INDEPENDENT REMEDIAL ACTION REPORT
6361 WING POINT ROAD NE
BAINBRIDGE ISLAND, WA

Resolve Project 16-054
October 15, 2016

Prepared for:

Clark Construction Company LLC
500 Winslow Way E
Bainbridge Island, WA

Prepared by:

Resolve Environmental & Geotechnical, Inc.
8842 NE Lacey Street
Indianola, Washington 98342
(360) 297-8870; resolveEG@comcast.net

October 15, 2016 Resolve Project No. 16-054

INDEPENDENT REMEDIAL ACTION REPORT
RECTOR PROPERTY; CONSTRUCTION EXCAVATION
6361 WING POINT ROAD
BAINBRIDGE ISLAND, WASHINGTON

INTRODUCTION and SUMMARY

Based on the findings presented in our recent Phase II Environmental Site Assessment (ESA) report, dated September 24, 2016, Resolve Environmental & Geotechnical, Inc. (Resolve) was retained by Clark Construction LLC to consult on an Independent Remedial Action for the contaminated soils in the central portion of the construction area of the Rector Property, located at 6361 Wing Point Road, Bainbridge Island, Washington. The subject property is the site of construction of a stick-built, single family residence. The latitude is approximately 47 degrees, 37.286 minutes, and the longitude is approximately 122 degrees, 29.598 minutes.

Contaminated soils were identified in the subsurface during common excavation for a retaining wall emplacement. The corresponding Washington State Department of Ecology (DOE) ERTS Number for this project is 667952. We are presenting the attached information with the goal of obtaining a "Cleanup Completed" and/or No Further Action Letter for the subject site from the DOE.

Preliminary field investigation and sampling activities were conducted on September 21, 2016 by Ronald Nance, a Washington State Licensed Geologist and Environmental Professional representing Resolve. Soil excavation had been conducted by Clark Construction, LLC of Bainbridge Island, Washington, using a Case excavator. Selected photographs of the field activities are attached to this report.

Initially, soils were sampled from the northeast corner of the excavation, the central-eastern portion of the excavation, and the southern wall of the excavation. Soils were found to have concentrations of diesel home heating oil in excess of MTCA Method A cleanup standards.

An Independent Remedial Action was instigated by Clark Construction LLC, and soils were subsequently excavated for disposal. The excavation began in the central and south areas, and proceeded to the south, east, and west beyond the original excavation in order to reach the margins of the contaminated soils plume. This excavation also included excavation to the west to within approximately three feet of the neighboring property. Plume delineation was determined by odor and visual methods in the field, and by laboratory testing of floors and walls of the excavation.

Subsurface soils encountered during the exploratory excavations were generally structural fill materials consisting of silty sand with gravel, (USCS SM), underlain by generally brown and light gray, dry to damp, dense, silty sand with gravel (USCS SM), interpreted in the field as lightly compacted outwash. Beneath these materials were impermeable glacial till soils, onto which the contaminant appeared to have settled without penetration or infiltration.

Verification that contaminated soils had been removed from the identified areas of contamination was carried out by sampling and testing of soils, and analysis of laboratory results. Some discussion of the excavation and sampling is included in this report, however, it is Resolve's opinion that the contaminated soils have been removed from the subject site, and that appropriate due diligence was utilized in the investigation and remediation.

PURPOSE AND SCOPE

The purpose of this Independent Remedial Action was to remove diesel and lube oil-range petroleum hydrocarbon-contaminated soils from the site, and to verify through laboratory testing that contaminated soils had been removed. The IRA included the following basic scope of work:

- Initial sampling of excavated soils in an existing soil pile;
- Initial sampling of excavated soils in the retaining wall trench area;
- Identification of soils that exceeded MTCA Method A cleanup standards;
- Soil sampling and laboratory analyses of soils identified in excavation as plume delineation was investigated;
- Interpretation of laboratory results;
- Excavation and removal of contaminated soils from the subject site;
- Disposal of soils at an appropriate disposal site; and,
- Preparation of this report documenting the cleanup efforts and results.

FIELD ACTIVITIES AND ACTIONS

Field investigation and sampling activities were conducted beginning September 21, 2016 by Ronald Nance, a Washington State Licensed Geologist and Environmental Professional representing Resolve. Sample collection, testing, and evaluations were an integral element of the Independent Remedial Action, designed to verify that contaminated soils had been removed from the site. Soil excavation was conducted by Clark Construction LLC of Bainbridge Island, Washington, using an excavator. Selected photographs of the field activities are attached to this report.

INITIAL CHARACTERIZATION ACTIVITIES

Initially, Resolve collected three samples from the soils in the excavation that appeared to be representative of potentially contaminated soils in the excavation. Soil samples were collected in sealed, 4-ounce jars for processing by Method NWTPH-Dx. The samples were delivered under Chain of Custody to Onsite Laboratories of Kirkland, Washington for processing.

Soils initially encountered with obvious visual and olfactory contamination in the pile were isolated to prevent cross-contamination of other soils on the site. Soil samples from suspected contamination areas were collected for laboratory analysis and were transported to the laboratory. Soils in the trench area were sampled from walls and floor of the retaining wall excavation.

Sampling was undertaken across the area, with obviously contaminated soils being removed as excavation proceeded. Samples were trucked to a City of Bainbridge Island temporary staging area by Liden Land Development and Excavation Company.

Contaminated soils initially encountered during the exploratory excavations were generally a thin (one to two foot) layer of gray, silty sand within fill material and brown, damp, dense, silty sand with gravel (USCS SM). These soils were followed at depth by brown and gray silty sand with minor gravel, and some intervals of moist, dense silt sand with gravel (USCS SM) and minor sand.

The contamination initially appeared likely to have been related to relict home heating oil, and samples were therefore tested for diesel and oil by EPA Method NWTPH Dx. No groundwater was encountered in the course of sampling. Soil samples were collected in sealed, 4-ounce jars for processing by Method NWTPH-Dx. The samples were delivered under Chain of Custody to Onsite Laboratories of Kirkland, Washington for processing. Expedited turnaround times for laboratory testing for the soils were requested by Resolve.

Table 3 below is a summary of laboratory results from the samples that were initially analyzed for soils characterization. Laboratory results are attached to this report.

Initial Laboratory Soil Sample Results

Sample Number	Sample Location and Depth bgs	Laboratory Test	Test Results (parts per million-ppm)	MTCA METHOD A Cleanup Levels
Sample 1 NE	**Northeast corner of excavation**	**Diesel by NWTPH-Dx**	**Diesel Fuel No. 2; 3,500** **Lube Oil; Non Detect**	**Diesel range hydrocarbons 2,000 ppm**
Sample 2-Central	**Central excavation**	**Diesel by NWTPH-Dx**	**Diesel Fuel No. 2; 2,800** **Lube Oil; Non Detect**	**Diesel range hydrocarbons 2,000 ppm**
Sample 3 Southwest	Southwest margin of excavation	Diesel by NWTPH-Dx	Diesel Fuel No. 2; 1,800 Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm

Based on the laboratory results, two of the samples collected from suspect areas showed high concentrations of diesel fuel, and lube oil was not detected.

Based on the results of the initial testing, it was decided to report the contamination to the DOE ERTS system, and to initiate an Independent Remedial Action (IRA) to remove contaminated soils from the subject site.

REMEDIATION ACTIVITIES and SUBSEQUENT FINDINGS

Following receipt of the laboratory samples, Resolve recommended that an Independent Remedial Action (IRA) should be undertaken at the site. This measure was recommended in order to remove the existing contaminated soils from the subject site. It was recommended that a soil profile form be submitted to PRS Group of Tacoma for approval of disposal of contaminated soils. Following approval from PRS Group of Tacoma to dispose of soils at their 3003 Taylor Way Disposal Site, removal of the contaminated soils from the site was initiated.

The discovery of additionally contaminated soils extended the remediation excavation, with some obviously contaminated soils extending deeper and wider than originally estimated, and to the south, east, and west of previously observed contaminated soils. The contaminated area was found to extend to a depth of approximately 18 to 20 feet below the existing ground surface (bgs), approximately 12 feet to the south and east, 10 feet farther north, and to the west to within approximately 3 feet of the neighboring property boundary. ***It is significant to note that no groundwater was encountered in any phase of the investigation or excavation.*** A total of 438 cubic yards of soil were removed from the site and disposed of at PRS as contaminated materials.

VERIFICATION LABORATORY RESULTS

During and following excavation and removal of the contaminated soils from the site, verification of completion of remediation samples were collected and laboratory tested. Samples from the southern, eastern, and western portions of the excavation site were collected on September 28th and October 4th. Laboratory results are attached to this report. The following table summarizes laboratory results as tested and analyzed:

Verification Sampling Results

Sample Number	Sample Location and Depth bgs	Laboratory Test	Test Results (parts per million-ppm)	MTCA METHOD A Cleanup Levels
C-4	South Wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-5: VOID	Southeast wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-6	South Central Floor	Diesel by NWTPH-Dx	Diesel Fuel No. 2; 75 Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-7	East side wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-8	East side floor	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-9	South wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-10	Northwest wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-11	Northwest floor	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-12	Northeast wall	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm
C-13	Northeast floor	Diesel by NWTPH-Dx	Diesel Fuel No. 2; Non Detect Lube Oil; Non Detect	Diesel range hydrocarbons 2,000 ppm

As can be seen in the table above, none of the verification samples tested and analyzed had concentrations above MTCA cleanup standards for Diesel-range petroleum hydrocarbons. The significant excavation and testing efforts located the margins of the contaminant plume and successfully remediated the site (with some qualification noted below regarding the western margin). Based on laboratory results, visual, and olfactory field screening, it is our opinion that the contaminated soils have been removed from the site, and remaining soils do not exceed MTCA Method A cleanup standards.

Western Margin Discussion

Excavation to a depth in the central areas of the contamination approached 20 feet bgs in places. The lens of contaminant began to shallow and thin toward the western margins of the property. It was noted on the western side of the excavation at a depth of approximately 12 feet, and within 3 feet of the subject property boundary, was thinning to an approximately 8-inch to one -foot lens. This thinning on all other margins (south, north, and east) to this extent yielded non-detect results within two feet of encounter.

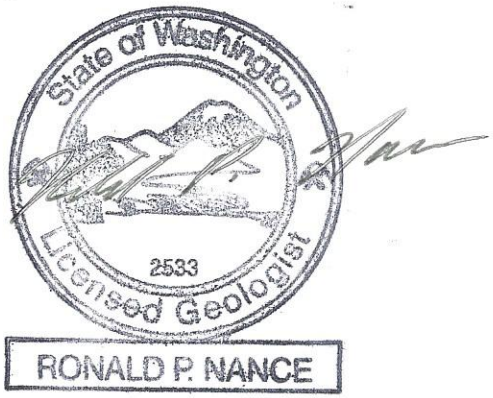
The excavation, as stated, was a very deep and was a wide cavity on the site. Moreover, strong rain moved into the area while the excavation was open. Mr. Richard Bazzell and Mr. Grant Holdcroft of the Kitsap County Department of Health, acting on behalf of the DOE, agreed that backfilling would be prudent. Approaching the west to remove the last thin lens (two or three feet) of contaminant appeared to be an extreme safety hazard, and would likely have resulted in severe undermining of the bank and the neighbor's property. The western margin of the excavation was tested along the northernmost and southernmost portions, and found to be non detect for contaminant. Although the extreme, westernmost margin of the subject property was not practical to sample, Resolve believes that the western margin was adequately remediated.

LIMITATIONS

This Independent Remedial Action has been conducted in good faith and was limited in scope to those areas defined by the client. This investigation was undertaken with the risk that visual observations and random sampling alone would not reveal the presence, full nature, and extent of contaminants in the subsurface, however common industry practices were applied, and Resolve is confident that the appropriate testing, observation, remediation, and disposal of soils were undertaken for contaminants discovered at the site. This report was prepared for Clark Construction LLC and their assigns.

Resolve appreciates the opportunity to present this letter report. If you have any questions or comments, wish to pursue the investigation further, or need additional information, please feel free to contact us at (360) 865-1843.

Sincerely,
Resolve Environmental & Geotechnical, Incorporated



Ronald Nance, P.G.
Senior Environmental Geologist
Washington State License No. 2533

Resolve Environmental & Geotechnical, Inc.

(360) 865-1843
resolveeg@comcast.net

FIGURE 1:
Vicnity Map

PROJECT No. 16-054

DATE: OCTOBER, 2016

PROJECT:

Independent Remedial Action
6361 Wing Point Road NE
Bainbridge Island, Washington

Prepared for: Clark Construction LLC

N

LABORATORY RESULTS

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

September 23, 2016

Ron Nance
Resolve Environmental & Geotechnical, Inc.
8842 NE Lacey Street
Indianola, WA 98342

Re: Analytical Data for Project 1512
Laboratory Reference No. 1609-285

Dear Ron:

Enclosed are the analytical results and associated quality control data for samples submitted on September 23, 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: September 23, 2016
Samples Submitted: September 23, 2016
Laboratory Reference: 1609-285
Project: 1512

Case Narrative

Samples were collected on September 20, 2016 and received by the laboratory on September 23, 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: September 23, 2016
Samples Submitted: September 23, 2016
Laboratory Reference: 1609-285
Project: 1512

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Sample1 - NE**					
Laboratory ID:	09-285-01					
Diesel Range Organics	**3600**	27	NWTPH-Dx	9-22-16	9-22-16	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	9-22-16	9-22-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**Sample 2 - Central**					
Laboratory ID:	09-285-02					
Diesel Range Organics	**2800**	28	NWTPH-Dx	9-22-16	9-22-16	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	9-22-16	9-22-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*124*	*50-150*				
Client ID:	**Sample 3 - SW**					
Laboratory ID:	09-285-03					
Diesel Range Organics	**1600**	27	NWTPH-Dx	9-22-16	9-22-16	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	9-22-16	9-22-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*113*	*50-150*				

Date of Report: September 23, 2016
Samples Submitted: September 23, 2016
Laboratory Reference: 1609-285
Project: 1512

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0922S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-22-16	9-22-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-22-16	9-22-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-267-06										
	ORIG	DUP									
Diesel Range Organics	**257**	**214**	NA	NA		NA		NA	18	NA	N
Lube Oil	**1940**	**1560**	NA	NA		NA		NA	22	NA	
Surrogate:											
o-Terphenyl						*119*	*123*	*50-150*			

Date of Report: September 23, 2016
Samples Submitted: September 23, 2016
Laboratory Reference: 1609-285
Project: 1512

% MOISTURE

Date Analyzed: 9-22-16

Client ID	Lab ID	% Moisture
Sample1 - NE	09-285-01	8
Sample 2 - Central	09-285-02	11
Sample 3 - SW	09-285-03	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

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: 09-285

Company: Resolve E+G
Project Number: 1512
Project Name: WPR 1512
Project Manager: Mike Contreras
Sampled by: Ron Nance

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	Sample 1 - NE	9/20/16	4:20P	Soil	1				X													10
2	Sample 2 - central	"	4:30P	"	1				X													
3	Sample 3 - SW	"	4:40P	"	1				X													

	Signature	Company	Date	Time
Relinquished	Ron Nance	Resolve E+G	9/21/16	10:30A
Received		OSE	9/22/16	1200
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
P/S. email results (or call) Thanks! Please find a payment in the overall delivery package.
Ron

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 3, 2016

Ron Nance
Resolve Environmental & Geotechnical, Inc.
8842 NE Lacey Street
Indianola, WA 98342

Re: Analytical Data for Project 15-021
Laboratory Reference No. 1609-403

Dear Ron:

Enclosed are the analytical results and associated quality control data for samples submitted on September 30, 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 3, 2016
Samples Submitted: September 30, 2016
Laboratory Reference: 1609-403
Project: 15-021

Case Narrative

Samples were collected on September 28, 2016 and received by the laboratory on September 30, 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 3, 2016
Samples Submitted: September 30, 2016
Laboratory Reference: 1609-403
Project: 15-021

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**C-4**					
Laboratory ID:	09-403-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	9-30-16	10-3-16	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	9-30-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**C-5**					
Laboratory ID:	09-403-02					
Diesel Range Organics	**ND**	29	NWTPH-Dx	9-30-16	10-3-16	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	9-30-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: October 3, 2016
Samples Submitted: September 30, 2016
Laboratory Reference: 1609-403
Project: 15-021

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0930S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-30-16	10-3-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-30-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	09-403-02										
	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						*97*	*107*	*50-150*			

Date of Report: October 3, 2016
Samples Submitted: September 30, 2016
Laboratory Reference: 1609-403
Project: 15-021

% MOISTURE

Date Analyzed: 9-30-16

Client ID	Lab ID	% Moisture
C-4	09-403-01	9
C-5	09-403-02	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

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

Company: Resolve E+G
Project Number: 15-021
Project Name: WPR-1512
Project Manager: Ron Nance
Sampled by: Ron Nance

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: 09-403

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-~~Gx~~ Dx	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	C-4 [S. wall ≈10' depth]	9/28/16	5:00P	soil				X														X
2	C-5 [S-E Floor ≈12.5' depth]	9/28/16	5:20P	soil				X														X

	Signature	Company	Date	Time
Relinquished		Resolve E+G	9/29/15	3:00 P
Received			9/30/16	1500
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
There will be more of these samples for this project, I will need more 4oz jars. Thanks!
Pls. charge shipping to our account.
Ron

Chromatograms with final report ☐

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

October 4, 2016

Ron Nance
Resolve Environmental & Geotechnical, Inc.
8842 NE Lacey Street
Indianola, WA 98342

Re: Analytical Data for Project W
Laboratory Reference No. 1610-002

Dear Ron:

Enclosed are the analytical results and associated quality control data for samples submitted on October 1, 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 4, 2016
Samples Submitted: October 1, 2016
Laboratory Reference: 1610-002
Project: W

Case Narrative

Samples were collected on September 29, 2016 and received by the laboratory on October 1, 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 4, 2016
Samples Submitted: October 1, 2016
Laboratory Reference: 1610-002
Project: W

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**C-6**					
Laboratory ID:	10-002-01					
Diesel Range Organics	**75**	28	NWTPH-Dx	10-3-16	10-3-16	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	10-3-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**C-7**					
Laboratory ID:	10-002-02					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-3-16	10-3-16	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-3-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**C-8**					
Laboratory ID:	10-002-03					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-3-16	10-3-16	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-3-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**C-9**					
Laboratory ID:	10-002-04					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-3-16	10-3-16	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-3-16	10-3-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				

Date of Report: October 4, 2016
Samples Submitted: October 1, 2016
Laboratory Reference: 1610-002
Project: W

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1003S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-3-16	10-3-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-3-16	10-3-16	
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:	09-368-04										
	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						*106*	*124*	*50-150*			

Date of Report: October 4, 2016
Samples Submitted: October 1, 2016
Laboratory Reference: 1610-002
Project: W

% MOISTURE

Date Analyzed: 10-3-16

Client ID	Lab ID	% Moisture
C-6	10-002-01	11
C-7	10-002-02	13
C-8	10-002-03	12
C-9	10-002-04	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: Resolve E+G
Project Number: W
Project Name:
Project Manager: Ron Nance
Sampled by: Norm Landry / under Resolve Direction

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: 10-002

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	C-6 [East side wall]	9/29/16	12:00	Soil					X													X
2	C-7 [East side Floor]	"	12:30	"					X													X
3	C-8 [South wall]	"	1:00	"					X													X
4	C-9 [South Floor]	"	1:30	"					X													X

	Signature	Company	Date	Time
Relinquished		Resolve E+G	9/30/16	9:00A
Received		OnSite E.	10/1/16	1130
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 7, 2016

Ron Nance
Resolve Environmental & Geotechnical, Inc.
8842 NE Lacey Street
Indianola, WA 98342

Re: Analytical Data for Project WPR-1512
Laboratory Reference No. 1610-063

Dear Ron:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 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 7, 2016
Samples Submitted: October 6, 2016
Laboratory Reference: 1610-063
Project: WPR-1512

Case Narrative

Samples were collected on October 4, 2016 and received by the laboratory on October 6, 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 7, 2016
Samples Submitted: October 6, 2016
Laboratory Reference: 1610-063
Project: WPR-1512

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**C-10**					
Laboratory ID:	10-063-01					
Diesel Range Organics	**ND**	27	NWTPH-Dx	10-6-16	10-6-16	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	10-6-16	10-6-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**C-11**					
Laboratory ID:	10-063-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-6-16	10-6-16	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-6-16	10-6-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**C-12**					
Laboratory ID:	10-063-03					
Diesel Range Organics	**ND**	29	NWTPH-Dx	10-6-16	10-6-16	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	10-6-16	10-6-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**C-13**					
Laboratory ID:	10-063-04					
Diesel Range Organics	**ND**	27	NWTPH-Dx	10-6-16	10-6-16	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	10-6-16	10-6-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Date of Report: October 7, 2016
Samples Submitted: October 6, 2016
Laboratory Reference: 1610-063
Project: WPR-1512

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1006S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-6-16	10-6-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-6-16	10-6-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-359-03									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil	**8670**	**6550**	NA	NA		NA	NA	28	NA	
Surrogate:										
o-Terphenyl						--- ---	*50-150*			S,S

Date of Report: October 7, 2016
Samples Submitted: October 6, 2016
Laboratory Reference: 1610-063
Project: WPR-1512

% MOISTURE

Date Analyzed: 10-6-16

Client ID	Lab ID	% Moisture
C-10	10-063-01	9
C-11	10-063-02	12
C-12	10-063-03	14
C-13	10-063-04	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.

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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.

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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: Resolve Environmental & Geo
Project Number: WPR-1512
Project Name:
Project Manager: Ronald Nance
Sampled by: Norm Landry (under Resolve)

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: 10-063

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	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	C-10 (NW wall)	10/4/16	12:00	soil					X														X
2	C-11 (NW Floor)	10/4/16	12:30	soil					X														X
3	C-12 (NE wall)	10/4/16	1:00	soil					X														X
4	C-13 (NE Floor)	10/4/16	1:30	soil					X														X

	Signature	Company	Date	Time
Relinquished		Resolve E&G	10/4/16	4:30P
Received			10/4/16	1400
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

SELECTED PHOTOGRAPHS

1. Initial observation of contamination was in an excavation for a retaining wall footing.

2. Soils initially observed were fill materials. Beneath the fill were brown and gray, damp, medium dense sand with gravel and minor silt (USCS SP to SM).

Resolve Project 16-054
Date of Photographs: September-October, 2016

3. Contamination in the northeast corner was exposed, sampled, and tested. Concentration of diesel home heating oil was above MTCA Method A cleanup standards.

4. Delineation of plume began with a slot to the south. Contamination limits were recognized southward of the slot in this photo.

Resolve Project 16-054
Date of Photographs: September-October, 2016

5. Higher concentrations of contamination were exposed as investigation and excavation continued. This was in the central area of the site.

6. As contaminant continued deeper, a ramp was cut from the north.

7. To find the extremities of the plume, a pit approximately 20 feet deep and 30 feet wide was excavated.

8. Verification samples were taken from walls and floors of the site, and confirmed that the contaminant had been removed.