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- Legend**
- Spill Origin
 - Other Soil Sample Location
 - Spill Area

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Project Number: 018-065	Fee 49 Spill Response Chevron USA, Inc Rio Blanco County, Colorado NWSE S17 T2N R102W		330 Grand Ave, Suite C Grand Junction, CO 81501 P: 970.270.2986	Figure
Drawn By: TPD				
Revision Date: 11/14/2018				1

F:\Projects\013-3287\Chevron - Rangely Environmental\2016\Spills\GIS\Spill Response Maps.mxd

Table 1
Fee 49 Spill
Soil Data Summary

SAMPLE SUMMARY										
Location Description	Fee 49 Spill									
Sample Type	Soil									

LABORATORY DATA SUMMARY										
Sample ID	Fee 49-SS1	Fee 49-SS1	Fee 49-SS1	Fee 49-SS2	Fee 49-SS2	Fee 49-SS3	Fee 49-SS3	Fee 49-BG1	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	11/2/2016	7/13/2018	4/1/2021	11/2/2016	7/13/2018	11/2/2016	7/13/2008	11/2/2016		
Analytical Parameters										
TPH										
TPH Gasoline Range Organics	<3.7	NT	NT	<3.9	NT	<4.4	NT	<3.5	500	mg/kg
TPH Diesel Range Organics	15	NT	NT	450	NT	41	NT	<5.9		
BTEX										
Benzene	<0.044	NT	NT	<0.047	NT	<0.053	NT	<0.041	0.17	mg/kg
Toluene	<0.044	NT	NT	<0.047	NT	<0.053	NT	<0.041	85	mg/kg
Ethylbenzene	<0.044	NT	NT	<0.047	NT	<0.053	NT	<0.041	100	mg/kg
Total Xylene	<0.13	NT	NT	<0.14	NT	0.16	NT	<0.12	175	mg/kg
Metals										
Arsenic	9.9	NT	NT	11	NT	7.8	NT	10	0.39	mg/kg
Barium	190	NT	NT	380	NT	130	NT	180	15,000	mg/kg
Cadmium	<0.43	NT	NT	<0.47	NT	<0.56	NT	<0.46	70	mg/kg
Chromium	12	NT	NT	13	NT	13	NT	13	NA	mg/kg
Copper	13	NT	NT	15	NT	14	NT	15	3,100	mg/kg
Lead	16	NT	NT	27	NT	18	NT	19	400	mg/kg
Mercury	0.040	NT	NT	0.041	NT	0.041	NT	0.017	23	mg/kg
Nickel	19	NT	NT	21	NT	20	NT	22	1,600	mg/kg
Selenium	<0.87	NT	NT	<0.95	NT	<1.1	NT	<0.092	390	mg/kg
Silver	<0.43	NT	NT	<0.47	NT	<0.56	NT	<0.46	390	mg/kg
Zinc	82	NT	NT	120	NT	98	NT	93	23,000	mg/kg
SAR Metals Analysis										
Calcium	810	30	NT	380	490	560	210	13	NA	mg/L
Magnesium	340	7	NT	90	61	120	35	3.9	NA	mg/L
Sodium	2700	5.2	NT	5200	85	6800	16	50	NA	mg/L
Sodium Adsorption Ratio	20	0.22	NT	62	0.96	6.7	0.28	3.1	<12	ratio
Polynuclear Aromatic Hydrocarbons										
Acenaphthene	<0.0080	<0.030	<0.010	<0.0085	NT	<0.0090	NT	<0.0079	1,000	mg/kg
Anthracene	0.018	<0.017	<0.011	<0.0085	NT	<0.0090	NT	<0.0079	1,000	mg/kg
Benzo(a)anthracene	0.038	<0.016	<0.012	<0.0085	NT	<0.0090	NT	<0.0079	0.22	mg/kg
Benzo(a)pyrene	0.036	<0.026	<0.0096	<0.0085	NT	<0.0090	NT	<0.0079	0.022	mg/kg
Benzo(b)fluoranthene	0.049	<0.019	<0.010	<0.0085	NT	<0.0090	NT	<0.0079	0.22	mg/kg
Benzo(k)fluoranthene	0.016	<0.022	<0.0097	<0.0085	NT	<0.0090	NT	<0.0079	2.2	mg/kg
Chrysene	0.039	<0.022	<0.011	<0.0085	NT	<0.0090	NT	<0.0079	22	mg/kg
Dibenzo(a,h)anthracene	<0.0080	<0.039	<0.0097	<0.0085	NT	<0.0090	NT	<0.0079	0.022	mg/kg
Fluoranthene	0.059	<0.037	<0.0095	<0.0085	NT	<0.0090	NT	<0.0079	1,000	mg/kg
Fluorene	<0.0080	<0.018	<0.0093	<0.0085	NT	<0.0090	NT	<0.0079	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	0.022	<0.048	<0.010	<0.0085	NT	<0.0090	NT	<0.0079	0.22	mg/kg
Napthalene	0.014	<0.023	<0.012	0.015	NT	0.022	NT	<0.0079	23	mg/kg
Pyrene	0.0079	<0.028	<0.011	<0.0085	NT	<0.0090	NT	<0.0079	1,000	mg/kg
General Chemistry										
Chromium, Hexavalent	<1.2	NT	NT	<1.2	NT	<1.4	NT	<1.2	23	mg/kg
Chromium, Trivalent	12	NT	NT	13	NT	13	NT	13	120,000	mg/kg
Specific Conductivity	33	0.34	NT	35	3.4	45	1.2	0.82	<4 or 2 x the background	mmhos/cm
pH	7.1	NT	NT	7.5	NT	7.9	NT	8.9	6-9	su

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NA - not applicable
NT - parameter was not tested

Over COGCC Table 910-1 concentration levels but under BACKGROUND level.

Over COGCC Table 910-1 concentration levels and not within BACKGROUND level.

Over COGCC Table 910-1 concentration levels



17-Nov-2016

Tim Dobransky
Olsson Associates
760 Horizon Drive
Suite 102
Grand Junction, CO 81506

Re: **Fee 49 Spill**

Work Order: **1611393**

Dear Tim,

ALS Environmental received 4 samples on 04-Nov-2016 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Fee 49 Spill
Work Order: 1611393

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1611393-01	Fee49-SS1	Soil		11/2/2016 14:20	11/4/2016 09:30	<input type="checkbox"/>
1611393-02	Fee49-SS2	Soil		11/2/2016 14:30	11/4/2016 09:30	<input type="checkbox"/>
1611393-03	Fee49-SS3	Soil		11/2/2016 14:40	11/4/2016 09:30	<input type="checkbox"/>
1611393-04	Fee49-BG1	Soil		11/2/2016 14:50	11/4/2016 09:30	<input type="checkbox"/>

Client: Olsson Associates
Project: Fee 49 Spill
WorkOrder: 1611393

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-SS1

Collection Date: 11/2/2016 02:20 PM

Work Order: 1611393

Lab ID: 1611393-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 11/11/16	Analyst: IT
DRO (C10-C28)	15		6.0	mg/Kg-dry	1	11/11/2016 11:32 PM
Surr: 4-Terphenyl-d14	52.2		39-133	%REC	1	11/11/2016 11:32 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/11/16	Analyst: IT
GRO (C6-C10)	ND		3.7	mg/Kg-dry	1	11/11/2016 05:59 PM
Surr: Toluene-d8	103		50-150	%REC	1	11/11/2016 05:59 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/15/16	Analyst: LR
Mercury	0.040		0.017	mg/Kg-dry	1	11/15/2016 04:37 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/10/16	Analyst: RH
Arsenic	9.9		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Barium	190		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Cadmium	ND		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Chromium	12		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Copper	13		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Lead	16		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Nickel	19		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Selenium	ND		0.87	mg/Kg-dry	1	11/12/2016 12:22 PM
Silver	ND		0.43	mg/Kg-dry	1	11/12/2016 12:22 PM
Zinc	82		0.87	mg/Kg-dry	1	11/12/2016 12:22 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Calcium	810		5.0	mg/L	10	11/10/2016 01:25 AM
Magnesium	340		2.0	mg/L	10	11/10/2016 01:25 AM
Sodium	2,700		2.0	mg/L	10	11/10/2016 01:25 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Sodium Adsorption Ratio	20		0.010	none	1	11/9/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3546 / 11/11/16	Analyst: RS
Acenaphthene	ND		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Anthracene	0.018		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Benzo(a)anthracene	0.038		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Benzo(a)pyrene	0.036		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Benzo(b)fluoranthene	0.049		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Benzo(k)fluoranthene	0.016		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Chrysene	0.039		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Dibenzo(a,h)anthracene	ND		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Fluoranthene	0.059		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates
Project: Fee 49 Spill
Sample ID: Fee49-SS1
Collection Date: 11/2/2016 02:20 PM

Work Order: 1611393
Lab ID: 1611393-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Indeno(1,2,3-cd)pyrene	0.022		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Naphthalene	0.014		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Pyrene	0.079		0.0080	mg/Kg-dry	1	11/12/2016 01:42 AM
Surr: 2-Fluorobiphenyl	76.1		12-100	%REC	1	11/12/2016 01:42 AM
Surr: 4-Terphenyl-d14	82.5		25-137	%REC	1	11/12/2016 01:42 AM
Surr: Nitrobenzene-d5	63.4		37-107	%REC	1	11/12/2016 01:42 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/11/16		Analyst: AK
Benzene	ND		0.044	mg/Kg-dry	1	11/16/2016 06:46 AM
Ethylbenzene	ND		0.044	mg/Kg-dry	1	11/16/2016 06:46 AM
m,p-Xylene	ND		0.088	mg/Kg-dry	1	11/16/2016 06:46 AM
o-Xylene	ND		0.044	mg/Kg-dry	1	11/16/2016 06:46 AM
Toluene	ND		0.044	mg/Kg-dry	1	11/16/2016 06:46 AM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	11/16/2016 06:46 AM
Surr: 1,2-Dichloroethane-d4	81.3		70-130	%REC	1	11/16/2016 06:46 AM
Surr: 4-Bromofluorobenzene	95.8		70-130	%REC	1	11/16/2016 06:46 AM
Surr: Dibromofluoromethane	89.8		70-130	%REC	1	11/16/2016 06:46 AM
Surr: Toluene-d8	89.7		70-130	%REC	1	11/16/2016 06:46 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/9/16		Analyst: JB
Electrical Conductivity @ Saturation	33		0.25	mmhos/cm @2	50	11/9/2016 04:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	12		0.62	mg/Kg-dry	1	11/14/2016 03:10 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/7/16		Analyst: BWW
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/9/2016 09:00 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	19		0.050	% of sample	1	11/10/2016 01:37 PM
PH			SW9045D	Prep: EXTRACT / 11/7/16		Analyst: RZM
pH	7.1			s.u.	1	11/8/2016 09:40 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-SS2

Collection Date: 11/2/2016 02:30 PM

Work Order: 1611393

Lab ID: 1611393-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 11/11/16	Analyst: IT
DRO (C10-C28)	450		32	mg/Kg-dry	5	11/12/2016 12:01 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>53.7</i>		<i>39-133</i>	<i>%REC</i>	<i>5</i>	11/12/2016 12:01 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/11/16	Analyst: IT
GRO (C6-C10)	ND		3.9	mg/Kg-dry	1	11/11/2016 06:23 PM
<i>Surr: Toluene-d8</i>	<i>93.7</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	11/11/2016 06:23 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/15/16	Analyst: LR
Mercury	0.041		0.017	mg/Kg-dry	1	11/15/2016 04:40 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/10/16	Analyst: RH
Arsenic	11		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Barium	380		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Cadmium	ND		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Chromium	13		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Copper	15		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Lead	27		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Nickel	21		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Selenium	ND		0.95	mg/Kg-dry	1	11/14/2016 04:43 PM
Silver	ND		0.47	mg/Kg-dry	1	11/12/2016 12:28 PM
Zinc	120		0.95	mg/Kg-dry	1	11/12/2016 12:28 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Calcium	380		5.0	mg/L	10	11/10/2016 01:31 AM
Magnesium	90		2.0	mg/L	10	11/10/2016 01:31 AM
Sodium	5,200		20	mg/L	100	11/10/2016 06:15 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Sodium Adsorption Ratio	62		0.010	none	1	11/9/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3546 / 11/11/16	Analyst: RS
Acenaphthene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Anthracene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Benzo(a)anthracene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Benzo(a)pyrene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Benzo(b)fluoranthene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Benzo(k)fluoranthene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Chrysene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Dibenzo(a,h)anthracene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Fluoranthene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-SS2

Collection Date: 11/2/2016 02:30 PM

Work Order: 1611393

Lab ID: 1611393-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Indeno(1,2,3-cd)pyrene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Naphthalene	0.015		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Pyrene	ND		0.0085	mg/Kg-dry	1	11/11/2016 10:47 PM
Surr: 2-Fluorobiphenyl	81.2		12-100	%REC	1	11/11/2016 10:47 PM
Surr: 4-Terphenyl-d14	87.0		25-137	%REC	1	11/11/2016 10:47 PM
Surr: Nitrobenzene-d5	59.7		37-107	%REC	1	11/11/2016 10:47 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/11/16 Analyst: AK		
Benzene	ND		0.047	mg/Kg-dry	1	11/16/2016 07:12 AM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	11/16/2016 07:12 AM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	11/16/2016 07:12 AM
o-Xylene	ND		0.047	mg/Kg-dry	1	11/16/2016 07:12 AM
Toluene	ND		0.047	mg/Kg-dry	1	11/16/2016 07:12 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	11/16/2016 07:12 AM
Surr: 1,2-Dichloroethane-d4	85.0		70-130	%REC	1	11/16/2016 07:12 AM
Surr: 4-Bromofluorobenzene	96.0		70-130	%REC	1	11/16/2016 07:12 AM
Surr: Dibromofluoromethane	91.0		70-130	%REC	1	11/16/2016 07:12 AM
Surr: Toluene-d8	91.4		70-130	%REC	1	11/16/2016 07:12 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/9/16 Analyst: JB		
Electrical Conductivity @ Saturation	35		0.25	mmhos/cm @2	50	11/9/2016 04:00 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	13		0.65	mg/Kg-dry	1	11/14/2016 03:10 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/7/16 Analyst: BWW		
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/9/2016 09:00 AM
MOISTURE			SW3550C	Analyst: EDL		
Moisture	22		0.050	% of sample	1	11/10/2016 01:37 PM
PH			SW9045D	Prep: EXTRACT / 11/7/16 Analyst: RZM		
pH	7.5			s.u.	1	11/8/2016 09:40 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-SS3

Collection Date: 11/2/2016 02:40 PM

Work Order: 1611393

Lab ID: 1611393-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 11/11/16	Analyst: IT
DRO (C10-C28)	41		6.7	mg/Kg-dry	1	11/12/2016 12:30 PM
Surr: 4-Terphenyl-d14	55.0		39-133	%REC	1	11/12/2016 12:30 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/11/16	Analyst: IT
GRO (C6-C10)	ND		4.4	mg/Kg-dry	1	11/11/2016 06:48 PM
Surr: Toluene-d8	103		50-150	%REC	1	11/11/2016 06:48 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/16/16	Analyst: LR
Mercury	0.041		0.020	mg/Kg-dry	1	11/16/2016 07:32 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/10/16	Analyst: RH
Arsenic	7.8		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Barium	130		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Cadmium	ND		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Chromium	13		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Copper	14		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Lead	18		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Nickel	20		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Selenium	ND		1.1	mg/Kg-dry	1	11/12/2016 12:33 PM
Silver	ND		0.56	mg/Kg-dry	1	11/12/2016 12:33 PM
Zinc	98		1.1	mg/Kg-dry	1	11/12/2016 12:33 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Calcium	560		5.0	mg/L	10	11/10/2016 01:36 AM
Magnesium	120		2.0	mg/L	10	11/10/2016 01:36 AM
Sodium	6,800		20	mg/L	100	11/10/2016 06:20 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Sodium Adsorption Ratio	67		0.010	none	1	11/9/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3546 / 11/11/16	Analyst: RS
Acenaphthene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Anthracene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Benzo(a)anthracene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Benzo(a)pyrene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Benzo(b)fluoranthene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Benzo(k)fluoranthene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Chrysene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Dibenzo(a,h)anthracene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Fluoranthene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates
Project: Fee 49 Spill
Sample ID: Fee49-SS3
Collection Date: 11/2/2016 02:40 PM

Work Order: 1611393
Lab ID: 1611393-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Indeno(1,2,3-cd)pyrene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Naphthalene	0.022		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Pyrene	ND		0.0090	mg/Kg-dry	1	11/11/2016 11:06 PM
Surr: 2-Fluorobiphenyl	79.1		12-100	%REC	1	11/11/2016 11:06 PM
Surr: 4-Terphenyl-d14	85.9		25-137	%REC	1	11/11/2016 11:06 PM
Surr: Nitrobenzene-d5	63.0		37-107	%REC	1	11/11/2016 11:06 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/11/16		Analyst: AK
Benzene	ND		0.053	mg/Kg-dry	1	11/16/2016 07:38 AM
Ethylbenzene	ND		0.053	mg/Kg-dry	1	11/16/2016 07:38 AM
m,p-Xylene	ND		0.11	mg/Kg-dry	1	11/16/2016 07:38 AM
o-Xylene	ND		0.053	mg/Kg-dry	1	11/16/2016 07:38 AM
Toluene	ND		0.053	mg/Kg-dry	1	11/16/2016 07:38 AM
Xylenes, Total	ND		0.16	mg/Kg-dry	1	11/16/2016 07:38 AM
Surr: 1,2-Dichloroethane-d4	83.0		70-130	%REC	1	11/16/2016 07:38 AM
Surr: 4-Bromofluorobenzene	94.8		70-130	%REC	1	11/16/2016 07:38 AM
Surr: Dibromofluoromethane	90.2		70-130	%REC	1	11/16/2016 07:38 AM
Surr: Toluene-d8	88.4		70-130	%REC	1	11/16/2016 07:38 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/9/16		Analyst: JB
Electrical Conductivity @ Saturation	45		0.25	mmhos/cm @2	50	11/9/2016 04:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	13		0.69	mg/Kg-dry	1	11/14/2016 03:10 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/7/16		Analyst: BWW
Chromium, Hexavalent	ND		1.4	mg/Kg-dry	1	11/9/2016 09:00 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	28		0.050	% of sample	1	11/10/2016 01:37 PM
PH			SW9045D	Prep: EXTRACT / 11/7/16		Analyst: RZM
pH	7.9			s.u.	1	11/8/2016 09:40 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-BG1

Collection Date: 11/2/2016 02:50 PM

Work Order: 1611393

Lab ID: 1611393-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 11/11/16	Analyst: IT
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	11/12/2016 01:00 AM
Surr: 4-Terphenyl-d14	63.8		39-133	%REC	1	11/12/2016 01:00 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/11/16	Analyst: IT
GRO (C6-C10)	ND		3.5	mg/Kg-dry	1	11/11/2016 07:13 PM
Surr: Toluene-d8	105		50-150	%REC	1	11/11/2016 07:13 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/16/16	Analyst: LR
Mercury	0.017		0.017	mg/Kg-dry	1	11/16/2016 07:35 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/10/16	Analyst: RH
Arsenic	10		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Barium	180		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Cadmium	ND		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Chromium	13		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Copper	15		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Lead	19		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Nickel	22		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Selenium	ND		0.92	mg/Kg-dry	1	11/12/2016 12:55 PM
Silver	ND		0.46	mg/Kg-dry	1	11/12/2016 12:55 PM
Zinc	93		0.92	mg/Kg-dry	1	11/12/2016 12:55 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Calcium	13		5.0	mg/L	10	11/10/2016 01:42 AM
Magnesium	3.9		2.0	mg/L	10	11/10/2016 01:42 AM
Sodium	50		2.0	mg/L	10	11/10/2016 01:42 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/9/16	Analyst: RH
Sodium Adsorption Ratio	3.1		0.010	none	1	11/9/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3546 / 11/11/16	Analyst: JF
Acenaphthene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Anthracene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Benzo(a)anthracene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Benzo(a)pyrene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Benzo(b)fluoranthene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Benzo(k)fluoranthene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Chrysene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Dibenzo(a,h)anthracene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Fluoranthene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Project: Fee 49 Spill

Sample ID: Fee49-BG1

Collection Date: 11/2/2016 02:50 PM

Work Order: 1611393

Lab ID: 1611393-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Indeno(1,2,3-cd)pyrene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Naphthalene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Pyrene	ND		0.0079	mg/Kg-dry	1	11/13/2016 02:51 PM
Surr: 2-Fluorobiphenyl	79.1		12-100	%REC	1	11/13/2016 02:51 PM
Surr: 4-Terphenyl-d14	100		25-137	%REC	1	11/13/2016 02:51 PM
Surr: Nitrobenzene-d5	62.5		37-107	%REC	1	11/13/2016 02:51 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/11/16		Analyst: AK
Benzene	ND		0.041	mg/Kg-dry	1	11/16/2016 08:04 AM
Ethylbenzene	ND		0.041	mg/Kg-dry	1	11/16/2016 08:04 AM
m,p-Xylene	ND		0.083	mg/Kg-dry	1	11/16/2016 08:04 AM
o-Xylene	ND		0.041	mg/Kg-dry	1	11/16/2016 08:04 AM
Toluene	ND		0.041	mg/Kg-dry	1	11/16/2016 08:04 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	11/16/2016 08:04 AM
Surr: 1,2-Dichloroethane-d4	83.7		70-130	%REC	1	11/16/2016 08:04 AM
Surr: 4-Bromofluorobenzene	99.6		70-130	%REC	1	11/16/2016 08:04 AM
Surr: Dibromofluoromethane	90.8		70-130	%REC	1	11/16/2016 08:04 AM
Surr: Toluene-d8	90.2		70-130	%REC	1	11/16/2016 08:04 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/9/16		Analyst: JB
Electrical Conductivity @ Saturation	0.82		0.25	mmhos/cm @2	50	11/9/2016 04:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	13		0.60	mg/Kg-dry	1	11/14/2016 03:10 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/7/16		Analyst: BWW
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/9/2016 09:00 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	16		0.050	% of sample	1	11/10/2016 03:04 PM
PH			SW9045D	Prep: EXTRACT / 11/7/16		Analyst: RZM
pH	8.9			s.u.	1	11/8/2016 09:40 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94410** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-94410-94410				Units: mg/Kg		Analysis Date: 11/11/2016 05:39 PM		
Client ID:		Run ID: GC8_161111B				SeqNo: 4150501		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	2.139	0	3.33	0	64.2	39-133		0		

LCS		Sample ID: DLCSS1-94410-94410				Units: mg/Kg		Analysis Date: 11/11/2016 06:08 PM		
Client ID:		Run ID: GC8_161111B				SeqNo: 4150502		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	253.5	5.0	333	0	76.1	61-109		0		
Surr: 4-Terphenyl-d14	1.88	0	3.33	0	56.5	39-133		0		

MS		Sample ID: 1611542-09B MS				Units: mg/Kg		Analysis Date: 11/11/2016 06:38 PM		
Client ID:		Run ID: GC8_161111B				SeqNo: 4150503		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	250.2	4.8	318.7	17.34	73.1	48-110		0		
Surr: 4-Terphenyl-d14	1.841	0	3.187	0	57.8	39-133		0		

MSD		Sample ID: 1611542-09B MSD				Units: mg/Kg		Analysis Date: 11/11/2016 07:07 PM		
Client ID:		Run ID: GC8_161111B				SeqNo: 4150504		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	278.4	5.0	332.1	17.34	78.6	48-110	250.2	10.6	30	
Surr: 4-Terphenyl-d14	1.874	0	3.321	0	56.4	39-133	1.841	1.77	30	

The following samples were analyzed in this batch:		1611393-01B	1611393-02B	1611393-03A
		1611393-04A		

Client: Olsson Associates
 Work Order: 1611393
 Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94429** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-94429-94429				Units: µg/Kg-dry		Analysis Date: 11/11/2016 05:34 PM		
Client ID:		Run ID: GC9_161111B				SeqNo: 4150494		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4980	0	5000	0	99.6	50-150	0			

LCS		Sample ID: LCS-94429-94429				Units: µg/Kg-dry		Analysis Date: 11/11/2016 05:09 PM		
Client ID:		Run ID: GC9_161111B				SeqNo: 4150493		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	525400	2,500	500000	0	105	70-130	0			
Surr: Toluene-d8	5398	0	5000	0	108	50-150	0			

MS		Sample ID: 1611393-04A MS				Units: µg/Kg-dry		Analysis Date: 11/11/2016 07:38 PM		
Client ID: Fee49-BG1		Run ID: GC9_161111B				SeqNo: 4150499		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	688900	3,500	690500	0	99.8	70-130	0			
Surr: Toluene-d8	7276	0	6905	0	105	50-150	0			

MSD		Sample ID: 1611393-04A MSD				Units: µg/Kg-dry		Analysis Date: 11/11/2016 08:03 PM		
Client ID: Fee49-BG1		Run ID: GC9_161111B				SeqNo: 4150500		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	714800	3,500	690500	0	104	70-130	688900	3.69	30	
Surr: Toluene-d8	7474	0	6905	0	108	50-150	7276	2.68	30	

The following samples were analyzed in this batch:

1611393-01A	1611393-02A	1611393-03A
1611393-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94573** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-94573-94573				Units: mg/Kg		Analysis Date: 11/15/2016 03:15 PM		
Client ID:		Run ID: HG1_161115A				SeqNo: 4154337		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-94573-94573				Units: mg/Kg		Analysis Date: 11/15/2016 03:18 PM		
Client ID:		Run ID: HG1_161115A				SeqNo: 4154338		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1933 0.020 0.1665 0 116 80-120 0

MSD		Sample ID: 1611603-06BMSD				Units: mg/Kg		Analysis Date: 11/15/2016 03:28 PM		
Client ID:		Run ID: HG1_161115A				SeqNo: 4154439		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1224 0.013 0.1087 0.004226 109 75-125 0

MSD		Sample ID: 1611603-06BMSD				Units: mg/Kg		Analysis Date: 11/15/2016 03:30 PM		
Client ID:		Run ID: HG1_161115A				SeqNo: 4154708		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1224 0.013 0.1087 0.004226 109 75-125 0

The following samples were analyzed in this batch:

1611393-01B 1611393-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94594** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-94594-94594				Units: mg/Kg		Analysis Date: 11/16/2016 07:27 PM			
Client ID:		Run ID: HG1_161116A				SeqNo: 4157908		Prep Date: 11/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury ND 0.020

LCS		Sample ID: LCS-94594-94594				Units: mg/Kg		Analysis Date: 11/16/2016 07:30 PM		
Client ID:		Run ID: HG1_161116A			SeqNo: 4157909		Prep Date: 11/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1725 0.020 0.1665 0 104 80-120 0

MS		Sample ID: 1611649-09BMS				Units: mg/Kg		Analysis Date: 11/16/2016 08:21 PM		
Client ID:		Run ID: HG1_161116A			SeqNo: 4157929		Prep Date: 11/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1345 0.014 0.1148 0.01987 99.8 75-125 0

MSD				Sample ID: 1611649-09BMSD				Units: mg/Kg			Analysis Date: 11/16/2016 08:23 PM			
Client ID:				Run ID: HG1_161116A				SeqNo: 4157930			Prep Date: 11/16/2016		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Mercury 0.1277 0.014 0.115 0.01987 93.8 75-125 0.1345 5.15 35

The following samples were analyzed in this batch:

1611393-03A 1611393-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94292** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1611387-02CDUP				Units: mg/L		Analysis Date: 11/10/2016 12:41 A		
Client ID:		Run ID: ICP2_161109A				SeqNo: 4144324		Prep Date: 11/9/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	250.3	5.0	0	0	0	0-0	0			
Magnesium	53.03	2.0	0	0	0	0-0	0			
Sodium	1312	2.0	0	0	0	0-0	0			

The following samples were analyzed in this batch:

1611393-01C	1611393-02C	1611393-03B
1611393-04B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1611393
 Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: 94370 Instrument ID ICP2 Method: SW846 6010C

Sample ID: MBLK-94370-94370				Units: mg/Kg			Analysis Date: 11/12/2016 11:42 A			
Client ID:		Run ID: ICP2_161112A			SeqNo: 4149601		Prep Date: 11/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	0.02655	0.50								J
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.09281	0.50								J

LCS				Sample ID: LCS-94370-94370				Units: mg/Kg			Analysis Date: 11/12/2016 11:48 A		
Client ID:			Run ID: ICP2_161112A				SeqNo: 4149602			Prep Date: 11/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Arsenic	5.282	0.25	5	0	106	80-120	0						
Barium	4.893	0.25	5	0	97.9	80-120	0						
Cadmium	5.198	0.50	5	0	104	80-120	0						
Chromium	5.178	0.25	5	0	104	80-120	0						
Copper	4.961	0.50	5	0	99.2	80-120	0						
Lead	5.149	0.25	5	0	103	80-120	0						
Nickel	5.084	0.25	5	0	102	80-120	0						
Selenium	4.961	0.50	5	0	99.2	80-120	0						
Silver	4.66	0.25	5	0	93.2	80-120	0						
Zinc	5.121	0.50	5	0	102	80-120	0						

MS				Sample ID: 1611649-09BMS			Units: mg/Kg		Analysis Date: 11/12/2016 02:30 PM		
Client ID:			Run ID: ICP2_161112A			SeqNo: 4149630		Prep Date: 11/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	11.83	0.36	7.123	4.281	106	75-125	0				
Barium	91.03	0.36	7.123	74.94	226	75-125	0			SO	
Cadmium	7.466	0.71	7.123	0.02343	104	75-125	0				
Chromium	18.59	0.36	7.123	11.09	105	75-125	0				
Copper	16.99	0.71	7.123	9.865	100	75-125	0				
Lead	13.54	0.36	7.123	6.012	106	75-125	0				
Nickel	22.24	0.36	7.123	13.63	121	75-125	0				
Selenium	6.351	0.71	7.123	-0.2548	92.7	75-125	0				
Silver	6.436	0.36	7.123	-0.1836	92.9	75-125	0				
Zinc	35.98	0.71	7.123	26.43	134	75-125	0			S	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94370** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1611649-09BMSD				Units: mg/Kg		Analysis Date: 11/12/2016 02:35 PM		
Client ID:		Run ID: ICP2_161112A				SeqNo: 4149631		Prep Date: 11/10/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.35	0.35	7.092	4.281	114	75-125	11.83	4.28	20	
Barium	97.93	0.35	7.092	74.94	324	75-125	91.03	7.31	20	SO
Cadmium	7.693	0.71	7.092	0.02343	108	75-125	7.466	2.99	20	
Chromium	19.02	0.35	7.092	11.09	112	75-125	18.59	2.29	20	
Copper	16.87	0.71	7.092	9.865	98.8	75-125	16.99	0.726	20	
Lead	15.66	0.35	7.092	6.012	136	75-125	13.54	14.5	20	S
Nickel	23.17	0.35	7.092	13.63	135	75-125	22.24	4.1	20	S
Selenium	6.452	0.71	7.092	-0.2548	94.6	75-125	6.351	1.58	20	
Silver	6.346	0.35	7.092	-0.1836	92.1	75-125	6.436	1.41	20	
Zinc	36.68	0.71	7.092	26.43	144	75-125	35.98	1.93	20	S

The following samples were analyzed in this batch:

1611393-01B
 1611393-04A

1611393-02B

1611393-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1611393
 Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: 94409 Instrument ID SVMS5 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-94409-94409				Units: µg/Kg		Analysis Date: 11/13/2016 12:45 PM		
Client ID:		Run ID: SVMS5_161113A				SeqNo: 4150862		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	2733	0	3333	0	82	12-100	0			
Surr: 4-Terphenyl-d14	2845	0	3333	0	85.3	25-137	0			
Surr: Nitrobenzene-d5	2095	0	3333	0	62.9	37-107	0			

LCS		Sample ID: SLCSS1-94409-94409				Units: µg/Kg		Analysis Date: 11/13/2016 01:08 PM		
Client ID:		Run ID: SVMS5_161113A				SeqNo: 4150864		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1027	6.7	1333	0	77.1	45-110	0			
Anthracene	1101	6.7	1333	0	82.6	55-105	0			
Benzo(a)anthracene	1148	6.7	1333	0	86.1	50-110	0			
Benzo(a)pyrene	1091	6.7	1333	0	81.8	50-110	0			
Benzo(b)fluoranthene	1045	6.7	1333	0	78.4	45-115	0			
Benzo(k)fluoranthene	1144	6.7	1333	0	85.8	45-115	0			
Chrysene	1127	6.7	1333	0	84.6	55-110	0			
Dibenzo(a,h)anthracene	1212	6.7	1333	0	90.9	40-125	0			
Fluoranthene	1052	6.7	1333	0	78.9	55-115	0			
Fluorene	1080	6.7	1333	0	81	50-110	0			
Indeno(1,2,3-cd)pyrene	1073	6.7	1333	0	80.5	40-120	0			
Naphthalene	845.3	6.7	1333	0	63.4	40-105	0			
Pyrene	1263	6.7	1333	0	94.7	45-125	0			
Surr: 2-Fluorobiphenyl	2799	0	3333	0	84	12-100	0			
Surr: 4-Terphenyl-d14	2879	0	3333	0	86.4	25-137	0			
Surr: Nitrobenzene-d5	2109	0	3333	0	63.3	37-107	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1611393
 Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: 94409 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1611393-04A MS			Units: µg/Kg		Analysis Date: 11/13/2016 02:05 PM		
Client ID: Fee49-BG1			Run ID: SVMS5_161113A			SeqNo: 4150867		Prep Date: 11/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	963.6	6.6	1320	0	73	45-110	0				
Anthracene	1026	6.6	1320	0	77.7	55-105	0				
Benzo(a)anthracene	1063	6.6	1320	0	80.6	50-110	0				
Benzo(a)pyrene	996.6	6.6	1320	0	75.5	50-110	0				
Benzo(b)fluoranthene	987.4	6.6	1320	0	74.8	45-115	0				
Benzo(k)fluoranthene	1056	6.6	1320	0	80	45-115	0				
Chrysene	1038	6.6	1320	0	78.6	55-110	0				
Dibenzo(a,h)anthracene	1105	6.6	1320	0	83.7	40-125	0				
Fluoranthene	1008	6.6	1320	0	76.4	55-115	0				
Fluorene	1029	6.6	1320	0	78	50-110	0				
Indeno(1,2,3-cd)pyrene	980.1	6.6	1320	0	74.3	40-120	0				
Naphthalene	844.2	6.6	1320	0	64	40-105	0				
Pyrene	1107	6.6	1320	0	83.9	45-125	0				
Surr: 2-Fluorobiphenyl	2650	0	3300	0	80.3	12-100	0				
Surr: 4-Terphenyl-d14	2597	0	3300	0	78.7	25-137	0				
Surr: Nitrobenzene-d5	2089	0	3300	0	63.3	37-107	0				

MSD				Sample ID: 1611393-04A MSD			Units: µg/Kg		Analysis Date: 11/13/2016 02:28 PM	
Client ID: Fee49-BG1			Run ID: SVMS5_161113A		SeqNo: 4150868		Prep Date: 11/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	953.1	6.7	1331	0	71.6	45-110	963.6	1.1	30	
Anthracene	1020	6.7	1331	0	76.6	55-105	1026	0.591	30	
Benzo(a)anthracene	1063	6.7	1331	0	79.9	50-110	1063	0.0377	30	
Benzo(a)pyrene	996.3	6.7	1331	0	74.9	50-110	996.6	0.0295	30	
Benzo(b)fluoranthene	975.7	6.7	1331	0	73.3	45-115	987.4	1.19	30	
Benzo(k)fluoranthene	1072	6.7	1331	0	80.5	45-115	1056	1.46	30	
Chrysene	1018	6.7	1331	0	76.5	55-110	1038	1.94	30	
Dibenzo(a,h)anthracene	1070	6.7	1331	0	80.4	40-125	1105	3.25	30	
Fluoranthene	977	6.7	1331	0	73.4	55-115	1008	3.11	30	
Fluorene	1045	6.7	1331	0	78.5	50-110	1029	1.54	30	
Indeno(1,2,3-cd)pyrene	959.1	6.7	1331	0	72.1	40-120	980.1	2.17	30	
Naphthalene	833.3	6.7	1331	0	62.6	40-105	844.2	1.3	30	
Pyrene	1274	6.7	1331	0	95.7	45-125	1107	14	30	
Surr: 2-Fluorobiphenyl	2557	0	3327	0	76.8	12-100	2650	3.57	40	
Surr: 4-Terphenyl-d14	2970	0	3327	0	89.2	25-137	2597	13.4	40	
Surr: Nitrobenzene-d5	2091	0	3327	0	62.8	37-107	2089	0.0739	40	

The following samples were analyzed in this batch:

1611393-01B	1611393-02B	1611393-03A
1611393-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1611393
 Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: 94426 Instrument ID VMS7 Method: SW8260B

MBLK		Sample ID: MBLK-94426-94426				Units: µg/Kg-dry		Analysis Date: 11/11/2016 10:03 PM		
Client ID:		Run ID: VMS7_161111B				SeqNo: 4149082		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	981	0	1000	0	98.1	70-130	0			
Surr: 4-Bromofluorobenzene	955	0	1000	0	95.5	70-130	0			
Surr: Dibromofluoromethane	934.5	0	1000	0	93.4	70-130	0			
Surr: Toluene-d8	991.5	0	1000	0	99.2	70-130	0			

LCS		Sample ID: LCS-94426-94426				Units: µg/Kg-dry		Analysis Date: 11/11/2016 09:01 PM		
Client ID:		Run ID: VMS7_161111B				SeqNo: 4149081		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1105	30	1000	0	110	75-125	0			
Ethylbenzene	1101	30	1000	0	110	75-125	0			
m,p-Xylene	2218	60	2000	0	111	80-125	0			
o-Xylene	1094	30	1000	0	109	75-125	0			
Toluene	1082	30	1000	0	108	70-125	0			
Xylenes, Total	3313	90	3000	0	110	75-125	0			
Surr: 1,2-Dichloroethane-d4	979.5	0	1000	0	98	70-130	0			
Surr: 4-Bromofluorobenzene	997.5	0	1000	0	99.8	70-130	0			
Surr: Dibromofluoromethane	995.5	0	1000	0	99.6	70-130	0			
Surr: Toluene-d8	993	0	1000	0	99.3	70-130	0			

MS		Sample ID: 1611393-04A MS				Units: µg/Kg-dry		Analysis Date: 11/16/2016 01:19 PM		
Client ID: Fee49-BG1		Run ID: VMS5_161115B				SeqNo: 4156779		Prep Date: 11/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1583	41	1381	0	115	75-125	0			
Ethylbenzene	1440	41	1381	0	104	75-125	0			
m,p-Xylene	2894	83	2762	0	105	80-125	0			
o-Xylene	1422	41	1381	0	103	75-125	0			
Toluene	1430	41	1381	0	104	70-125	0			
Xylenes, Total	4315	120	4143	0	104	75-125	0			
Surr: 1,2-Dichloroethane-d4	1131	0	1381	0	81.9	70-130	0			
Surr: 4-Bromofluorobenzene	1371	0	1381	0	99.2	70-130	0			
Surr: Dibromofluoromethane	1315	0	1381	0	95.2	70-130	0			
Surr: Toluene-d8	1255	0	1381	0	90.8	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94426** Instrument ID **VMS7** Method: **SW8260B**

MSD				Sample ID: 1611393-04A MSD			Units: µg/Kg-dry		Analysis Date: 11/16/2016 01:45 PM		
Client ID: Fee49-BG1			Run ID: VMS5_161115B			SeqNo: 4156780		Prep Date: 11/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1643	41	1381	0	119	75-125	1583	3.73	30		
Ethylbenzene	1558	41	1381	0	113	75-125	1440	7.83	30		
m,p-Xylene	3115	83	2762	0	113	80-125	2894	7.38	30		
o-Xylene	1514	41	1381	0	110	75-125	1422	6.3	30		
Toluene	1540	41	1381	0	112	70-125	1430	7.44	30		
Xylenes, Total	4630	120	4143	0	112	75-125	4315	7.02	30		
Surr: 1,2-Dichloroethane-d4	1157	0	1381	0	83.8	70-130	1131	2.29	30		
Surr: 4-Bromofluorobenzene	1384	0	1381	0	100	70-130	1371	0.953	30		
Surr: Dibromofluoromethane	1294	0	1381	0	93.7	70-130	1315	1.59	30		
Surr: Toluene-d8	1265	0	1381	0	91.6	70-130	1255	0.822	30		

The following samples were analyzed in this batch:

1611393-01A	1611393-02A	1611393-03A
1611393-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94179** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-94179-94179					Units: s.u.		Analysis Date: 11/8/2016 09:40 AM		
Client ID:		Run ID: WETCHEM_161108J			SeqNo: 4140785		Prep Date: 11/7/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	3.95	0	4	0	98.8	90-110	0			
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DUP				Sample ID: 1611393-01B DUP				Units: s.u.			Analysis Date: 11/8/2016 09:40 AM			
Client ID: Fee49-SS1				Run ID: WETCHEM_161108J				SeqNo: 4140792			Prep Date: 11/7/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH	7.56	0	0	0	0	0-0	7.09	6.42	20	
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DUP		Sample ID: 1611395-01B DUP					Units: s.u.		Analysis Date: 11/8/2016 09:40 AM		
Client ID:			Run ID: WETCHEM_161108J			SeqNo: 4140797		Prep Date: 11/7/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.19	0	0	0	0	0-0	8.35	1.93	20	
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The following samples were analyzed in this batch:

1611393-01B	1611393-02B	1611393-03A
1611393-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94184** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-94184-94184				Units: mg/Kg		Analysis Date: 11/9/2016 09:00 AM		
Client ID:		Run ID: WETCHEM_161109H				SeqNo: 4142640		Prep Date: 11/7/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.96

LCS		Sample ID: LCS-94184-94184				Units: mg/Kg		Analysis Date: 11/9/2016 09:00 AM		
Client ID:		Run ID: WETCHEM_161109H				SeqNo: 4142641		Prep Date: 11/7/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.725 0.98 4.902 0 96.4 80-120 0

MS		Sample ID: 1611393-04A MS				Units: mg/Kg		Analysis Date: 11/9/2016 09:00 AM		
Client ID: Fee49-BG1		Run ID: WETCHEM_161109H				SeqNo: 4142652		Prep Date: 11/7/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.078 0.97 4.854 0.2157 79.6 75-125 0

MS		Sample ID: 1611393-04A MSI				Units: mg/Kg		Analysis Date: 11/9/2016 09:00 AM		
Client ID: Fee49-BG1		Run ID: WETCHEM_161109H				SeqNo: 4142654		Prep Date: 11/7/2016		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3087 99 3393 0.2157 91 75-125 0

MSD		Sample ID: 1611393-04A MSD				Units: mg/Kg		Analysis Date: 11/9/2016 09:00 AM		
Client ID: Fee49-BG1		Run ID: WETCHEM_161109H				SeqNo: 4142653		Prep Date: 11/7/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.951 0.97 4.854 0.2157 77 75-125 4.078 3.14 20

The following samples were analyzed in this batch:

1611393-01B	1611393-02B	1611393-03A
1611393-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **94292** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1611387-02C DUP				Units: mmhos/cm @25°		Analysis Date: 11/9/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_1611090				SeqNo: 4143384		Prep Date: 11/9/2016		DF: 50
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	12.3	0.25	0	0	0		11.45	7.16	50	

The following samples were analyzed in this batch:

1611393-01C	1611393-02C	1611393-03B
1611393-04B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **R200352** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R200352				Units: % of sample		Analysis Date: 11/10/2016 01:37 PM		
Client ID:		Run ID: MOIST_161110A				SeqNo: 4147178		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS				Sample ID: LCS-R200352				Units: % of sample			Analysis Date: 11/10/2016 01:37 PM		
Client ID:				Run ID: MOIST_161110A				SeqNo: 4147177		Prep Date:		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP				Sample ID: 1611391-01A DUP				Units: % of sample			Analysis Date: 11/10/2016 01:37 PM			
Client ID:				Run ID: MOIST_161110A				SeqNo: 4147147			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 21.02 0.050 0 0 0 20.8 1.05 20

DUP				Sample ID: 1611393-03A DUP				Units: % of sample			Analysis Date: 11/10/2016 01:37 PM			
Client ID: Fee49-SS3				Run ID: MOIST_161110A				SeqNo: 4147161			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 25.65 0.050 0 0 0 27.54 7.11 20

The following samples were analyzed in this batch:

1611393-01B 1611393-02B 1611393-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1611393
Project: Fee 49 Spill

QC BATCH REPORT

Batch ID: **R200355** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R200355				Units: % of sample		Analysis Date: 11/10/2016 03:04 PM		
Client ID:		Run ID: MOIST_161110B				SeqNo: 4147221		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R200355				Units: % of sample		Analysis Date: 11/10/2016 03:04 PM		
Client ID:		Run ID: MOIST_161110B				SeqNo: 4147220		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP				Sample ID: 1611395-01B DUP				Units: % of sample			Analysis Date: 11/10/2016 03:04 PM			
Client ID:				Run ID: MOIST_161110B				SeqNo: 4147191			Prep Date:		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 16.78 0.050 0 0 0 19.34 14.2 20

The following samples were analyzed in this batch:

1611393-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #: 1611393

Customer Information

Project Information

Parameter/Method Request for Analysis

Purchase Order		Project Name	Fee 49 Spill	A	TPH (GRO & DRO)
Work Order		Project Number	013.3287.300.300004	B	BTEX
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C	PAH (See Attached List) CO Table 910
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky	D	Electrical Conductivity
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102	E	Sodium Adsorption Ratio
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506	F	pH
Phone	970.283.7800	Phone	970.283.7800	G	Metals (See Attached List) CO Table 910
Fax	970.283.7456	Fax	970.283.7456	H	Arsenic Only
e-Mail Address	tdobransky@olssonassoc.com	e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Fee49-SS1	11/02/16	1420	Soil	8	3	X	X	X	X	X	X	X				
2	Fee49-SS2	11/02/16	1430	Soil	8	3	X	X	X	X	X	X	X				
3	Fee49-SS3	11/02/16	1440	Soil	8	2	X	X	X	X	X	X	X				
4	Fee49-BG1	11/02/16	1450	Soil	8	2	X	X	X	X	X	X	X				
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

Sampler(s): Please Print & Sign Jason McLarty		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:		Date: 11/3/16	Time:	Received by:		Notes: Chevron Pricing Applies - Per Bruce Schlatter	
Relinquished by:		Date: 11/3/16	Time: 1730	Received by (Laboratory):		QC Package: (Check Box Below)	
Logged by (Laboratory):		Date: 11/4/16	Time: 1730	Checked by (Laboratory):		Cooler Temp: 36°	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 deprec 9-5035				<input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:			

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **04-Nov-16 09:30**

Work Order: **1611393**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

04-Nov-16
Date

Reviewed by: Chad Whelton
eSignature

06-Nov-16
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.6/3.6 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>11/4/2016 5:35:43 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



31-Jul-2018

Tim Dobransky
Olsson Associates
760 Horizon Drive
Suite 102
Grand Junction, CO 81506

Re: **Fee 49 Spill Resampling**

Work Order: **1807961**

Dear Tim,

ALS Environmental received 3 samples on 17-Jul-2018 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Fee 49 Spill Resampling
Work Order: 1807961

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1807961-01	Fee49-SS1	Soil		7/13/2018 09:50	7/17/2018 09:00	<input type="checkbox"/>
1807961-02	Fee49-SS2	Soil		7/13/2018 10:00	7/17/2018 09:00	<input type="checkbox"/>
1807961-03	Fee49-SS3	Soil		7/13/2018 10:05	7/17/2018 09:00	<input type="checkbox"/>

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Fee 49 Spill Resampling
Sample ID: Fee49-SS1
Collection Date: 7/13/2018 09:50 AM

Work Order: 1807961
Lab ID: 1807961-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			Method: SW846 8270D		Prep: SW3546 / 7/20/18		Analyst: RM
Acenaphthene	U		0.030	0.062	mg/Kg-dry	1	7/23/2018 18:10
Anthracene	U		0.017	0.062	mg/Kg-dry	1	7/23/2018 18:10
Benzo(a)anthracene	U		0.016	0.062	mg/Kg-dry	1	7/23/2018 18:10
Benzo(a)pyrene	U		0.026	0.062	mg/Kg-dry	1	7/23/2018 18:10
Benzo(b)fluoranthene	U		0.019	0.062	mg/Kg-dry	1	7/23/2018 18:10
Benzo(k)fluoranthene	U		0.022	0.062	mg/Kg-dry	1	7/23/2018 18:10
Chrysene	U		0.022	0.062	mg/Kg-dry	1	7/23/2018 18:10
Dibenzo(a,h)anthracene	U		0.039	0.062	mg/Kg-dry	1	7/23/2018 18:10
Fluoranthene	U		0.037	0.062	mg/Kg-dry	1	7/23/2018 18:10
Fluorene	U		0.018	0.062	mg/Kg-dry	1	7/23/2018 18:10
Indeno(1,2,3-cd)pyrene	U		0.048	0.062	mg/Kg-dry	1	7/23/2018 18:10
Naphthalene	U		0.023	0.062	mg/Kg-dry	1	7/23/2018 18:10
Pyrene	U		0.028	0.062	mg/Kg-dry	1	7/23/2018 18:10
Surr: 2-Fluorobiphenyl	80.0			20-140	%REC	1	7/23/2018 18:10
Surr: 4-Terphenyl-d14	67.9			22-172	%REC	1	7/23/2018 18:10
Surr: Nitrobenzene-d5	66.1			28-140	%REC	1	7/23/2018 18:10
MOISTURE			Method: SW3550C				Analyst: NW
Moisture	1.6		0.025	0.050	% of sample	1	7/26/2018 12:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Fee 49 Spill Resampling
Sample ID: Fee49-SS2
Collection Date: 7/13/2018 10:00 AM

Work Order: 1807961
Lab ID: 1807961-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 7/23/18		Analyst: STP
Calcium	490		0.86	5.0	mg/L	10	7/23/2018 21:38
Magnesium	61		0.068	2.0	mg/L	10	7/23/2018 21:38
Sodium	85		0.34	2.0	mg/L	10	7/23/2018 21:38
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/23/18		Analyst: STP
Sodium Adsorption Ratio	0.96		0.010	0.010	none	1	7/23/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/23/18		Analyst: JB
Electrical Conductivity @ Saturation	3.4		0.014	0.12	mmhos/cm @25°	25	7/24/2018 14:40

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Fee 49 Spill Resampling
Sample ID: Fee49-SS3
Collection Date: 7/13/2018 10:05 AM

Work Order: 1807961
Lab ID: 1807961-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 7/23/18		Analyst: STP
Calcium	210		0.86	5.0	mg/L	10	7/23/2018 21:40
Magnesium	35		0.068	2.0	mg/L	10	7/23/2018 21:40
Sodium	16		0.34	2.0	mg/L	10	7/23/2018 21:40
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/23/18		Analyst: STP
Sodium Adsorption Ratio	0.28		0.010	0.010	none	1	7/23/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/23/18		Analyst: JB
Electrical Conductivity @ Saturation	1.2		0.014	0.12	mmhos/cm @25°	25	7/24/2018 14:40

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Olsson Associates
Work Order: 1807961
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **121697** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1807961-03ADUP				Units: mg/L		Analysis Date: 7/23/2018 09:42 PM		
Client ID: Fee49-SS3		Run ID: ICPMS3_180723A				SeqNo: 5163147		Prep Date: 7/23/2018		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	177.5	5.0	0	0	0	0-0	205.6	14.6		
Magnesium	29.51	2.0	0	0	0	0-0	35.09	17.3		
Sodium	14.66	2.0	0	0	0	0-0	16.44	11.4		

The following samples were analyzed in this batch:

1807961-02A 1807961-03A

Batch ID: **121697** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1807961-03ADUP				Units: none		Analysis Date: 7/23/2018		
Client ID: Fee49-SS3		Run ID: SAR_180723A				SeqNo: 5172824		Prep Date: 7/23/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.2684	0.010	0	0	0		0.2789	3.83	50	

The following samples were analyzed in this batch:

1807961-02A 1807961-03A

Client: Olsson Associates
Work Order: 1807961
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **121616** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-121616-121616				Units: µg/Kg		Analysis Date: 7/23/2018 10:26 AM	
Client ID:			Run ID: SVMS6_180723A			SeqNo: 5161602		Prep Date: 7/20/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	U	42									
Anthracene	U	42									
Benzo(a)anthracene	U	42									
Benzo(a)pyrene	U	42									
Benzo(b)fluoranthene	U	42									
Benzo(k)fluoranthene	U	42									
Chrysene	U	42									
Dibenzo(a,h)anthracene	U	42									
Fluoranthene	U	42									
Fluorene	U	42									
Indeno(1,2,3-cd)pyrene	U	42									
Naphthalene	U	42									
Pyrene	U	42									
Surr: 2-Fluorobiphenyl	3173	0	3333	0	95.2	20-140	0				
Surr: 4-Terphenyl-d14	2981	0	3333	0	89.5	22-172	0				
Surr: Nitrobenzene-d5	2804	0	3333	0	84.1	28-140	0				

LCS				Sample ID: SLCSS1-121616-121616			Units: µg/Kg		Analysis Date: 7/23/2018 10:41 AM		
Client ID:			Run ID: SVMS6_180723A			SeqNo: 5161603		Prep Date: 7/20/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1387	42	1333	0	104	40-140	0				
Anthracene	1569	42	1333	0	118	40-140	0				
Benzo(a)anthracene	1409	42	1333	0	106	40-140	0				
Benzo(a)pyrene	1393	42	1333	0	104	40-140	0				
Benzo(b)fluoranthene	1287	42	1333	0	96.6	40-140	0				
Benzo(k)fluoranthene	1179	42	1333	0	88.4	40-140	0				
Chrysene	1158	42	1333	0	86.9	40-140	0				
Dibenzo(a,h)anthracene	1561	42	1333	0	117	40-140	0				
Fluoranthene	1281	42	1333	0	96.1	40-140	0				
Fluorene	1351	42	1333	0	101	40-140	0				
Indeno(1,2,3-cd)pyrene	1568	42	1333	0	118	40-140	0				
Naphthalene	1521	42	1333	0	114	40-140	0				
Pyrene	1308	42	1333	0	98.2	40-140	0				
<i>Surr: 2-Fluorobiphenyl</i>	3433	0	3333	0	103	20-140	0				
<i>Surr: 4-Terphenyl-d14</i>	2993	0	3333	0	89.8	22-172	0				
<i>Surr: Nitrobenzene-d5</i>	3714	0	3333	0	111	28-140	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1807961
 Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: 121616 Instrument ID SVMS6 Method: SW846 8270D

MS				Sample ID: 18071000-01A MS				Units: µg/Kg		Analysis Date: 7/23/2018 10:56 AM	
Client ID:			Run ID: SVMS6_180723A			SeqNo: 5161604		Prep Date: 7/20/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1192	41	1325	0	90	40-140	0				
Anthracene	1462	41	1325	0	110	40-140	0				
Benzo(a)anthracene	1482	41	1325	0	112	40-140	0				
Benzo(a)pyrene	1286	41	1325	0	97.1	40-140	0				
Benzo(b)fluoranthene	1354	41	1325	0	102	40-140	0				
Benzo(k)fluoranthene	1121	41	1325	0	84.6	40-140	0				
Chrysene	1181	41	1325	0	89.1	40-140	0				
Dibenzo(a,h)anthracene	1241	41	1325	0	93.7	40-140	0				
Fluoranthene	1317	41	1325	0	99.4	40-140	0				
Fluorene	1640	41	1325	263.3	104	40-140	0				
Indeno(1,2,3-cd)pyrene	1407	41	1325	0	106	40-140	0				
Naphthalene	1680	41	1325	404.5	96.3	40-140	0				
Pyrene	1598	41	1325	0	121	40-140	0				
Surr: 2-Fluorobiphenyl	3024	0	3312	0	91.3	20-140	0				
Surr: 4-Terphenyl-d14	3332	0	3312	0	101	22-172	0				
Surr: Nitrobenzene-d5	2547	0	3312	0	76.9	28-140	0				

MSD				Sample ID: 18071000-01A MSD				Units: µg/Kg		Analysis Date: 7/23/2018 11:11 AM	
Client ID:			Run ID: SVMS6_180723A			SeqNo: 5161605		Prep Date: 7/20/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1051	40	1292	0	81.4	40-140	1192	12.6	30		
Anthracene	1364	40	1292	0	106	40-140	1462	6.96	30		
Benzo(a)anthracene	1366	40	1292	0	106	40-140	1482	8.17	30		
Benzo(a)pyrene	1057	40	1292	0	81.9	40-140	1286	19.5	30		
Benzo(b)fluoranthene	1125	40	1292	0	87.1	40-140	1354	18.5	30		
Benzo(k)fluoranthene	1055	40	1292	0	81.7	40-140	1121	6	30		
Chrysene	1125	40	1292	0	87.1	40-140	1181	4.86	30		
Dibenzo(a,h)anthracene	1235	40	1292	0	95.6	40-140	1241	0.503	30		
Fluoranthene	1210	40	1292	0	93.7	40-140	1317	8.46	30		
Fluorene	1352	40	1292	263.3	84.3	40-140	1640	19.3	30		
Indeno(1,2,3-cd)pyrene	1337	40	1292	0	104	40-140	1407	5.09	30		
Naphthalene	1718	40	1292	404.5	102	40-140	1680	2.27	30		
Pyrene	1604	40	1292	0	124	40-140	1598	0.392	30		
Surr: 2-Fluorobiphenyl	2952	0	3230	0	91.4	20-140	3024	2.43	0		
Surr: 4-Terphenyl-d14	3463	0	3230	0	107	22-172	3332	3.86	0		
Surr: Nitrobenzene-d5	1204	0	3230	0	37.3	28-140	2547	71.6	0		

The following samples were analyzed in this batch:

1807961-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1807961
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **121697** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1807961-03A DUP				Units: mmhos/cm @25°		Analysis Date: 7/24/2018 02:40 PM		
Client ID: Fee49-SS3			Run ID: WETCHEM_180724H			SeqNo: 5164875		Prep Date: 7/23/2018		DF: 25
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.195	0.12	0	0	0		1.2	0.418	50	

The following samples were analyzed in this batch:

1807961-02A	1807961-03A
-------------	-------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1807961
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **R241042** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R241042					Units: % of sample		Analysis Date: 7/26/2018 12:00 PM		
Client ID:			Run ID: MOIST_180726A			SeqNo: 5171561		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture U 0.050

LCS		Sample ID: LCS-R241042					Units: % of sample		Analysis Date: 7/26/2018 12:00 PM		
Client ID:			Run ID: MOIST_180726A			SeqNo: 5171560		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 18071065-01A DUP					Units: % of sample		Analysis Date: 7/26/2018 12:00 PM		
Client ID:			Run ID: MOIST_180726A			SeqNo: 5171545		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 50.13 0.050 0 0 0 0-0 50.57 0.874 10

DUP		Sample ID: 18071065-10A DUP					Units: % of sample		Analysis Date: 7/26/2018 12:00 PM		
Client ID:			Run ID: MOIST_180726A			SeqNo: 5171555		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 24.7 0.050 0 0 0 0-0 24.76 0.243 10

The following samples were analyzed in this batch:

1807961-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #:

1207961

Customer Information

Project Information

Parameter/Method Request for Analysis

Purchase Order

Work Order

Company Name Olsson Associates

Send Report To Tim Dobransky

Address

City/State/Zip

Phone

Fax

e-Mail Address tdobransky@entradainc.com

Project Name Fee 49 Spill Resampling

Project Number 013.3287.300.300004

Bill To Company Olsson Associates

Invoice Attn. Dana Mack

Address 760 Horizon Drive, Ste. 102

City/State/Zip Grand Junction, CO 81506

Phone 970.263.7800

Fax 970.263.7456

e-Mail Address dmack@olssonassociates.com

A TPH (GRO & DRO)

B BTEX

C PAH (See Attached List) CO Table 910

D Electrical Conductivity

E Sodium Adsorption Ratio

F pH

G Metals (See Attached List) CO Table 910

H Arsenic Only

I

J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Fee49-SS1	07/13/18	950	Soil	8	1			X								
2	Fee49-SS2	07/13/18	1000	Soil	8	1				X	X						
3	Fee49-SS3	07/13/18	1005	Soil	8	1				X	X						
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	

Sampler(s): Please Print & Sign

Tim Dobransky

Shipment Method:

FedEx

Required Turnaround Time:

☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

☐ Other

Results Due Date:

Relinquished by:

Date: 7/16/18

Time:

Received by:

Received by (Laboratory):

Notes:

Chevron Pricing Applies - Per Bruce Schlatter

Relinquished by:

Date: 7/16/18

Time: 1830

Received by (Laboratory):

Checked by (Laboratory):

Cooler Temp.

4.2°

QC Package: (Check Box Below)

☒ Level II: Standard QC

☐ Level III: Std QC + Raw Data

☐ Level IV: SW846 CLP-Like

Other:

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

52°

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **17-Jul-18 09:00**

Work Order: **1807961**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

17-Jul-18
Date

Reviewed by: Chad Whelton
eSignature

18-Jul-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/17/2018 4:05:21 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



20-Sep-2018

Tim Dobransky
Entrada Consulting Group
240 Mesa Ave.
Grand Junction, CO 81501

Re: **Fee 49 Spill Resampling**

Work Order: **1809510**

Dear Tim,

ALS Environmental received 1 sample on 17-Jul-2018 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 7.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
Work Order: 1809510

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1809510-01	Fee49-SS1	Soil		7/13/2018 09:50	7/17/2018	<input type="checkbox"/>

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
WorkOrder: 1809510

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

ALS Group, USA**Date:** 20-Sep-18

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
Sample ID: Fee49-SS1
Collection Date: 7/13/2018 09:50 AM

Work Order: 1809510
Lab ID: 1809510-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 9/13/18		Analyst: STP
Calcium	30		0.86	5.0	mg/L	10	9/14/2018 10:54
Magnesium	7.0		0.068	2.0	mg/L	10	9/14/2018 10:54
Sodium	5.2		0.34	2.0	mg/L	10	9/14/2018 10:54
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 9/13/18		Analyst: STP
Sodium Adsorption Ratio	0.22		0.010	0.010	none	1	9/14/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 9/13/18		Analyst: JB
Electrical Conductivity @ Saturation	0.34		0.011	0.10	mmhos/cm @25°	20	9/14/2018 11:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Entrada Consulting Group
Work Order: 1809510
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **124493** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1809343-01ADUP				Units: mg/L		Analysis Date: 9/14/2018 10:46 AM		
Client ID:		Run ID: ICPMS3_180914A				SeqNo: 5256816		Prep Date: 9/13/2018		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	67.64	5.0	0	0	0	0-0	65.38	3.39		
Magnesium	16.49	2.0	0	0	0	0-0	15.57	5.73		
Sodium	291.2	2.0	0	0	0	0-0	275.2	5.66		

The following samples were analyzed in this batch:

1809510-01A

Batch ID: **124493** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1809343-01ADUP				Units: none		Analysis Date: 9/14/2018		
Client ID:		Run ID: SAR_180914A				SeqNo: 5257196		Prep Date: 9/13/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	8.235	0.010	0	0	0		7.941	3.63	50	

The following samples were analyzed in this batch:

1809510-01A

Batch ID: **124493** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1809343-01A DUP				Units: mmhos/cm @25°		Analysis Date: 9/14/2018 11:00 AM		
Client ID:		Run ID: WETCHEM_180914G				SeqNo: 5256514		Prep Date: 9/13/2018		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.01	0.10	0	0	0		1.95	3.03	50	

The following samples were analyzed in this batch:

1809510-01A



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #:

1809510

Customer Information		Project Information						Parameter/Method Request for Analysis											
Purchase Order		Project Name	Fee 49 Spill Resampling					A TPH (GRO & DRO)											
Work Order		Project Number						B BTEX											
Company Name	Entrada Consulting Group	Bill To Company	Entrada Consulting Group					C PAH (See Attached List) CO Table 910											
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky					D Electrical Conductivity											
Address	330 Grand Ave, Unit C	Address	330 Grand Ave, Unit C					E Sodium Adsorption Ratio											
								F pH											
City/State/Zip	Grand Junction, CO 81501	City/State/Zip	Grand Junction, CO 81501					G Metals (See Attached List) CO Table 910											
Phone	970.270.2986	Phone	970.270.2986					H Arsenic Only											
Fax		Fax						I											
e-Mail Address	tdobransky@entradainc.com	e-Mail Address	tdobransky@entradainc.com					J											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	Fee49-SS1	07/13/18	950	Soil	8	1				X	X								
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour			Other _____			Results Due Date:									
Relinquished by:		Date:	9/11/2018	Time:		Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter												
Relinquished by:		Date:		Time:		Received by (Laboratory):	Cooler Temp:	QC Package: (Check Box Below)											
Logged by (Laboratory):		Date:		Time:		Checked by (Laboratory):		x	Level II: Standard QC										
									Level III: Std QC + Raw Data										
									Level IV: SW846 CLP-Like										
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035								Other: _____											

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **17-Jul-18 00:00**

Work Order: **1809510**

Received by: **KRW**

Checklist completed by *Chad Whelton*
eSignature

11-Sep-18
Date

Reviewed by: *Chad Whelton*
eSignature

11-Sep-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/17/2018 4:05:21 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



08-Apr-2021

Tim Dobransky
Entrada Consulting Group
240 Mesa Ave.
Grand Junction, CO 81501

Re: **Fee 49 Spill Resampling**

Work Order: **21040269**

Dear Tim,

ALS Environmental received 1 sample on 03-Apr-2021 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
Work Order: 21040269**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21040269-01	Fee49-SS1	Soil		4/1/2021 08:20	4/3/2021 09:30	<input type="checkbox"/>

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
WorkOrder: 21040269

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 08-Apr-21

Client: Entrada Consulting Group
Project: Fee 49 Spill Resampling
Sample ID: Fee49-SS1
Collection Date: 4/1/2021 08:20 AM

Work Order: 21040269
Lab ID: 21040269-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) Method: SW8270E Prep: SW3546 / 4/6/21 Analyst: EEW							
Acenaphthene	U		0.010	0.012	mg/Kg-dry	1	4/6/2021 21:28
Anthracene	U		0.011	0.012	mg/Kg-dry	1	4/6/2021 21:28
Benzo(a)anthracene	U		0.012	0.012	mg/Kg-dry	1	4/6/2021 21:28
Benzo(a)pyrene	U		0.0096	0.012	mg/Kg-dry	1	4/6/2021 21:28
Benzo(b)fluoranthene	U		0.010	0.012	mg/Kg-dry	1	4/6/2021 21:28
Benzo(k)fluoranthene	U		0.0097	0.012	mg/Kg-dry	1	4/6/2021 21:28
Chrysene	U		0.011	0.012	mg/Kg-dry	1	4/6/2021 21:28
Dibenzo(a,h)anthracene	U		0.0097	0.012	mg/Kg-dry	1	4/6/2021 21:28
Fluoranthene	U		0.0095	0.012	mg/Kg-dry	1	4/6/2021 21:28
Fluorene	U		0.0093	0.012	mg/Kg-dry	1	4/6/2021 21:28
Indeno(1,2,3-cd)pyrene	U		0.010	0.012	mg/Kg-dry	1	4/6/2021 21:28
Naphthalene	U		0.012	0.012	mg/Kg-dry	1	4/6/2021 21:28
Pyrene	U		0.011	0.012	mg/Kg-dry	1	4/6/2021 21:28
Surr: 2-Fluorobiphenyl	93.4			20-140	%REC	1	4/6/2021 21:28
Surr: 4-Terphenyl-d14	93.0			22-172	%REC	1	4/6/2021 21:28
Surr: Nitrobenzene-d5	89.5			28-140	%REC	1	4/6/2021 21:28
MOISTURE Method: SW3550C Analyst: KTP							
Moisture	27		0.10	0.10	% of sample	1	4/6/2021 14:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Entrada Consulting Group
Work Order: 21040269
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **174625** Instrument ID **SVMS6** Method: **SW8270E**

MBLK Sample ID: SBLKS1-174625-174625				Units: µg/Kg		Analysis Date: 4/6/2021 04:17 PM				
Client ID:		Run ID: SVMS6_210406A		SeqNo: 7281894		Prep Date: 4/6/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	4.2								
Anthracene	U	4.2								
Benzo(a)anthracene	U	4.2								
Benzo(a)pyrene	U	4.2								
Benzo(b)fluoranthene	U	4.2								
Benzo(k)fluoranthene	U	4.2								
Chrysene	U	4.2								
Dibenzo(a,h)anthracene	U	4.2								
Fluoranthene	U	4.2								
Fluorene	U	4.2								
Indeno(1,2,3-cd)pyrene	U	4.2								
Naphthalene	U	4.2								
Pyrene	U	4.2								
<i>Surr: 2-Fluorobiphenyl</i>	3110	0	3333	0	93.3	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	2917	0	3333	0	87.5	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2795	0	3333	0	83.9	28-140	0			

LCS Sample ID: SLCSS1-174625-174625				Units: µg/Kg		Analysis Date: 4/6/2021 04:32 PM				
Client ID:		Run ID: SVMS6_210406A		SeqNo: 7281895		Prep Date: 4/6/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1163	4.2	1333	0	87.2	40-140	0			
Anthracene	1230	4.2	1333	0	92.3	40-140	0			
Benzo(a)anthracene	1216	4.2	1333	0	91.2	40-140	0			
Benzo(a)pyrene	1161	4.2	1333	0	87.1	40-140	0			
Benzo(b)fluoranthene	1183	4.2	1333	0	88.7	40-140	0			
Benzo(k)fluoranthene	1156	4.2	1333	0	86.7	40-140	0			
Chrysene	1202	4.2	1333	0	90.2	40-140	0			
Dibenzo(a,h)anthracene	1321	4.2	1333	0	99.1	40-140	0			
Fluoranthene	1171	4.2	1333	0	87.9	40-140	0			
Fluorene	1145	4.2	1333	0	85.9	40-140	0			
Indeno(1,2,3-cd)pyrene	1389	4.2	1333	0	104	40-140	0			
Naphthalene	1234	4.2	1333	0	92.6	40-140	0			
Pyrene	937.5	4.2	1333	0	70.3	40-140	0			
<i>Surr: 2-Fluorobiphenyl</i>	2985	0	3333	0	89.6	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	2562	0	3333	0	76.9	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2168	0	3333	0	65	28-140	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Entrada Consulting Group
 Work Order: 21040269
 Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **174625** Instrument ID **SVMS6** Method: **SW8270E**

MS				Sample ID: 21040317-07C MS		Units: µg/Kg		Analysis Date: 4/6/2021 04:48 PM		
Client ID:		Run ID: SVMS6_210406A			SeqNo: 7281896		Prep Date: 4/6/2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1177	4.1	1298	0	90.7	40-140	0			
Anthracene	1210	4.1	1298	0	93.3	40-140	0			
Benzo(a)anthracene	1174	4.1	1298	4.651	90.1	40-140	0			
Benzo(a)pyrene	1149	4.1	1298	3.299	88.3	40-140	0			
Benzo(b)fluoranthene	1204	4.1	1298	2.623	92.6	40-140	0			
Benzo(k)fluoranthene	1139	4.1	1298	0	87.8	40-140	0			
Chrysene	1177	4.1	1298	2.961	90.5	40-140	0			
Dibenzo(a,h)anthracene	1196	4.1	1298	0	92.2	40-140	0			
Fluoranthene	1142	4.1	1298	3.074	87.7	40-140	0			
Fluorene	1209	4.1	1298	0	93.2	40-140	0			
Indeno(1,2,3-cd)pyrene	1210	4.1	1298	0	93.3	40-140	0			
Naphthalene	1235	4.1	1298	0	95.1	40-140	0			
Pyrene	1130	4.1	1298	5.182	86.6	40-140	0			
Surr: 2-Fluorobiphenyl	2997	0	3245	0	92.4	20-140	0			
Surr: 4-Terphenyl-d14	2928	0	3245	0	90.2	22-172	0			
Surr: Nitrobenzene-d5	2599	0	3245	0	80.1	28-140	0			

MSD				Sample ID: 21040317-07C MSD		Units: µg/Kg		Analysis Date: 4/6/2021 05:03 PM		
Client ID:		Run ID: SVMS6_210406A			SeqNo: 7281897		Prep Date: 4/6/2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1164	4.0	1269	0	91.7	40-140	1177	1.16	30	
Anthracene	1345	4.0	1269	0	106	40-140	1210	10.5	30	
Benzo(a)anthracene	1178	4.0	1269	4.651	92.5	40-140	1174	0.36	30	
Benzo(a)pyrene	1164	4.0	1269	3.299	91.5	40-140	1149	1.29	30	
Benzo(b)fluoranthene	1156	4.0	1269	2.623	90.9	40-140	1204	4.02	30	
Benzo(k)fluoranthene	1107	4.0	1269	0	87.3	40-140	1139	2.84	30	
Chrysene	1179	4.0	1269	2.961	92.7	40-140	1177	0.148	30	
Dibenzo(a,h)anthracene	1247	4.0	1269	0	98.3	40-140	1196	4.17	30	
Fluoranthene	1293	4.0	1269	3.074	102	40-140	1142	12.4	30	
Fluorene	1132	4.0	1269	0	89.2	40-140	1209	6.57	30	
Indeno(1,2,3-cd)pyrene	1231	4.0	1269	0	97	40-140	1210	1.68	30	
Naphthalene	1214	4.0	1269	0	95.7	40-140	1235	1.72	30	
Pyrene	1083	4.0	1269	5.182	85	40-140	1130	4.17	30	
Surr: 2-Fluorobiphenyl	2694	0	3173	0	84.9	20-140	2997	10.7	30	
Surr: 4-Terphenyl-d14	2859	0	3173	0	90.1	22-172	2928	2.4	30	
Surr: Nitrobenzene-d5	2830	0	3173	0	89.2	28-140	2599	8.52	30	

The following samples were analyzed in this batch:

21040269-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Entrada Consulting Group
Work Order: 21040269
Project: Fee 49 Spill Resampling

QC BATCH REPORT

Batch ID: **R313521** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R313521				Units: % of sample		Analysis Date: 4/6/2021 02:18 PM		
Client ID:		Run ID: MOIST_210406C				SeqNo: 7282682		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS		Sample ID: LCS-R313521				Units: % of sample		Analysis Date: 4/6/2021 02:18 PM		
Client ID:		Run ID: MOIST_210406C				SeqNo: 7282681		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP		Sample ID: 21040154-01A DUP				Units: % of sample		Analysis Date: 4/6/2021 02:18 PM		
Client ID:		Run ID: MOIST_210406C				SeqNo: 7282661		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.96	0.10	0	0	0	0-0	4.5	12.8	10	R

DUP		Sample ID: 21040154-11B DUP				Units: % of sample		Analysis Date: 4/6/2021 02:18 PM		
Client ID:		Run ID: MOIST_210406C				SeqNo: 7282672		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	2.01	0.10	0	0	0	0-0	2.04	1.48	10	

The following samples were analyzed in this batch:

21040269-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order		Project Name	Fee 49 Spill Resampling	A	TPH (GRO & DRO)														
Work Order		Project Number		B	BTEX														
Company Name	Entrada Consulting Group	Bill To Company	Entrada Consulting Group	C	PAH (See Attached List) CO Table 910														
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky	D	Electrical Conductivity														
Address	330 Grand Ave, Unit C	Address	330 Grand Ave, Unit C	E	Sodium Adsorption Ratio														
City/State/Zip	Grand Junction, CO 81501	City/State/Zip	Grand Junction, CO 81501	F	pH														
Phone	970.270.2986	Phone	970.270.2986	G	Metals (See Attached List) CO Table 910														
Fax		Fax		H	Arsenic Only														
e-Mail Address	tdobransky@entradainc.com	e-Mail Address	tdobransky@entradainc.com	I															
				J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	Fee49-SS1	04/01/21	820	Soil	8	1			X										
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			

Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input checked="" type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:	Date: 04/01/21	Time:	Received by:	Date: 4/3/21	Time: 0930	Notes: 3 Day Rush	
Relinquished by:	Date: 4-2-21	Time: 1830	Received by (Laboratory):	Date: 4/3/21	Time: 0930	Cooler Temp. 12.1 4.2°C	
Logged by (Laboratory):	Date: 4/5/21	Time: 0900	Checked by (Laboratory):	QC Package: (Check Box Below)			
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				<input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like <input type="checkbox"/> Other:			

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **03-Apr-21 09:30**

Work Order: **21040269**

Received by: **DS**

Checklist completed by **Diane Shaw**

05-Apr-21

Reviewed by: **Chad Whelton**

05-Apr-21

eSignature

Date

eSignature

Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): **4.2/4.2 c** **IR1**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **4/5/2021 9:09:26 AM**

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt? Yes ☐ No ☐ N/A ☒

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by: **-**

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: