Sternberg 783-4641
930 Mrs James Dean 6 783-8623
931 Paul Arthur Smith 3 782-5245
933 Joe Buckenmeyer 783-9787
934 Raymond H Peterson 4 783-4022
936 Arthur W Smith - 789-2668
940 J E Garbutt ¤ 782-8004
Gary Zarker ¤ 784-8540
941 L E Venable 783-3739
943 NP
946 James E Coughlin 5 784-8527
947 Rich Chaffee 6 782-6379
949 Mary Burchett ¤ 789-3156
7600 N AURORA
1111 Roy J Anderson 525-7540
1112 NP
1115 Mrs Dorothy Blair 4 524-4954
1116 P E Englert 523-2606
1119 Harold J Hillard 523-6890
1120 Ivan L Baggett 6 524-3947
1123 Fred A Smith 522-7230
1124 Pon Jay - 525-2333
1127 Thomas F Heslin 6 523-4258
1128 V J Waite 523-7395
1131 Charles Moseley ¤ 522-6812
1132 Roger D Pederson 6 525-2219
1135 Roger Davis 2 523-7635
1136 M E White - 525-0618
1139 B B Healy 524-1328
1140 Martha Merklin 523-3402
1143 Walter W Puckett - 524-7179
1144 Brian Kincaid 5 525-2395
1148 Robert N McIntyre 1 522-2162
1152 Denney Givens 523-4021
1156 Thos A Whitehouse 6 525-9347
1160 E L Rafter 525-7631
1164 James F Sutterman 525-3299

7600 N WINONA
1304 Richard N Stanford 5 525-4326
1310 Fred C Parker 8 523-2363
1314 Ben Lundberg 525-8885
1318 Mike MacEwan 4 525-8574
1322 B Arnold Loken 522-7743
1326 Lewis E Gilbert 522-4091
166 Residence 1 Business

NE 76TH
98115
E From 7600 Latona NE
1- 999 TZ 27 $E..H 4
1000- 1999 TZ 26 $D..H 4
007740
306 John E Wall 3 524-6457
312 Z G McWhinney 8 522-3235
313 Nils Foss 522-0223
317 J F Quackenbush 9 522-7450
C Stevenson - 523-8564
318 G Callaway 3 524-7857
320 Leroy Alibee 524-5422
323 Maxwell R Cooper 522-0563
326 Michael S Kanski 523-7526
329 Kenneth M Zentner 523-6750
333★Christian Science 523-0266
342 Earl R Stromer 524-3249
350 James L Bellessa 2 524-5003
7600 4TH NW
401 Clark F Bellessa ¤ 525-0710
610 John Fisken 525-5894
614 Rollin G Radwick 3 524-2544
615 Brian Deslauriers ¤ 524-7430
621 John Butler 6 522-1487
622 B P Grimstad 4 524-7941
624 R E Cook - 523-3153
7600 15TH NE
1506 NP
1507 NP
1514 Harley J Shelley 6 524-9755
1515 Eulogio Flores ¤ 525-6846
1518 Karl W Sumboru 524-1336
1519 A N Johnson 2 523-8185
1522 B Kerr 5 524-4392
1523 Fredk N Johnson 3 525-1836
1527 Phil A Woare 3 522-5461
1528 Ronald Olsen 9 522-0292
1533 R R Armstrong 522-6124
1534 Karen Lidikay 5 522-5741
1537 NP
1540 Joseph A Jurich ¤ 524-0665
1541 Maurice C Clark 523-5022
1542 C A Rogstad 523-1889
Donald W Wessman 6 523-1889
1545 C E Douglass 523-5305
1549 Mike Barlia 8 524-5575
1550 Mike Elvsaas ¤ 523-1616
1552 George C Dick 523-1494
1557 L Fudge 523-0208
1558 William G Thornton - 523-6389
42 Residence 1 Business

NW 76TH
98117
W From 7600 1st NW
1- 799 TZ 29 $E..H 3
007750
102 Thomas F Donohue 784-4191
105 C Elza ¤ 782-2288
T Lofton ¤ 782-2288
108 L Dillman ¤ 783-4857
B Longenecker 6 782-3181
½ NP
112 Michael Sheets 2 789-4225
113 Robert F Howell 8 784-0224
116 Wayne T Duncan - 784-7392
117 William P Mitchell 784-0164
122 Michael J Moffitt - 782-6857
123 Annette Carmagnola 5 783-0834
125 Lyle W Tiberghien 6 789-0877
128 Glenna M Howey 784-4559
William J Sutton 784-4559
131 Cornelius Sullivan 784-6827
132 Karl J Andersen 0 784-4509
135 David R Pullin 784-8514
136 M O Thomson 784-7295
140 Richard G Wells 0 782-2641
141 Mrs Louise Loper 784-4287
144 Wilma L Snyder 5 782-8831
145 J K Smiley 8 783-0261
148 Chuck Larsen 4 789-0319
149 Henry A Huddleston 5 782-1737
152 Louis S Barkley 784-6697
156 Paul Schur 782-4614
7600 3RD NW
304 Curtis P Jensen 5 789-2448
307 Gordon Pederson 782-3541
311 William Duyck 784-2119
312 P F Aspinall 783-1814
317 John Dreewes 784-5000
320 Henry J Sarempa 6 783-7230
323 Don Anthony 3 789-3319
324 Robert E Holley ¤ 783-1133
327 Keith Wood - 783-5105
328 J A Thomes 6 782-2939
330 John E Olson 784-5771
331 R S Christensen 5 789-4363
334 Sam Panagiotou 4 782-1142
338 James E Jonas 0 784-2582
339 Phyllis J Presba 782-9014
342 Harold N Esperum 0 782-3720
343 Stephen J McAleer 783-3427
346 Steven D Cullison ¤ 784-2219
347 David L Horton 4 784-5997
351 Clinton H Minar 784-7025
352 James F Hunter 6 783-4276
L Rapp ¤ 784-4587
353 Mrs C F Forcier 782-2133
359 NP
7600 6TH NW
606 N Tazioli 782-4282
610 Mrs Naomi Olson 782-5551
611 Lura E Floyd 782-4990
614 NP
615 Greg Marincola ¤ 783-3791
618 Walter Francis 782-9342
619 Melvin P Wilson 782-3593
622★M Stephen Music 784-1651
625 Erling C Nilson 782-7936
628 Gerald V Harris 784-0688
629 G Herb Pashley 782-8994
630 Elaine Chihara 6 784-2062
636★Charles R Griffin 783-7026
Louise O Griffin ¤ 783-7026

637 Peter Toumanoff 6 784-3098
640 R H Miller 782-6195
641 Ron Rafferty 5 783-6349
642 John M Doyle ¤ 782-0320
643 John G Harkinson 4 782-8813
646 NP
647 Clifford L Olson 783-8470
650 David S Obreen 5 782-8223
651 Timothy J Ault ¤ 782-2294
655 David M Reed ¤ 782-3854
656 John N Breen 4 783-5582
74 Residence 2 Business

77TH AVE S
98178
At 7700 S 118th
10400-12699 TZ 260 $B..P 6
12800-12899 TZ 261 $B..P 6
007760
11701 Dale D Berglund 2 772-6264
11720 James W McConville 772-6197
11803 Hal H Ise 3 772-4892
Tom M Yamaguchi 3 772-4892
11808 NP
11815 Kiyo Osada 4 772-5402
11820 Donald I Suyetani 772-0343
11821 P Chinn ¤ 772-5807
11826 Tak Tsuchida 8 772-1716
11827 Roy L Rogers 9 772-1517
11832 Samuel H Shinozaki 4 772-6694
11833 Lavern E Birch 9 772-0556
11838 Robert A Vickers 772-1775
11841 John E Hope 5 772-6588
11842 Vernon E Zier 772-5688
11845 Steven A Maxwell ¤ 772-6721
12003 Rev A C Hartley 3 772-6080
12004 Gregory Pinney ¤ 772-0310
12009 Gary E Martin - 772-1117
12010 Curtis J Hill 772-4871
12015 NP
12016 J Biddle 2 772-2286
12021 NP
12027 Klaus Joeschke ¤ 772-5305
12028 Curtis D May 772-4710
12033 Kenneth M Duffield - 772-5533
12034 John O Jacobson 772-5651
12037 Richard A Biller 0 772-4940
12038 James T McCracken 772-6577
12043 James H Watkins 6 772-5264
12044 K M Dalvit 772-5575
12049 NP
12050 Robert H Vold 772-4792
12055 Ronald O Kidd 6 772-0118
12056 Harry Walker - 772-1121
12203 Al Simpson 772-5824
12204 Barbara Scribner 6 772-1940
12209 Clarence R Raaum 772-6766
12210 James W Christian 772-6504
12215 F W Dent 772-4597
12216 R L Moodie 772-6560
12221 Reginald Mayo 3 772-6093
12222 C A Campbell 5 772-1768
12237 Darryl Davis 5 772-1219
12228 Duke Rogers - 772-6472
12233 NP
12234 James T Dowling ¤ 772-0355
12237 Donald E Norris 9 772-5773
12238 David W Thompson 4 772-5195
12243 David L Banks 5 772-4585
12244 Gene E Gregory 772-6213
12249 H D Borsvold 772-4912
12250 O B McGinnis 772-5328
12255 Russell J Sherrick 6 772-0884
12256 Leora Kuwitzky 2 772-2793
12844★Abe Toshio Gardeng 255-5257
12846 Thomas T Hisayasu 3 226-9514
56 Residence 1 Business

77TH AVE SE
See Mercer Island
007770

77TH PL SE
See Mercer Island
007780

N 77TH
98103
N From 7700 1st NW
1- 299 TZ 29 $E..H 3
300- 1099 TZ 28 $E..H 3
1100- END TZ 27 $E..H 4
007790
101 Archie McDonald 783-5861
102 Don Latham 3 782-4923
106 A H King 3 782-8131
110 Roland V Egan 783-3533
111 Loran J Frye 782-6652
114 Anthony F Gilman 2 783-3038
117 Herman Hadalier 784-3203
120 James E Myers 783-5221
123 Alfred C Henne Jr 782-9249
125 W G Bille 1 782-3061
126 James T Gardner ¤ 789-3615
130 NP
131 D Kurtz 6 784-2671
132 J Weitzin - 784-8940
135 I Head 0 783-5217
Doug Makitten ¤ 784-7199
136 G V Larson 6 783-1070
137 N A Walker ¤ 784-1648
141 NP
145 Karl Dardick - 784-2517
N K Holcomb ¤ 789-0843
148 D N Fotheringham 782-3704
151 Alfred J Sholset 783-1907
7700 N GREENWOOD
303 NP
305 NP
307★Donald L Johnson 789-1620
★White HS Dist Dsgn 789-1620
310 V S Schmitz ¤ 789-3504
311 Florence Gustafson 784-8832
Charles R Johnson 784-0712
R A Kelley 6 784-4882
315 NP
316 Scott M Freeman 784-1984
317 NP
320 Lester D Wilson 782-2151
321 Richard Osborne ¤ 784-1013
324 Rondal E Pitts 783-3747
328 Paul R Schalkau 782-7220
334 Hervey T Ballou 782-1260
335 NP

•••••••••••••••••• 98103
741 ROMAN ANTIOQUIA SR
1 7842388
742 NP
744 D M MOUM -7829315
745 NP
746 NP
749 F K SHORES 0 7823253
750 NP
751 NP
755 JOHN MOLVIK 7840076
760 M E YERGER 7830317
761 NP
763 JEFFERY JEWETT 2 7828014
764 WALTER W WARE JR 5 7826671
767 C F CROY 7831348
768 D C POLETTO 0 7844230
G M POLETTO 7844230
P A ZULKOSKY 2 7890759
771 DOUGLASS L NIXON 1 7847535
773 NP
•• 7500 N LINDEN ••
900 EDWIN BENDEWALD 2 7831108
909 LAVINA I FARR 7842112
W S STAN FARR 7842112
910 R M MOREAU 7 7849328
914 NP
915 NP
917 J T SKOLROOD 7832238
918 CHARLES N HOBRIGHT-7832286
920 NP
921 RICHARD P WARREN 5 7829405
924 PERCY M STOTT 7843157
925 ROBT L BRIDGES JR ¤7831986
M D FRANUSICH ¤7831986
926 BENJAMIN COPELAND8 7890345
927 O R BATTERSON 0 7839847
928 HENRY O KNUDSEN 9 7892246
•• 7500 N ORIN CT ••
2004*GREEN LK CHRSTN SH¤5242010
*PILLAR FIRE CHURCH 5242010
2007 NP
2008 HALDOR K MATHISEN 5222831
2014 ALDO HULTEN 8 5241581
2020 GARDINER G WORKING 5235419
•• 7500 N MERIDIAN ••
2100 ELMO H MEADOWS 5227973
2104 ANNA DARZINS 5 5240775
2107 DAVE RUCKERT ¤5253665
2108 GREGORY J BUJAK ¤5223519
2109 E J THOMAS 7 5225777
OWEN P THOMAS 9 5225777
2114 ALLAN R SUSIA ¤5252133
2115 RICARD WALL 2 5250751
•• 7500 CORLISS ••
•• 7500 N SUNNYSIDE ••
2409 L CHROMOGA 5240872
2411 SHERLIE P DENHOF 7 5241912
2412 MRS HARRY DAHLNER ¤5228917
2415 MELVIN C ROGERS 5 5243837
2416 JOHN P GULICKSON 9 5247594
2417 BERTHOLD NEFF 8 5244016
2421 FLOYD A JORDAN 9 5246141
148 RESIDENCE 5 BUSINESS

NE 75TH 98115

•••••••••••••••••••••••••••
E FROM 7500 1ST NE
••• 1- 999 T 27 $E••H 4
••• 1000- 1999 T 26 $D••H 4
••• 2000- 2999 T 25 $D••H 4
••• 3000- 4499 T 24 $B••H 5
••• 4500- 5999 T 22 $A••H 5
•• 7500 NE LATONA ••
311 ROSEMARY KINNE 2 5224802
•• 7500 4TH NE ••
•• 7500 6TH NE ••
619 A ACKERMAN -5251176
•• 7500 8TH NE ••
801 MRS R M PETERSON 5 5236027
819 WILLIAM H LAFFOON 5235362
825 A MICHAEL HANEY ¤5245620
•• 7500 11TH NE ••
1114 DOROTHY J WARRINER
4 5245371
1118 MRS A O MYRON 5246327
1122 FRED E BUTTON -5251531
1126 GILBERT A RIEGEL 5220964
•• 7500 12TH NE ••
1204 WILLIAM L SHECKLER
5 5246482
1210 JAMES P MURRAY 5230923
1214 H C SCHAEFER 0 5252646
JUNE L SCHAEFER 0 5252646
S R SCHAEFER 0 5252646
1218*AMER PROGROM SERV ¤5228600
*R E DELANEY INS 5228600
R E DELANEY 2 5228601
*NORTHLAND UNDWRTRS 5228600
•• 7500 BROOKLYN NE ••
1306 WILLIAM E LITTLE 9 5220472
•• 7500 14TH NE ••
1402 F M RUSSELL 5231326
L G RUSSELL 5231326
•• 7500 15TH NE ••
1503 SWAN WESTROM 5236650
1506 ARTHUR K STROM 9 5224503
1508 H L BENOIT 5229079
1509 NP
1512 MRS JAMES B TAYLOR-5239118
1516 ROOSEVELT JOHNSON ¤5248933
1520 DANIEL HATHAWAY -5237405
1522*HALL MILO ORCHESTR 5231898
•• 7500 16TH NE ••
1600 CARL V LAGERQUISTO 5224286
1606 JONATHAN FOX -5254163
D FUQUAY -5254163
1609 VICTOR E JOHNSON 5223895
1611 PHILIP P MCLEOD 2 5228283
1612 FREEMAN W GRAY 5243467
1614 JOHN W SCHIFFNER 5220557
1615 R C ACHZIGER 5258221
1617 CONWELL G SWENSON 5244746
1618 JEAN RAINEY GIBSON 5244297
1620 THOMAS J JOHNSTONO 5223234
THOMAS G PIDDUCK 0 5223234
•• 7500 17TH NE ••
1704 G V BURRELL 5227081
1706 IVAN A RAINES 5245114
1707 JOHN A JOHNSON 5 5241753
1711 MICHAEL L TRIPP 2 5220359
•• 7500 18TH NE ••
1800 MILDRED S FORTNER -5220777
1809 M E PHILLIPS ¤5249093
1812 A C HOUWELLING JR2 5227167
1816 ROBERT P HOWELL 0 5230531
•• 7500 19TH NE ••
1902 DWIGHT E SHIELDS NP
1905 RICHARD J DEMEULES ¤5249195
1906 ROBERT FUGMAN 1 5251795
1915 B H DEXTER 2 5238342
1916 A E EKINS 1 5245431
•• 7500 20TH NE 5240368
••

2021 RONALD A CARPENTER
5 5254550
•• 7500 21ST NE ••
2102 DONALD TRIMBLE 5226557
2106 RUDY SCANZON 5220476
2107 VINCENT SAUVE 8 5256380
2112 PHILIP HAIGH 9 5258716
2120 NP
2121 EDWIN C JOHNSON 5234841
•• 7500 NE RAVENNA ••
2200 DAVID MCELROY -5249676
2205 KEITH WATENPAUGH 1 5250152
2208 WILLIAM A FULTON ¤5256731
2212 NP
2216 D I GAINES 2 5232922
•• 7500 23RD NE ••
2302 ROSSIE M STANTON 5231906
2316 A E MEYERS ¤5258882
•• 7500 24TH NE ••
2406 CHARLES H BRASCH 8 5231008
2418*JIMS TEXACO 5229770
•• 7500 25TH NE ••
2501*CHUCKS SHELL 5229549
•• 7500 26TH NE ••
2604 NP
2615 GEORGE KAROL 5237664
•• 7500 27TH NE ••
2711 ALICE K SPARKS ¤5245721
2714 EUGENE F GOUDELOCK 5244473
2717 MRS ANN D GIBBS 8 5227270
2725 LEONARD J HARTZ 0 5245161
2726 MANZER J GRISWOLD0 5233648
•• 7500 28TH NE ••
2806 MRS JUNE S THEIMER
7 5240795
2813 DOROTHY GRANNEBERG
9 5225270
2819 THOMAS J HART 8 5246847
2820 MARSHALL L WHIPPLE 5239163
2825 HARRY J WILSON 7 5246504
•• 7500 29TH NE ••
•• 7500 30TH NE ••
3003*ECKSTEIN MID SCHL 5247000
•• 7500 32ND NE ••
3202 DANIEL R IHLER 7 5234324
3210 C E DANIEL 1 5254899
•• 7500 33RD NE ••
3301 M E ROEGNER 2 5236088
3302 LESLIE H ROBINSON 5259117
3315 G R HOLDERMAN 5 5238785
•• 7500 34TH NE ••
3402 SOGO MIYAUCHI 1 5244118
•• 7500 35TH NE ••
3516*APARTMENT
FRANCES B BASCH 9 5233731
MRS EDLA V EGBERS -5258807
B D FINN ¤5256649
D R FLATH 2 5241104
R JOHN GARLAND 2 5232888
WYLIE I LEE ¤5239075
I W MCDONALD ¤5247616
PAUL W PUGH 2 5241977
T C RYDMAN -5220869
MRS M WYATT 5 5241617
•• 7500 36TH NE ••
3602 NP
3603 DON H MORGAN 5228915
3613 NP
3619 NP
•• 7500 37TH NE ••
3701 AUDREY V BAISCH 7 5222095
PETER BAISCH 8 5222095
3706*APARTMENT
AMBROSE J BEHAN 5240540
J FOGELSON -5237645
LARRY LARSEN 2 5233489
FRANK MARKHAM 1 5220069
3714*ONEIDA GARDENS 5225031
•• 7500 38TH NE ••
3801 MRS L SHOWALTER 5240548
LLOYD D SHOWALTER4 5240548
3805 JOHN MICK MOORE -5242740
3810 NORVAL S ANDERSON7 5222123
MRS E CHRISTOPHERS 5223823
LUCILLE E DURKIN 6 5246347
FREDERICK J LORD ¤5245736
3811 DAVID W MORGAN 5227265
3814*APARTMENT
ELIAS B DOMINGO JR
2 5249231
JO D LAWRENCE 4 5254826
W H LEAHY ¤5259717
3817 MAYNARD J WEGE 6 5256248
3818*APARTMENT
JOSEPH H ALDRIDGE0 5235797
PEARL LUDWIG ¤5231027
DIXIE M PRATHER ¤5250279
T D REYNOLDS -5257432
3823 DAVID S FREEMAN 1 5235667
JERRY SKARBEK 0 5235667
3826*APARTMENT
JEAN FARMER ¤5241351
P FORNIA 1 5223449
JAN M PHILLIPS ¤5249614
•• 7500 39TH NE ••
3902 N M GILL 1 5257816
•• 7500 40TH NE ••
4002 HARRY A CAMPBELL 5235433
LOIS M CAMPBELL 5239358
4007 ANN BODLE ¤5244824
4009 JOSEPH RILEY 9 5252997
4014 JAMES M HARA 5221019
4017 WALTER DALRYMPLE 5240030
4021 PAUL J JONES 0 5252118
4025 ALFRED S MARTINSON
7 5232984
•• 7500 42ND NE ••
4209 DAVID M BLAKEMORE -5246685
4215 P J JESSEN 5238568
4221 PETAR S RADUNOVICH
7 5227965
4227 D MIKE KENNEDY 9 5257521
4233 JOSEPH LAMONT JR ¤5242052
4241 ROBERT R ROWSE 5 5240677
•• 7500 43RD NE ••
4305 GEORGE J GOSIESKI8 5233128
4309 A J MITCHELL 7 5231995
4313 LOUIS LAZOFF 4 5227828
4314 J L DOUGHERTY -5251599
4316 T J LASHLEY 5242844
4321 RALPH W FRANCK 6 5258767
•• 7500 44TH NE ••
4401 CHARLES SANVIDGE 5243882
4405 JOHN M CROCKETT 1 5237351
4411 DR RILEY W PARK 5 5259634
•• 7500 45TH NE ••
4500 CHARLES COYNE 0 5231975
4501 JOSEPH I KIMM ¤5223144
•• 7500 46TH NE ••
4603 P N BELDEN 5243377
4611 WILLIAM T WHITHAM2 5258623
•• 7500 48TH NE ••
4803 JAMES H MURRAY 5232024
4811 B S WITTENBERG 2 5237583

4817 ANTHONY H ISHISAKA
2 5243503
4823 G W PARKS ¤5222187
4829 DAN E HARTNETT 5255461
4835 GEORGE A JAMESON 2 5234069
•• 7500 50TH NE ••
5051 BRUCE MAINES 5229049
•• 7500 51ST NE ••
5105 MAURICE E STANSBY 5220374
5112 E G VANLAW 5230285
5118 GLEN MOEHRING 7 5256919
5121 A M PELLEGRINI 5221238
5122 ELMER M PLEIN 0 5231919
5130 WILLIAM E ROBBINS9 5254278
5136 ROBERT B MITCHELL -5223352
•• 7500 52ND NE ••
5211 DONALD F BENTLER 0 5254390
5217 DR WYATT WOOD ¤5220913
•• 7500 57TH NE ••
5700 RICHD C MICKELSON8 5258570
170 RESIDENCE 13 BUSINESS

NW 75TH 98117

•••••••••••••••••••••••••••
W FROM 7500 1ST NW
••• 1- 799 T 29 $E••H 3
••• 800- 1999 T 30 $D••H 2
••• 2000- END T 31 $D••H 2
101 NP
104 ALLEN S JENSEN ¤7840513
105 JOHN L HOWELL 7834282
108 JAMES A GARNER 7843717
109 HARRY A EVENSEN 7835296
114 HARRIETT C FIGI 5 7823422
115 EDNA AKLEY 8 7839695
116 AGNES DAVIS 8 7840260
THOMAS KELLY ¤7847872
GLEN MERITT ¤7846142
119 RUBEN C JOHNSON 5 7846170
120 KARL A EVENSEN 7835341
121 RAIDAR PAULSON 5 7838067
125 ROBERT SCHIRK 4 7838182
128 FRANK PEELER 7820209
131 ROEN E KREPS 7834321
134 EDWARD A MILKENT 7830572
137 JOSEPH E FOUTY 7832615
140 NP
R H DRAUGHON 1 7891873
142 JAMES W RAND 7 7836842
143 JOHAN GJOLMESLI 2 7826797
145 JIM FIELDER ¤7840136
JOEL SEIDEL ¤7840136
146 RALPH THOMAS 7830146
148 NP
149 THELMA TITLAND -7847488
•• 7500 3RD NW ••
305 J P DONOHUE 7829099
310 LORIE JORDAN ¤7828093
313 PATRICK J ADAMS -7893348
314 PETER POOLMAN 7828078
317 RUSSELL ROBERTS 0 7890477
320 MRS E J SHEFCHIK 8 7843255
321 ONETA RITCHIE 1 7837748
324 ROBERT SEATON 7847162
328 MARY A PAPIN 9 7825810
329 P M TENERELLI 0 7834686
331 NP
335 JOHN DAVID BURT 1 7891218
336 F H FIELDS 7821451
341 ELLMAN H JOHNSON 7836210
345 RAUL H CANO 7847593
346*J&K JANITORIAL SVC¤7833325
JAMES W ROBERSON 0 7843427
347 MRS V A BURKE 7844745
351 JOSEPH B MCMANUS 6 7825621
352 RALPH GRANILLO 5 7847367
354 P ALBERT 2 7894629
356 NP
358 NP
359 T M HARROLD ¤7891609
360 LEE ONEIL ¤7841570
•• 7500 6TH NW ••
600*THRIFTEE CRNR MRKT 7827677
GARFIELD O WALLA 2 7827677
609 DAVE MONROE 9 7891405
610 R M POWERS 2 7827590
611 H HELMUN 7847328
614 WILLIAM R RICE 7 7833976
615 LINDA PITELLO 5 7830628
617 GERALD M JACKSON 7821152
618 J KNIGHT LOWRY 7826746
619 NP
622 L A BULLIS 2 7844437
623 ALEX BENSON 7844076
625 NP
626 GERALD B MCCARTHY5 7827919
629 EMMETT J OREILLY 7841296
632 M A SHEETS -7838610
633 JOHN W WALD ¤7848135
636 GARY R BARBER 2 7846699
S BARBER 2 7846699
637 EUGENE C DAVIS ¤7831132
639 MRS HARRY KNUDSON5 7833064
640 JOSEPH GREEN 7846654
644 ALVIN L CREITZ 7844207
645 RON E PEDERSEN 6 7830987
649 KAREN CURTIS 1 7892539
•• 7500 8TH NW ••
•• 7500 DIBBLE NW ••
802 TRUMAN A MERRITT 7836043
814 JOHN LEE KURTZ -7837554
815 HARRY L BAKER 0 7826839
818 H J CUNNINGHAM 7828861
852 NP
856 R E MCFARLAND 7835534
865 HOWARD V BROCK 1 7831755
•• 7500 9TH NW ••
902 TONNES AANESTAD 7 7847703
906 E M STENHOLM 7839271
•• 7500 10TH NW ••
1002 DANIEL V CARBONE 7832476
•• 7500 11TH NW ••
1102 M L MOORE 0 7820596
1106 NP
1110 NP
1116 JAMES T WILSON 2 7890286
•• 7500 12TH NW ••
1202 NP
1210 W H GRIFFITH ¤7840209
L GRIGSBY 1 7848934
1216 HAZEL V BROWN 7836664
JANNES A WYNN 7836664
•• 7500 14TH NW ••
•• 7500 ALONZO NW ••
1406 DOROTHY DESMOND 2 7827302
1410 DONALD J BRADY 7 7829444
1452 FRED E THOMAS 7844393
1476 WILLIAM G KLOP 7822438
1478 MRS HELEN STORRE 7828087
1482 HANNES WESTMAN 7826982
•• 7500 15TH NW ••
1501 NP
1503 A B OZURA 7838235
1505 NP
1507 NP

1509 AL BALL -7849203
•• 7500 19TH NW ••
1905 NP
1910 DANIEL GARRISON ¤7894287
1911 W HASTIG 7834844
•• 7500 21ST NW ••
2115 EDWARD WOODRUFF 7847212
•• 7500 22ND NW ••
2209 A GRAY ¤7833799
•• 7500 23RD NW ••
•• 7500 JONES NW ••
2405 PETER A STONE 8 7833813
2406 KARL F LEONARD -7831864
2408 HELEN ARNETT 8 7824526
•• 7500 25TH NW ••
2515 D M BJORK 7836778
2757 GEORGIA WHITE 2 7821202
•• 7500 28TH NW ••
2800 D GREENY 1 7833258
JOHN GREENY 7 7824224
P GREENY 0 7833258
2813 MRS T L FISHER 1 7835932
2815 ROY BEACH 9 7843260
2816 M CHAPIN 7832129
2820 ESTHER E ROUSU 7836943
2823 L J FRANCIS 7829361
2824 E L MCALPIN 4 7839158
2827 C D SANDNESS 1 7838797
•• 7500 29TH NW ••
2901 VERLE YEAGER 7825447
2905 EDWARD HALL 0 7842665
2908 SCOTT T WOODWARD 2 7891293
2909 D L TAYLOR 2 7826441
2914 FRANK W COOPER 7834125
2915 RAYMOND F ERICKSON
5 7839732
2920 RICK O HEIKES 1 7847547
2923 PAUL R VOGT 5 7838316
•• 7500 30TH NW ••
3001 J M STEINKE 9 7846309
3002 LAURI J SYRJANEN ¤7824123
3007 NP
3008 JOHN I BECHTEL 7838753
3011 BYRON H COOLIDGE 7832064
3014 NICHOLAS E BRASEN 7824386
3017 JOHN N EXCELL 7839896
3020 J W WOODALL 7828338
3023 JAMES L GOBLE 7833987
•• 7500 31ST NW ••
3101 ARNE E E ANDERSON6 7848680
D S SPAULDING ¤7892838
3102 RAYMOND E CAMPBELL 7830653
3106 NP
3107 DAVID W HOFFNER 8 7834160
3110 DURWARD D LIVESLEY
0 7827469
3111 PETER M NESS 7823606
3117 W F JENKINS 7823139
•• 7500 32ND NW ••
3215 DARRELL N MARKEY 5 7839173
3221 ANNA AURDAL 8 7827741
•• 7500 33RD NW ••
3306 GALE E ROO ¤7826358
ALEX J ST PETER 7826358
3307 ALEXANDER MOLES ¤7824575
3311 ROBERT W WESTPHAL6 7828637
3314 J BOIT SESNON ¤7846735
•• 7500 34TH NW ••
157 RESIDENCE 2 BUSINESS

SE 76TH

•••••••••••••••••••••••••••
SEE MERCER ISL

76TH AVE SE

•••••••••••••••••••••••••••
SEE MERCER ISL

76TH PL SE

SEE MERCER ISL

SE 76TH PL

•••••••••••••••••••••••••••
SEE MERCER ISL

76TH S 98178

•••••••••••••••••••••••••••
••• 10400-12699 T 260 $B••P 6
••• 12700-13699 T 261 $B••P 6
10401 EDWARD L ARNE 7722068
10417 R C FENTON JR 4 7722042
10423 ANTHONY BERNIK 0 7722023
10429 RUSSELL H ELSTON 7722978
10435 J K WIMPRESS 0 7722583
11315 D F PRITCHARD 7721419
11433*LAKERIDGE SWIM CLB 7721950
11541 ROBT H HENDRICKSON 7721241
11625 D W JENSEN ¤7720574
11631 ROBERT A COCHRAN 7 7725306
11637 THOMAS C DILWORTH2 7722787
11801 NP
11809 NP
11814 HELEN PENOVICH 9 7726281
11820 JOHN A HUGHES 2 7725982
11826 DOUGLAS JAY SMITH9 7725413
11829 RALPH YORIO 7721252
11832 EARNEST A PATE -7726427
11836 D TEETS -7725774
11840 JAMES M DODOBARA 9 7724364
11841 BRUCE CHRISTIANSON 7721016
11844 GORDON E ALBERTI 9 7726101
12004 JAMES R GIRON 0 7725776
12009 BILL J CROSWHITE 9 7724159
12010 NP
12015 J L PACKARD 1 7725317
12016 NP
12019 CAROLYN SMITH ¤7724680
12022 JAMES VANN 0 7721191
12025 NP
12028 STEPHEN D HARE -7726179
12029 NP
12034 H R VANCE 1 7724604
12035 L J NARANJO 2 7725967
12038 LOWELL E REISTAD 7725878
12039 WALTER E WITT 7724040
12045 D E CODDINGTON 1 7725942
12050 STEVEN T CAMPBELL2 7722114
12051 ROY E WEEKS 7724270
12056 EDGAR D DAVIS JR ¤7724453
12204 DAVID D ZIMMERMAN 7726769
12207 ROBERT S BROWN -7721376
12210 ALFRED S JOHNSON 7725327
12213 ROBERT E HOFFMAN 7726087
12216 ROBERT PURVIANCE 7726522
12219 NP
12222 M K HOEFNER 7726429
12225 NP
12228 C L GUENTHER ¤7725724
12231 JOHN W HANSON ¤7721661
12234 RICHARD S SEABERG2 7722292
12237 ROBERT J MORRIS 7724272
12243 MICHAEL W PADDOCK ¤7724690
12244 NORMAN W SJOGREN 7726639
12250 JOS W MARCHBANKS ¤7724297

			98178
12256			NP
12424*7	11 FOOD STORES		¤7722890
12610*	PEOPLES NATL BANK		7724573
12704*	DR LEO E HEYE		7724000
	*DR N L NELSON		7724000
	*RIDGE HGTS MED CTR		7724000
12715	ROBERT C MACHEN	7	7725237
12721	ALLAN LARSON	0	7724441
12722*	SKYVIEW APT MOTEL		
	ROGER CEMPER		¤7722511
	JOSEPH S FAGG		¤7720928
	KATHLEEN HAND		-7722911
	TSUTOMU KAJIMURA	7	7725533
	SARAH L PASSEY		¤7724982
	ROBERT G SIEGFRIED		¤7724118
12727	ERIC P ENGLUND	9	7726165
12744	N DIEVENDORF	1	7726424
12816*	BUSINESS MGT SYS		7721771
	W REX CANDLAND	6	7724442
12826	ALBERT WICKER	7	AL55592
12900			NP
12914	ALFRED R REINHART	6	BA61920
	69 RESIDENCE	8	BUSINESS

N 76TH 98103

E FROM 7600 1ST NW

•••	1- 299 T	29	$E..H 3
•••	300- 1099 T	28	$E..H 3
•••	1100- 1499 T	27	$E..H 4
102	CECIL WATKINS	9	7890911
106	G A LINDEMANN		¤7831766
110	R A SCHUELLER	9	7843701
111	MAY DALAN		7820743
	BOBBIE M ROBERTS		7820743
112			NP
116			NP
117	FRANK O BERGERSON		7824085
	LILLIAN MCLAUGHLIN		7824085
121	GLENN R WATSON	1	7832362
122			NP
126	RENA ZALLOCCO		7832235
127	LARRY DEAHL	1	7830155
130	DONALD MACNAUGHTON		7839206
131	SCHYLOR P HOLMES	4	7826104
135	CHESTER BIELBY		7838873
137	P E PENHOLLOW		¤7893954
138	G F HAUGHIAN		7841664
141	RONALD JACKSON		¤7893150
142	EARL F LANDGUTH	7	7830308
	MRS F A LANDGUTH		7830308
143			NP
146	MARK BLACKBOURN		¤7847620
	EDWARD CLOUDY		¤7847620
147	C EUSE	2	7849381
	S MOILANEN		¤7829323
	L SMITH	2	7849381
••	7600 N GREENWOOD		••
302	JOHN A BACKMAN	8	7849433
306	CHARLOTTE KINSEY		7836483
312	WALTER P HAMSTROM		-7892349
	N HUME		¤7826769
	HANS NELSON		-7825832
	MRS BILLIE NICHOLS		7848971
	WARREN K UNZELMAN		-7843044
314			NP
316			NP
317			NP
319	K K BJARNASON	6	7826672
321	V M BUSBY		7821293
324	ALAN R LANKEY		¤7836313
325	O A LIDER		7831851
326			NP
329	DALE O MAGDEN	8	7846196
332	MERRILL OLINGER	1	7828646
333	REV ROBT B LESTER	7	7847097
334	HAROLD N ROUNSLEY	5	7820668
337	R E THORNTON		¤7831614
340	ROBERT A DOWIE		7841445
	GLADYS E DOWIE		7841445
342	ELIZ MONTGOMERY		7823247
343	ALBERT B SATHER	0	7849760
347	GENE ROTHROCK	2	7890838
348	ROBERT FRISBIE		7835938
350	H M FERMSTAD	9	7831062
353	CARA KOCH		7834631
354	R R FRANE	9	7823844
355	KEMPER H JOLLIFFE		7824796
360	WILLIAM BRIGHTMAN	2	7838483
	½N DAVIDSON	2	7822808
361	TULLY S MARTIN	1	7838580
••	7600 N DAYTON		••
503	LEO F VREELAND		7836762
504	WILLIAM F DYMENT	0	7823563
506	FRANK A WILLIAMS	2	7824893
509	G E LAMB	0	7823227
510	JOSEPH P CHAPMAN		¤7891437
511	DAVID L MARCUM	0	7824902
514	WALDO O SANDERS		7828135
515	VATSEK PARDA		7824056
520	ROBERT J WALLACE		7828698
521			NP
524	D F CREAGER	1	7832712
525	C EDWARD MILLS		7838184
528	VIOLA I STROMBERG	1	7845508
½			NP
531	SIK M YAN		¤7832185
532	GEORGE E GODFREY		7840270
536			NP
537	ARTHUR C JOHNSON		7823014
541	JOSEPH L MILLER		7822864
544	CRAIG E MILLER	2	7847967
547	ARCHIE CRANE	2	7837019
548	JOHN F BOYD	1	7827581
	DAVID FULLERTON	0	7827581
551	JOHANN I JOHNSON		7820911
706			NP
707	THEODORE JOHNSON	1	7835772
710	INEZ A PAUL		7839939
711	ROY E MCKEEHAN		7843142
712	JOHN HYND		7825508
715	NELSON N AIKINS		7831992
716			NP
719	MRS ROY K HOLMES		7829353
720	GEORGE P GAW		7848824
721	WENDELL JONES		¤7837193
724	RUSSELL BLACK	7	7830529
725	GAIL FERRY	5	7842105
726	KIYOSHI NAKAMURA	2	7833463
••	7600 N FREMONT		••
731	JAMES S HENDRIX		-7840425
733			NP
734	JOSEPH L CLEM		7849473
736	RUSSEL N WHEELER		7841027
741	BRIAN L SMITH		¤7824790
742	J E MALESTKY		7823699
743	DONALD B PRINDLE	1	7837773
746	J E EARL		7830204
748	LESLEY C PARKER		7844154
749	MICHAEL B NIXON	1	7830808
756	JOHN PETERSON		¤7894478
••	7600 N LINDEN		••
902	HAROLD L SPILDE		7841764
906	B E SMITH	1	7893144
909	A J MALLINSON		7835978
910	E C GOODENBOUR		7834168
911	ROBERT M MUTH	1	7892103
212	CAPT B G JOHANSON	0	7890260
914	MARION I SMITH		7824338
919	LOUIS J MORSETH		7821568
920	MORGAN T THORNTON	2	7830578
923	CARL F ANDERSON		7845363
924			NP
927	ALBERTA FORTIER	1	7843450
929	CARL STERNBERG		7834641
930	GREGORY MCGAR	1	7893289
931	PAUL ARTHUR SMITH		-7825245
933	JOE BUCKENMEYER	5	7839787
934	ADAH H COLELLA		7824031
936	G M OLBERG		7828664
940	HOWARD ETLINGER		-7893944
	WILLIAM A TWOMBLY		7821165
941	L E VENABLE		7833739
943	RICHARD H NIESE		7838456
946			NP
947			NP
949			NP
••	7600 N AURORA		••
1111	ROY J ANDERSON		5257540
1112			NP
1115	HAROLD BLAIR		¤5244954
1116	P E ENGLERT		5232606
1119	HAROLD J HILLARD		5236890
1120			NP
1123	FRED A SMITH		5227230
1124	REV W D GRIFFEN	8	5235884
1127	DONOVAN D DAY	1	5228640
1128	V J WAITE		5237395
1131			NP
1132	EINAR NILSEN		5228223
1135	ROGER DAVIS	2	5237635
1139	B B HEALY		5241328
1140	MARTHA MERKLIN		5233402
1143	WALTER W PUCKETT		-5237549
1144	O M LAURITSON		5220143
1148	ROBERT N MCINTYRE	1	5222162
1152	DENNEY GIVENS		5234021
1156	CLIFFORD J WILSON		5228399
1160	E L RAFTER		5257631
1164	B L SUTTERMAN		¤5237623
	JAMES F SUTTERMAN	7	5253299
••	7600 N WINONA		••
1310	FRED C PARKER	8	5232363
1314	BEN LUNDBERG		5258885
1318			NP
1322	B ARNOLD LOKEN		5227743
1326	LEWIS E GILBERT		5224091
	161 RESIDENCE		

NE 76TH 98115

E FROM 7600 LATONA NE

•••	1- 999 T	27	$E..H 4
•••	1000- 1999 T	26	$D..H 4
306	JOHN E WALL		¤5246457
312	Z G MCWHINNEY	8	5223235
313	NILS FOSS		5220223
317	J F QUACKENBUSH	9	5227450
318	G CALLAWAY		-5247857
	ALVEDIS NAZARIAN		¤5254629
320	LEROY ALLBEE		5245422
323	MAXWELL R COOPER		5220563
326	MICHAEL S KANSKI		5237526
329	KENNETH M ZENTNER		5236750
333*	CHRISTIAN SCIENCE		5230266
342	EARL R STROMER		5243249
350	JAMES L BELLESSA	2	5245003
••	7600 4TH NW		••
401	CHARLES R ONEILL		5241182
610	JOHN FISKEN		5255894
614	ROLLIN G RADWICK		¤5242544
615			NP
621	P L WORTHY	2	5227925
622	MRS PEDER GRIMSTAD		5226300
624	V A RHODEN		¤5233039
••	7600 15TH NE		••
1506			NP
1507			NP
1514			NP
1515	S E PEABODY		¤5249023
1518	KARL W SJMBORU		5241336
1519	A N JOHNSON	2	5238185
1522			NP
1523	FREDK N JOHNSON		-5251836
1527	PHIL A WOARE		-5225461
1528	RONALD OLSEN	9	5220292
1533	R R ARMSTRONG		5226124
1534	C A PARKINS		-5237311
	V J VALAAS		-5237311
1537			NP
1540	KIRK W NORMAN		¤5243578
1541	MAURICE C CLARK		5235022
1542	C A ROGSTAD		5231889
1545	C E DOUGLASS		5235305
1549	MIKE BARLIA	8	5245575
1552	GEORGE C DICK		5231494
1557	L FUDGE	6	5230208
1558	BRYON RUNYON		¤5235333
	41 RESIDENCE	1	BUSINESS

NW 76TH 98117

W FROM 7600 1ST NW

•••	1- 799 T	29	$E..H 3
102	THOMAS F DONOHUE		7840191
105	HARRY CZUBIN		7832999
108	K D POTTER		¤7832715
½			NP
112	MICHAEL SHEETS	2	7894225
113	ROBERT F HOWELL	8	7840224
116	STEPHEN SKULLERUD	7	7830028
117	WILLIAM P MITCHELL		7840164
122	P A PUTNAM		7823007
123	D TROYER		¤7847334
125	RALPH W HALL		7830999
128	GLENNA M HOWEY		7844559
	W J SUTTON		7844559
131	CORNELIUS SULLIVAN		7846827
132	KARL J ANDERSEN	0	7844509
135	E PULLIN		7848514
136	M O THOMSON		7847295
140	RICHARD G WELLS	0	7822641
141	MRS LOUISE LOPER		7844287
144	PETER T STOCKS	2	7894770
145	J K SMILEY	8	7830261
148	S B LARSEN	2	7847086
152	LOUIS S BARKLEY	6	7846697
156	PAUL SCHUR		7824614
••	7600 3RD NW		••
304	VINCENT CALLAGHAN		7821241
307	GORDON PEDERSON		7823541
311	WILLIAM DUYCK		7842119
312	P F ASPINALL		7831814
317	JOHN DREEWES		7845000
320	DOUGLAS A WARD		¤7833179
323	DON ANTHONY		¤7893319
324			NP
327	FRANK SMITH		¤7829097
328			NP
330	JOHN E OLSON		7845771
331	W E SHAVER		7842115
334	ROBERT D POUND	0	7827316
338	JAMES E JONAS	0	7842582
339	PHYLLIS J PRESBA	7	7829014
342	HAROLD N ESPERUM	0	7823720
343	STEPHEN J MCALEER	4	7833427
346	CLARENCE D CASE JR		7837053
347	JAMES ONEIL	1	7892967
351	CLINTON H MINAR		7847025
	MARGARET MINAR	2	7894158
353	MRS C F FORCIER		7822133
359	ALEXANDER WELLS SR	1	7827724
••	7600 6TH NW		••
606	N TAZIOLI		7824282
610	MRS NAOMI OLSON		7825551
611	LURA E FLOYD		7824990
614	MAGEE S G STEWART		¤7822979
615	MRS FERN E DAVIS		7844599
618	WALTER FRANCIS		7829342
619	MELVIN P WILSON		7823593
622*	MILDRED STEPHEN		7841651
625	ERLING C NILSON		7827936
628	GERALD V HARRIS		7840688
629	G HERB PASHLEY		7828994
630	H M HOLTEN		7842065
636	MRS L O GRIFFIN		7837026
637			NP
640	R H MILLER		7826195
641	WILBERT FRANCIS	4	7826808
642			NP
643			NP
646	RAYMOND H KNEELAND		¤7849663
647	CLIFFORD L OLSON		7838470
650	JAMES C AKINS		7827360
651	BARBARA LYSON		¤7849913
655	SHERMAN S JACKSON		-7831868
656	HAROLD L ROYS		7832062
	70 RESIDENCE	1	BUSINESS

77TH AVE S 98178

AT 7700 S 118TH

•••	10400-12699 T	260	$B..P 6
•••	12800-12899 T	261	$B..P 6
11701	DALE D BERGLUND	2	7726264
11720	JAMES W MCCONVILLE	5	7726197
11803	HAL H ISE		-7724892
	TOM M YAMAGUCHI		-7724892
11808			NP
11820	DONALD I SUYETANI		7720343
11821	WAYNE CHINN	0	7725807
11826	TAK TSUCHIDA	8	7721716
11827	ROY L ROGERS	9	7721517
11832	SAMUEL H SHINOZAKI	7	7726694
11833	LAVERN E BIRCH	9	7720556
11838	ROBERT A VICKERS	7	7721775
11841	TERRY D PYLE	0	7724484
11842	VERNON E ZIER	7	7725688
11845	DOUGLAS C PETERSON	0	7726852
12003	REV A C HARTLEY		-7726080
12004	ROBERT D NICKELS		¤7721210
12009	ALLEN DUNN		¤7725521
12010	CURTIS J HILL		7724871
12015			NP
12016	J BIDDLE	2	7722286
12021			NP
12027	JAMES A MITCHELL	2	7726632
12028	CURTIS D MAY		7724710
12033	WAYNE E LYMAN	9	7725911
12034	JOHN O JACOBSON		7725651
12037	RICHARD A BLILER	0	7724940
12038	JAMES T MCCRACKEN	7	7726577
12043	BRUCE KAMARAINEN		¤7724666
12044	STANLEY W DALVIT		7725575
12049			NP
12050	ROBERT H VOLD		7724792
12055	E A SWENSTAD	0	7724885
	DEVERE YEOMAN		7725670
12056			NP
12203	AL SIMPSON	6	7725824
12204	MATHEW BOGUMINSKI		7726784
12209	CLARENCE R RAAUM		7726766
12210	JAMES W CHRISTIAN		7726504
12215	F W DENT		7724597
12216	R L MOODIE		7726560
12221	REGINALD MAYO		¤7726093
12227			NP
12228			NP
12233			NP
12234			NP
12237	DONALD E NORRIS	9	7725773
12238			NP
12243	R W BASS	1	7725505
12244	GENE E GREGORY		7726213
12249	H D BORSVOLD	4	7724912
12250	O B MCGINNIS		7725328
12255	WES TYLER	5	7725146
12256	LEORA KUWITZKY	2	7722793
12844*	ABE TOSHIO GARDENG		AL55257
12846	THOMAS T HISAYASU		¤BA69514
	ROY KANEGAE		¤BA68654
	56 RESIDENCE	1	BUSINESS

77TH AVE SE

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N 77TH 98103

N FROM 7700 1ST NW

•••	1- 299 T	29	$E..H 3
•••	300- 1099 T	28	$E..H 3
•••	1100- END T	27	$E..H 4
101	ARCHIE MCDONALD		7835861
102	DON LATHAM		¤7824923
106	A H KING		¤7828131
110	ROLAND V EGAN		7833533
111	LORAN J FRYE		7826652
114	ANTHONY F GILMAN	2	7833038
117	HERMAN HADALLER	5	7843203
120	JAMES E MYERS		7835221
123	ALFRED C HENNE JR	7	7829249
125	W G BILLE	1	7823061
126	P A SMITH		-7846976
130	EVERETT BUCKLEY	9	7848455
131			NP
132			NP
135	I HEAD	0	7835217
	EARL S NORTON		¤7836242
136	MERLE E DORAN	9	7845164
	SAMIR NASSAR	2	7848954
137	MAUDE M CURTIS		7838446
141	P J VANDERVEEN		7821609
145	S L JACKSON	2	7830689
148	D N FOTHERINGHAM		7823704
151	ALFRED J SHOLSET	4	7831907
••	7700 N GREENWOOD		••
303	M H OCONNELL		¤7821068
305	M KINSELLA		¤7836757
307			NP
310	ROBERT T FIX		7822081
311	FLORENCE GUSTAFSON	7	7848832
	CHARLES R JOHNSON		7840712
315	LAWRENCE BURLING	2	7838980
316	SCOTT M FREEMAN		7841984
317	ANTE DOMINIS	8	7839428
320	LESTER D WILSON		7822151
324	RONDAL E PITTS		7833747
328	PAUL R SCHALKAU		7827220
334	HERVEY T BALLOU	6	7821260
335	JOSEPH EVANS		7837292
336	EARL S BLAIR		7838266
339	GEORGE B HELGETH	0	7827284
340	DAVID D SCHMITZ	7	7845761
345	MRS E V MCGRATH		7846933
	GAIL E MCGRATH		7846933
346	S J JAKUBOWSKI		7830018
349	OLIVE L MILLER		7832141
354	D E GREENE	0	7833230
355	MICHAEL E ANDERSON		7827020
356	OLAF STAVA		7837261
361	HANS ANDERSEN		7843380
362	P RICHARDS		¤7844999
364	MONA ROBERTS		-7891974
••	7700 N DAYTON		••
503	CHARLES A ROBINSON		7848250
506	ROBERT R UFFORD	2	7829168
507	WILLIAM BIGELOW		7835554
509	P A METZ	1	7845079
513	ELTON ENGSTROM		7841008
516	PHILLIP H MOORE	2	7837349
	*P H MOORE PIANO		7845322
519	LEO ALMO		7832268
520			NP
523	BARRY MUNRO	2	7833897
	MIKE MUNRO	2	7833897
	WILLIAM F PHILLIPS	2	7833897
526	A M COWLING		7846838
529	HENRY SODERQUIST		7822015
530	JOHN J MAZAR	0	7828933
533	JOHN H RANSOM		7841834
534	CLAUDE JONES	1	7893142
537	GARY LEE	2	7893518
	P LEE	2	7893518
538	J L DAVIS		¤7841947
544	GORDON N LARSON		7840248
545	ALFRED K SACHS	1	7833144
546	GEORGE S ELMGREN		7827540
549	ARTHUR BOLDEN	2	7891624
555	M L CREED		7844248
••	7700 N FREMONT		••
702	A L COOMBE		7841028
703	MYRA F PAGE		7821160
706			NP
708	JEAN ROCHELEAU	2	7837417
710	K SILVER		-7838759
712	DOUGLAS G GROCHOW	9	7892129
	JANICE SUYEMIRA		¤7821887
	C YODA		-7821887
715	GEORGE HYRE	6	7837674
718			NP
719	W C WILES		¤7826077
722	M V COOK	5	7842701
723	M ! BERG		7839853
725	S P CLEMENTS	0	7841154
728	KEITH PARK		-7827537
729	STANLEY W LALA		7829399
	J MONCON-AGUIRRE		¤7845961
	ALFRED N TIESSEN		¤7829399
732	NICHOLAS H MURPHY		7840047
734			NP
735	E G ANDERSON		7840534
739	RON GARETSON		¤7833884
742	G E OBERG		7827467
746			NP
747	LAWRENCE R WYLIE	5	7820745
751	LEWIS BOYD PARKER	4	7824184
••	7700 N LINDEN		••
902			NP
906	RODERICK J WILLS		7835558
910	WILLIS E GATES		-7827009
911	FRED P BAUMGARTNER		-7892788
914	WM T MORRISSEY		¤7893130
915	MAYNARD R BURK	5	7834038
918			NP
924	R H MCCULLOCH		7822920
925			NP
929			NP
930	DON A CRANE	7	7820340
	JENNIE FRITZ	0	7821333
931	JACK A FORSELL		7823221
934	J J DOUGHER		¤7829368
935	FURMIL V EOGNUK	2	7822634
941	EARL G MILNE		7835827
945			NP
949			NP
••	7700 N AURORA		••
1110	LOUIS TRUNCER	8	5244551
1113	RICHARD M HAGBERG	7	5246477
1114			NP
1117	WARREN MATHIASEN		5237099
1121	GEORGE B POWELL	5	5231033
1122	JOHN W CARLSON	7	5241202
1125	H F CARTER		5224365
1128	L H KONNE JR		¤5241797
1129	WILLIAM E BARNES	9	5246579
1132	MRS SID HANSEN	7	5226787
1133	EDWARD N COLE		5233633
1136	E M BUTCHER	0	5241385
1137	MRS T W FORSMAN		5220841
1141	DONALD E PERDUE	7	5225855
1142	BRIAN W BARTHROP		¤5251933
	*RAINIER TRUCKIN	CR	¤5251400
	*TEMPO INDUSTRIES		¤5251933
1145	THOMAS WALKER		5242951
1146	JAMES L GREEN	9	5252779
1149	JAMES THOMAS GIBBS		5242947
1150	VINA M KING		5240625
1153	CLAYTON H EMMERSON		5234792
1154	P W CROCKER		5220683
1157	CRAIG L BREWSTER		¤5247247
	ROBT A CHRISTOPFEL		-5247247
1159	JOAN M PETERSON	7	5237056
••	7700 N STONE		••
1301			NP
1302	MRS R I G LUSK		5234522
1304	HUGH K OBRIEN	1	5251125
1305	WILLIAM F GADKE		5240109
1309	HARRY BRYAN DYE		5258078
1312	W F SEGALLA		5220887
1313	WM J SCHILPEROORT		5233802
1316	N R MOEHRING		5257505
1317	JACK BURKE		5230653
1320	P BENNETT	1	5248573
1321	JAMES R TOWNSEND		-5221123
1324			NP
1330	ROLAND MERRITT	7	5233115
1334	MRS EDNA H WILSON		5229050
1338	W P STUPFELL	4	5223334

□ = New Listing to the Directory
-= New Listing to that Street
TZ = Trading Zone

1, 2, 3, etc. = Year First Listed 1961, 1962, 1963
$A, $B, etc = Census Tract Wealth Rating
L10 = Map Location

142 JAMES W RAND 7 SU36842
143 ROBERT S MEGORDEN SU47467
145 EDNA WOLD SU44087
146 RALPH THOMAS SU30146
148 RONALD W MOORE ¤SU22899
149 DON L HODGES 6 SU34560
305 J P DONOHUE SU29099
310 MILDRED L MARTS SU43122
313 RAY MCGEE -SU32617
314 PETER POOLMAN SU28078
317 N.T.I.A.
320 MRS E J SHEFCHIK 8 SU43255
321 ROBERT P MOORE -SU37748
324 ROBERT SEATON SU47162
328 MARY A PAPIN -SU25810
329 MARVIN RICHARDSON SU21087
335 E D BUD PEASE 2 SU24296
336 F H FIELDS SU21451
MRS MARGT RUTLEDGE SU21451
341 ELLMAN L JOHNSON SU36210
345 RAUL H CANO 3 SU47593
346 N.T.I.A.
347 MRS V A BURKE 2 SU44745
351 JOSEPH B MCMANUS 6 SU25621
352 RALPH GRANILLO 5 SU47367
354 PATRICIA L SCOTT SU45084
356 RONALD L HURSH ¤SU91207
358 HERBERT C MORRISON
7 SU27928
359 E R MCQUERY 6 SU38493
360 B J SVIEN ¤SU90917
600*THRIFTEE CRNR MRKT SU29528
609 DAVE MONROE -SU91405
610 ROBERT W POWERS 2 SU37280
ALMA M WELCH SU37280
611 H HELMUN SU47328
614 JANE RICE SU42274
WILLIAM R RICE 7 SU33976
615 LINDA PITELLO 5 SU30628
617 GERALD M JACKSON SU21152
618 J KNIGHT LOWRY SU26746
619 THERESA D MOORE -SU47897
KATHRYN FISHER ¤SU47897
622 BEVERLY L OLSON 3 SU48061
623 ALEX BENSON SU44076
625 K GJESDAL 8 SU24699
626 GERALD B MCCARTHY5 SU27919
629 EMMETT J OREILLY SU41296
633 RON TORSEN ¤SU91252
636 MRS LEWIS HANSCOM SU44270
637 N.T.I.A.
639 MRS HARRY KNUDSON5 SU33064
640 JOSEPH GREEN SU46654
644 ALVIN L CREITZ SU44207
645 RON E PEDERSEN 6 SU30987
649 N.T.I.A.
•••• 800- 1999 T T 30 $C••H 2
602 TRUMAN A MERRITT 2 SU36043
815 P J DONAHUE SU43858
818 H J CUNNINGHAM SU28861
852 E J THOMSEN SU36473
856 R E MCFARLAND SU35534
865 GARY E KLOKSTAD SU49471
*KLOKSTAD CEMENT SU49471
902 TONNES AANESTAD 7 SU47703
906 E M STENHOLM SU39271
1002 DANIEL V CARBONE 2 SU32476
1102 BRETA D EWING ¤SU44209
1106 R J CRAGG JR SU38331
1110 N.T.I.A.
1116 THOMAS C REAGAN SU32793
1202 N.T.I.A.
1210 W H DUNHAM 8 SU40209
1216 HAZEL B BROWN SU36664
JANNES A WYNN SU36664
1406 MERLE F DESMOND SU27302
1410 DONALD J BRADY 7 SU29444
1452 FRED E THOMAS 3 SU44393
1476 WILLIAM G KLOP SU22438
1478 MRS HELEN STORRE SU28087
1482 HANNES WESTMAN SU26982
1501 BERNARD F LEONZAL8 SU48774
1503 A B OZURA 3 SU38235
1507 H E NAZE 7 SU27948
1509 VICTOR M WELLS 5 SU20813
1911 W HASTIG SU34844
•••• 2000- END T T 31 $B••H 2
2115 EDWARD WOODRUFF 3 SU47212
2209 FINETTA B BUCHANAN SU46585
2405 PETER A STONE 8 SU33813
2406 N.T.I.A.
2408 HELEN ARNETT 8 SU24526
2515 D M BJORK SU36778
2757 EDWARD L WERBY SU30418
2800 JOHN GREENY 7 SU24224
2815 ROY BEACH ¤SU43260
2816 M CHAPIN SU32129
2820 ESTHER E ROUSU SU36943
2823 L J FRANCIS SU29361
2824 E L MCALPIN 4 SU39158
2827 EYSTEIN WARNESS SU36797
2901 VERLE YEAGER SU25447
2905 E P COMFORT SR SU34378
2908 OSSIAN F ROOTVIK SU36062
2909 PHILIP R TAYLOR SU22971
2914 FRANK W COOPER SU34125
2915 RAYMOND F ERICKSON
5 SU39732
2920 WESLEY HERSOM SU37675
2923 PAUL R VOGT 5 SU38316
3001 J M STEINKE ¤SU46309
3002 EVERT MAKI 4 SU48212
3007 ISAAC E EXCELL SU23629
3008 JOHN I BECHTEL SU38753
3011 BYRON H COOLIDGE 2 SU32064
3014 N E BRASEN SU24386
MRS N E BRASEN SU24386
3017 JOHN N EXCELL SU39896
3020 J W WOODALL SU28338
3023 JAMES L GOBLE SU33987
3101 ARNE E E ANDERSON6 SU48680
3102 RAYMOND E CAMPBELL SU30653
3106 MRS C G PEDERSEN 5 SU30239
3107 DAVID W HOFFNER 8 SU34160
3110 MRS H L FIERCE SU34263
3111 PETER M NESS SU23606
3117 W F JENKINS SU23139
3215 DARRELL N MARKEY 5 SU39173
3221 ANNA AURDAL 8 SU27741
3306 ALEX J ST PETER SU26358
3307 ALEX MOLES SU24575
3311 ROBERT W WESTPHAL6 SU48637
3314 FREDRICKA NELSON ¤SU91130
STANLEY NELSON JR SU46735
144 RESIDENCE 3 BUSINESS

SE 76TH

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76TH S

98178

••••10400-12699 T T 260 $C••P 6
10401 EDWARD L ARNE 2 PA21866
10417 R C FENTON JR 4 PA21374
10423 ANTHONY BERNIK PA21745
10429 RUSSELL H ELSTON PA59821
10435 J K WIMPRESS PA37446

11315 D F PRITCHARD SP21419
11433*LAKERDG SWIM CLUB SP21950
11541 ROBT H HENDRICKSON SP21241
11625 JOE W SPEAR SP25796
11631 ROBERT A COCHRAN 7 SP25306
11637 C J CARTER 7 SP20755
11809 BEN J THOMPSON 7 SP20525
JOSEPHINE THOMPSON SP20525
11814 HELEN PENOVICH -SP26281
11826 DOUGLAS JAY SMITH -SP25413
11829 RALPH YORIO SP21252
11832 ROBERT L MORRIS SR
8 SP25055
11836 CHARLES J BERRY ¤SP25702
11840 JAMES M DOOBARA ¤SP24364
11841 BRUCE CHRISTIANSON SP21016
11844 GORDON E ALBERTI ¤SP26101
12004 SIDNEY SHONG SP26575
12009 BILL J CROSWHITE ¤SP24159
12010 GORDON T VOLD SP25272
12015 JEANNE L PACKARD SP25317
12016 N.T.I.A.
12019 GARY FRANDSEN 8 SP25551
12022 GERTRUDE MEAD 8 SP25245
12025 CARMAN E PETERSON ¤SP24348
MRS OSCAR PETERSON¤SP24348
12028 RICHARD L BEYMER -SP25046
12029 GILBERT SALAZAR ¤SP25513
12034 WILLIAM KRAMER -SP24237
12035 RAYMOND E NARANJO4 SP25263
12038 LOWELL E REISTAD SP25878
12039 WALTER E WITT SP24040
12045 NOLAN K RICHARD SP24314
12050 N.T.I.A.
12051 ROY E WEEKS SP24270
12056 EDGAR D DAVIS JR 6 SP24443
12204 DAVID D ZIMMERMAN SP26769
12210 ALFRED S JOHNSON SP25327
12213 ROBERT E HOFFMAN SP26087
12216 ROBERT PURVIANCE SP26522
12219 WILFRED J CARIVEAU SP25083
12222 M K HOEFNER SP26429
12225 WILLIAM J BRUTON SP25664
12231 RICHD C SPICKNALL SP25155
12234 RONALD H DOWDA 7 SP24916
12237 ROBERT J MORRIS SP24272
12243 RUSS MARTIN -SP24691
12244 NORMAN W SJOGREN SP26639
12256 CAL T KLINKER SP25084
12424*711 FOOD STORES SP29954
12610 N.T.I.A.
12667*JOES HILLCREST SER SP26696
••••12700-13699 T T 261 $A••P 6
12704*DR N L NELSON SP24000
*RIDGE HGTS RED CTR SP24000
*DR LEO E HEYE SP24000
12715 ROBERT C MACHEN 7 SP25237
12721 ROBERT W LEMASTER -SP26899
12722*SKYVIEW APT MOTEL
HERBERT FELDMAN ¤SP25019
DONALD E SCHAFER ¤SP25109
WM A HOOGENDIJK 8 SP25974
ELMER L MITZEL ¤SP26305
JOHN L FARNSWORTH ¤SP26623
MARGARET MALKUCH SP26733
TSUTOMU KAJIMURA 7 SP25533
R M JOHNSTON III 7 SP25682
JAMES C BERNECK 8 SP24696
12727 ERIC P ENGLUND ¤SP26165
12816 W REX CANDLAND 6 SP24442
12826 ALBERT WICKER 7 AL55592
12900 CHARLES E NICHOLS7 AL58145
12914 ALFRED R REINHART6 BA61920
69 RESIDENCE 7 BUSINESS

76TH AVE SE

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76TH PL SE

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N 76TH

98103

•••• 1- 299 T T 29 $D••H 3
102 CECIL WATKINS -SU90911
106 RICHARD W ROBERTS -SU30644
110 J H SCHUELLER -SU43701
R A SCHUELLER -SU43701
111 BOBBIE M ROBERTS SU20743
112 P M CONCANNON 8 SU25399
116 JOHN F SORENSON 8 SU90108
117 FRANK O BERGERSON SU24085
LILLIAN MCLAUGHLIN SU24085
121 J E KNIGHT 7 SU32362
122 JOHN F SIFFERLE -SU31127
126 RENA ZALLOCCO SU32235
130 DONALD MACNAUGHTON SU39206
131 SCHYLOR P HOLMES 4 SU26104
135 CHESTER BIELBY SU38873
137 DAVID J SEIPP ¤SU33943
138 G F HAUGHIAN SU41664
141 MARGARET PARKER SU44430
MRS JOSEPH COOLEY7 SU44430
142 EARL F LANDGUTH 7 SU30308
MRS F A LANDGUTH SU30308
143 RICHARD D JOHNS ¤SU32535
146 JAMES J LESLIE SU26294
147 MRS LEOTA CRAWFORD
5 SU22933
•••• 300- 1099 T T 28 $D••H 3
302 JOHN A BACKMAN 8 SU49433
306 CHARLOTTE KINSEY SU36483
314 CARL HOSSMAN II SU43086
MERRILL G MCADAMS ¤SU43086
316 M DEAN POLLOCK ¤SU33829
319 KJARTAN BJARNASON6 SU26672
321 V M BUSBY SU21293
324 HERMAN LJUNG ¤SU44897
325 O A LIDER SU31851
326 JAMES HULSE SU44675
329 DALE O MAGDEN 8 SU46196
333 REV ROBT B LESTER7 SU47097
334 HAROLD N ROUSLEY 5 SU20668
337 ROBERTA THORNTON SU31614
340 ROBERT C DWIRE SU41445
342 ELIZ MONTGOMERY SU23247
343 ALVIN L MOOSER 5 SU22638
347 N.T.I.A.
348 ROBERT FRISBIE SU35938
350 THEO S FERMSTAD -SU31062
353 ELLEN KUTSCHER -SU43661
354 R R FRANE ¤SU23844
355 KEMPER H JOLLIFFE SU24796
360 E C DAVIS ¤SU31088
361 TULLY S MARTIN SU38580
503 LEO F VREELAND SU36762
504*CROWN ROOFING SU38008
ROGER W FAIR 6 SU38648
506 N.T.I.A.
509 GEORGE E LAMB 5 SU23227
510 W A TRITHART 3 SU30343
511 GARY L MATTHEWS -SU90168

514 WALDO O SANDERS SU28135
515 VATSEK PARDA SU24056
520 ROBERT J WALLACE SU28698
521 E R COULTER 5 SU31640
524 D F CREAGER ¤SU32712
525 C EDWARD MILLS SU38184
528*DELTA C FRENCH 7 SU27586
531 GORDAN G EVANS 7 SU46306
532 GEORGE E GODFREY SU40270
536 JOHN D ANDERSON SU35383
537 ARTHUR C JOHNSON SU23014
541 JOSEPH L MILLER SU22864
547 JOHN T CROWE SU28576
548 HARRY LOASBY SU31244
551 JOHANN I JOHNSON SU20911
706 HAKON ROKKE SU47793
710 INEZ A PAUL SU39939
711 ROY E MCKEEHAN SU43142
712 JOHN HYND SU25508
715 NELSON N AIKINS SU31992
716 WALLACE N TIFFANY SU42127
INA R TIFFANY SU42127
719 MRS ROY K HOLMES SU29353
720 GEORGE P GAW SU48624
724 RUSSELL BLACK 7 SU30529
725 GAIL FERRY 5 SU42105
731 CHARLES FRANKS SU44149
734 JOSEPH C CLEM SU49473
736 RUSSEL N WHEELER SU41027
742 JULIA E MALESTKY SU23699
746 JEAN E EARL SU30204
748 MRS L C PARKER SU44154
749 HENNY COLLIN SU22130
JOHNNY K COLLIN 2 SU22130
756 J D FENOLIA SU41816
902 HAROLD L SPILDE 3 SU41764
906 JESSIE M VAILS -SU34154
909 A J MALLINSON 3 SU35978
910 E C GOODENBOUR SU34168
911 N.T.I.A.
912 GERALD R ZINK -SU32406
914 MARION I SMITH SU24738
919 LOUIS J MORSETH SU21568
920 THOMAS A THORNTON SU30578
923 CARL F ANDERSON SU45363
924 RAYMOND L JAQUES 8 SU34452
927 DAVID LEWIS PEERY7 SU35194
929 CARL STERNBERG SU34641
931 MILTON E PHILLIPS SU42092
933 JOE BUCKENMEYER 5 SU39787
934 ADAH H COLELLA 2 SU24031
936 G M OLBERG SU28664
940 WILLIAM A TWOMBLY3 SU31165
ANDREW J THOMPSON ¤SU91043
941 L E VENABLE SU33739
943 RICHARD H NIESE SU38456
946 JAMES S KELLY JR 7 SU46048
947 JIM A REED ¤SU36620
949 BARRY PATTERSON -SU23069
•••• 1100- 1499 T T 27 $B••H 4
1111 ROY J ANDERSON LA57540
1112 JAMES R DINKINS -LA48389
1115 JAMES D CHAPMAN 7 LA59811
1116 P E ENGLERT LA32606
1119 HAROLD J HILLARD LA36890
1120 RUTH L SCOTT 2 LA43947
1123 FRED A SMITH LA27230
1124 REV W D GRIFFEN 8 LA35884
1127 O DAY LA28640
1128 VERA J WAITE LA37395
1131 JUDY FIELD 8 LA23606
1132 EINAR NILSEN LA28223
1135 W O REINHARDT LA54249
1139 B B HEALY LA41328
1140 MARTHA MERKLIN LA33402
1143 DON HOOD 8 LA41215
1144 O M LAURITSON LA20143
1148 A K SULLIVAN 3 LA26168
1152 DENNEY GIVENS LA34021
1156 CLIFFORD J WILSON LA28399
1160 E L RAFTER LA57631
1164 JAMES F SUTTERMAN7 LA53299
1310 FRED C PARKER 8 LA32363
1314 BEN LUNDBERG LA58885
1318 N.T.I.A.
1322 B ARNOLD LOKEN 3 LA27743
1326 LEWIS E GILBERT 2 LA24091
141 RESIDENCE 1 BUSINESS

NE 76TH

98115

•••• 1- 999 T T 27 $B••H 4
306 GREGORY G GRIFFIN -LA46457
312 Z G MCWHINNEY 8 LA22355
313 N S OSS LA20223
317 J F QUACKENBUSH -LA27450
318 DALE DOUGHTY ¤LA45862
320 LEROY ALLBEE LA45422
323 MAXWELL R COOPER LA20563
326 MICHAEL S KANSKI 3 LA37526
329 KENNETH M ZENTNER LA36750
333*CHRISTIAN SCIENCE LA30266
342 EARL R STROMER LA43249
MARGARET G STROMER LA42827
350 JACK E PITCHER 5 LA58958
401 CHARLES R ONEILL LA41182
610 JOHN HANSEN 3 LA41664
614 J R DIVIENE LA20783
615 KNUTE W LUNDQUIST LA25225
621 L M STOFFEL ¤LA32685
622 PEDER GRIMSTAD LA26300
624 VIVIAN A COCHRUN 5 LA33039
WESLEY C COCHRUN LA33039
•••• 1000- 1999 T T 26 $A••H 4
1506 JACK E WEDEBERG LA30378
1507 JAMES M COWEN 7 LA47125
1514 TRUMAN EGGER LA21375
1515 J LOFBERG ¤LA33367
MICHAEL P ROEWE ¤LA33367
MARC SANDLER ¤LA33367
1518 KARL W SUMBORU LA41336
1519 CARL T JOHNSON LA38185
1522 FLOYD D RODGERS JR
8 LA46874
1523 JAMES RIDDELL LA25209
1527 L C DANBY LA39938
1528 RONALD OLSEN ¤LA20292
1533 R R ARMSTRONG LA26124
1534 S J TODD LA33685
1537 CRAIG E RICHMIRE 4 LA20097
1540 R A STARKWEATHER ¤LA36559
1541 MAURICE C CLARK LA35022
1542 C A ROGSTAD 3 LA31889
1545 C E DOUGLASS LA35305
1549 MIKE BARLIA 8 LA45575
1552 GEORGE C DICK LA31494
1557 L FUDGE 6 LA30208
1558 CLYDE E REED LA36870
43 RESIDENCE 1 BUSINESS

NW 76TH

98107

•••• 1- 799 T T 29 $D••H 3
102 THOMAS F DONOHYE 2 SU44191
105 HARRY CZUBIN SU32999
108 DAVE WHITNALL ¤SU91874
N.T.I.A.
113 ROBERT F HOWELL 8 SU40224
116 STEPHEN SKULLERUD7 SU30028
117 WILLIAM P MITCHELL SU40164
122 P A PUTNAM SU23007
123 JACK TROYER 3 SU47334
125 RALPH W HALL 3 SU30999
128 GLENNA M HOWEY SU44559
W J SUTTON SU44559
131 CORNELIUS SULLIVAN SU46827
132 MRS BENJ B HANSEN ¤SU30712
135 E PULLIN 3 SU48514
136 M O THOMSON 3 SU47295
140 RICHARD H MIETZNER
7 SU41898
141 MRS LOUISE LOPER SU44287
144 P E HEDENSTROM SU45078
145 J K SMILEY 8 SU30261
148 CHARLES E LARSEN ¤SU47086
152 LOUIS S BARKLEY 6 SU46697
156 PAUL SCHUR SU24614
304 VINCENT CALLAGHAN3 SU21241
307 GORDON PEDERSON SU24841
311 WILLIAM DYCK SU42119
312 P F ASPINALL SU31814
317 JOHN DREEWES SU45000
320 HARRY G GRUBER SU26833
323 N.T.I.A.
324 N F ALFIERI ¤SU91373
328 LOUISA E WHITTLE ¤SU91264
330 JOHN E OLSON SU45771
331 W E SHAVER SU42115
334 JOHN A SMEVIK SU21717
339 PHYLLIS J PRESBA 7 SU29014
342 TILLMAN ANDERSON SU21024
343 STEPHEN J MCALEER4 SU33427
346 C D CASE JR SU37053
347 ROBERT H EICHEM JR¤SU49642
351 CLINTON H MINAR SU47025
353 MRS C F FORCIER SU22133
359*A1A INS&RL EST SU49999
AUDREY L COLLINS ¤SU38376
606 N TAZIOLI SU24282
610 MRS NAOMI OLSON 2 SU25551
611 LURA E FLOYD 3 SU24990
614 U J WOODMAN SU29126
615 MRS FERN E DAVIS SU44599
618 WALTER FRANCIS SU29342
619 MELVIN P WILSON SU23593
622*MILDRED STEPHEN ¤SU41651
625 ERLING C NILSON SU27936
628 GERALD V HARRIS SU40688
629 G HERB PASHLEY SU28994
630 H M HOLTEN SU42065
636 MRS L O GRIFFIN SU37026
637 MRS GEORGE MILLER5 SU37057
640 R H MILLER SU29367
641 WILBERT FRANCIS 4 SU26808
642 MARY WINSLOW SU28619
646 ELEANOR M KNEELAND SU49663
647 CLIFFORD L OLSON 3 SU38470
650 JAMES C AKINS SU27360
651 HELMUTH W ALBRECHT SU23774
655 GEORGE L CLARKE 8 SU20583
656 HAROLD L ROYS SU32062
65 RESIDENCE 2 BUSINESS

77TH S

98178

••••10400-12699 T T 260 $C••P 6
11720 JAMES W MCCONVILLE
5 SP26197
11803 MORRIS O JOHNSON 7 SP20679
THERICE JOHNSON SP20679
11808 D MCGLOTHIN 8 SP21422
11820 DONALD I SUYETANI SP21863
11826 TAK TSUCHIDA 8 SP21716
11827 ROY L ROGERS -SP21517
11832 SAMUEL H SHINOZAKI
7 SP26694
11833 LAVERN E BIRCH -SP20556
11838 ROBERT A VICKERS 7 SP21775
11841 N.T.I.A.
11842 VERNON E ZIER 7 SP25688
11845 WILLARD M SWANZY 8 SP20597
12004 N.T.I.A.
12009 C A DUNN 5 SP25521
12010 CURTIS J HILL SP24871
12015 JOSEPH P PARDO 8 SP25145
12021 HARRY R HONNOLD 7 SP25720
12028 CURTIS D MAY SP24710
12033 WAYNE E LYMAN ¤SP25911
12034 JOHN O JACOBSON SP25651
12037 LAWRENCE W RECKELL
5 SP26850
12038 JAMES T MCCRACKEN7 SP26577
12043 IRENE D VOTH SP25362
12044 STANLEY W DALVIT SP25575
12049 G R KEASEY 6 SP25115
12050 ROBERT H VOLD SP24792
12055 DEVERE YEOMAN SP25670
12056 CAROLE CALDER 7 SP26728
12203 AL SIMPSON 6 SP25624
12204 MATHEW BOGUMINSKI SP26784
12209 CLARENCE R RAAUM SP26766
12210 JAMES W CHRISTIAN SP26504
12215 F W DENT SP24597
12216 R L MOODIE SP26560
12227 LARRY L ANDERSON ¤SP26463
12228 MICHAEL W SORENSON¤SP25208
12233 MANUEL ZEPEDA JR -SP25080
12234 V M GREEN 8 SP25660
12237 DONALD E NORRIS -SP25773
12238 DANIEL L RABAGO ¤SP24237
12244 GENE E GREGORY SP26213
12249 H D BORSVOLD 4 SP24912
12250 O B MCGINNIS SP25328
12255 WES TYLER 5 SP25146
12256 DON F KUWITZKY SP26641
46 RESIDENCE

77TH AVE SE

SEE MERCER ISL

77TH PL SE

SEE MERCER ISL

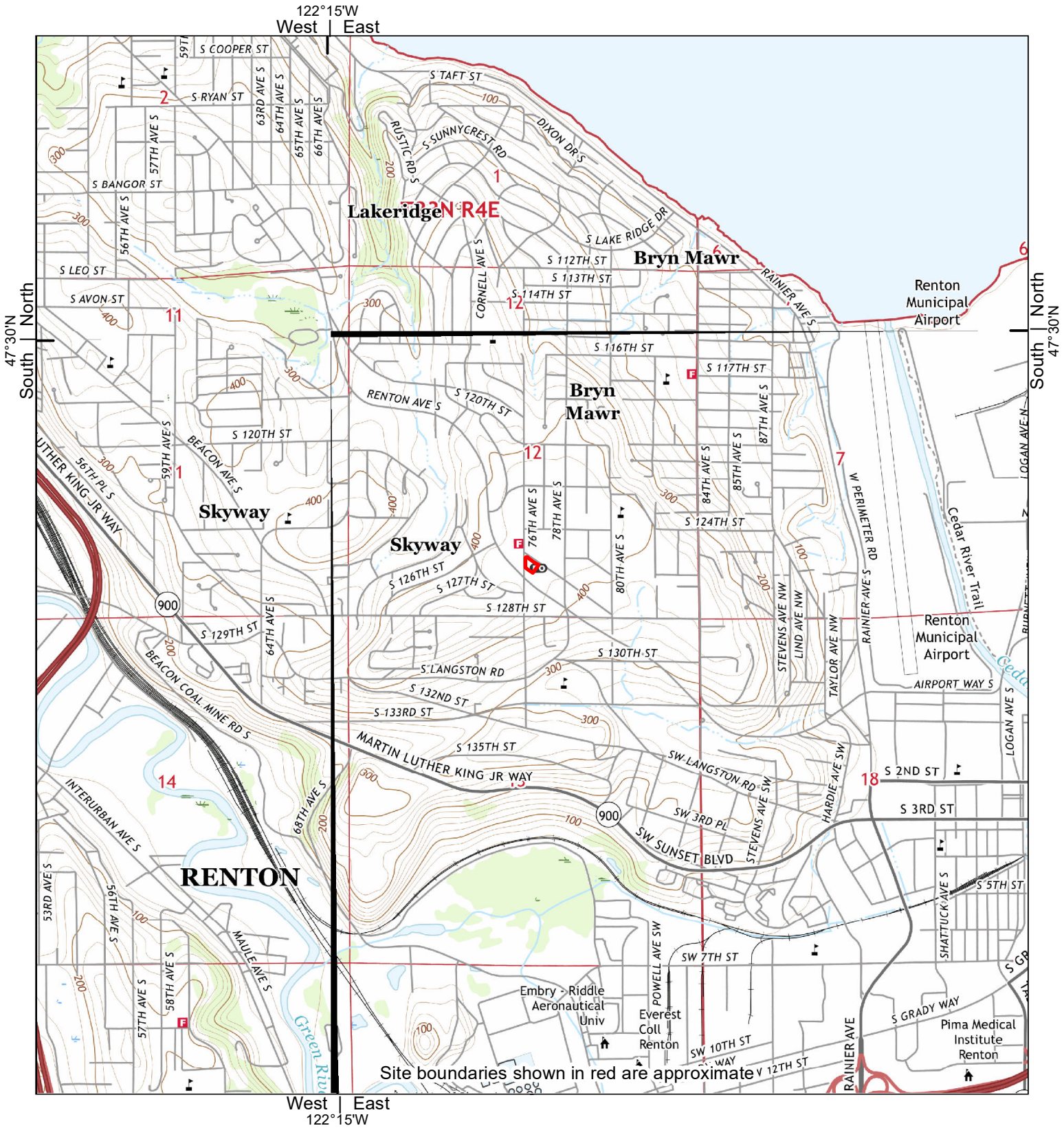
N 77TH

98103

•••• 1- 299 T T 29 $D••H 3
101 ARCHIE MCDONALD SU35861
102 DON LATHAM SU28824
106 MINARD LEWIS SU24489
110 ROLAND V EGAN SU33533
111 LORAN J FRYE SU26692
114 RUBY J BOWEN 8 SU26799
117 HERMAN HADALLER 5 SU43203
120 JAMES E MYERS 2 SU35221
123 ALFRED C HENNE JR7 SU29249
126 DAVID E GUSTAFSON8 SU45781
130 ANTHONY J MONIS ¤SU38639
131 HENRY SIMONSON SU31023
132 EVERETT BUCKLEY ¤SU48455
135 LEONARD SOKOLIC ¤SU91842
136 MERLE E DORAN ¤SU45164
JOSEPH L WATERFALL
2 SU42473
137 MAUDE M CURTIS SU38446

Appendix F

Historical Maps

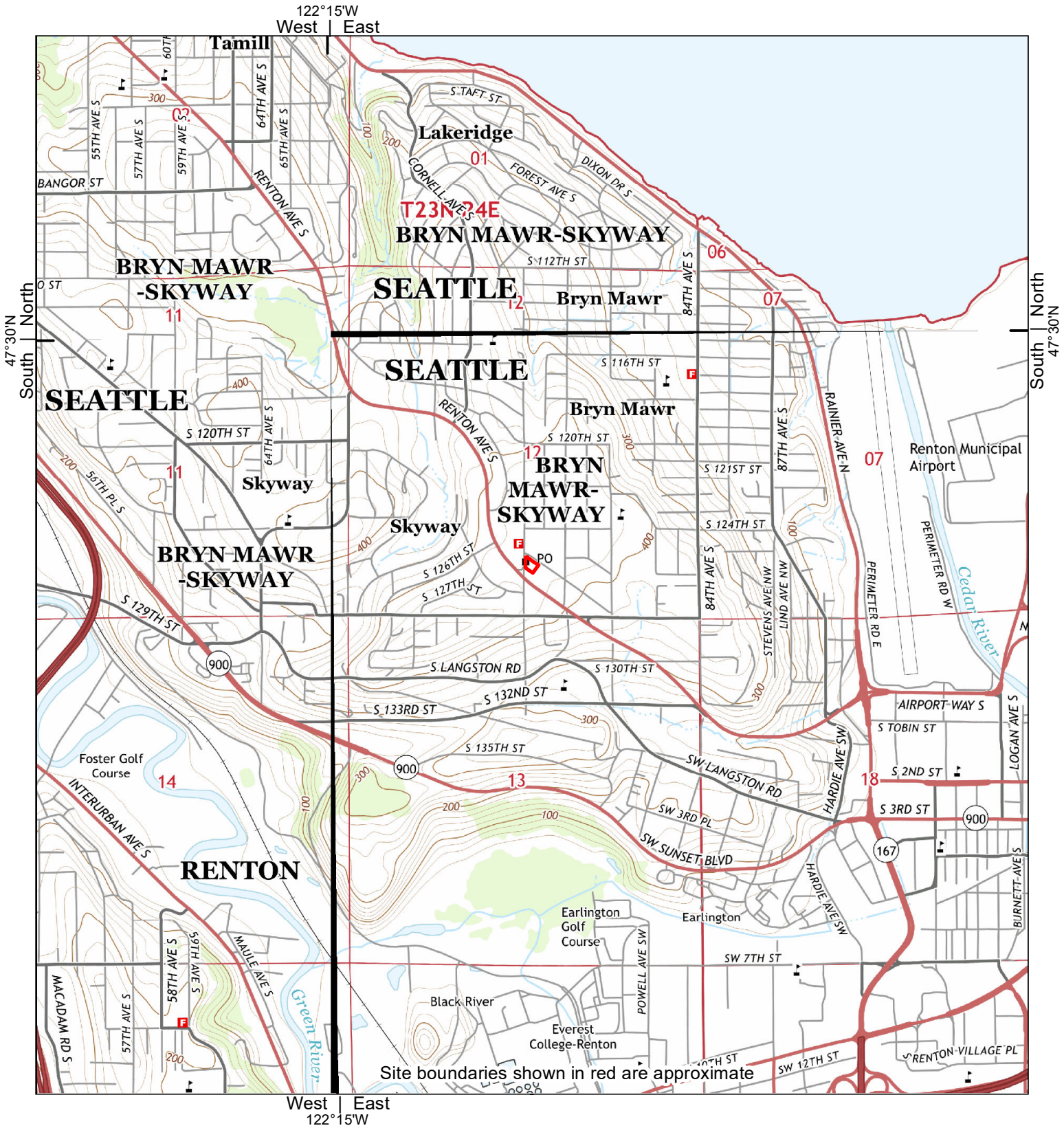


2017	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N	Site information: Seattle 12610 76th Avenue South Seattle, WA

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
NE	Mercer Island, WA	USGS	7½' x 7½'	2017	--	--	--
NW	Seattle South, WA	USGS	7½' x 7½'	2017	--	--	--
SE	Renton, WA	USGS	7½' x 7½'	2017	--	--	--
SW	Des Moines, WA	USGS	7½' x 7½'	2017	--	--	--



2014	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N	Site information: Seattle 12610 76th Avenue South Seattle, WA

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
NE	Mercer Island, WA	USGS	7½' x 7½'	2014	--	--	--
NW	Seattle South, WA	USGS	7½' x 7½'	2014	--	--	--
SE	Renton, WA	USGS	7½' x 7½'	2014	--	--	--
SW	Des Moines, WA	USGS	7½' x 7½'	2014	--	--	--

122°15'W
West | East

47°30'N
South | North

West | East
122°15'W

1983

0 Distance in Miles 1

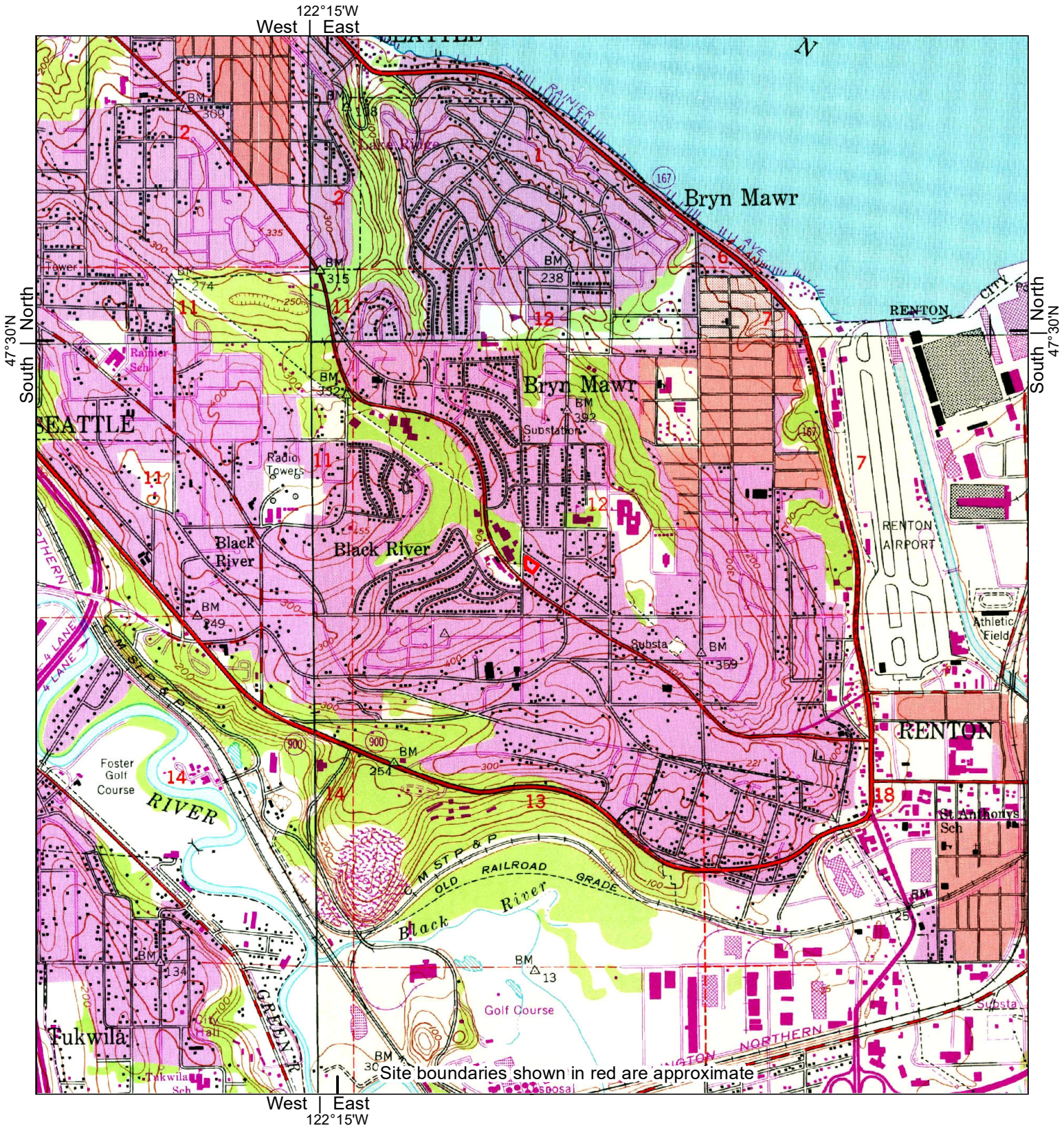
1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N

Site information:
Seattle
12610 76th Avenue South
Seattle, WA

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
NE	Bellevue South, WA	USGS	7½' x 15'	1983	1977	--	--
NW	Seattle South, WA	USGS	7½' x 15'	1983	1977	--	--
SE	Renton, WA	USGS	7½' x 15'	1983	1977	--	--
SW	Burien, WA	USGS	7½' x 15'	1983	1977	--	--



1973

0 Distance in Miles 1

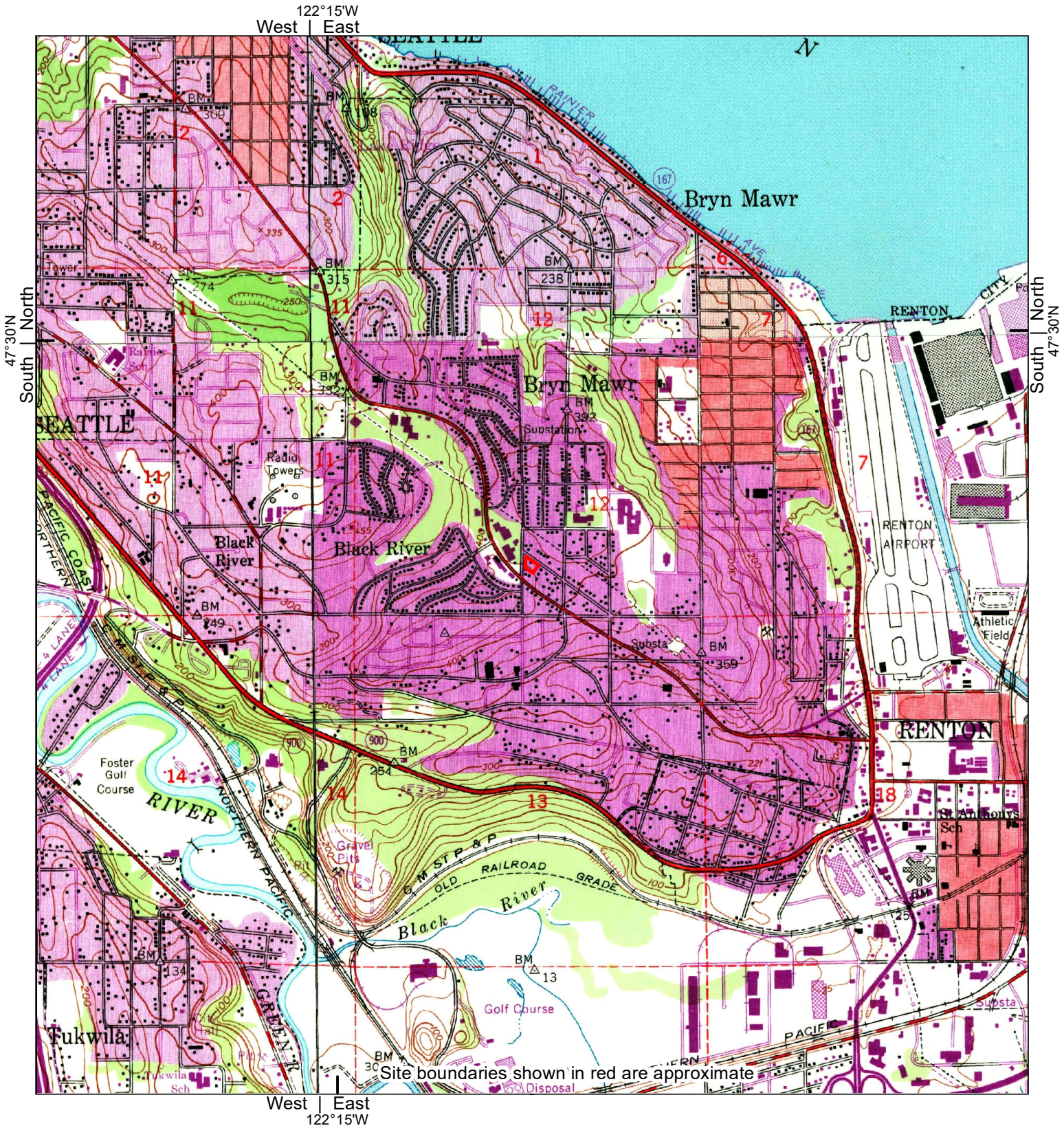
1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N

Site information:
Seattle
12610 76th Avenue South
Seattle, WA

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
NE	Mercer Island, WA	CoE;AMS;USGS	7½' x 7½'	1950	1973	--	1973
NW	Seattle South, WA	CoE	7½' x 7½'	1949	1973	--	1973
SE	Renton, WA	CoE	7½' x 7½'	1949	1973	--	1973
SW	Des Moines, WA	CoE;AMS;USGS	7½' x 7½'	1949	1973	--	1973



1968

0 Distance in Miles 1

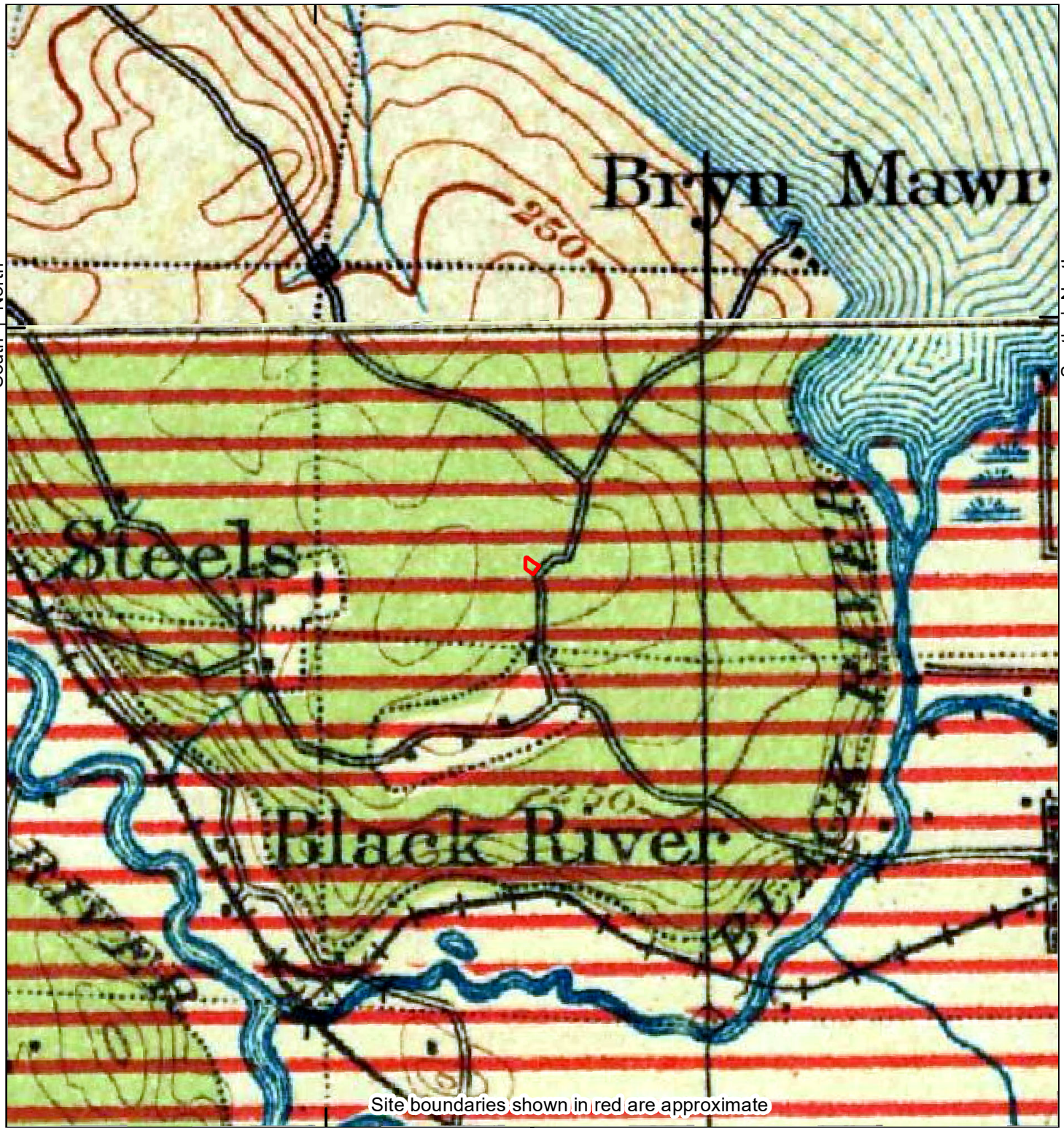
1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N

Site information:
Seattle
12610 76th Avenue South
Seattle, WA

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
NE	Mercer Island, WA	CoE;AMS;USGS	7½' x 7½'	1950	1968	--	1968
NW	Seattle South, WA	CoE	7½' x 7½'	1949	1968	--	1968
SE	Renton, WA	CoE	7½' x 7½'	1949	1968	--	1968
SW	Des Moines, WA	CoE;AMS;USGS	7½' x 7½'	1949	1968	--	1968



1897	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 10N	Site information: Seattle 12610 76th Avenue South Seattle, WA

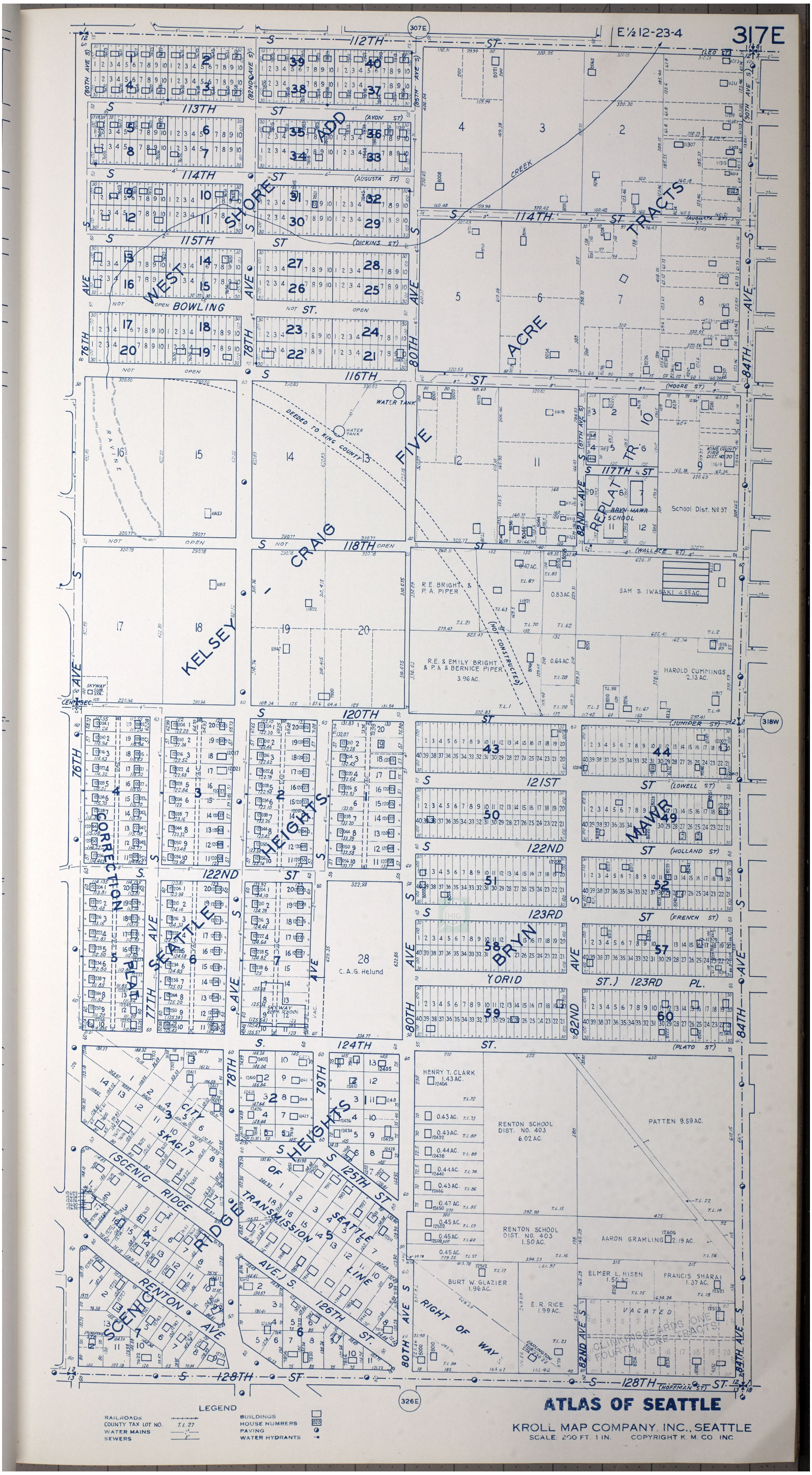
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Stantec Consulting Services Inc. project #227702984
HIG #212051580 completed: 06/01/2021 16:49

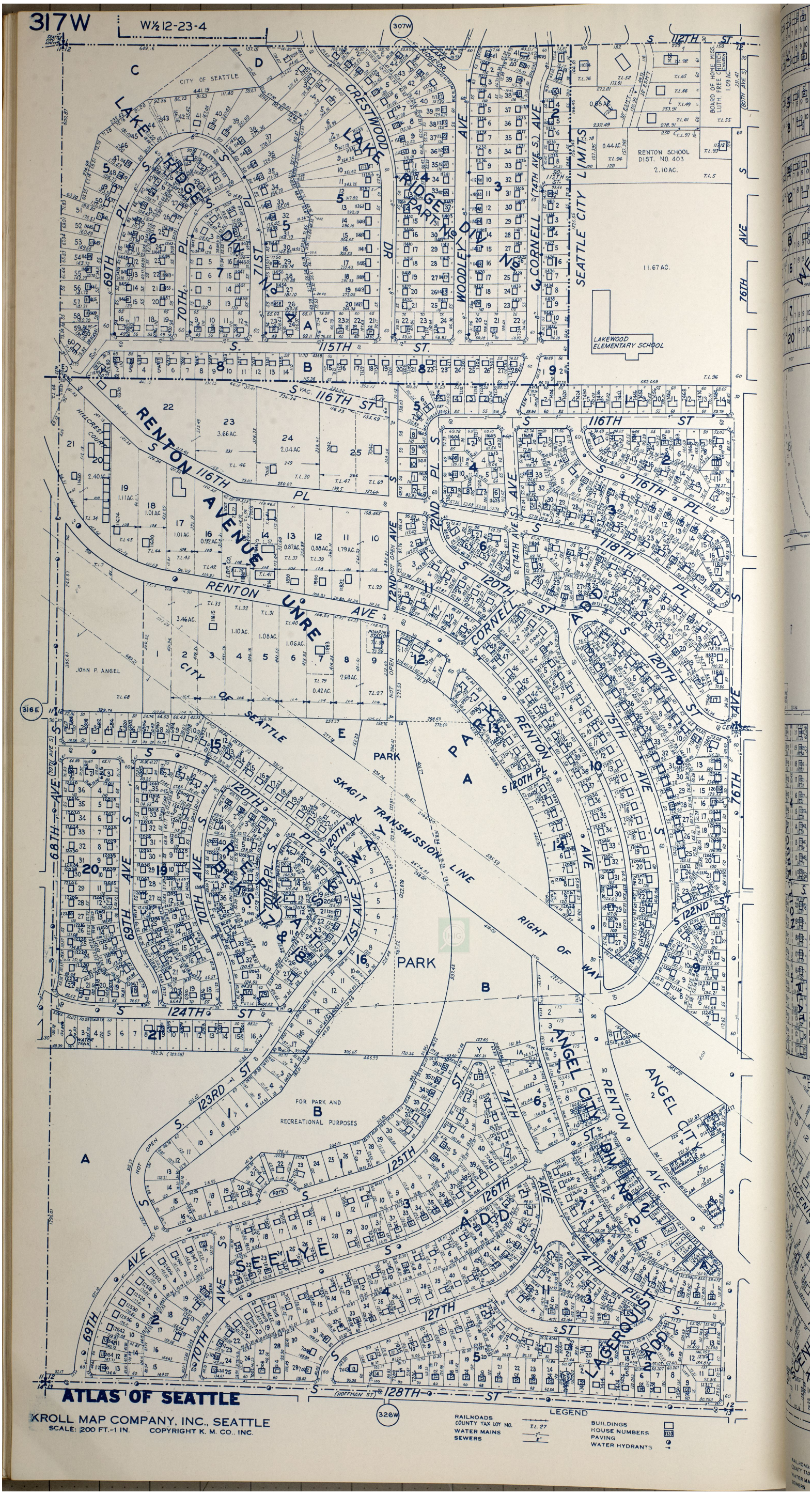
Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
North	Seattle, WA	USGS	30' x 30'	1897	--	--	--
South	Tacoma, WA	USGS	30' x 30'	1897	--	--	--

Appendix G

Real Estate Atlas



Map Type: Real Estate Atlas Publisher: Kroll Map Company Publication Name: Seattle, WA Base Map Date: 1953 Revised Date: Republished Date: Sheet Number: 317E	**1953**	Requested by: Stantec Consulting Services Inc. Seattle 12610 76th Avenue South Seattle, WA Client Project # 227702984 HIG Project # 2051580 www.historicalinfo.com



Map Type: Real Estate Atlas Publisher: Kroll Map Company Publication Name: Seattle, WA Base Map Date: 1953 Revised Date: Republished Date: Sheet Number: 317W	**1953**	Requested by: Stantec Consulting Services Inc. Seattle 12610 76th Avenue South Seattle, WA Client Project # 227702984 HIG Project # 2051580 www.historicalinfo.com	HIG

Appendix H

Subject Property Photographs

Photo 1 – View facing northeast showing the building's southwest facade

Photo 2 – View facing north showing drive–through canopy

Photo 3 – View within the customer lobby showing teller windows

Photo 4 – View of office area on first level

Photo 5 – View of kitchenette on second level

Photo 6 – View of storage room with roof access

Photo 7 – View of air-handling unit in second level mechanical room

Photo 8 – View showing waste receptacle near front door of bank building

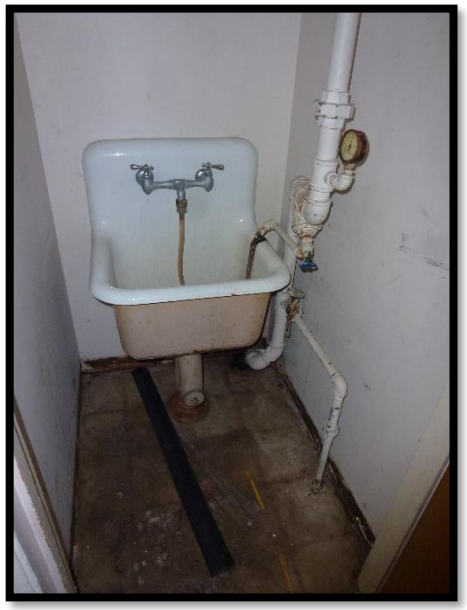


Photo 9 – View of first floor janitor's closet

Photo 10 – View of the monitoring well on the adjoining property across 76th Ave. S

Photo 11 – View of the pole-mounted transformer systems on the west edge of the Subject Property. Facing west across 76th Ave. S

Appendix I

Research Summary

HIG Research Summary

Site Location
Seattle
12610 76th Avenue South
Seattle, WA

Requested by
Stantec Consulting Services Inc.
2080 Wooddale Drive #100
Woodbury,

HIG Project #
2051580
Client Project #
227702984
Date Created
06/02/2021

Historical Information Gatherers

This Research Summary identifies the products and services provided by Historical Information Gatherers, Inc. (HIG) for the above referenced site location. All products are provided as PDFs unless otherwise noted.

Historical Aerial Photographs

Aerial photographs of the site location were used to create a multi-page file named AerialPhotos. Each aerial photograph has a title block that includes the year and scale of the photograph as well as project information submitted at the time the order was placed. The years provided are:

1936, 1943, 1968, 1972, 1977, 1980, 1990, 2006, 2009, 2013, 2019

City Directory Pages/Abstracts

Research Methodology: A search was conducted for city directories that include coverage of the site area using HIG's City Directory Collection and other sources, if needed. Directories for the following years were identified for the site area. A comma between date ranges indicates a gap of 10 years or more in available city directories:

Seattle (1938-2018)

The above listed directories were reviewed at approximate 5 year intervals to determine if the street(s) specified in the order were included in the directories and had listings for the site area. HIG attempted to identify former street names and aliases and if identified, these were also included in the review.

Research Results: City directory information, when provided, was used to create a multi-page file(s) named CD- followed by the street name. When City Directory Pages are provided, the publication name and date are shown at the top of each page. When a City Directory abstract is provided, the first page of the abstract includes the relevant publication information. The years of coverage identified for each street and any identified historical street names are as follows:

76th Ave S (1969-1977, 1986-2018)

FIM+ Maps

The HIG Historical Map Collection and the United States Library of Congress Map Collection were searched for fire insurance maps (FIMs), real estate atlases and similar maps for the site location and adjoining properties. These maps were used to create a multi-page file named FIM+Maps. The maps have title blocks that include the map publisher, year the map was created and, if applicable, the year the map was last updated. The years provided are:

1953

Database Report

A GeoSearch Radius Report is provided as a file named DBR. Links to the text file, unlocatable report and zip report can be accessed by clicking on the paperclip icon within the GeoSearch report. Key information regarding the database listings is included in a separate Excel spreadsheet named DBRS.

Topographic Maps

The HIG Historical Map Collection was searched for topographic maps for the site location and adjoining properties. Maps from the HIG Collection were used to create a multi-page file named TopoMaps. The years provided are:

1897, 1968, 1973, 1983, 2014, 2017

Up to four different topographic maps may have been used to create a unified map showing the site location in the center. Unified maps show subdued modern topo features where corresponding maps of the same year were not published. The date in large font on each map is the date HIG has attributed to the map based on the date of first publication, or the most recent date of map inspection or revision. The definitions below provide clarification regarding the dates included in the HIG title block for each map.

Base Map Year - The year when a topographic map was first published or the date the map was significantly revised and given a new base map date.
Photo Year - The date of the most recent aerial photography used to create, revise, or inspect the map.
Photoinspected Year - The year the base map was compared to a more recent aerial photograph. If the comparison showed that no changes were needed, the map was marked photoinspected and no changes were made to the map.
Photorevised Year - During the photo inspection process, if enough changes were observed, the map would be revised by adding the new features. These changes were not field checked and are shown in purple on the photorevised maps.

now part of

January 31, 2022

Beth Pearson
King County Housing Authority
600 Andover Park West
Tukwila, WA 98118

Via email: bethp@kcha.org

Regarding: Limited Sub-Slab Soil Vapor Investigation
Skyway Community Center
12610 76th Avenue South
Seattle, Washington 98188
PBS Project 40573.228.002

Dear Beth Pearson:

PBS Engineering and Environmental, Inc. (PBS) has completed a limited investigation of sub-slab soil-vapor conditions at the future Skyway Community Center site for use by King County Housing Authority (KCHA). The site is located at 12610 76th Avenue south in the Skyway neighborhood of unincorporated King County, Washington (Site or subject property). The sub-slab soil vapor investigation was conducted to determine potential soil vapor intrusion impacts to the subject property derived from contamination present on the west-adjacent property, the Skyway Library.

BACKGROUND

The subject property is a former branch of US Bank, NA, which US Bank vacated in 2020 and gifted to KCHA in August 2021. PBS understands that KCHA intends to renovate the existing structure in preparation for transfer to a community group who plans to use it as a community center.

On December 8, 2021, PBS completed a Limited Environmental Review of the subject property by the request of KCHA to reconcile the conflicting conclusions of two Phase I Environmental Site Assessments completed in 2021 for the subject property[1]. PBS made the following conclusions in relation to the previously completed Phase I ESAs:

- PBS does not consider the petroleum contamination (Skyway Market) present on the west-adjacent property to constitute a REC. Based on further review of the regulatory records obtained from Ecology in November 2021, the degree and extent of soil or groundwater contamination at this site does not extend to the subject property. There is potential for soil vapors from prior release sites to migrate from the source area on to the subject property, although there is no evidence that migration of contaminant toward the subject property has occurred. While no soil vapor impacts are known on the subject property, further evaluation could include sub-slab vapor testing to verify conditions prior to occupancy.

- PBS does not consider the lack of records regarding historical USTs at the south-adjacent property (7-Eleven) to constitute a REC. Based on additional public records provided by Ecology and subsequent discussion of

[1] PBS Engineering and Environmental, Inc. *Limited Environmental Review.* December 8, 2021. PBS Project 40573.228.

these records with Ecology, Mr. Hart (Ecology) told PBS that if there were record of a confirmed release, Ecology would have the associated report confirming the release on file.

- Hazardous building materials are not considered environmental concerns per standard practice for Environmental Site Assessments unless a release of hazardous materials has occurred to the environment.

There is no direct evidence of petroleum-contaminated soil on the subject property or contaminated groundwater migrating onto the subject property. However, to confirm that there is minimal risk of vapor intrusion, KCHA requested evaluation of sub-slab soil vapor on the subject property which may be impacted by volatile contaminants from the west-adjacent property.

LIMITED SUB-SLAB SOIL VAPOR INVESTIGATION

At the request of KCHA, PBS planned and conducted a limited sub-slab soil vapor investigation for the purpose of determining if soil vapor contamination had migrated onto the subject property from the source property west-adjacent to the subject property. Applicable regulatory criteria, field investigation, and analytical results are summarized below.

Applicable Regulatory Criteria

The evaluation of vapor intrusion in Washington is conducted in general accordance with Ecology's *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action,* and supplemental *Implementation Memorandums No. 14* (2016), *18* (2018), *and 22* (2019). These documents are collectively referred to as the VI Guidance in this report and include screening and cleanup levels presented in the July 2021 Cleanup Levels and Risk Calculations (CLARC) data tables.

Per the VI Guidance, the Vapor Intrusion (VI) Evaluation is a tiered approach, in which data is evaluated and the decision is made to either "off-ramp" and rule out the VI pathway as a concern or proceed forward with the evaluation. The VI Evaluation is summarized as follows:

Preliminary Assessment: The purpose of the preliminary assessment is to quickly determine whether or not the potential exists for the vapor intrusion pathway to be complete. Two questions must be evaluated in the preliminary assessment:

1. Are volatile toxic chemicals present or reasonably suspected to be present?
2. If so, are existing or planned occupied buildings close enough to be impacted by vapor intrusion of those chemicals?

Based on PBS' Limited Environmental Review of previous environmental evaluations of the subject property and adjacent properties, the potential exists for volatile chemicals in soil and groundwater to migrate on site and into the vicinity of the site structure. Therefore, it is appropriate to proceed to Tier I.

Tier I Assessment: The purpose of the Tier I Assessment is to determine if identified volatile toxic chemicals have the potential to unacceptably impact indoor air quality within an identified building or future building. More specifically, Tier I poses the question: "Do volatile toxic chemicals in the subsurface represent a VI source that is potentially unacceptable to indoor air quality within the current or future building(s) on site?"

The Tier I Assessment includes the comparison of sub-slab soil vapor concentrations and/or concentrations of contaminants in shallow groundwater to Ecology's VI Guidance Groundwater and Sub-Slab Soil Gas Screening Levels.

Ecology's Method B Sub-Slab Soil Gas Screening Levels as established in the CLARC data tables are the cleanup criteria for this evaluation. In the event that both a cancer and noncancer screening level are established for a given compound, the more stringent of the two values is used.

Of note is that the generic total petroleum hydrocarbon (TPH) sub-slab screening level is derived from the indoor air cleanup level as described in the VI Guidance (Memo #18, Attachment A-2 *Development of Generic TPH Cleanup and Screening Levels*).

The VI Guidance provides screening levels for ranges of air-phase hydrocarbons based on the "equivalent carbon" (EC) count of hydrocarbons detected in soil gas samples, and provides further guidance regarding the two types of petroleum hydrocarbons: aromatic and aliphatic. The EC8 to EC12 range of aliphatic hydrocarbons is used in the screening level development. However, the laboratory provides results summarizing detected hydrocarbons in the ranges of EC5 to EC8 and EC9 to EC12. As such, to be risk conservative, PBS totaled the EC5 to EC8 and EC9 to EC12 concentrations and compared them to the criteria (EC8 to EC12).

Field Investigation

On December 16, 2021, PBS collected two sub-slab soil vapor samples from the subject property. Samples were collected along the west edge of the subject property adjacent to the potential source of petroleum contamination. The investigation portion of this evaluation included the installation of two sub-slab soil vapor ports and the collection of soil vapor samples (SV1 and SV2). SV1 was collected from the concrete pathway adjacent to the western corner of the existing US Bank structure on the subject property. SV2 was installed near the center of the western boundary of the subject property, in the concrete pathway (See Figure 2).

The soil vapor ports were installed by first drilling a 1 1/2-inch-diameter hole to a depth of 3 inches, then advancing a 5/8-inch-diameter hole through the remainder of the 4- to 6-inch-thick concrete slab. A vapor pin device was then hammered into the 5/8-inch hole, leaving its sample point below the slab. The vapor pins utilize a silicone sleeve to create a seal with the slab and have a resealable metal hose barb for vapor sampling.

PBS utilized water dams and a helium shroud to evaluate the barrier between sub-slab soil vapor and indoor ambient air during sampling. As described above, the vapor pin sample ports were installed approximately 3 inches below the top of the slab. For each sample, the sample tubing was connected to the vapor pin, and the hole surrounding the tubing and vapor pin was then filled with water.

A shut-in pressure test of the sample collection tubing was performed by shutting the valves on the tubing system and pulling a negative pressure of 15 inches of mercury (inHg). No pressure changes in the tubing systems nor reduction of the water level within the surrounding hole were observed over the course of the 3-minute shut-in tests performed at each sample location, indicating that the tubing systems were free of leaks that could introduce ambient air to the sample train. During sampling, the water level within the dam did not decrease and no bubbling was observed, indicating the vapor port seal was intact. In the case that any leaks were undetected in the field, a plastic shroud was placed around the sample point and flooded with helium. The concentration of helium in the shroud was maintained at 85-90% by volume before and during sampling.

Vapor samples were collected into a Summa canister at each location, along with a flow controller set at a flow rate of 150 milliliters (ml)/minute. PBS personnel wore clean nitrile gloves during the set up and sampling at each location. The water level in the port was observed to remain stable during the collection of each sample, indicating liquid or air was not drawn through the vapor port and into the sub-slab zone from which the sample was collected. Based on the success of the quality control measures described in this section the samples collected are representative of sub-slab soil vapor beneath structures on the subject property.

After sample collection was completed, the canisters were closed and delivered to Friedman and Bruya, Inc., in Seattle, Washington, under chain-of-custody documentation. The following analyses were conducted under standard turnaround time:

- Select volatile organic compounds (VOCs) by Method TO-15
- Air-Phase Hydrocarbons by Method MA-APH
- Helium by Method ASTM D1946

Sub-slab soil gas sample locations are depicted on Figure 2.

Analytical Results

Concentrations of Air-Phase Hydrocarbons (APH) are reported as the total concentration of hydrocarbon compounds detected within a range of "equivalent carbon" (EC), in reference to the varied length of the carbon chains comprising the hydrocarbon compounds. These ranges are further delineated between aromatic-type or aliphatic-type hydrocarbons. Specifically, the laboratory reports the following hydrocarbon types and ranges: aliphatic EC5-EC8, aliphatic EC9-12, and aromatic EC9-10. Analysis of select volatile organic compounds (VOCs) includes reporting of concentrations of benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN), in addition to several other carcinogenic VOCs typically associated with petroleum contamination.

Aliphatic EC9-12 hydrocarbons and xylenes were detected at both sub-slab sample locations. Benzene was detected at SV2. Detected contaminant concentrations were below the applicable screening levels established by the regulatory criteria.

Benzene was not detected above laboratory reporting limits in SV1.

Aliphatic EC5-EC8 hydrocarbons, aromatic EC9-10 hydrocarbons, ethylbenzene, toluene, naphthalene, and other carcinogenic VOCs typically associated with petroleum contamination were not detected above laboratory reporting limits at either location.

Helium was not detected above laboratory reporting limits at either location, indicating no atmospheric leaks were present during sampling.

Reported concentrations of soil vapor analytical results APH, BTEXN, other VOCs, and applicable screening levels are presented on Table 1. The analytical laboratory report is included as Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

PBS conducted a limited sub-slab soil vapor intrusion investigation at the request of KCHA as a conservative response to environmental conditions present on the west-adjacent property. PBS collected sub-slab soil vapor samples in accordance with Ecology guidance for conducting soil vapor intrusion investigations, with one sample taken from the western edge of the property boundary adjacent to the potential source of petroleum

contamination, and the other samples taken from a location adjacent to the existing structure to evaluate potential for impacts to indoor air.

No soil vapor contamination was detected above the most stringent established screening levels. Based on this investigation, the vapor-intrusion-to-indoor-air pathway is incomplete, meaning there is no evidence for impacts of soil vapor contamination on indoor air.

Based on these results and previous environmental assessments, no further investigation is warranted on the subject property.

LIMITATIONS

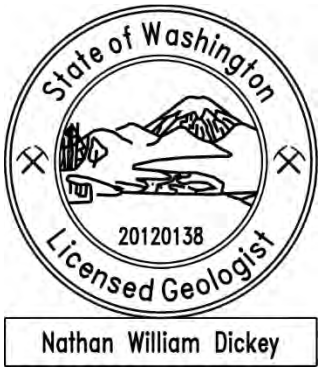
PBS has prepared this report for use by King County Housing Authority is not intended for use by others without the written consent of PBS.

This investigation was limited to the tests, locations and depths as indicated to determine the absence or presence of certain contaminants. The findings and conclusions of this work are based on professional judgment concerning the significance of the data gathered during the course of this investigation.

Please feel free to contact me at 206.718.9104 or nathan.dickey@pbsusa.com with any questions or comments.

Sincerely,

Digitally signed by Nathan Dickey
Date: 2022.01.31 13:54:43 -08'00'



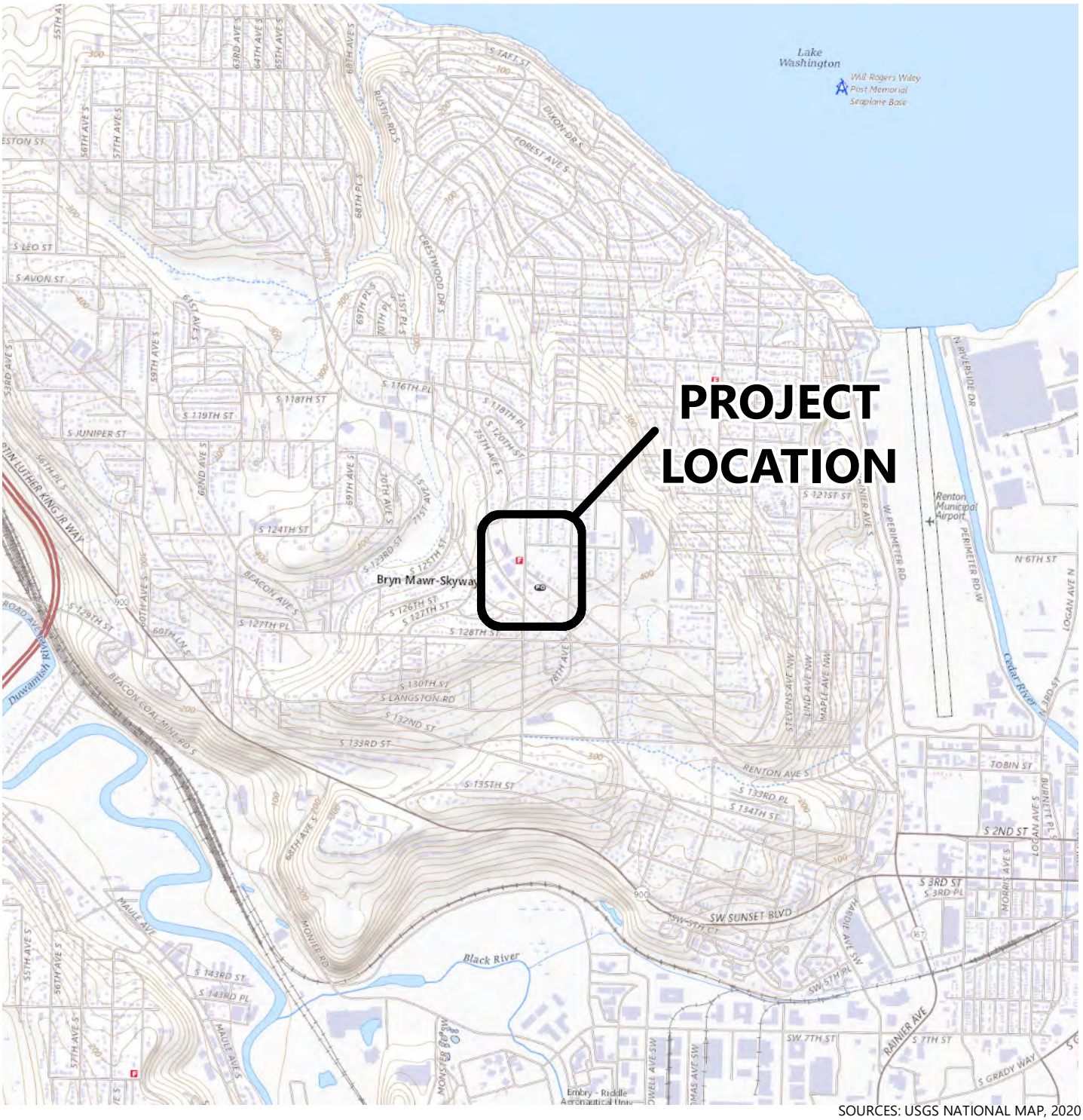
Nathan Dickey, LG
Project Geologist

cc:

Attachment(s): Figure 1. Site Vicinity
Figure 2. Site Plan
Table 1. Analytical Results
Appendix A. Laboratory Report

ND:MY

Figures



SOURCES: USGS NATIONAL MAP, 2020
PROJECTION: NAD 2011 WA STATE PLANE NORTH LAMBERT US FT

N

SCALE: 1 " = 2,000 feet

0 1,000 2,000 4,000 Feet

PREPARED FOR: KING COUNTY HOUSING AUTHORITY

L:\Projects\40500\40573 KCHA\40573.228 Skyway_12610 76th Ave South_Seattle.VE_GIS\Fig1_SiteVicinity.mxd

PBS

SITE VICINITY

SKYWAY COMMUNITY CENTER
12610 76TH AVENUE S, SEATTLE, WASHINGTON

JAN 2022
40573.228

FIGURE
1

LEGEND

Temporary Sub-Slab Soil Vapor Sample Point

N

SCALE: 1 " = 40 feet

0 20 40 80 Feet

BASEMAP: ESRI WORLD IMAGERY
PROJECTION: NAD 2011 WA STATE PLANE NORTH LAMBERT US FT

PREPARED FOR: KING COUNTY HOUSING AUTHORITY

L:\Projects\40500\40573 KCHA\40573.228 Skyway_12610 76th Ave South_Seattle.VE_GIS\Fig2_SitePlan_SV.mxd

PBS

SITE PLAN

SKYWAY COMMUNITY CENTER
12610 76TH AVENUE S, SEATTLE, WASHINGTON

JAN 2021
40573.228

FIGURE
2

Tables

TABLE 1
Analytical Results
Skyway Community Center
12610 76th Avenue South, Seattle, Washington
PBS Project No. 40573.228

Temporary Vapor Probe ID	Date	Sample Collection	Helium[a]	APH[b]			Volatile and Semi-Volatile Organic Compounds[c]						
				EC5-8 aliphatics	EC9-12 aliphatics	EC9-10 aromatics	Naphthalene	Benzene	Toluene	Ethyl-benzene	o-Xylene	m,p-Xylene	cVOCs
Adopted Criteria[d]			*	4,700			2.5	11.0	76,000	15,000	1,500		Varies
Sub-Slab Soil Gas Sampling			pbv	µg/m3									
SV1	12/16/2021	1L Summa canister	< 0.6	< 480	420	< 160	< 1.7	< 2.0	< 120	< 2.8	7.9	3.0	ND
SV2	12/16/2021	1L Summa canister	< 0.6	< 430	330	< 140	< 1.5	3.9	< 110	< 2.5	7.7	2.9	ND

Notes:
< indicates analyte not detected at or above given laboratory reporting limit

Abbreviations & Acronyms:
pbv - percent by volume
µg/m^3 - micrograms per cubic meter
APH - Air-Phase Hydrocarbons
cVOCs - Carcinogenic Volatile Organic Compounds; see Laboratory Report for complete list of analytes
ND - no analytes detected above laboratory reporting limits; see Laboratory Report for individual analyte reporting limits

Footnotes
[a] Analyzed by ASTM D1946-90 Standard Practice for Analysis of Reformed Gas by Gas Chromatography
[b] Analyzed by EPA Air Method, Toxic Organics - 15 (TO-15)
[c] Analyzed by Massachusetts Department of Environmental Protection Method for the determination of Air-Phase Hydrocarbons (MA-APH)
[d] Washington State Department of Ecology Model Toxics Control Act Method B Screening Level for Sub-Slab Soil Gas (updated July 2021)
* Helium concentration measured for the evaluation of potential atmospheric leaks during sampling is not a contaminant of concern.

Appendix A

Laboratory Report

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 5, 2022

Nathan Dickey, Project Manager
PBS Engineering and Environmental, Inc.
214 E. Galer St, Suite 300
Seattle, WA 98102

Dear Mr Dickey:

Included are the results from the testing of material submitted on December 17, 2021 from the Skyway Community Center 40573.228, F&BI 112347 project. There are 13 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
PBS0105R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 17, 2021 by Friedman & Bruya, Inc. from the PBS Engineering and Environmental Skyway Community Center 40573.228, F&BI 112347 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	PBS Engineering and Environmental
112347 -01	SV1
112347 -02	SV2

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SV1	Client:	PBS Engineering and Environmental
Date Received:	12/17/21	Project:	40573.228, F&BI 112347
Date Collected:	12/16/21	Lab ID:	112347-01 1/6.4
Date Analyzed:	12/29/21	Data File:	122823.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<480
APH EC9-12 aliphatics	420
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SV2	Client:	PBS Engineering and Environmental
Date Received:	12/17/21	Project:	40573.228, F&BI 112347
Date Collected:	12/16/21	Lab ID:	112347-02 1/5.7
Date Analyzed:	12/29/21	Data File:	122824.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<430
APH EC9-12 aliphatics	330
APH EC9-10 aromatics	<140

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	Not Applicable	Project:	40573.228, F&BI 112347
Date Collected:	Not Applicable	Lab ID:	01-2855 MB
Date Analyzed:	12/28/21	Data File:	122810.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SV1	Client:	PBS Engineering and Environmental
Date Received:	12/17/21	Project:	40573.228, F&BI 112347
Date Collected:	12/16/21	Lab ID:	112347-01 1/6.4
Date Analyzed:	12/29/21	Data File:	122823.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.6	<0.64
Chloroethane	<17	<6.4
1,1-Dichloroethene	<2.5	<0.64
trans-1,2-Dichloroethene	<2.5	<0.64
1,1-Dichloroethane	<2.6	<0.64
cis-1,2-Dichloroethene	<2.5	<0.64
1,2-Dichloroethane (EDC)	<0.26	<0.064
1,1,1-Trichloroethane	<3.5	<0.64
Benzene	<2	<0.64
Trichloroethene	<0.69	<0.13
Toluene	<120	<32
1,1,2-Trichloroethane	<0.35	<0.064
Tetrachloroethene	<43	<6.4
Ethylbenzene	<2.8	<0.64
m,p-Xylene	7.9	1.8
o-Xylene	3.0	0.70
Naphthalene	<1.7	<0.32

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SV2	Client:	PBS Engineering and Environmental
Date Received:	12/17/21	Project:	40573.228, F&BI 112347
Date Collected:	12/16/21	Lab ID:	112347-02 1/5.7
Date Analyzed:	12/29/21	Data File:	122824.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.5	<0.57
Chloroethane	<15	<5.7
1,1-Dichloroethene	<2.3	<0.57
trans-1,2-Dichloroethene	<2.3	<0.57
1,1-Dichloroethane	<2.3	<0.57
cis-1,2-Dichloroethene	<2.3	<0.57
1,2-Dichloroethane (EDC)	<0.23	<0.057
1,1,1-Trichloroethane	<3.1	<0.57
Benzene	3.9	1.2
Trichloroethene	<0.61	<0.11
Toluene	<110	<28
1,1,2-Trichloroethane	<0.31	<0.057
Tetrachloroethene	<39	<5.7
Ethylbenzene	<2.5	<0.57
m,p-Xylene	7.7	1.8
o-Xylene	2.9	0.67
Naphthalene	<1.5	<0.28

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	PBS Engineering and Environmental
Date Received:	Not Applicable	Project:	40573.228, F&BI 112347
Date Collected:	Not Applicable	Lab ID:	01-2855 MB
Date Analyzed:	12/28/21	Data File:	122810.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01
1,1,1-Trichloroethane	<0.55	<0.1
Benzene	<0.32	<0.1
Trichloroethene	<0.11	<0.02
Toluene	<19	<5
1,1,2-Trichloroethane	<0.055	<0.01
Tetrachloroethene	<6.8	<1
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

Date of Report: 01/05/22
Date Received: 12/17/21
Project: Skyway Community Center 40573.228, F&BI 112347
Date Extracted: 12/30/21
Date Analyzed: 12/30/21

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
SV1 112347-01	<0.6
SV2 112347-02	<0.6
Method Blank 01-2953 MB	<0.6

Date of Report: 01/05/22
Date Received: 12/17/21
Project: Skyway Community Center 40573.228, F&BI 112347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 112287-01 1/18 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	1,700	2,600	42 vo
APH EC9-12 aliphatics	ug/m3	9,200	9,200	0
APH EC9-10 aromatics	ug/m3	<450	<450	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	87	70-130
APH EC9-12 aliphatics	ug/m3	67	119	70-130
APH EC9-10 aromatics	ug/m3	67	119	70-130

Date of Report: 01/05/22
Date Received: 12/17/21
Project: Skyway Community Center 40573.228, F&BI 112347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 112287-01 1/18 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<4.6	<4.6	nm
Chloroethane	ug/m3	<47	<47	nm
1,1-Dichloroethene	ug/m3	<7.1	<7.1	nm
trans-1,2-Dichloroethene	ug/m3	<7.1	<7.1	nm
1,1-Dichloroethane	ug/m3	<7.3	<7.3	nm
cis-1,2-Dichloroethene	ug/m3	51	50	2
1,2-Dichloroethane (EDC)	ug/m3	3.2	3.4	6
1,1,1-Trichloroethane	ug/m3	<9.8	<9.8	nm
Benzene	ug/m3	29	28	4
Trichloroethene	ug/m3	76	68	11
Toluene	ug/m3	<340	<340	nm
1,1,2-Trichloroethane	ug/m3	<0.98	<0.98	nm
Tetrachloroethene	ug/m3	350	310	12
Ethylbenzene	ug/m3	7.8	7.8	0
m,p-Xylene	ug/m3	21	21	0
o-Xylene	ug/m3	9.9	9.8	1
Naphthalene	ug/m3	62	64	3

Date of Report: 01/05/22
Date Received: 12/17/21
Project: Skyway Community Center 40573.228, F&BI 112347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	103	70-130
Chloroethane	ug/m3	36	93	70-130
1,1-Dichloroethene	ug/m3	54	95	70-130
trans-1,2-Dichloroethene	ug/m3	54	99	70-130
1,1-Dichloroethane	ug/m3	55	99	70-130
cis-1,2-Dichloroethene	ug/m3	54	99	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	101	70-130
1,1,1-Trichloroethane	ug/m3	74	99	70-130
Benzene	ug/m3	43	97	70-130
Trichloroethene	ug/m3	73	87	70-130
Toluene	ug/m3	51	87	70-130
1,1,2-Trichloroethane	ug/m3	74	84	70-130
Tetrachloroethene	ug/m3	92	92	70-130
Ethylbenzene	ug/m3	59	94	70-130
m,p-Xylene	ug/m3	120	93	70-130
o-Xylene	ug/m3	59	99	70-130
Naphthalene	ug/m3	71	81	70-130

Date of Report: 01/05/22
Date Received: 12/17/21
Project: Skyway Community Center 40573.228, F&BI 112347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Laboratory Code: 112483-01 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	<0.6	<0.6	nm	0-20

Data Qualifiers & Definitions

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

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

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

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

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

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

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

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

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

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

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

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

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

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

SAMPLE CHAIN OF CUSTODY

112347

Report to: Nathan Dickey

Company: PBS

Address: Seattle

City, State, ZIP:

Phone: Email: nathan.dickey@pbsusa.com

SAMPLERS (signature): 12-17-21

PROJECT NAME & ADDRESS	PO #
Skyway Community Center	40573.228
NOTES:	INVOICE TO

Page # 1 of 1

TURNAROUND TIME
- [x] Standard
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Default: Clean after 3 days
- [ ] Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	ANALYSIS REQUESTED: TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
SV1	01	4178	17 18 ef	IA / (SG)	12/16	30	1505	5	1541		X	X	X	X		
SV2	02	4183	31 18	IA / (SG)	1	30	1535	6	1541		X	X	X	X		
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Nathan Dickey	PBS	12/17	0900
Received by:	Eric Ruby	F:B	12/17	0900
Relinquished by:				
Received by:		Samples received at 16 °C		

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