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- Legend**
- Spill Origin
 - Soil Sample Location
 - Spill Path

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Project Number: 018-065	Lateral to Rooth 1 Spill Response Chevron USA, Inc Rio Blanco County, Colorado NENE S22 / NWNW S23 T2N R103W		330 Grand Ave., Suite C Grand Junction, CO 81501 P: 970.549.1015	Figure
Drawn By: TPD				1
Revision Date: 5/23/2016				

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

Table 1
Lateral to Rooth 1
Soil Data Summary

SAMPLE SUMMARY	
Location Description	Lateral to Rooth 1 Spill
Sample Type	Soil

LABORATORY DATA SUMMARY																						
Sample ID	LTR1-SS1	LTR1-SS1	LTR1-SS2	LTR1-SS2	LTR1-SS2	LTR1- SS3	LTR1- SS3	LTR1- SS4	LTR1- SS4	LTR1- SS5	LTR1- SS5	LTR1- SS5	LTR1- SS6	LTR1- SS6	LTR1- SS6	LTR1- SS6	LTR1- SS7	LTR1- SS8	LTR1- BG1	LTR1- BG2	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	3/4/2016	7/13/2018	3/4/2016	7/13/2018	3/18/2021	3/4/2016	7/13/2018	3/4/2016	7/13/2018	3/4/2016	7/13/2018	3/18/2021	3/4/2016	7/13/2018	3/18/2021	3/4/2016	3/4/2016	3/4/2016	3/4/2016	3/4/2016		
Analytical Parameters																						
TPH																						
TPH Gasoline Range Organics	8.5	NT	11	NT	NT	92	<2.1	12	NT	<3.8	<2.1	NT	14	NT	NT	<4.0	<4.0	NT	NT	500	mg/kg	
TPH Diesel Range Organics	110	NT	170	NT	NT	850	<4.2	330	NT	580	<4.3	NT	140	NT	NT	96	59	NT	NT			
BTEX																						
Benzene	<0.040	NT	<0.045	NT	NT	<0.046	NT	<0.048	NT	<0.045	NT	NT	<0.030	NT	NT	<0.030	<0.030	NT	NT	0.17	mg/kg	
Toluene	<0.040	NT	<0.045	NT	NT	<0.046	NT	<0.048	NT	<0.045	NT	NT	<0.030	NT	NT	<0.030	<0.030	NT	NT	85	mg/kg	
Ethylbenzene	<0.040	NT	<0.045	NT	NT	<0.046	NT	<0.048	NT	<0.045	NT	NT	0.043	NT	NT	<0.030	<0.030	NT	NT	100	mg/kg	
Total Xylene	<0.120	NT	0.15	NT	NT	0.29	NT	0.19	NT	0.14	NT	NT	0.26	NT	NT	<0.09	<0.09	NT	NT	175	mg/kg	
Metals																						
Arsenic	7.4	NT	7.7	NT	NT	6.7	NT	8.1	NT	8.1	NT	NT	7.4	NT	NT	7.4	7.8	7.3	7.3	0.39	mg/kg	
Barium	110	NT	120	NT	NT	80	NT	140	NT	91	NT	NT	120	NT	NT	110	240	100	NT	15,000	mg/kg	
Cadmium	<0.40	NT	<0.41	NT	NT	<0.41	NT	<0.50	NT	<0.44	NT	NT	<0.49	NT	NT	<0.44	<0.51	<3.9	NT	70	mg/kg	
Chromium	11	NT	11	NT	NT	9.0	NT	13	NT	12	NT	NT	9.9	NT	NT	10	12	11	NT	NA	mg/kg	
Copper	12	NT	12	NT	NT	11	NT	15	NT	12	NT	NT	12	NT	NT	13	14	12	NT	3,100	mg/kg	
Lead	13	NT	14	NT	NT	12	NT	17	NT	16	NT	NT	14	NT	NT	14	16	13	NT	400	mg/kg	
Mercury	0.015	NT	<0.016	NT	NT	<0.018	NT	0.029	NT	0.025	NT	NT	0.019	NT	NT	0.023	0.029	<0.016	NT	23	mg/kg	
Nickel	13	NT	14	NT	NT	11	NT	16	NT	14	NT	NT	13	NT	NT	13	15	12	NT	1,600	mg/kg	
Selenium	1.3	NT	1.5	NT	NT	0.99	NT	1.6	NT	1.2	NT	NT	1.3	NT	NT	1.2	1.3	1.100	NT	390	mg/kg	
Silver	<0.40	NT	<0.41	NT	NT	<0.41	NT	<0.50	NT	<0.44	NT	NT	<0.49	NT	NT	<0.44	<0.51	<0.39	NT	390	mg/kg	
Zinc	70	NT	74	NT	NT	62	NT	87	NT	80	NT	NT	70	NT	NT	73	83	67	NT	23,000	mg/kg	
SAR Metals Analysis																						
Calcium	550	NT	640	NT	NT	120	160	54	130	54	150	NT	51	140	NT	90	190	34	NT	NA	mg/L	
Magnesium	190	NT	160	NT	NT	29	38	10	38	<10	31	NT	9.0	31.0	NT	15	31	13	NT	NA	mg/L	
Sodium	1100	NT	400	NT	NT	540	62	710	120	540	38	NT	530	17	NT	360	130	750	NT	NA	mg/L	
Sodium Adsorption Ratio	11	NT	3.7	NT	NT	12	1.1	23	2.4	18	0.74	NT	18	0.33	NT	9.3	2.3	28	NT	<12	ratio	
Polynuclear Aromatic Hydrocarbons																						
Acenaphthene	<0.0077	NT	<0.041	NT	0.0067	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0044	<0.049	NT	<0.0044	<0.010	<0.0086	NT	NT	1,000	mg/kg	
Anthracene	<0.0077	NT	<0.041	NT	0.013	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0046	<0.049	NT	<0.0047	<0.010	<0.0086	NT	NT	1,000	mg/kg	
Benzo(a)anthracene	<0.0077	NT	<0.041	NT	<0.0049	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0050	<0.049	NT	<0.0050	<0.010	<0.0086	NT	NT	0.22	mg/kg	
Benzo(a)pyrene	<0.0077	NT	<0.041	NT	<0.0040	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0041	<0.049	NT	<0.0042	<0.010	<0.0086	NT	NT	0.022	mg/kg	
Benzo(b)fluoranthene	<0.0077	NT	<0.041	NT	<0.0043	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0044	<0.049	NT	<0.0044	<0.010	<0.0086	NT	NT	0.22	mg/kg	
Benzo(k)fluoranthene	<0.0077	NT	<0.041	NT	<0.0041	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0042	<0.049	NT	<0.0042	<0.010	<0.0086	NT	NT	2.2	mg/kg	
Chrysene	<0.0077	NT	<0.041	NT	<0.0046	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0047	<0.049	NT	<0.0048	<0.010	<0.0086	NT	NT	22	mg/kg	
Dibenzo(a,h)anthracene	<0.0077	NT	<0.041	NT	<0.0041	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0042	<0.049	NT	<0.0042	<0.010	<0.0086	NT	NT	0.022	mg/kg	
Fluoranthene	0.024	NT	<0.041	NT	0.0088	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0041	<0.049	NT	<0.0041	<0.010	<0.0086	NT	NT	1,000	mg/kg	
Fluorene	<0.0077	NT	<0.041	NT	0.014	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0040	<0.049	NT	<0.0041	<0.010	<0.0086	NT	NT	1,000	mg/kg	
Indeno(1,2,3-cd)pyrene	<0.0077	NT	<0.041	NT	<0.0044	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0045	<0.049	NT	<0.0045	<0.010	<0.0086	NT	NT	0.22	mg/kg	
Napthalene	<0.0077	NT	0.082	NT	<0.0049	0.23	NT	<0.010	NT	<0.041	NT	<0.0050	<0.049	NT	<0.0050	<0.010	<0.0086	NT	NT	23	mg/kg	
Pyrene	0.041	NT	<0.041	NT	<0.0070	<0.0084	NT	<0.010	NT	<0.041	NT	<0.0049	<0.049	NT	<0.0050	<0.010	<0.0086	NT	NT	1,000	mg/kg	
General Chemistry																						
Chromium, Hexavalent	<1.1	NT	<1.2	NT	NT	<1.2	NT	<1.3	NT	<1.2	NT	NT	<1.3	NT	NT	<1.2	<1.3	<1.1	NT	23	mg/kg	
Chromium, Trivalent	11	NT	11	NT	NT	9	NT	13	NT	11	NT	NT	9.9	NT	NT	10	12	11	NT	120,000	mg/kg	
Specific Conductivity	13	1.1	4.8	0.70	NT	3.0	1.3	6.4	1.6	1.9	NT	NT	3.7	NT	NT	2.8	2.1	3.0	NT	<4 or 2 x the background	mmhos/cm	
pH	7.9	NT	8.0	NT	NT	8.2	NT	8.8	NT	8.5	NT	NT	8.4	NT	NT	8.4	7.40	9.1	NT	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



18-Mar-2016

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

Re: **Lateral to Rooth 1 Spill**

Work Order: **1603414**

Dear Tim,

ALS Environmental received 10 samples on 08-Mar-2016 12:00 PM 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 NELAP standard requirements and QC 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 40.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Work Order: 1603414

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>
1603414-01	LTR1-SS1	Soil		3/4/2016 10:30	3/8/2016 12:00	<input type="checkbox"/>
1603414-02	LTR1-SS2	Soil		3/4/2016 10:45	3/8/2016 12:00	<input type="checkbox"/>
1603414-03	LTR1-BG1	Soil		3/4/2016 11:05	3/8/2016 12:00	<input type="checkbox"/>
1603414-04	LTR1-SS3	Soil		3/4/2016 11:15	3/8/2016 12:00	<input type="checkbox"/>
1603414-05	LTR1-SS4	Soil		3/4/2016 11:30	3/8/2016 12:00	<input type="checkbox"/>
1603414-06	LTR1-SS5	Soil		3/4/2016 11:40	3/8/2016 12:00	<input type="checkbox"/>
1603414-07	LTR1-SS6	Soil		3/4/2016 12:40	3/8/2016 12:00	<input type="checkbox"/>
1603414-08	LTR1-SS7	Soil		3/4/2016 12:55	3/8/2016 12:00	<input type="checkbox"/>
1603414-09	LTR1-SS8	Soil		3/4/2016 13:05	3/8/2016 12:00	<input type="checkbox"/>
1603414-10	LTR1-BG2	Soil		3/4/2016 13:25	3/8/2016 12:00	<input type="checkbox"/>

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Work Order: 1603414

Case Narrative

Batch 83317, Method DRO_8015_S, Sample 1603414-04A: DRO surrogate recovery high due to matrix interference.

Batch 83342, Method ICP_6010_SOL, Sample 1603414-06A: The reporting limit for Magnesium is elevated due to dilution for high concentrations of non-target analytes.

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
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
n	Not offered for accreditation
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 PQL, 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, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS1
Collection Date: 3/4/2016 10:30 AM

Work Order: 1603414
Lab ID: 1603414-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	110		4.8	mg/Kg-dry	1	3/10/2016 09:47 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>86.5</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	3/10/2016 09:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	8.5		3.3	mg/Kg-dry	1	3/9/2016 12:43 PM
<i>Surr: Toluene-d8</i>	<i>90.5</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	3/9/2016 12:43 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.015		0.015	mg/Kg-dry	1	3/11/2016 04:51 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	7.4		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Barium	110		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Cadmium	ND		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Chromium	11		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Copper	12		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Lead	13		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Nickel	13		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Selenium	1.3		0.80	mg/Kg-dry	1	3/11/2016 07:55 PM
Silver	ND		0.40	mg/Kg-dry	1	3/11/2016 07:55 PM
Zinc	70		0.80	mg/Kg-dry	1	3/11/2016 07:55 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	550		5.0	mg/L	10	3/14/2016 05:34 PM
Magnesium	190		2.0	mg/L	10	3/14/2016 05:34 PM
Sodium	1,100		2.0	mg/L	10	3/14/2016 05:34 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	13		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	11		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Anthracene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Benzo(a)anthracene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Benzo(a)pyrene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Benzo(b)fluoranthene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Benzo(k)fluoranthene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Chrysene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Dibenzo(a,h)anthracene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS1
Collection Date: 3/4/2016 10:30 AM

Work Order: 1603414
Lab ID: 1603414-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	0.024		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Fluorene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Indeno(1,2,3-cd)pyrene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Naphthalene	ND		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Pyrene	0.041		0.0077	mg/Kg-dry	1	3/9/2016 04:40 PM
Surr: 2-Fluorobiphenyl	73.8		12-100	%REC	1	3/9/2016 04:40 PM
Surr: 4-Terphenyl-d14	127		25-137	%REC	1	3/9/2016 04:40 PM
Surr: Nitrobenzene-d5	80.5		37-107	%REC	1	3/9/2016 04:40 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.040	mg/Kg-dry	1	3/9/2016 08:17 PM
Ethylbenzene	ND		0.040	mg/Kg-dry	1	3/9/2016 08:17 PM
m,p-Xylene	ND		0.080	mg/Kg-dry	1	3/9/2016 08:17 PM
o-Xylene	ND		0.040	mg/Kg-dry	1	3/9/2016 08:17 PM
Toluene	ND		0.040	mg/Kg-dry	1	3/9/2016 08:17 PM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	3/9/2016 08:17 PM
Surr: 1,2-Dichloroethane-d4	93.4		70-130	%REC	1	3/9/2016 08:17 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	3/9/2016 08:17 PM
Surr: Dibromofluoromethane	98.9		70-130	%REC	1	3/9/2016 08:17 PM
Surr: Toluene-d8	92.2		70-130	%REC	1	3/9/2016 08:17 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	13		0.050	mmhos/cm @2	10	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.58	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C			Analyst: ED
Moisture	14		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	7.9			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS2
Collection Date: 3/4/2016 10:45 AM

Work Order: 1603414
Lab ID: 1603414-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	170		26	mg/Kg-dry	5	3/10/2016 10:47 PM
ORO (C28-C40)	150		26	mg/Kg-dry	5	3/10/2016 10:47 PM
Surr: 4-Terphenyl-d14	68.4		39-133	%REC	5	3/10/2016 10:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	11		3.8	mg/Kg-dry	1	3/9/2016 04:09 PM
Surr: Toluene-d8	92.0		50-150	%REC	1	3/9/2016 04:09 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	ND		0.016	mg/Kg-dry	1	3/11/2016 04:53 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	7.7		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Barium	120		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Cadmium	ND		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Chromium	11		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Copper	12		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Lead	14		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Nickel	14		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Selenium	1.5		0.41	mg/Kg-dry	1	3/15/2016 01:31 PM
Silver	ND		0.41	mg/Kg-dry	1	3/11/2016 08:01 PM
Zinc	74		0.82	mg/Kg-dry	1	3/11/2016 08:01 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	640		25	mg/L	50	3/15/2016 01:59 PM
Magnesium	160		10	mg/L	50	3/15/2016 01:59 PM
Sodium	400		10	mg/L	50	3/15/2016 01:59 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	4.0		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	3.7		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Acenaphthylene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Benzo(a)anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Benzo(a)pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Benzo(b)fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Benzo(g,h,i)perylene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS2
Collection Date: 3/4/2016 10:45 AM

Work Order: 1603414
Lab ID: 1603414-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Chrysene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Dibenzo(a,h)anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Fluorene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Indeno(1,2,3-cd)pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Naphthalene	0.082		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 05:06 PM
Surr: 2-Fluorobiphenyl	65.0		12-100	%REC	5	3/9/2016 05:06 PM
Surr: 4-Terphenyl-d14	89.8		25-137	%REC	5	3/9/2016 05:06 PM
Surr: Nitrobenzene-d5	65.4		37-107	%REC	5	3/9/2016 05:06 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16	Analyst: BG	
Benzene	ND		0.045	mg/Kg-dry	1	3/9/2016 08:43 PM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	3/9/2016 08:43 PM
m,p-Xylene	0.098		0.090	mg/Kg-dry	1	3/9/2016 08:43 PM
o-Xylene	0.048		0.045	mg/Kg-dry	1	3/9/2016 08:43 PM
Toluene	ND		0.045	mg/Kg-dry	1	3/9/2016 08:43 PM
Xylenes, Total	0.15		0.14	mg/Kg-dry	1	3/9/2016 08:43 PM
Surr: 1,2-Dichloroethane-d4	94.6		70-130	%REC	1	3/9/2016 08:43 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	3/9/2016 08:43 PM
Surr: Dibromofluoromethane	99.8		70-130	%REC	1	3/9/2016 08:43 PM
Surr: Toluene-d8	90.8		70-130	%REC	1	3/9/2016 08:43 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16	Analyst: JB	
Electrical Conductivity @ Saturation	4.8		0.050	mmhos/cm @2	10	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	11		0.62	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16	Analyst: MB	
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C	Analyst: ED		
Moisture	20		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16	Analyst: STP	
pH	8.0			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-BG1
Collection Date: 3/4/2016 11:05 AM

Work Order: 1603414
Lab ID: 1603414-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA						
Mercury	ND		SW7471B 0.016	mg/Kg-dry	Prep: SW7471 / 3/11/16 1	Analyst: LR 3/11/2016 04:55 PM
METALS ANALYSIS BY ICP						
Arsenic	7.3		SW846 6010C 0.39	mg/Kg-dry	Prep: SW3050B / 3/11/16 1	Analyst: BL 3/11/2016 08:06 PM
Barium	100		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Cadmium	ND		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Chromium	11		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Copper	12		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Lead	13		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Nickel	12		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Selenium	1.1		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Silver	ND		0.39	mg/Kg-dry	1	3/11/2016 08:06 PM
Zinc	67		0.77	mg/Kg-dry	1	3/11/2016 08:06 PM
SOLUBLE CATIONS FOR SAR						
Calcium	34		SW846 6010C 25	mg/L	Prep: USDA Method 20B / 3/14/16 50	Analyst: BL 3/15/2016 02:04 PM
Magnesium	13		10	mg/L	50	3/15/2016 02:04 PM
Sodium	750		10	mg/L	50	3/15/2016 02:04 PM
SODIUM ADSORPTION RATIO						
Exchangeable Sodium Percentage	28		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 3/14/16 1	Analyst: BL 3/15/2016
Sodium Adsorption Ratio	28		0.010	none	1	3/15/2016
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	3.0		USDA H60 METHO 0.12	mmhos/cm @2	Prep: USDA Method 20B / 3/14/16 25	Analyst: JB 3/15/2016 11:15 AM
CHROMIUM, TRIVALENT						
Chromium, Trivalent	11		CALCULATION 0.59	mg/Kg-dry	1	Analyst: JB 3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	ND		SW7196A 1.1	mg/Kg-dry	Prep: SW3060A / 3/9/16 1	Analyst: MB 3/10/2016 12:00 PM
MOISTURE						
Moisture	15		SW3550C 0.050	% of sample	1	Analyst: ED 3/8/2016 04:23 PM
PH						
pH	9.1		SW9045D	s.u.	Prep: EXTRACT / 3/8/16 1	Analyst: STP 3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS3
Collection Date: 3/4/2016 11:15 AM

Work Order: 1603414
Lab ID: 1603414-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	850		26	mg/Kg-dry	5	3/10/2016 11:17 PM
ORO (C28-C40)	350		26	mg/Kg-dry	5	3/10/2016 11:17 PM
Surr: 4-Terphenyl-d14	132		39-133	%REC	5	3/10/2016 11:17 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	92		3.8	mg/Kg-dry	1	3/9/2016 04:34 PM
Surr: Toluene-d8	104		50-150	%REC	1	3/9/2016 04:34 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	ND		0.018	mg/Kg-dry	1	3/11/2016 04:58 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	6.7		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Barium	80		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Cadmium	ND		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Chromium	9.0		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Copper	11		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Lead	12		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Nickel	11		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Selenium	0.99		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Silver	ND		0.41	mg/Kg-dry	1	3/11/2016 08:11 PM
Zinc	62		0.83	mg/Kg-dry	1	3/11/2016 08:11 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	120		25	mg/L	50	3/15/2016 02:10 PM
Magnesium	29		10	mg/L	50	3/15/2016 02:10 PM
Sodium	540		10	mg/L	50	3/15/2016 02:10 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	14		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	12		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Acenaphthylene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Anthracene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Benzo(a)anthracene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Benzo(a)pyrene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Benzo(b)fluoranthene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Benzo(g,h,i)perylene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS3
Collection Date: 3/4/2016 11:15 AM

Work Order: 1603414
Lab ID: 1603414-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Chrysene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Dibenzo(a,h)anthracene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Fluoranthene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Fluorene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Indeno(1,2,3-cd)pyrene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Naphthalene	0.23		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Pyrene	ND		0.0084	mg/Kg-dry	1	3/9/2016 05:31 PM
Surr: 2-Fluorobiphenyl	80.7		12-100	%REC	1	3/9/2016 05:31 PM
Surr: 4-Terphenyl-d14	148	S	25-137	%REC	1	3/9/2016 05:31 PM
Surr: Nitrobenzene-d5	91.8		37-107	%REC	1	3/9/2016 05:31 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16	Analyst: BG	
Benzene	ND		0.046	mg/Kg-dry	1	3/9/2016 09:10 PM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	3/9/2016 09:10 PM
m,p-Xylene	0.22		0.092	mg/Kg-dry	1	3/9/2016 09:10 PM
o-Xylene	0.072		0.046	mg/Kg-dry	1	3/9/2016 09:10 PM
Toluene	ND		0.046	mg/Kg-dry	1	3/9/2016 09:10 PM
Xylenes, Total	0.29		0.14	mg/Kg-dry	1	3/9/2016 09:10 PM
Surr: 1,2-Dichloroethane-d4	90.8		70-130	%REC	1	3/9/2016 09:10 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	3/9/2016 09:10 PM
Surr: Dibromofluoromethane	98.2		70-130	%REC	1	3/9/2016 09:10 PM
Surr: Toluene-d8	93.1		70-130	%REC	1	3/9/2016 09:10 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16	Analyst: JB	
Electrical Conductivity @ Saturation	3.0		0.12	mmhos/cm @2	25	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	9.0		0.63	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16	Analyst: MB	
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C	Analyst: ED		
Moisture	21		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16	Analyst: STP	
pH	8.2			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS4
Collection Date: 3/4/2016 11:30 AM

Work Order: 1603414
Lab ID: 1603414-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	330		31	mg/Kg-dry	5	3/10/2016 11:47 PM
ORO (C28-C40)	270		31	mg/Kg-dry	5	3/10/2016 11:47 PM
Surr: 4-Terphenyl-d14	95.3		39-133	%REC	5	3/10/2016 11:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	12		4.0	mg/Kg-dry	1	3/9/2016 04:58 PM
Surr: Toluene-d8	93.0		50-150	%REC	1	3/9/2016 04:58 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.029		0.017	mg/Kg-dry	1	3/11/2016 05:07 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	8.1		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Barium	140		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Cadmium	ND		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Chromium	13		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Copper	15		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Lead	17		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Nickel	16		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Selenium	1.6		0.50	mg/L-dry	1	3/14/2016 02:11 PM
Silver	ND		0.50	mg/Kg-dry	1	3/11/2016 08:17 PM
Zinc	87		1.0	mg/Kg-dry	1	3/11/2016 08:17 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	54		5.0	mg/L	10	3/14/2016 05:57 PM
Magnesium	10		2.0	mg/L	10	3/14/2016 05:57 PM
Sodium	710		2.0	mg/L	10	3/14/2016 05:57 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	25		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	23		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Acenaphthylene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Benzo(a)anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Benzo(a)pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Benzo(b)fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Benzo(g,h,i)perylene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS4
Collection Date: 3/4/2016 11:30 AM

Work Order: 1603414
Lab ID: 1603414-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Chrysene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Dibenzo(a,h)anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Fluorene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Indeno(1,2,3-cd)pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Naphthalene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 05:57 PM
Surr: 2-Fluorobiphenyl	41.0		12-100	%REC	1	3/9/2016 05:57 PM
Surr: 4-Terphenyl-d14	70.2		25-137	%REC	1	3/9/2016 05:57 PM
Surr: Nitrobenzene-d5	48.1		37-107	%REC	1	3/9/2016 05:57 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.048	mg/Kg-dry	1	3/9/2016 09:36 PM
Ethylbenzene	ND		0.048	mg/Kg-dry	1	3/9/2016 09:36 PM
m,p-Xylene	0.12		0.096	mg/Kg-dry	1	3/9/2016 09:36 PM
o-Xylene	0.067		0.048	mg/Kg-dry	1	3/9/2016 09:36 PM
Toluene	ND		0.048	mg/Kg-dry	1	3/9/2016 09:36 PM
Xylenes, Total	0.19		0.14	mg/Kg-dry	1	3/9/2016 09:36 PM
Surr: 1,2-Dichloroethane-d4	93.4		70-130	%REC	1	3/9/2016 09:36 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	3/9/2016 09:36 PM
Surr: Dibromofluoromethane	96.6		70-130	%REC	1	3/9/2016 09:36 PM
Surr: Toluene-d8	90.8		70-130	%REC	1	3/9/2016 09:36 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	6.4		0.12	mmhos/cm @2	25	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	13		0.65	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.3	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C			Analyst: ED
Moisture	23		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	8.8			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS5
Collection Date: 3/4/2016 11:40 AM

Work Order: 1603414
Lab ID: 1603414-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	580		100	mg/Kg-dry	20	3/11/2016 12:17 PM
ORO (C28-C40)	2,300		100	mg/Kg-dry	20	3/11/2016 12:17 PM
Surr: 4-Terphenyl-d14	60.8		39-133	%REC	20	3/11/2016 12:17 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	ND		3.8	mg/Kg-dry	1	3/9/2016 05:23 PM
Surr: Toluene-d8	88.8		50-150	%REC	1	3/9/2016 05:23 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.025		0.018	mg/Kg-dry	1	3/11/2016 05:09 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	8.1		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Barium	91		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Cadmium	ND		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Chromium	12		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Copper	12		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Lead	16		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Nickel	14		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Selenium	1.2		0.44	mg/L-dry	1	3/14/2016 02:16 PM
Silver	ND		0.44	mg/Kg-dry	1	3/11/2016 08:22 PM
Zinc	80		0.87	mg/Kg-dry	1	3/11/2016 08:22 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	54		25	mg/L	50	3/15/2016 02:16 PM
Magnesium	ND		10	mg/L	50	3/15/2016 02:16 PM
Sodium	540		10	mg/L	50	3/15/2016 02:16 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	21		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	18		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Acenaphthylene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Benzo(a)anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Benzo(a)pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Benzo(b)fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Benzo(g,h,i)perylene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS5
Collection Date: 3/4/2016 11:40 AM

Work Order: 1603414
Lab ID: 1603414-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Chrysene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Dibenzo(a,h)anthracene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Fluoranthene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Fluorene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Indeno(1,2,3-cd)pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Naphthalene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Pyrene	ND		0.041	mg/Kg-dry	5	3/9/2016 06:22 PM
Surr: 2-Fluorobiphenyl	56.9		12-100	%REC	5	3/9/2016 06:22 PM
Surr: 4-Terphenyl-d14	90.0		25-137	%REC	5	3/9/2016 06:22 PM
Surr: Nitrobenzene-d5	66.5		37-107	%REC	5	3/9/2016 06:22 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.045	mg/Kg-dry	1	3/9/2016 10:02 PM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	3/9/2016 10:02 PM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	3/9/2016 10:02 PM
o-Xylene	ND		0.045	mg/Kg-dry	1	3/9/2016 10:02 PM
Toluene	ND		0.045	mg/Kg-dry	1	3/9/2016 10:02 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	3/9/2016 10:02 PM
Surr: 1,2-Dichloroethane-d4	91.5		70-130	%REC	1	3/9/2016 10:02 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	3/9/2016 10:02 PM
Surr: Dibromofluoromethane	98.9		70-130	%REC	1	3/9/2016 10:02 PM
Surr: Toluene-d8	90.9		70-130	%REC	1	3/9/2016 10:02 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	1.9		0.050	mmhos/cm @2	10	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Prep: SW3060A / 3/9/16		Analyst: JB
Chromium, Trivalent	11		0.62	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C	Prep: EXTRACT / 3/8/16		Analyst: ED
Moisture	20		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	8.5		s.u.		1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS6
Collection Date: 3/4/2016 12:40 PM

Work Order: 1603414
Lab ID: 1603414-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	140		31	mg/Kg-dry	5	3/11/2016 12:47 PM
ORO (C28-C40)	190		31	mg/Kg-dry	5	3/11/2016 12:47 PM
Surr: 4-Terphenyl-d14	96.0		39-133	%REC	5	3/11/2016 12:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	14		3.8	mg/Kg-dry	1	3/9/2016 05:47 PM
Surr: Toluene-d8	93.6		50-150	%REC	1	3/9/2016 05:47 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.019		0.017	mg/Kg-dry	1	3/11/2016 05:11 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	7.4		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Barium	120		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Cadmium	ND		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Chromium	9.9		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Copper	12		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Lead	14		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Nickel	13		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Selenium	1.3		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Silver	ND		0.49	mg/Kg-dry	1	3/11/2016 08:27 PM
Zinc	70		0.97	mg/Kg-dry	1	3/11/2016 08:27 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	51		5.0	mg/L	10	3/14/2016 04:20 PM
Magnesium	9.0		2.0	mg/L	10	3/14/2016 04:20 PM
Sodium	530		2.0	mg/L	10	3/14/2016 04:20 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	20		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	18		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Acenaphthylene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Anthracene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Benzo(a)anthracene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Benzo(a)pyrene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Benzo(b)fluoranthene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Benzo(g,h,i)perylene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS6
Collection Date: 3/4/2016 12:40 PM

Work Order: 1603414
Lab ID: 1603414-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Chrysene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Dibenzo(a,h)anthracene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Fluoranthene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Fluorene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Indeno(1,2,3-cd)pyrene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Naphthalene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Pyrene	ND		0.049	mg/Kg-dry	5	3/9/2016 06:48 PM
Surr: 2-Fluorobiphenyl	59.7		12-100	%REC	5	3/9/2016 06:48 PM
Surr: 4-Terphenyl-d14	86.7		25-137	%REC	5	3/9/2016 06:48 PM
Surr: Nitrobenzene-d5	68.4		37-107	%REC	5	3/9/2016 06:48 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:04 PM
Ethylbenzene	0.043		0.030	mg/Kg-dry	1	3/9/2016 08:04 PM
m,p-Xylene	0.18		0.060	mg/Kg-dry	1	3/9/2016 08:04 PM
o-Xylene	0.082		0.030	mg/Kg-dry	1	3/9/2016 08:04 PM
Toluene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:04 PM
Xylenes, Total	0.26		0.090	mg/Kg-dry	1	3/9/2016 08:04 PM
Surr: 1,2-Dichloroethane-d4	91.8		70-130	%REC	1	3/9/2016 08:04 PM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	3/9/2016 08:04 PM
Surr: Dibromofluoromethane	98.9		70-130	%REC	1	3/9/2016 08:04 PM
Surr: Toluene-d8	89.9		70-130	%REC	1	3/9/2016 08:04 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	3.7		0.12	mmhos/cm @2	25	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	9.9		0.63	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.3	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C			Analyst: ED
Moisture	21		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	8.4			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS7
Collection Date: 3/4/2016 12:55 PM

Work Order: 1603414
Lab ID: 1603414-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	96		6.4	mg/Kg-dry	1	3/11/2016 01:17 AM
ORO (C28-C40)	85		6.4	mg/Kg-dry	1	3/11/2016 01:17 AM
Surr: 4-Terphenyl-d14	93.1		39-133	%REC	1	3/11/2016 01:17 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	ND		4.0	mg/Kg-dry	1	3/9/2016 06:12 PM
Surr: Toluene-d8	90.9		50-150	%REC	1	3/9/2016 06:12 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.023		0.017	mg/Kg-dry	1	3/11/2016 05:13 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	7.4		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Barium	110		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Cadmium	ND		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Chromium	10		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Copper	13		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Lead	14		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Nickel	13		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Selenium	1.2		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Silver	ND		0.44	mg/Kg-dry	1	3/11/2016 08:33 PM
Zinc	73		0.88	mg/Kg-dry	1	3/11/2016 08:33 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	90		5.0	mg/L	10	3/14/2016 04:25 PM
Magnesium	15		2.0	mg/L	10	3/14/2016 04:25 PM
Sodium	360		2.0	mg/L	10	3/14/2016 04:25 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	11		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	9.3		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Acenaphthylene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Benzo(a)anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Benzo(a)pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Benzo(b)fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Benzo(g,h,i)perylene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS7
Collection Date: 3/4/2016 12:55 PM

Work Order: 1603414
Lab ID: 1603414-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Chrysene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Dibenzo(a,h)anthracene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Fluoranthene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Fluorene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Indeno(1,2,3-cd)pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Naphthalene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Pyrene	ND		0.010	mg/Kg-dry	1	3/9/2016 07:13 PM
Surr: 2-Fluorobiphenyl	76.4		12-100	%REC	1	3/9/2016 07:13 PM
Surr: 4-Terphenyl-d14	131		25-137	%REC	1	3/9/2016 07:13 PM
Surr: Nitrobenzene-d5	84.9		37-107	%REC	1	3/9/2016 07:13 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:29 PM
Ethylbenzene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:29 PM
m,p-Xylene	ND		0.060	mg/Kg-dry	1	3/9/2016 08:29 PM
o-Xylene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:29 PM
Toluene	ND		0.030	mg/Kg-dry	1	3/9/2016 08:29 PM
Xylenes, Total	ND		0.090	mg/Kg-dry	1	3/9/2016 08:29 PM
Surr: 1,2-Dichloroethane-d4	88.5		70-130	%REC	1	3/9/2016 08:29 PM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	3/9/2016 08:29 PM
Surr: Dibromofluoromethane	93.0		70-130	%REC	1	3/9/2016 08:29 PM
Surr: Toluene-d8	89.2		70-130	%REC	1	3/9/2016 08:29 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	2.8		0.050	mmhos/cm @2	10	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	10		0.65	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C			Analyst: ED
Moisture	23		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	8.4			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates

Project: Lateral to Rooth 1 Spill

Sample ID: LTR1-SS8

Collection Date: 3/4/2016 01:05 PM

Work Order: 1603414

Lab ID: 1603414-09

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 3/10/16	Analyst: RM
DRO (C10-C28)	59		5.4	mg/Kg-dry	1	3/11/2016 01:47 AM
ORO (C28-C40)	120		5.4	mg/Kg-dry	1	3/11/2016 01:47 AM
Surr: 4-Terphenyl-d14	112		39-133	%REC	1	3/11/2016 01:47 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/9/16	Analyst: IT
GRO (C6-C10)	ND		4.0	mg/Kg-dry	1	3/9/2016 06:36 PM
Surr: Toluene-d8	92.0		50-150	%REC	1	3/9/2016 06:36 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 3/11/16	Analyst: LR
Mercury	0.029		0.019	mg/Kg-dry	1	3/11/2016 05:15 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 3/11/16	Analyst: BL
Arsenic	7.8		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Barium	240		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Cadmium	ND		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Chromium	12		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Copper	14		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Lead	16		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Nickel	15		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Selenium	1.3		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Silver	ND		0.51	mg/Kg-dry	1	3/11/2016 08:38 PM
Zinc	83		1.0	mg/Kg-dry	1	3/11/2016 08:38 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Calcium	190		5.0	mg/L	10	3/14/2016 04:31 PM
Magnesium	31		2.0	mg/L	10	3/14/2016 04:31 PM
Sodium	130		2.0	mg/L	10	3/14/2016 04:31 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 3/14/16	Analyst: BL
Exchangeable Sodium Percentage	2.1		0.010	none	1	3/15/2016
Sodium Adsorption Ratio	2.3		0.010	none	1	3/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 3/9/16	Analyst: RS
Acenaphthene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Acenaphthylene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Anthracene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Benzo(a)anthracene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Benzo(a)pyrene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Benzo(b)fluoranthene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Benzo(g,h,i)perylene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM

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

ALS Group USA, Corp

Date: 18-Mar-16

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill
Sample ID: LTR1-SS8
Collection Date: 3/4/2016 01:05 PM

Work Order: 1603414
Lab ID: 1603414-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(k)fluoranthene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Chrysene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Dibenzo(a,h)anthracene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Fluoranthene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Fluorene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Indeno(1,2,3-cd)pyrene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Naphthalene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Pyrene	ND		0.0086	mg/Kg-dry	1	3/10/2016 11:46 AM
Surr: 2-Fluorobiphenyl	53.3		12-100	%REC	1	3/10/2016 11:46 AM
Surr: 4-Terphenyl-d14	63.6		25-137	%REC	1	3/10/2016 11:46 AM
Surr: Nitrobenzene-d5	53.5		37-107	%REC	1	3/10/2016 11:46 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 3/9/16		Analyst: BG
Benzene	ND		0.030	mg/Kg-dry	1	3/9/2016 07:14 PM
Ethylbenzene	ND		0.030	mg/Kg-dry	1	3/9/2016 07:14 PM
m,p-Xylene	ND		0.060	mg/Kg-dry	1	3/9/2016 07:14 PM
o-Xylene	ND		0.030	mg/Kg-dry	1	3/9/2016 07:14 PM
Toluene	ND		0.030	mg/Kg-dry	1	3/9/2016 07:14 PM
Xylenes, Total	ND		0.090	mg/Kg-dry	1	3/9/2016 07:14 PM
Surr: 1,2-Dichloroethane-d4	90.6		70-130	%REC	1	3/9/2016 07:14 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	3/9/2016 07:14 PM
Surr: Dibromofluoromethane	95.2		70-130	%REC	1	3/9/2016 07:14 PM
Surr: Toluene-d8	90.4		70-130	%REC	1	3/9/2016 07:14 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 3/14/16		Analyst: JB
Electrical Conductivity @ Saturation	2.1		0.050	mmhos/cm @2	10	3/15/2016 11:15 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	12		0.65	mg/Kg-dry	1	3/15/2016 08:15 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 3/9/16		Analyst: MB
Chromium, Hexavalent	ND		1.3	mg/Kg-dry	1	3/10/2016 12:00 PM
MOISTURE			SW3550C			Analyst: ED
Moisture	23		0.050	% of sample	1	3/8/2016 04:23 PM
PH			SW9045D	Prep: EXTRACT / 3/8/16		Analyst: STP
pH	7.4			s.u.	1	3/8/2016 06:45 PM

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

ALS Group USA, Corp**Date:** 18-Mar-16**Client:** Olsson Associates**Project:** Lateral to Rooth 1 Spill**Work Order:** 1603414**Sample ID:** LTR1-BG2**Lab ID:** 1603414-10**Collection Date:** 3/4/2016 01:25 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	7.3		SW846 6010C 0.44	mg/Kg-dry	Prep: SW3050B / 3/11/16 1	Analyst: BL 3/11/2016 08:43 PM
MOISTURE						
Moisture	15		SW3550C 0.050	% of sample	1	Analyst: ED 3/8/2016 04:23 PM

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

Client: Olsson Associates

Work Order: 1603414

Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: 83376

Instrument ID GC8

Method: SW8015M

MBLK		Sample ID: DBLKS1-83376-83376				Units: mg/Kg		Analysis Date: 3/10/2016 05:16 PM		
Client ID:		Run ID: GC8_160310A				SeqNo: 3730700		Prep Date: 3/10/2016		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

ORO (C28-C40)

ND

5.0

Surr: 4-Terphenyl-d14

1.759

0

2

0

87.9

39-133

0

LCS		Sample ID: DLCSS1-83376-83376				Units: mg/Kg		Analysis Date: 3/10/2016 05:46 PM		
Client ID:		Run ID: GC8_160310A				SeqNo: 3730701		Prep Date: 3/10/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

207.4

5.0

200

0

104

61-109

0

ORO (C28-C40)

212.5

5.0

200

0

106

61-119

0

Surr: 4-Terphenyl-d14

1.733

0

2

0

86.7

39-133

0

MS		Sample ID: 1603404-02A MS				Units: mg/Kg		Analysis Date: 3/10/2016 06:16 PM		
Client ID:		Run ID: GC8_160310A				SeqNo: 3730702		Prep Date: 3/10/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

197.6

4.1

162.4

19.78

110

48-110

0

ORO (C28-C40)

218.8

4.1

162.4

35.79

113

39-140

0

Surr: 4-Terphenyl-d14

1.777

0

1.624

0

109

39-133

0

MSD		Sample ID: 1603404-02A MSD				Units: mg/Kg		Analysis Date: 3/10/2016 06:46 PM		
Client ID:		Run ID: GC8_160310A				SeqNo: 3730703		Prep Date: 3/10/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

200.5

4.1

164.1

19.78

110

48-110

197.6

1.44

30

S

ORO (C28-C40)

228.1

4.1

164.1

35.79

117

39-140

218.8

4.19

30

Surr: 4-Terphenyl-d14

1.685

0

1.641

0

103

39-133

1.777

5.3

30

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-04A
1603414-05A	1603414-06A	1603414-07A
1603414-08A	1603414-09A	

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83329** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-83329-83329				Units: µg/Kg-dry		Analysis Date: 3/9/2016 10:38 AM		
Client ID:		Run ID: GC9_160309A				SeqNo: 3728117		Prep Date: 3/9/2016		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	0	0	0		0			
Surr: Toluene-d8	4118	0	5000	0	82.4	50-150	0			

LCS		Sample ID: LCS-83329-83329				Units: µg/Kg-dry		Analysis Date: 3/9/2016 10:13 AM		
Client ID:		Run ID: GC9_160309A				SeqNo: 3728116		Prep Date: 3/9/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	409200	2,500	500000	0	81.8	70-130	0			
Surr: Toluene-d8	4261	0	5000	0	85.2	50-150	0			

MS		Sample ID: 1603404-01A MS				Units: µg/Kg-dry		Analysis Date: 3/9/2016 03:44 PM		
Client ID:		Run ID: GC9_160309A				SeqNo: 3728125		Prep Date: 3/9/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	790900	3,200	649400	13770	120	70-130	0			
Surr: Toluene-d8	5826	0	6494	0	89.7	50-150	0			

MSD		Sample ID: 1603404-01A MSD				Units: µg/Kg-dry		Analysis Date: 3/9/2016 03:20 PM		
Client ID:		Run ID: GC9_160309A				SeqNo: 3728124		Prep Date: 3/9/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	814100	3,200	649400	13770	123	70-130	790900	2.89	30	
Surr: Toluene-d8	5953	0	6494	0	91.7	50-150	5826	2.16	30	

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-04A
1603414-05A	1603414-06A	1603414-07A
1603414-08A	1603414-09A	

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83431** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-83431-83431				Units: mg/Kg		Analysis Date: 3/11/2016 04:18 PM		
Client ID:		Run ID: HG1_160311A				SeqNo: 3730825		Prep Date: 3/11/2016		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-83431-83431				Units: mg/Kg		Analysis Date: 3/11/2016 04:20 PM		
Client ID:		Run ID: HG1_160311A				SeqNo: 3730826		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.19 0.020 0.1665 0 114 80-120 0

MS		Sample ID: 1603404-03AMS				Units: mg/Kg		Analysis Date: 3/11/2016 04:46 PM		
Client ID:		Run ID: HG1_160311A				SeqNo: 3730838		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1296 0.013 0.1093 0.01864 102 75-125 0

MSD		Sample ID: 1603404-03AMSD				Units: mg/Kg		Analysis Date: 3/11/2016 04:49 PM		
Client ID:		Run ID: HG1_160311A				SeqNo: 3730839		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1265 0.013 0.1089 0.01864 99 75-125 0.1296 2.46 35

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83342** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1603404-01ADUP				Units: none		Analysis Date: 3/15/2016		
Client ID:		Run ID: SAR_160315A				SeqNo: 3734587		Prep Date: 3/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Exchangeable Sodium Percentage	7.345	0.010	0	0	0		8.42	13.6	50	
Sodium Adsorption Ratio	6.229	0.010	0	0	0		7.087	12.9	50	

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83434** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-83434-83434				Units: mg/Kg		Analysis Date: 3/11/2016 06:44 PM		
Client ID:		Run ID: ICP2_160311A				SeqNo: 3731591		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Silver	ND	0.25								
Zinc	ND	0.50								

MBLK		Sample ID: MBLK-83434-83434				Units: mg/Kg		Analysis Date: 3/14/2016 07:42 PM		
Client ID:		Run ID: ICP2_160314A				SeqNo: 3732921		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	ND	0.25								
Selenium	ND	0.50								

LCS		Sample ID: LCS-83434-83434				Units: mg/Kg		Analysis Date: 3/11/2016 06:50 PM		
Client ID:		Run ID: ICP2_160311A				SeqNo: 3731592		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.477	0.25	5	0	89.5	80-120	0			
Cadmium	4.056	0.50	5	0	81.1	80-120	0			
Chromium	4.685	0.25	5	0	93.7	80-120	0			
Copper	4.25	0.50	5	0	85	80-120	0			
Lead	4.366	0.25	5	0	87.3	80-120	0			
Nickel	4.114	0.25	5	0	82.3	80-120	0			
Silver	4.209	0.25	5	0	84.2	80-120	0			
Zinc	4.722	0.50	5	0	94.4	80-120	0			

LCS		Sample ID: LCS-83434-83434				Units: mg/Kg		Analysis Date: 3/14/2016 07:48 PM		
Client ID:		Run ID: ICP2_160314A				SeqNo: 3732922		Prep Date: 3/11/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	4.332	0.25	5	0	86.6	80-120	0			
Selenium	4.42	0.50	5	0	88.4	80-120	0			

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83434** Instrument ID **ICP2** Method: **SW846 6010C**

MS				Sample ID: 1603404-01AMS			Units: mg/Kg		Analysis Date: 3/11/2016 07:06 PM		
Client ID:			Run ID: ICP2_160311A			SeqNo: 3731595		Prep Date: 3/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	11.84	0.38	7.645	7.011	63.2	75-125		0		S	
Cadmium	5.458	0.76	7.645	0.08142	70.3	75-125		0		S	
Chromium	15.57	0.38	7.645	11.28	56.2	75-125		0		S	
Copper	17.26	0.76	7.645	14.69	33.6	75-125		0		S	
Lead	17.61	0.38	7.645	14.79	36.8	75-125		0		S	
Nickel	18.52	0.38	7.645	16.96	20.4	75-125		0		S	
Silver	5.735	0.38	7.645	0.06252	74.2	75-125		0		S	
Zinc	75.53	0.76	7.645	89.72	-186	75-125		0		SO	

MS				Sample ID: 1603404-01AMS				Units: mg/Kg			Analysis Date: 3/14/2016 08:04 PM			
Client ID:				Run ID: ICP2_160314A				SeqNo: 3732925			Prep Date: 3/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Barium	110.6	0.38	7.645	125.3	-192	75-125	0			SO				
Selenium	8.62	0.76	7.645	1.618	91.6	75-125	0							

MSD				Sample ID: 1603404-01AMSD				Units: mg/Kg			Analysis Date: 3/11/2016 07:12 PM			
Client ID:				Run ID: ICP2_160311A				SeqNo: 3731596			Prep Date: 3/11/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	16.34	0.38	7.645	7.011	122	75-125	11.84	31.9	20	R				
Cadmium	7.148	0.76	7.645	0.08142	92.4	75-125	5.458	26.8	20	R				
Chromium	20.86	0.38	7.645	11.28	125	75-125	15.57	29	20	SR				
Copper	23.07	0.76	7.645	14.69	110	75-125	17.26	28.8	20	R				
Lead	23.24	0.38	7.645	14.79	110	75-125	17.61	27.6	20	R				
Nickel	24.8	0.38	7.645	16.96	103	75-125	18.52	29	20	R				
Silver	7.577	0.38	7.645	0.06252	98.3	75-125	5.735	27.7	20	R				
Zinc	111.7	0.76	7.645	89.72	288	75-125	75.53	38.6	20	SRO				

MSD				Sample ID: 1603404-01AMSD				Units: mg/Kg			Analysis Date: 3/14/2016 08:09 PM			
Client ID:				Run ID: ICP2_160314A				SeqNo: 3732926			Prep Date: 3/11/2016		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Barium		143.4	0.38	7.645	125.3	237	75-125	110.6	25.8	20	SRO			
Selenium		9.481	0.76	7.645	1.618	103	75-125	8.62	9.51	20				

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A
1603414-10A		

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: 83316 Instrument ID SVMS5 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-83316-83316				Units: µg/Kg		Analysis Date: 3/10/2016 11:36 AM		
Client ID:		Run ID: SVMS5_160309A				SeqNo: 3728928		Prep Date: 3/9/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Acenaphthylene	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(g,h,i)perylene	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	1360	0	1667	0	81.6	12-100	0			
Surr: 4-Terphenyl-d14	1723	0	1667	0	103	25-137	0			
Surr: Nitrobenzene-d5	1371	0	1667	0	82.3	37-107	0			

LCS		Sample ID: SLCSS1-83316-83316				Units: µg/Kg		Analysis Date: 3/9/2016 01:36 PM		
Client ID:		Run ID: SVMS5_160309A				SeqNo: 3728627		Prep Date: 3/9/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	521.7	6.7	666.7	0	78.2	45-110	0			
Acenaphthylene	537.7	6.7	666.7	0	80.6	45-105	0			
Anthracene	672	6.7	666.7	0	101	55-105	0			
Benzo(a)anthracene	705	6.7	666.7	0	106	50-110	0			
Benzo(a)pyrene	674.7	6.7	666.7	0	101	50-110	0			
Benzo(b)fluoranthene	700.7	6.7	666.7	0	105	45-115	0			
Benzo(g,h,i)perylene	658.7	6.7	666.7	0	98.8	40-125	0			
Benzo(k)fluoranthene	682.3	6.7	666.7	0	102	45-115	0			
Chrysene	721	6.7	666.7	0	108	55-110	0			
Dibenzo(a,h)anthracene	660.3	6.7	666.7	0	99	40-125	0			
Fluoranthene	667.3	6.7	666.7	0	100	55-115	0			
Fluorene	549.7	6.7	666.7	0	82.4	50-110	0			
Indeno(1,2,3-cd)pyrene	658.7	6.7	666.7	0	98.8	40-120	0			
Naphthalene	553.7	6.7	666.7	0	83	40-105	0			
Pyrene	742.7	6.7	666.7	0	111	45-125	0			
Surr: 2-Fluorobiphenyl	1336	0	1667	0	80.2	12-100	0			
Surr: 4-Terphenyl-d14	1811	0	1667	0	109	25-137	0			
Surr: Nitrobenzene-d5	1418	0	1667	0	85.1	37-107	0			

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: 83316 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 16021256-01A MS			Units: µg/Kg		Analysis Date: 3/9/2016 03:46 PM	
Client ID:				Run ID: SVMS5_160309A			SeqNo: 3728628		Prep Date: 3/9/2016	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	516.2	6.6	658.4	17.28	75.8	45-110	0			
Acenaphthylene	514.5	6.6	658.4	0	78.1	45-105	0			
Anthracene	705.5	6.6	658.4	58.14	98.3	55-105	0			
Benzo(a)anthracene	772.6	6.6	658.4	138.9	96.3	50-110	0			
Benzo(a)pyrene	699.5	6.6	658.4	119.6	88.1	50-110	0			
Benzo(b)fluoranthene	760.8	6.6	658.4	168.1	90	45-115	0			
Benzo(g,h,i)perylene	644.2	6.6	658.4	75.09	86.4	40-125	0			
Benzo(k)fluoranthene	663.7	6.6	658.4	67.11	90.6	45-115	0			
Chrysene	794.4	6.6	658.4	150.2	97.8	55-110	0			
Dibenzo(a,h)anthracene	606.7	6.6	658.4	32.89	87.1	40-125	0			
Fluoranthene	886.9	6.6	658.4	231.6	99.5	55-115	0			
Fluorene	561	6.6	658.4	27.58	81	50-110	0			
Indeno(1,2,3-cd)pyrene	652.1	6.6	658.4	93.36	84.9	40-120	0			
Naphthalene	918.5	6.6	658.4	368.1	83.6	40-105	0			
Pyrene	894.1	6.6	658.4	220.9	102	45-125	0			
Surr: 2-Fluorobiphenyl	1202	0	1646	0	73	12-100	0			
Surr: 4-Terphenyl-d14	1678	0	1646	0	102	25-137	0			
Surr: Nitrobenzene-d5	1251	0	1646	0	76	37-107	0			

MSD				Sample ID: 16021256-01A MSD			Units: µg/Kg		Analysis Date: 3/9/2016 04:09 PM	
Client ID:				Run ID: SVMS5_160309A			SeqNo: 3728629		Prep Date: 3/9/2016	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	505.9	6.6	660.5	17.28	74	45-110	516.2	2.01	30	
Acenaphthylene	517.8	6.6	660.5	0	78.4	45-105	514.5	0.633	30	
Anthracene	645.3	6.6	660.5	58.14	88.9	55-105	705.5	8.91	30	
Benzo(a)anthracene	718.9	6.6	660.5	138.9	87.8	50-110	772.6	7.2	30	
Benzo(a)pyrene	672	6.6	660.5	119.6	83.6	50-110	699.5	4.01	30	
Benzo(b)fluoranthene	729.1	6.6	660.5	168.1	84.9	45-115	760.8	4.25	30	
Benzo(g,h,i)perylene	657.8	6.6	660.5	75.09	88.2	40-125	644.2	2.09	30	
Benzo(k)fluoranthene	625.8	6.6	660.5	67.11	84.6	45-115	663.7	5.87	30	
Chrysene	753.9	6.6	660.5	150.2	91.4	55-110	794.4	5.22	30	
Dibenzo(a,h)anthracene	611.3	6.6	660.5	32.89	87.6	40-125	606.7	0.746	30	
Fluoranthene	762.5	6.6	660.5	231.6	80.4	55-115	886.9	15.1	30	
Fluorene	537	6.6	660.5	27.58	77.1	50-110	561	4.37	30	
Indeno(1,2,3-cd)pyrene	652.9	6.6	660.5	93.36	84.7	40-120	652.1	0.111	30	
Naphthalene	870.5	6.6	660.5	368.1	76.1	40-105	918.5	5.36	30	
Pyrene	779.7	6.6	660.5	220.9	84.6	45-125	894.1	13.7	30	
Surr: 2-Fluorobiphenyl	1208	0	1651	0	73.2	12-100	1202	0.532	40	
Surr: 4-Terphenyl-d14	1542	0	1651	0	93.4	25-137	1678	8.47	40	
Surr: Nitrobenzene-d5	1138	0	1651	0	68.9	37-107	1251	9.49	40	

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83316** Instrument ID **SVMS5** Method: **SW846 8270D**

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-04A
1603414-05A	1603414-06A	1603414-07A
1603414-08A	1603414-09A	

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83327** Instrument ID **VMS5** Method: **SW8260B**

MBLK				Sample ID: MBLK-83327-83327				Units: µg/Kg-dry			Analysis Date: 3/9/2016 03:55 PM		
Client ID:			Run ID: VMS5_160309A			SeqNo: 3728905		Prep Date: 3/9/2016		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	940	0	1000	0	94	70-130		0					
Surr: 4-Bromofluorobenzene	967	0	1000	0	96.7	70-130		0					
Surr: Dibromofluoromethane	1030	0	1000	0	103	70-130		0					
Surr: Toluene-d8	932.5	0	1000	0	93.2	70-130		0					

LCS				Sample ID: LCS-83327-83327			Units: µg/Kg-dry		Analysis Date: 3/9/2016 02:10 PM		
Client ID:			Run ID: VMS5_160309A			SeqNo: 3728899		Prep Date: 3/9/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1100	30	1000	0	110	75-125	0				
Ethylbenzene	1102	30	1000	0	110	75-125	0				
m,p-Xylene	2254	60	2000	0	113	80-125	0				
o-Xylene	1090	30	1000	0	109	75-125	0				
Toluene	1070	30	1000	0	107	70-125	0				
Xylenes, Total	3345	90	3000	0	112	75-125	0				
Surr: 1,2-Dichloroethane-d4	917.5	0	1000	0	91.8	70-130	0				
Surr: 4-Bromofluorobenzene	1014	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	987	0	1000	0	98.7	70-130	0				
Surr: Toluene-d8	942.5	0	1000	0	94.2	70-130	0				

MS				Sample ID: 1603404-01A MS				Units: µg/Kg-dry			Analysis Date: 3/9/2016 10:29 PM		
Client ID:			Run ID: VMS5_160309A			SeqNo: 3728926		Prep Date: 3/9/2016		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	1362	39	1299	0	105	75-125	0						
Ethylbenzene	1335	39	1299	0	103	75-125	0						
m,p-Xylene	2759	78	2598	0	106	80-125	0						
o-Xylene	1340	39	1299	0	103	75-125	0						
Toluene	1284	39	1299	0	98.8	70-125	0						
Xylenes, Total	4099	120	3897	0	105	75-125	0						
Surr: 1,2-Dichloroethane-d4	1192	0	1299	0	91.8	70-130	0						
Surr: 4-Bromofluorobenzene	1338	0	1299	0	103	70-130	0						
Surr: Dibromofluoromethane	1280	0	1299	0	98.6	70-130	0						
Surr: Toluene-d8	1203	0	1299	0	92.6	70-130	0						

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83327** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 1603404-01A MSD			Units: µg/Kg-dry		Analysis Date: 3/9/2016 10:55 PM		
Client ID:		Run ID: VMS5_160309A			SeqNo: 3728927		Prep Date: 3/9/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1460	39	1299	0	112	75-125	1362	6.9	30		
Ethylbenzene	1437	39	1299	0	111	75-125	1335	7.36	30		
m,p-Xylene	2938	78	2598	0	113	80-125	2759	6.29	30		
o-Xylene	1420	39	1299	0	109	75-125	1340	5.84	30		
Toluene	1387	39	1299	0	107	70-125	1284	7.68	30		
Xylenes, Total	4358	120	3897	0	112	75-125	4099	6.14	30		
Surr: 1,2-Dichloroethane-d4	1146	0	1299	0	88.2	70-130	1192	3.94	30		
Surr: 4-Bromofluorobenzene	1325	0	1299	0	102	70-130	1338	1.02	30		
Surr: Dibromofluoromethane	1257	0	1299	0	96.8	70-130	1280	1.84	30		
Surr: Toluene-d8	1196	0	1299	0	92.1	70-130	1203	0.541	30		

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-04A
1603414-05A	1603414-06A	1603414-07A
1603414-08A	1603414-09A	

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83308** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-83308-83308				Units: s.u.			Analysis Date: 3/8/2016 06:45 PM			
Client ID:				Run ID: WETCHEM_1603080				SeqNo: 3726814			Prep Date: 3/8/2016		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						

DUP		Sample ID: 1603412-01A DUP				Units: s.u.		Analysis Date: 3/8/2016 06:45 PM		
Client ID:		Run ID: WETCHEM_1603080				SeqNo: 3726819		Prep Date: 3/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.07	0	0	0	0	0-0	8.04	0.372	20	

DUP				Sample ID: 1603414-01A DUP				Units: s.u.			Analysis Date: 3/8/2016 06:45 PM			
Client ID: LTR1-SS1				Run ID: WETCHEM_1603080				SeqNo: 3726821			Prep Date: 3/8/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH	7.85	0	0	0	0	0-0	7.87	0.254	20					

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A

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

Client: Olsson Associates
 Work Order: 1603414
 Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83335** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-83335-83335				Units: mg/Kg		Analysis Date: 3/10/2016 12:00 PM		
Client ID:		Run ID: WETCHEM_160310J		SeqNo: 3729316		Prep Date: 3/9/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-83335-83335				Units: mg/Kg		Analysis Date: 3/10/2016 12:00 PM		
Client ID:		Run ID: WETCHEM_160310J		SeqNo: 3729315		Prep Date: 3/9/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.51 1.0 5 0 90.2 80-120 0

MS		Sample ID: 1603404-01A MS				Units: mg/Kg		Analysis Date: 3/10/2016 12:00 PM		
Client ID:		Run ID: WETCHEM_160310J		SeqNo: 3729300		Prep Date: 3/9/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.186 0.98 4.902 0.3558 78.1 75-125 0

MS		Sample ID: 1603404-01A MSI				Units: mg/Kg		Analysis Date: 3/10/2016 12:00 PM		
Client ID:		Run ID: WETCHEM_160310J		SeqNo: 3729302		Prep Date: 3/9/2016		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2056 98 2272 0.3558 90.5 75-125 0

MSD		Sample ID: 1603404-01A MSD				Units: mg/Kg		Analysis Date: 3/10/2016 12:00 PM		
Client ID:		Run ID: WETCHEM_160310J		SeqNo: 3729301		Prep Date: 3/9/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.186 0.98 4.902 0.3558 78.1 75-125 4.186 0 20

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **83342** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1603404-01A DUP				Units: mmhos/cm @25°		Analysis Date: 3/15/2016 11:15 AM		
Client ID:		Run ID: WETCHEM_160315H				SeqNo: 3733848		Prep Date: 3/14/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	7.6	0.050	0	0	0		7.44	2.13	50	

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A

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

Client: Olsson Associates
Work Order: 1603414
Project: Lateral to Rooth 1 Spill

QC BATCH REPORT

Batch ID: **R183171** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R183171					Units: % of sample		Analysis Date: 3/8/2016 04:23 PM		
Client ID:			Run ID: MOIST_160308C			SeqNo: 3727788		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-R183171					Units: % of sample		Analysis Date: 3/8/2016 04:23 PM	
Client ID:			Run ID: MOIST_160308C			SeqNo: 3727787		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: 1603414-02A DUP				Units: % of sample			Analysis Date: 3/8/2016 04:23 PM			
Client ID: LTR1-SS2				Run ID: MOIST_160308C				SeqNo: 3727777			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 19.97 0.050 0 0 0 19.88 0.452 20

DUP				Sample ID: 1603414-09A DUP				Units: % of sample			Analysis Date: 3/8/2016 04:23 PM			
Client ID: LTR1-SS8				Run ID: MOIST_160308C				SeqNo: 3727784			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 23.23 0.050 0 0 0 23.15 0.345 20

The following samples were analyzed in this batch:

1603414-01A	1603414-02A	1603414-03A
1603414-04A	1603414-05A	1603414-06A
1603414-07A	1603414-08A	1603414-09A
1603414-10A		

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

- | | | |
|--|--|--|
| <input type="checkbox"/> Cincinnati, OH
+1 513 733 5336 | <input checked="" type="checkbox"/> Holland, MI
+1 616 399 6070 | <input type="checkbox"/> Salt Lake City, UT
+1 801 266 7700 |
| <input type="checkbox"/> Everett, WA
+1 425 356 2600 | <input type="checkbox"/> Houston, TX
+1 281 530 5856 | <input type="checkbox"/> Spring City, PA
+1 610 948 4903 |
| <input type="checkbox"/> Fort Collins, CO
+1 970 490 1511 | <input type="checkbox"/> Middletown, PA
+1 717 944 5541 | <input type="checkbox"/> York, PA
+1 717 505 5280 |

Customer Information		Project Information		Parameter/Method Request for Analysis															
Purchase Order		Project Name	Lateral to Rooth 1 Spill	A TPH (GRO & DRO)															
Work Order		Project Number	013.3287.100.100004	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	780 Horizon Drive, Ste. 102	Address	780 Horizon Drive, Ste. 102	E Sodium Adsorption Ratio															
				F pH															
				G Metals (See Attached List) CO Table 910															
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506	H Arsenic Only															
Phone	970.283.7800	Phone	970.283.7800																
Fax	970.283.7456	Fax	970.283.7456																
e-Mail Address	tdobransky@olssonconsulting.com	e-Mail Address																	
No.	Sample Description	Date	Time	Matrix	Pres.	# Batches	A	B	C	D	E	F	G	H	I	J	Hold		
1	LTR1-SS1	03/04/16	1030	Soil	8	2	X	X	X	X	X	X	X						
2	LTR1-SS2	03/04/16	1045	Soil	8	2	X	X	X	X	X	X	X						
3	LTR1-BG 1	03/04/16	1105	Soil	8	2				X	X	X	X						
4	LTR1-SS3	03/04/16	1115	Soil	8	2	X	X	X	X	X	X	X						
5	LTR1-SS4	03/04/16	1130	Soil	8	2	X	X	X	X	X	X	X						
6	LTR1-SS5	03/04/16	1140	Soil	8	2	X	X	X	X	X	X	X						
7	LTR1-SS6	03/04/16	1240	Soil	8	2	X	X	X	X	X	X	X						
8	LTR1-SS7	03/04/16	1255	Soil	8	2	X	X	X	X	X	X	X						
9	LTR1-SS8	03/04/16	1305	Soil	8	2	X	X	X	X	X	X	X						
10	LTR1-BG2	03/04/16	1325	Soil	8	1								X					
Samples(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Other		Results Due Date:											
Jason McLarty		FedEx		STD 10 Wk Days		15 Wk Days		12 Wk Days		24 Hour									
Relinquished By:	Date:	Time:	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter															
<i>Jason McLarty</i>	3/7/16	900	<i>MB</i>																
Relinquished By:	Date:	Time:	Received by (Laboratory):	Cooler Temp. QC Package: (Check Box Below)															
<i>MB</i>	5/7/16	1200	<i>MB</i>	x Level II: Standard QC															
Logged by (Laboratory):				Level III: Std QC + Raw Data															
<i>MB</i>				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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 NICK MARTINEZ
 ALS ENVIRONMENTAL PARACHUTE
 PARACHUTE SERVICE CENTER
 127 EAST 1ST ST
 PARACHUTE, CO 81635
 UNITED STATES US

SHIP DATE: 07MAR16
 ACTWGT: 70.00 LB
 CAD: 22648401NET3730
 DMS: 14x26x15 IN
 BILL SENDER

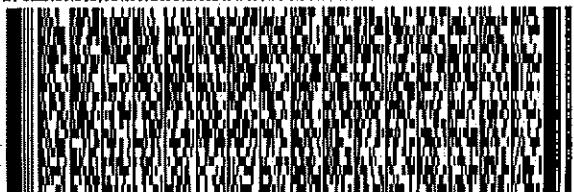
TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424

(816) 399-6070
 NV
 PO. PARACHUTE

REF: 030716-1

DEPT:



FedEx
Express



REL#
3785346

540J1KF34727F

2 of 2
 MPB# 7758 1746 6890
 0263
 Mstr# 7758 1746 7430

TUE - 08 MAR 10:30A
 PRIORITY OVERNIGHT

0201

XX HLMA

49424
 GRR



ALS Environmental
 3352 128th Avenue
 Holland, Michigan 49424
 Tel. +1 616 399 8070
 Fax. +1 616 399 6185

on this page to print your label to your laser or inkjet printer.
 along the horizontal line
 and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Print your original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could
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 of profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is
 of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of
 \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written
 within strict time limits. See current FedEx Service Guide.

CUSTODY SEAL

Date: 5/1/16 Time: 17:30
 Name: [Signature]
 Company: ALS

Seal Broken By:

Date:

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **08-Mar-16 12:00**

Work Order: **1603414**

Received by: **MB**

Checklist completed by Meghan Broadbent
eSignature

08-Mar-16
Date

Reviewed by: Chad Whelton
eSignature

08-Mar-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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input 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>0.8/0.8</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>3/8/2016 2:11:18 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:



01-Apr-2020

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

Re: **Lateral to Rooth 1 Spill Resampling**

Work Order: **1807971**

Dear Tim,

ALS Environmental received 6 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 15.

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: Olsson Associates
Project: Lateral to Rooth 1 Spill Resampling
Work Order: 1807971

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>
1807971-01	LTR1-SS1	Soil		7/13/2018 08:45	7/17/2018 09:00	<input type="checkbox"/>
1807971-02	LTR1-SS2	Soil		7/13/2018 08:50	7/17/2018 09:00	<input type="checkbox"/>
1807971-03	LTR1-SS3	Soil		7/13/2018 09:00	7/17/2018 09:00	<input type="checkbox"/>
1807971-04	LTR1-SS4	Soil		7/13/2018 09:05	7/17/2018 09:00	<input type="checkbox"/>
1807971-05	LTR1-SS5	Soil		7/13/2018 09:15	7/17/2018 09:00	<input type="checkbox"/>
1807971-06	LTR1-SS6	Soil		7/13/2018 09:25	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: 01-Apr-20

Client: Olsson Associates

Project: Lateral to Rooth 1 Spill Resampling

Sample ID: LTR1-SS1

Collection Date: 7/13/2018 08:45 AM

Work Order: 1807971

Lab ID: 1807971-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ELECTRICAL CONDUCTIVITY (SAR)							
				Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18	
						Analyst: JB	
Electrical Conductivity @ Saturation	1.1		0.011	0.10	mmhos/cm @25°	20	7/30/2018 10:20

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

ALS Group, USA

Date: 01-Apr-20

Client: Olsson Associates

Project: Lateral to Rooth 1 Spill Resampling

Sample ID: LTR1-SS2

Collection Date: 7/13/2018 08:50 AM

Work Order: 1807971

Lab ID: 1807971-02

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: JB
Electrical Conductivity @ Saturation	0.70		0.011	0.10	mmhos/cm @25°	20	7/30/2018 10:20

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

ALS Group, USA

Date: 01-Apr-20

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill Resampling
Sample ID: LTR1-SS3
Collection Date: 7/13/2018 09:00 AM

Work Order: 1807971
Lab ID: 1807971-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW3546 / 7/18/18		Analyst: RP
DRO (C10-C28)	U		4.2	7.3	mg/Kg-dry	1	7/24/2018 04:22
Surr: 4-Terphenyl-d14	58.6			34-130	%REC	1	7/24/2018 04:22
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/18/18		Analyst: MEB
GRO (C6-C10)	U		2.1	5.1	mg/Kg-dry	1	7/19/2018 12:08
Surr: Toluene-d8	121			71-123	%REC	1	7/19/2018 12:08
SOLUBLE CATIONS FOR SAR							
			Method: SW6020B		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Calcium	160		0.86	5.0	mg/L	10	7/26/2018 21:07
Magnesium	38		0.068	2.0	mg/L	10	7/26/2018 21:07
Sodium	62		0.34	2.0	mg/L	10	7/26/2018 21:07
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Sodium Adsorption Ratio	1.1		0.010	0.010	none	1	7/26/2018
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: JB
Electrical Conductivity @ Saturation	1.3		0.011	0.10	mmhos/cm @25°	20	7/30/2018 10:20
MOISTURE							
			Method: SW3550C				Analyst: NW
Moisture	1.2		0.025	0.050	% of sample	1	7/26/2018 17:55

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

ALS Group, USA

Date: 01-Apr-20

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill Resampling
Sample ID: LTR1-SS4
Collection Date: 7/13/2018 09:05 AM

Work Order: 1807971
Lab ID: 1807971-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Calcium	130		1.7	10	mg/L	20	7/26/2018 21:08
Magnesium	38		0.14	4.0	mg/L	20	7/26/2018 21:08
Sodium	120		0.68	4.0	mg/L	20	7/26/2018 21:08
<hr/>							
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Sodium Adsorption Ratio	2.4		0.010	0.010	none	1	7/26/2018
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: JB
Electrical Conductivity @ Saturation	1.6		0.011	0.10	mmhos/cm @25°	20	7/30/2018 10:20

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

ALS Group, USA

Date: 01-Apr-20

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill Resampling
Sample ID: LTR1-SS5
Collection Date: 7/13/2018 09:15 AM

Work Order: 1807971
Lab ID: 1807971-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW3546 / 7/18/18		Analyst: RP
DRO (C10-C28)	U		4.3	7.4	mg/Kg-dry	1	7/24/2018 04:52
Surr: 4-Terphenyl-d14	59.6			34-130	%REC	1	7/24/2018 04:52
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/18/18		Analyst: MEB
GRO (C6-C10)	U		2.1	5.1	mg/Kg-dry	1	7/19/2018 01:26
Surr: Toluene-d8	122			71-123	%REC	1	7/19/2018 01:26
SOLUBLE CATIONS FOR SAR							
			Method: SW6020B		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Calcium	150		0.86	5.0	mg/L	10	7/26/2018 21:10
Magnesium	31		0.068	2.0	mg/L	10	7/26/2018 21:10
Sodium	38		0.34	2.0	mg/L	10	7/26/2018 21:10
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Sodium Adsorption Ratio	0.74		0.010	0.010	none	1	7/26/2018
MOISTURE							
			Method: SW3550C				Analyst: NW
Moisture	0.75		0.025	0.050	% of sample	1	7/26/2018 17:55

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

ALS Group, USA

Date: 01-Apr-20

Client: Olsson Associates
Project: Lateral to Rooth 1 Spill Resampling
Sample ID: LTR1-SS6
Collection Date: 7/13/2018 09:25 AM

Work Order: 1807971
Lab ID: 1807971-06
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Calcium	140		1.7	10	mg/L	20	7/26/2018 21:12
Magnesium	31		0.14	4.0	mg/L	20	7/26/2018 21:12
Sodium	17		0.68	4.0	mg/L	20	7/26/2018 21:12
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/26/18		Analyst: STP
Sodium Adsorption Ratio	0.33		0.010	0.010	none	1	7/26/2018

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

Client: Olsson Associates

QC BATCH REPORT

Work Order: 1807971

Project: Lateral to Rooth 1 Spill Resampling

Batch ID: 121503

Instrument ID GC8

Method: SW8015D

MBLK		Sample ID: DBLKS1-121503-121503				Units: mg/Kg		Analysis Date: 7/24/2018 09:16 AM		
Client ID:		Run ID: GC8_180723B				SeqNo: 5164394		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	1.933	0	3.33	0	58.1	34-130		0		

LCS		Sample ID: DLCSS1-121503-121503				Units: mg/Kg		Analysis Date: 7/24/2018 02:31 PM		
Client ID:		Run ID: GC8_180723B				SeqNo: 5165161		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	399.3	5.0	333	0	120	65-122		0		
Surr: 4-Terphenyl-d14	2.817	0	3.33	0	84.6	34-130		0		

MS		Sample ID: 18071000-02A MS				Units: mg/Kg		Analysis Date: 7/24/2018 03:00 PM		
Client ID:		Run ID: GC8_180723B				SeqNo: 5165162		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	373.5	5.0	332.2	13.2	108	65-122		0		
Surr: 4-Terphenyl-d14	2.66	0	3.322	0	80.1	34-130		0		

MSD		Sample ID: 18071000-02A MSD				Units: mg/Kg		Analysis Date: 7/24/2018 02:01 PM		
Client ID:		Run ID: GC8_180723B				SeqNo: 5165160		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	337.8	5.0	330.4	13.2	98.2	65-122	373.5	10	30	
Surr: 4-Terphenyl-d14	2.729	0	3.304	0	82.6	34-130	2.66	2.55	30	

The following samples were analyzed in this batch:

1807971-03B 1807971-05B

Client: Olsson Associates
 Work Order: 1807971
 Project: Lateral to Rooth 1 Spill Resampling

QC BATCH REPORT

Batch ID: **121509** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-121509-121509				Units: µg/Kg-dry		Analysis Date: 7/18/2018 08:38 PM		
Client ID:		Run ID: GC10_180718A				SeqNo: 5154848		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	5,000								
<i>Surr: Toluene-d8</i>	5944	0	5000	0	119	71-123	0			

LCS		Sample ID: LCS-121509-121509				Units: µg/Kg-dry		Analysis Date: 7/18/2018 07:46 PM		
Client ID:		Run ID: GC10_180718A				SeqNo: 5154847		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	408400	5,000	500000	0	81.7	71-123	0			
<i>Surr: Toluene-d8</i>	5748	0	5000	0	115	71-123	0			

MS		Sample ID: 1807966-01B MS				Units: µg/Kg-dry		Analysis Date: 7/19/2018 03:37 AM		
Client ID:		Run ID: GC10_180718A				SeqNo: 5154860		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	184800	5,100	513200	0	36	71-123	0			S
<i>Surr: Toluene-d8</i>	6229	0	5132	0	121	71-123	0			

MSD		Sample ID: 1807966-01B MSD				Units: µg/Kg-dry		Analysis Date: 7/19/2018 04:03 AM		
Client ID:		Run ID: GC10_180718A				SeqNo: 5154861		Prep Date: 7/18/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	211000	5,100	513200	0	41.1	71-123	184800	13.2	30	S
<i>Surr: Toluene-d8</i>	6130	0	5132	0	119	71-123	6229	1.6	30	

The following samples were analyzed in this batch:

1807971-03B	1807971-05B
-------------	-------------

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

Client: Olsson Associates
Work Order: 1807971
Project: Lateral to Rooth 1 Spill Resampling

QC BATCH REPORT

Batch ID: **121912** Instrument ID **ICPMS3** Method: **SW6020B**

DUP		Sample ID: 1807966-05ADUP				Units: mg/L		Analysis Date: 7/26/2018 08:57 PM		
Client ID:		Run ID: ICPMS3_180726A				SeqNo: 5170832		Prep Date: 7/26/2018		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	134.2	5.0	0	0	0	0-0	114.4	15.9		
Magnesium	27.35	2.0	0	0	0	0-0	14.48	61.6		
Sodium	30.58	2.0	0	0	0	0-0	82.52	91.8		

The following samples were analyzed in this batch:

1807971-01A	1807971-02A	1807971-03A
1807971-04A	1807971-05A	1807971-06A

Batch ID: **121912** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1807966-05ADUP				Units: none		Analysis Date: 7/26/2018		
Client ID:		Run ID: SAR_180726A				SeqNo: 5172848		Prep Date: 7/26/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.6289	0.010	0	0	0		1.932	102	50	R

The following samples were analyzed in this batch:

1807971-01A	1807971-02A	1807971-03A
1807971-04A	1807971-05A	1807971-06A

Batch ID: **121912** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1807966-05A DUP				Units: mmhos/cm @25°		Analysis Date: 7/30/2018 10:20 AM		
Client ID:		Run ID: WETCHEM_180730F				SeqNo: 5174451		Prep Date: 7/26/2018		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.066	0.10	0	0	0		1.288	18.9	50	

The following samples were analyzed in this batch:

1807971-01A	1807971-02A	1807971-03A
1807971-04A	1807971-05A	1807971-06A

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

Client: Olsson Associates
Work Order: 1807971
Project: Lateral to Rooth 1 Spill Resampling

QC BATCH REPORT

Batch ID: **R241048** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R241048				Units: % of sample		Analysis Date: 7/26/2018 05:55 PM		
Client ID:		Run ID: MOIST_180726D				SeqNo: 5171716		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-R241048				Units: % of sample		Analysis Date: 7/26/2018 05:55 PM		
Client ID:		Run ID: MOIST_180726D				SeqNo: 5171715		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: 18071379-01B DUP				Units: % of sample		Analysis Date: 7/26/2018 05:55 PM		
Client ID:		Run ID: MOIST_180726D				SeqNo: 5171696		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 6.74 0.050 0 0 0 0-0 7.05 4.5 10

DUP		Sample ID: 18071379-03B DUP				Units: % of sample		Analysis Date: 7/26/2018 05:55 PM		
Client ID:		Run ID: MOIST_180726D				SeqNo: 5171699		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 10.47 0.050 0 0 0 0-0 10.95 4.48 10

The following samples were analyzed in this batch:

1807971-03B 1807971-05B

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



Page 1 of 1

COC ID: 123456

- ☐ 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	Lateral to Rooth 1 Spill Resampling	A TPH (GRO & DRO)													
Work Order		Project Number	013.3287.100.100004	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.	Dana Mack	D Electrical Conductivity													
Address		Address	760 Horizon Drive, Ste. 102	E Sodium Adsorption Ratio													
City/State/Zip		City/State/Zip	Grand Junction, CO 81506	F pH													
Phone		Phone	970.263.7800	G Metals (See Attached List) CO Table 910													
Fax		Fax	970.263.7456	H Arsenic Only													
e-Mail Address	tdobransky@entradainc.com	e-Mail Address	dmack@olssonassociates.com	I													
				J													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LTR1-SS1	07/13/18	845	Soil	8	2				X							
2	LTR1-SS2	07/13/18	850	Soil	8	2				X							
3	LTR1-SS3	07/13/18	900	Soil	8	2	X			X	X						
4	LTR1-SS4	07/13/18	905	Soil	8	2				X	X						
5	LTR1-SS5	07/13/18	915	Soil	8	2	X				X						
6	LTR1-SS6	07/13/18	925	Soil	8	2					X						
7																	
8																	
9																	
10																	
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													
Results Due Date:																	
Reinforced by:	Date: 7/16/18	Time:	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter													
Reinforced by:	Date: 7-16-18	Time: 7:50	Received by (Laboratory):	Cooler Temp. 4.2°													
Logged by (Laboratory):	Date: 7/17/18	Time: 1640	Checked by (Laboratory):	QC Package: (Check Box Below) <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:													
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																	

Sample Receipt Checklist

Client Name: **OLSSON**

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

Work Order: **1807971**

Received by: **KRW**

Checklist completed by **Keith Wierenga**

17-Jul-18

Reviewed by: **Chad Whelton**

18-Jul-18

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

SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

7/17/2018 4:59:46 PM

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:



29-Mar-2021

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

Re: **Lateral to Rooth 1**

Work Order: **21032117**

Dear Tim,

ALS Environmental received 3 samples on 20-Mar-2021 10:00 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 12.

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: Lateral to Rooth 1
Work Order: 21032117

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>
21032117-01	LTR1-SS2	Soil		3/18/2021 12:30	3/20/2021 10:00	<input type="checkbox"/>
21032117-02	LTR1-SS5	Soil		3/18/2021 12:40	3/20/2021 10:00	<input type="checkbox"/>
21032117-03	LTR1-SS6	Soil		3/18/2021 12:50	3/20/2021 10:00	<input type="checkbox"/>

Client: Entrada Consulting Group
Project: Lateral to Rooth 1
WorkOrder: 21032117

**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
µg/Kg-dry	Micrograms per Kilogram Dry Weight

ALS Group, USA

Date: 29-Mar-21

Client: Entrada Consulting Group
Project: Lateral to Rooth 1
Sample ID: LTR1-SS2
Collection Date: 3/18/2021 12:30 PM

Work Order: 21032117
Lab ID: 21032117-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) Method: SW8270E Prep: SW3546 / 3/24/21 Analyst: EEW							
1-Methylnaphthalene	U		3.0	5.0	µg/Kg-dry	1	3/25/2021 17:53
2-Methylnaphthalene	6.5		3.5	5.0	µg/Kg-dry	1	3/25/2021 17:53
Acenaphthene	6.7		4.3	5.0	µg/Kg-dry	1	3/25/2021 17:53
Anthracene	13		4.5	5.0	µg/Kg-dry	1	3/25/2021 17:53
Benzo(a)anthracene	U		4.9	5.0	µg/Kg-dry	1	3/25/2021 17:53
Benzo(a)pyrene	U		4.0	5.0	µg/Kg-dry	1	3/25/2021 17:53
Benzo(b)fluoranthene	U		4.3	5.0	µg/Kg-dry	1	3/25/2021 17:53
Benzo(k)fluoranthene	U		4.1	5.0	µg/Kg-dry	1	3/25/2021 17:53
Chrysene	U		4.6	5.0	µg/Kg-dry	1	3/25/2021 17:53
Dibenzo(a,h)anthracene	U		4.1	5.0	µg/Kg-dry	1	3/25/2021 17:53
Fluoranthene	8.8		4.0	5.0	µg/Kg-dry	1	3/25/2021 17:53
Fluorene	14		3.9	5.0	µg/Kg-dry	1	3/25/2021 17:53
Indeno(1,2,3-cd)pyrene	U		4.4	5.0	µg/Kg-dry	1	3/25/2021 17:53
Naphthalene	U		4.9	5.0	µg/Kg-dry	1	3/25/2021 17:53
Pyrene	7.0		4.8	5.0	µg/Kg-dry	1	3/25/2021 17:53
Surr: 2-Fluorobiphenyl	74.3			20-140	%REC	1	3/25/2021 17:53
Surr: 4-Terphenyl-d14	90.2			22-172	%REC	1	3/25/2021 17:53
Surr: Nitrobenzene-d5	81.1			28-140	%REC	1	3/25/2021 17:53
MOISTURE Method: SW3550C Analyst: KTP							
Moisture	19		0.10	0.10	% of sample	1	3/25/2021 13:44

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

ALS Group, USA

Date: 29-Mar-21

Client: Entrada Consulting Group
Project: Lateral to Rooth 1
Sample ID: LTR1-SS5
Collection Date: 3/18/2021 12:40 PM

Work Order: 21032117
Lab ID: 21032117-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)				Method: SW8270E	Prep: SW3546 / 3/24/21	Analyst: EEW	
1-Methylnaphthalene	U		3.1	5.1	µg/Kg-dry	1	3/25/2021 18:08
2-Methylnaphthalene	U		3.6	5.1	µg/Kg-dry	1	3/25/2021 18:08
Acenaphthene	U		4.4	5.1	µg/Kg-dry	1	3/25/2021 18:08
Anthracene	U		4.6	5.1	µg/Kg-dry	1	3/25/2021 18:08
Benzo(a)anthracene	U		5.0	5.1	µg/Kg-dry	1	3/25/2021 18:08
Benzo(a)pyrene	U		4.1	5.1	µg/Kg-dry	1	3/25/2021 18:08
Benzo(b)fluoranthene	U		4.4	5.1	µg/Kg-dry	1	3/25/2021 18:08
Benzo(k)fluoranthene	U		4.2	5.1	µg/Kg-dry	1	3/25/2021 18:08
Chrysene	U		4.7	5.1	µg/Kg-dry	1	3/25/2021 18:08
Dibenzo(a,h)anthracene	U		4.2	5.1	µg/Kg-dry	1	3/25/2021 18:08
Fluoranthene	U		4.1	5.1	µg/Kg-dry	1	3/25/2021 18:08
Fluorene	U		4.0	5.1	µg/Kg-dry	1	3/25/2021 18:08
Indeno(1,2,3-cd)pyrene	U		4.5	5.1	µg/Kg-dry	1	3/25/2021 18:08
Naphthalene	U		5.0	5.1	µg/Kg-dry	1	3/25/2021 18:08
Pyrene	U		4.9	5.1	µg/Kg-dry	1	3/25/2021 18:08
Surr: 2-Fluorobiphenyl	73.1			20-140	%REC	1	3/25/2021 18:08
Surr: 4-Terphenyl-d14	91.2			22-172	%REC	1	3/25/2021 18:08
Surr: Nitrobenzene-d5	82.3			28-140	%REC	1	3/25/2021 18:08
MOISTURE				Method: SW3550C		Analyst: KTP	
Moisture	22		0.10	0.10	% of sample	1	3/25/2021 13:44

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

ALS Group, USA

Date: 29-Mar-21

Client: Entrada Consulting Group
Project: Lateral to Rooth 1
Sample ID: LTR1-SS6
Collection Date: 3/18/2021 12:50 PM

Work Order: 21032117
Lab ID: 21032117-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) Method: SW8270E Prep: SW3546 / 3/24/21 Analyst: EEW							
1-Methylnaphthalene	U		3.1	5.2	µg/Kg-dry	1	3/25/2021 18:24
2-Methylnaphthalene	U		3.6	5.2	µg/Kg-dry	1	3/25/2021 18:24
Acenaphthene	U		4.4	5.2	µg/Kg-dry	1	3/25/2021 18:24
Anthracene	U		4.7	5.2	µg/Kg-dry	1	3/25/2021 18:24
Benzo(a)anthracene	U		5.0	5.2	µg/Kg-dry	1	3/25/2021 18:24
Benzo(a)pyrene	U		4.2	5.2	µg/Kg-dry	1	3/25/2021 18:24
Benzo(b)fluoranthene	U		4.4	5.2	µg/Kg-dry	1	3/25/2021 18:24
Benzo(k)fluoranthene	U		4.2	5.2	µg/Kg-dry	1	3/25/2021 18:24
Chrysene	U		4.8	5.2	µg/Kg-dry	1	3/25/2021 18:24
Dibenzo(a,h)anthracene	U		4.2	5.2	µg/Kg-dry	1	3/25/2021 18:24
Fluoranthene	U		4.1	5.2	µg/Kg-dry	1	3/25/2021 18:24
Fluorene	U		4.1	5.2	µg/Kg-dry	1	3/25/2021 18:24
Indeno(1,2,3-cd)pyrene	U		4.5	5.2	µg/Kg-dry	1	3/25/2021 18:24
Naphthalene	U		5.0	5.2	µg/Kg-dry	1	3/25/2021 18:24
Pyrene	U		5.0	5.2	µg/Kg-dry	1	3/25/2021 18:24
Surr: 2-Fluorobiphenyl	70.5			20-140	%REC	1	3/25/2021 18:24
Surr: 4-Terphenyl-d14	87.2			22-172	%REC	1	3/25/2021 18:24
Surr: Nitrobenzene-d5	79.6			28-140	%REC	1	3/25/2021 18:24
MOISTURE Method: SW3550C Analyst: KTP							
Moisture	22		0.10	0.10	% of sample	1	3/25/2021 13:44

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

Client: Entrada Consulting Group
Work Order: 21032117
Project: Lateral to Rooth 1

QC BATCH REPORT

Batch ID: **173996** Instrument ID **SVMS6** Method: **SW8270E**

MBLK		Sample ID: SBLKS1-173996-173996				Units: µg/Kg		Analysis Date: 3/25/2021 12:56 PM		
Client ID:		Run ID: SVMS6_210325A				SeqNo: 7251641		Prep Date: 3/24/2021		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	4.2								
2-Methylnaphthalene	U	4.2								
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>	2339	0	3333	0	70.2	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	2845	0	3333	0	85.3	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2629	0	3333	0	78.9	28-140	0			

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

Client: Entrada Consulting Group
Work Order: 21032117
Project: Lateral to Rooth 1

QC BATCH REPORT

Batch ID: **173996** Instrument ID **SVMS6** Method: **SW8270E**

LCS				Sample ID: SLCSS1-173996-173996				Units: µg/Kg			Analysis Date: 3/25/2021 12:10 PM			
Client ID:				Run ID: SVMS6_210325A				SeqNo: 7251638			Prep Date: 3/24/2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
1-Methylnaphthalene	1132	4.2	1333	0	84.9	40-140	0							
2-Methylnaphthalene	1046	4.2	1333	0	78.5	40-140	0							
Acenaphthene	1060	4.2	1333	0	79.5	40-140	0							
Anthracene	1100	4.2	1333	0	82.5	40-140	0							
Benzo(a)anthracene	1103	4.2	1333	0	82.7	40-140	0							
Benzo(a)pyrene	1021	4.2	1333	0	76.6	40-140	0							
Benzo(b)fluoranthene	1130	4.2	1333	0	84.8	40-140	0							
Benzo(k)fluoranthene	1001	4.2	1333	0	75.1	40-140	0							
Chrysene	1074	4.2	1333	0	80.5	40-140	0							
Dibenzo(a,h)anthracene	1187	4.2	1333	0	89.1	40-140	0							
Fluoranthene	1075	4.2	1333	0	80.6	40-140	0							
Fluorene	1046	4.2	1333	0	78.5	40-140	0							
Indeno(1,2,3-cd)pyrene	1279	4.2	1333	0	96	40-140	0							
Naphthalene	1091	4.2	1333	0	81.9	40-140	0							
Pyrene	1108	4.2	1333	0	83.1	40-140	0							
Surr: 2-Fluorobiphenyl	2446	0	3333	0	73.4	20-140	0							
Surr: 4-Terphenyl-d14	2667	0	3333	0	80	22-172	0							
Surr: Nitrobenzene-d5	1842	0	3333	0	55.3	28-140	0							

MS				Sample ID: 21031897-08A MS		Units: µg/Kg		Analysis Date: 3/25/2021 01:12 PM		
Client ID:		Run ID: SVMS6_210325A			SeqNo: 7251642		Prep Date: 3/24/2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	1015	4.1	1315	0	77.2	40-140	0			
2-Methylnaphthalene	1172	4.1	1315	0	89.1	40-140	0			
Acenaphthene	1131	4.1	1315	0	86	40-140	0			
Anthracene	1118	4.1	1315	0	85	40-140	0			
Benzo(a)anthracene	992.5	4.1	1315	2.15	75.3	40-140	0			
Benzo(a)pyrene	826.7	4.1	1315	0	62.9	40-140	0			
Benzo(b)fluoranthene	902.3	4.1	1315	0	68.6	40-140	0			
Benzo(k)fluoranthene	896.8	4.1	1315	0	68.2	40-140	0			
Chrysene	978.6	4.1	1315	0	74.4	40-140	0			
Dibenzo(a,h)anthracene	918.6	4.1	1315	0	69.9	40-140	0			
Fluoranthene	996.1	4.1	1315	0	75.8	40-140	0			
Fluorene	1102	4.1	1315	0	83.9	40-140	0			
Indeno(1,2,3-cd)pyrene	920.4	4.1	1315	0	70	40-140	0			
Naphthalene	1157	4.1	1315	0	88	40-140	0			
Pyrene	1180	4.1	1315	4.397	89.5	40-140	0			
Surr: 2-Fluorobiphenyl	2338	0	3287	0	71.1	20-140	0			
Surr: 4-Terphenyl-d14	2778	0	3287	0	84.5	22-172	0			
Surr: Nitrobenzene-d5	2306	0	3287	0	70.2	28-140	0			

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

Client: Entrada Consulting Group
 Work Order: 21032117
 Project: Lateral to Rooth 1

QC BATCH REPORT

Batch ID: 173996 Instrument ID SVMS6 Method: SW8270E

MSD				Sample ID: 21031897-08A MSD				Units: µg/Kg		Analysis Date: 3/25/2021 01:27 PM	
Client ID:		Run ID: SVMS6_210325A			SeqNo: 7251643		Prep Date: 3/24/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1-Methylnaphthalene	1021	4.1	1321	0	77.3	40-140	1015	0.547	30		
2-Methylnaphthalene	1143	4.1	1321	0	86.6	40-140	1172	2.45	30		
Acenaphthene	1118	4.1	1321	0	84.6	40-140	1131	1.17	30		
Anthracene	1102	4.1	1321	0	83.4	40-140	1118	1.43	30		
Benzo(a)anthracene	995.1	4.1	1321	2.15	75.2	40-140	992.5	0.259	30		
Benzo(a)pyrene	833.8	4.1	1321	0	63.1	40-140	826.7	0.848	30		
Benzo(b)fluoranthene	948.5	4.1	1321	0	71.8	40-140	902.3	5	30		
Benzo(k)fluoranthene	858.3	4.1	1321	0	65	40-140	896.8	4.38	30		
Chrysene	978	4.1	1321	0	74	40-140	978.6	0.0694	30		
Dibenzo(a,h)anthracene	933.1	4.1	1321	0	70.6	40-140	918.6	1.57	30		
Fluoranthene	983.9	4.1	1321	0	74.5	40-140	996.1	1.23	30		
Fluorene	1094	4.1	1321	0	82.8	40-140	1102	0.781	30		
Indeno(1,2,3-cd)pyrene	942.7	4.1	1321	0	71.4	40-140	920.4	2.4	30		
Naphthalene	1141	4.1	1321	0	86.4	40-140	1157	1.38	30		
Pyrene	1166	4.1	1321	4.397	87.9	40-140	1180	1.23	30		
Surr: 2-Fluorobiphenyl	2338	0	3303	0	70.8	20-140	2338	0.0381	30		
Surr: 4-Terphenyl-d14	2782	0	3303	0	84.2	22-172	2778	0.158	30		
Surr: Nitrobenzene-d5	2269	0	3303	0	68.7	28-140	2306	1.65	30		

The following samples were analyzed in this batch:

21032117-01A 21032117-02A 21032117-03A

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

Client: Entrada Consulting Group
 Work Order: 21032117
 Project: Lateral to Rooth 1

QC BATCH REPORT

Batch ID: **R312730** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R312730				Units: % of sample		Analysis Date: 3/25/2021 01:44 PM		
Client ID:		Run ID: MOIST_210325D				SeqNo: 7252046		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-R312730				Units: % of sample		Analysis Date: 3/25/2021 01:44 PM		
Client ID:		Run ID: MOIST_210325D				SeqNo: 7252045		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.99 0.10 100 0 100 98-102 0

DUP		Sample ID: 21032119-01A DUP				Units: % of sample		Analysis Date: 3/25/2021 01:44 PM		
Client ID:		Run ID: MOIST_210325D				SeqNo: 7252035		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.08 0.10 0 0 0 0-0 17.07 0.0586 10

DUP		Sample ID: 21032119-02A DUP				Units: % of sample		Analysis Date: 3/25/2021 01:44 PM		
Client ID:		Run ID: MOIST_210325D				SeqNo: 7252037		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.76 0.10 0 0 0 0-0 17.74 0.113 10

The following samples were analyzed in this batch:

21032117-01A 21032117-02A 21032117-03A

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

Chain of Custody Form

Page _____ of _____

☒ **ALS Environmental**
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager:							ALS Work Order #: 21032117															
Customer Information			Project Information				Parameter/Method Request for Analysis															
Purchase Order			Project Name	Lateral to Rooth 1			A	BTEx, TMBs														
Work Order			Project Number	018-065			B	Table 915 PAHs														
Company Name	Entrada		Bill To Company	Entrada			C	Table 915 Metals														
Send Report To	tdobranksy@entradainc.com		Invoice Attn.	Tim Dobranksy			D	Hot Water Soluble Boron														
Address	330 Grand Ave, Suite C		Address	330 Grand Ave, Suite C			E	GRO														
							F	ERO														
City/State/Zip	Grand Junction, CO 81501		City/State/Zip	Grand Junction, CO 81501			G	SAR/EC/pH														
Phone	970-270-2986		Phone	970-270-2986			H	Arsenic Only														
Fax			Fax				I															
e-Mail Address							J															
No.	Sample Description		Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold				
1	LTR1-SS2		3/18/2021	1230	Soil	8	1		X													
2	LTR1-SS5		3/18/2021	1240	Soil	8	1		X													
3	LTR1-SS6		3/18/2021	1250	Soil	8	1		X													
Sampler(s): Please Print & Sign Jason McLarty	Shipment Method:		Turnaround Time: (Business Days) <input type="checkbox"/> 10 BD <input checked="" type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD					<input type="checkbox"/> Other _____					Results Due Date:									
Relinquished by: 	Date: 3/19/21	Time: 1500	Received by: 		Date: 3/19/21	Time: 1500	Notes:															
Relinquished by: 	Date: 3/19/21	Time: 1831	Received by (Laboratory): 		Date: 3/20/21	Time: 1000	ALS Cooler ID 121	Cooler Temp 2.6°C	QC Package: (Check Box Below)													
Logged by (Laboratory): DFS	Date: 3/22/21	Time: 1545	Checked by (Laboratory): 			<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Raw Data																
						<input type="checkbox"/> TRRP LRC <input type="checkbox"/> TRRP Level IV																
						<input type="checkbox"/> Level IV: SW846 Methods/CLP like																
								<input type="checkbox"/> Other: _____														
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C								Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.														
Revision 2 - Effective 11/9/2016								Copyright 2016 by ALS Environmental														

Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **20-Mar-21 10:00**

Work Order: **21032117**

Received by: **DS**

Checklist completed by **Diane Shaw**

22-Mar-21

Reviewed by: **Chad Whelton**

23-Mar-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): **2.6/2.6 c** **IR1**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **3/22/2021 3:48:57 PM**

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: