



Legend

● Spill Origin
 ● Soil Sample Location
 ~ Spill Path
 Spill Area

0 400 800
 Ft
 1 inch = 400 ft



Project No: 018-065

Map By: NDB

Date: 3/18/2020

UP 34-31 Spill
 Chevron USA, Inc.
 Rio Blanco County, Colorado
 NE4 SE4 Section 31 T2S R102W
 E2 Section 32 T2S R102W



330 Grand Avenue, Unit C
 Grand Junction, CO 81501
 970-549-1015

Figure

1

Table 1
UP 34-31
Soil Data Summary

SAMPLE SUMMARY	
Location Description	UP 34-31 Spill
Sample Type	Grab Soil

LABORATORY DATA SUMMARY																			
Sample ID	UP 34-31-SS1	UP 34-31-SS2	UP 34-31-SS2	UP 34-31-SS2	UP 34-31-SS3	UP 34-31-SS3	UP 34-31-SS3	UP 34-31-SS3	UP 34-31-SS4	UP 34-31-SS4	UP 34-31-SS4	UP 34-31-SS5	UP 34-31-SS5	UP 34-31-SS5	UP 34-31-BG1	UP 34-31-BG2	UP 34-31-BG3	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"		
Sample Date	6/7/2016	6/7/2016	5/21/2020	8/7/2020	6/7/2016	5/21/2020	8/7/2020	6/7/2016	5/21/2020	8/7/2020	6/7/2016	5/21/2020	8/7/2020	6/7/2016	6/7/2016	6/7/2016			
Analytical Parameters																			
TPH																			
TPH Gasoline Range Organics	<3.3	<3.0	NT	NT	<4.1	NT	NT	<3.1	NT	NT	<3.0	NT	NT	NT	NT	NT	NT	500	mg/kg
TPH Diesel Range Organics	37	18	NT	NT	<16	NT	NT	21	NT	NT	92	NT	NT	NT	NT	NT	NT		
BTEX																			
Benzene	<0.040	<0.036	NT	NT	<0.049	NT	NT	<0.037	NT	NT	<0.037	NT	NT	NT	NT	NT	NT	0.17	mg/kg
Toluene	<0.040	<0.036	NT	NT	<0.049	NT	NT	<0.037	NT	NT	<0.037	NT	NT	NT	NT	NT	NT	85	mg/kg
Ethylbenzene	<0.040	<0.036	NT	NT	<0.049	NT	NT	<0.037	NT	NT	<0.037	NT	NT	NT	NT	NT	NT	100	mg/kg
Total Xylene	<0.12	0.11	NT	NT	<0.15	NT	NT	<0.11	NT	NT	<0.11	NT	NT	NT	NT	NT	NT	175	mg/kg
Metals																			
Arsenic	9.5	7.5	NT	NT	9.8	NT	NT	9.5	NT	NT	10	NT	NT	9.2	7.9	11		0.39	mg/kg
Barium	180	210	NT	NT	260	NT	NT	200	NT	NT	260	NT	NT	210	NT	NT	NT	15,000	mg/kg
Cadmium	<0.38	<0.37	NT	NT	<0.44	NT	NT	<0.39	NT	NT	<0.42	NT	NT	<0.37	NT	NT	NT	70	mg/kg
Chromium	14	14	NT	NT	13	NT	NT	15	NT	NT	16	NT	NT	14	NT	NT	NT	NA	mg/kg
Copper	22	20	NT	NT	17	NT	NT	22	NT	NT	25	NT	NT	21	NT	NT	NT	3,100	mg/kg
Lead	26	19	NT	NT	15	NT	NT	22	NT	NT	25	NT	NT	20	NT	NT	NT	400	mg/kg
Mercury	0.060	0.042	NT	NT	0.026	NT	NT	0.030	NT	NT	0.036	NT	NT	0.039	NT	NT	NT	23	mg/kg
Nickel	27	26	NT	NT	22	NT	NT	26	NT	NT	30	NT	NT	26	NT	NT	NT	1,600	mg/kg
Selenium	1.6	1.7	NT	NT	1.5	NT	NT	1.5	NT	NT	2.0	NT	NT	1.4	NT	NT	NT	390	mg/kg
Silver	<0.38	<3.7	NT	NT	<0.44	NT	NT	<0.39	NT	NT	<0.42	NT	NT	<0.37	NT	NT	NT	390	mg/kg
Zinc	130	120	NT	NT	120	NT	NT	130	NT	NT	150	NT	NT	120	NT	NT	NT	23,000	mg/kg
SAR Metals Analysis																			
Calcium	620	500	610	NT	450	690	NT	490	700	NT	550	1500	NT	640	NT	NT	NT	NA	mg/L
Magnesium	56	250	34	NT	290	14	NT	150	24	NT	190	31	NT	36	NT	NT	NT	NA	mg/L
Sodium	850	2000	24	NT	3500	13	NT	1800	42	NT	1700	19	NT	69	NT	NT	NT	NA	mg/L
Sodium Adsorption Ratio	8.8	18	0.26	NT	31	0.13	NT	18	0.42	NT	16	0.13	NT	0.7	NT	NT	NT	<12	ratio
Polynuclear Aromatic Hydrocarbons																			
Acenaphthene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	1,000	mg/kg
Anthracene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	2.2	mg/kg
Chrysene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	0.022	mg/kg
Fluoranthene	0.012	0.017	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	0.0096	NT	NT	NT	NT	NT	NT	1,000	mg/kg
Fluorene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	0.22	mg/kg
Napthalene	<0.0077	<0.0071	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	<0.0074	NT	NT	NT	NT	NT	NT	23	mg/kg
Pyrene	<0.0077	0.016	NT	NT	<0.010	NT	NT	<0.0074	NT	NT	0.012	NT	NT	NT	NT	NT	NT	1,000	mg/kg
General Chemistry																			
Chromium, Hexavalent	<1.1	<1.1	NT	NT	<1.3	NT	NT	<1.1	NT	NT	<1.1	NT	NT	<1.1	NT	NT	NT	23	mg/kg
Chromium, Trivalent	14	14	NT	NT	13	NT	NT	15	NT	NT	16	NT	NT	14	NT	NT	NT	120,000	mg/kg
Specific Conductivity	7.7	14	4.1	0.57	21	4.2	1.2	12	4.6	0.76	12	8.9	0.49	4.1	NT	NT	NT	<4 or 2 x the background	mmhos/cm
pH	7.9	8.3	NT	NT	7.8	NT	NT	8.1	NT	NT	7.8	NT	NT	8.0	NT	NT	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



20-Jun-2016

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

Re: **UP 34-31 Spill**

Work Order: **1606628**

Dear Tim,

ALS Environmental received 8 samples on 10-Jun-2016 10:00 AM for the analyses presented in the following report.

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

Sample results are compliant with 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 37.

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th 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: UP 34-31 Spill
Work Order: 1606628

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>
1606628-01	UP3431-SS1	Soil		6/7/2016 10:45	6/10/2016 10:00	<input type="checkbox"/>
1606628-02	UP3431-BG1	Soil		6/7/2016 10:55	6/10/2016 10:00	<input type="checkbox"/>
1606628-03	UP3431-SS2	Soil		6/7/2016 11:05	6/10/2016 10:00	<input type="checkbox"/>
1606628-04	UP3431-SS3	Soil		6/7/2016 11:55	6/10/2016 10:00	<input type="checkbox"/>
1606628-05	UP3431-BG2	Soil		6/7/2016 12:10	6/10/2016 10:00	<input type="checkbox"/>
1606628-06	UP3431-SS4	Soil		6/7/2016 12:25	6/10/2016 10:00	<input type="checkbox"/>
1606628-07	UP3431-SS5	Soil		6/7/2016 12:35	6/10/2016 10:00	<input type="checkbox"/>
1606628-08	UP3431-BG3	Soil		6/7/2016 12:40	6/10/2016 10:00	<input type="checkbox"/>

Client: Olsson Associates**Project:** UP 34-31 Spill**Work Order:** 1606628**Case Narrative**

Batch 87273, Method DRO_8015_S, Sample 1606628-07A: The DRO concentration in the Method Blank was greater than the quantitation limit. The sample result was greater than 5x the concentration in the Method Blank; therefore, no qualification is required.

Batch 87367, Method CR6_7196_S, Sample 1606628-01A MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

<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 Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

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

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS1
Collection Date: 6/7/2016 10:45 AM

Work Order: 1606628
Lab ID: 1606628-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 6/15/16	Analyst: IT
DRO (C10-C28)	37		9.1	mg/Kg-dry	1	6/15/2016 08:47 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>53.2</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	6/15/2016 08:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/13/16	Analyst: IT
GRO (C6-C10)	ND		3.3	mg/Kg-dry	1	6/14/2016 02:08 AM
<i>Surr: Toluene-d8</i>	<i>109</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	6/14/2016 02:08 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/13/16	Analyst: LR
Mercury	0.060		0.015	mg/Kg-dry	1	6/13/2016 06:27 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/14/16	Analyst: JEC
Arsenic	9.5		0.38	mg/Kg-dry	1	6/14/2016 10:39 PM
Barium	180		0.38	mg/Kg-dry	1	6/17/2016 04:49 PM
Cadmium	ND		0.38	mg/Kg-dry	1	6/14/2016 10:39 PM
Chromium	14		0.38	mg/Kg-dry	1	6/14/2016 10:39 PM
Copper	22		0.38	mg/Kg-dry	1	6/14/2016 10:39 PM
Lead	26		0.38	mg/Kg-dry	1	6/16/2016 01:26 AM
Nickel	27		0.38	mg/Kg-dry	1	6/16/2016 01:26 AM
Selenium	1.6		0.76	mg/Kg-dry	1	6/17/2016 04:49 PM
Silver	ND		0.38	mg/Kg-dry	1	6/14/2016 10:39 PM
Zinc	130		0.76	mg/Kg-dry	1	6/14/2016 10:39 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Calcium	620		5.0	mg/L	10	6/14/2016 06:00 PM
Magnesium	56		2.0	mg/L	10	6/14/2016 06:00 PM
Sodium	850		2.0	mg/L	10	6/14/2016 06:00 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Sodium Adsorption Ratio	8.8		0.010	none	1	6/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/14/16	Analyst: JF
Acenaphthene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Anthracene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Benzo(a)anthracene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Benzo(a)pyrene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Benzo(b)fluoranthene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Benzo(k)fluoranthene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Chrysene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Dibenzo(a,h)anthracene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Fluoranthene	0.012		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS1
Collection Date: 6/7/2016 10:45 AM

Work Order: 1606628
Lab ID: 1606628-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Indeno(1,2,3-cd)pyrene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Naphthalene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Pyrene	ND		0.0077	mg/Kg-dry	1	6/14/2016 09:27 PM
Surr: 2-Fluorobiphenyl	74.4		12-100	%REC	1	6/14/2016 09:27 PM
Surr: 4-Terphenyl-d14	71.2		25-137	%REC	1	6/14/2016 09:27 PM
Surr: Nitrobenzene-d5	53.6		37-107	%REC	1	6/14/2016 09:27 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/13/16	Analyst: LSY	
Benzene	ND		0.040	mg/Kg-dry	1	6/14/2016 07:38 AM
Ethylbenzene	ND		0.040	mg/Kg-dry	1	6/14/2016 07:38 AM
m,p-Xylene	ND		0.080	mg/Kg-dry	1	6/14/2016 07:38 AM
o-Xylene	ND		0.040	mg/Kg-dry	1	6/14/2016 07:38 AM
Toluene	ND		0.040	mg/Kg-dry	1	6/14/2016 07:38 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	6/14/2016 07:38 AM
Surr: 1,2-Dichloroethane-d4	95.6		70-130	%REC	1	6/14/2016 07:38 AM
Surr: 4-Bromofluorobenzene	97.3		70-130	%REC	1	6/14/2016 07:38 AM
Surr: Dibromofluoromethane	86.2		70-130	%REC	1	6/14/2016 07:38 AM
Surr: Toluene-d8	100		70-130	%REC	1	6/14/2016 07:38 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/14/16	Analyst: JB	
Electrical Conductivity @ Saturation	7.7		0.050	mmhos/cm @2	10	6/15/2016 11:20 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JJG		
Chromium, Trivalent	14		0.58	mg/Kg-dry	1	6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/15/16	Analyst: MB	
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/16/2016 04:00 PM
MOISTURE			SW3550C	Analyst: EDL		
Moisture	14		0.050	% of sample	1	6/10/2016 09:36 PM
PH			SW9045D	Prep: EXTRACT / 6/10/16	Analyst: EDL	
pH	7.9			s.u.	1	6/10/2016 04:04 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-BG1
Collection Date: 6/7/2016 10:55 AM

Work Order: 1606628
Lab ID: 1606628-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA						
Mercury	0.039		SW7471B 0.015	mg/Kg-dry	Prep: SW7471 / 6/13/16 1	Analyst: LR 6/13/2016 06:29 PM
METALS ANALYSIS BY ICP						
Arsenic	9.2		SW846 6010C 0.37	mg/Kg-dry	Prep: SW3050B / 6/14/16 1	Analyst: JEC 6/14/2016 10:44 PM
Barium	210		0.37	mg/Kg-dry	1	6/17/2016 04:55 PM
Cadmium	ND		0.37	mg/Kg-dry	1	6/14/2016 10:44 PM
Chromium	14		0.37	mg/Kg-dry	1	6/14/2016 10:44 PM
Copper	21		0.37	mg/Kg-dry	1	6/14/2016 10:44 PM
Lead	20		0.37	mg/Kg-dry	1	6/16/2016 01:31 AM
Nickel	26		0.37	mg/Kg-dry	1	6/16/2016 01:31 AM
Selenium	1.4		0.74	mg/Kg-dry	1	6/14/2016 10:44 PM
Silver	ND		0.37	mg/Kg-dry	1	6/14/2016 10:44 PM
Zinc	120		0.74	mg/Kg-dry	1	6/14/2016 10:44 PM
SOLUBLE CATIONS FOR SAR						
Calcium	640		SW846 6010C 5.0	mg/L	Prep: USDA Method 20B / 6/14/16 10	Analyst: JEC 6/14/2016 06:05 PM
Magnesium	36		2.0	mg/L	10	6/14/2016 06:05 PM
Sodium	69		2.0	mg/L	10	6/14/2016 06:05 PM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.72		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 6/14/16 1	Analyst: JEC 6/15/2016
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	4.1		USDA H60 METHO 0.050	mmhos/cm @2	Prep: USDA Method 20B / 6/14/16 10	Analyst: JB 6/15/2016 11:20 AM
CHROMIUM, TRIVALENT						
Chromium, Trivalent	14		CALCULATION 0.55	mg/Kg-dry	1	Analyst: JJG 6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	ND		SW7196A 1.1	mg/Kg-dry	Prep: SW3060A / 6/15/16 1	Analyst: MB 6/16/2016 04:00 PM
MOISTURE						
Moisture	8.3		SW3550C 0.050	% of sample	1	Analyst: EDL 6/10/2016 09:36 PM
PH						
pH	8.0		SW9045D	s.u.	Prep: EXTRACT / 6/10/16 1	Analyst: EDL 6/10/2016 04:04 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS2
Collection Date: 6/7/2016 11:05 AM

Work Order: 1606628
Lab ID: 1606628-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 6/15/16	Analyst: IT
DRO (C10-C28)	18		8.8	mg/Kg-dry	1	6/15/2016 09:47 PM
Surr: 4-Terphenyl-d14	43.3		39-133	%REC	1	6/15/2016 09:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/13/16	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	6/14/2016 02:33 AM
Surr: Toluene-d8	107		50-150	%REC	1	6/14/2016 02:33 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/14/16	Analyst: LR
Mercury	0.042		0.014	mg/Kg-dry	1	6/14/2016 06:54 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/14/16	Analyst: JEC
Arsenic	7.5		0.37	mg/Kg-dry	1	6/14/2016 10:50 PM
Barium	210		0.37	mg/Kg-dry	1	6/17/2016 05:01 PM
Cadmium	ND		0.37	mg/Kg-dry	1	6/14/2016 10:50 PM
Chromium	14		0.37	mg/Kg-dry	1	6/14/2016 10:50 PM
Copper	20		0.37	mg/Kg-dry	1	6/14/2016 10:50 PM
Lead	19		0.37	mg/Kg-dry	1	6/16/2016 01:36 AM
Nickel	26		0.37	mg/Kg-dry	1	6/16/2016 01:36 AM
Selenium	1.7		0.75	mg/Kg-dry	1	6/14/2016 10:50 PM
Silver	ND		0.37	mg/Kg-dry	1	6/14/2016 10:50 PM
Zinc	120		0.75	mg/Kg-dry	1	6/14/2016 10:50 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Calcium	500		5.0	mg/L	10	6/14/2016 06:11 PM
Magnesium	250		2.0	mg/L	10	6/14/2016 06:11 PM
Sodium	2,000		2.0	mg/L	10	6/14/2016 06:11 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Sodium Adsorption Ratio	18		0.010	none	1	6/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/14/16	Analyst: RS
Acenaphthene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Anthracene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Benzo(a)anthracene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Benzo(a)pyrene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Benzo(b)fluoranthene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Benzo(k)fluoranthene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Chrysene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Dibenzo(a,h)anthracene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Fluoranthene	0.017		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS2
Collection Date: 6/7/2016 11:05 AM

Work Order: 1606628
Lab ID: 1606628-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Indeno(1,2,3-cd)pyrene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Naphthalene	ND		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Pyrene	0.016		0.0071	mg/Kg-dry	1	6/14/2016 08:45 PM
Surr: 2-Fluorobiphenyl	55.5		12-100	%REC	1	6/14/2016 08:45 PM
Surr: 4-Terphenyl-d14	83.9		25-137	%REC	1	6/14/2016 08:45 PM
Surr: Nitrobenzene-d5	51.6		37-107	%REC	1	6/14/2016 08:45 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/13/16	Analyst: LSY	
Benzene	ND		0.036	mg/Kg-dry	1	6/14/2016 08:03 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	6/14/2016 08:03 AM
m,p-Xylene	ND		0.072	mg/Kg-dry	1	6/14/2016 08:03 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	6/14/2016 08:03 AM
Toluene	ND		0.036	mg/Kg-dry	1	6/14/2016 08:03 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	6/14/2016 08:03 AM
Surr: 1,2-Dichloroethane-d4	94.0		70-130	%REC	1	6/14/2016 08:03 AM
Surr: 4-Bromofluorobenzene	98.6		70-130	%REC	1	6/14/2016 08:03 AM
Surr: Dibromofluoromethane	86.7		70-130	%REC	1	6/14/2016 08:03 AM
Surr: Toluene-d8	99.9		70-130	%REC	1	6/14/2016 08:03 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/14/16	Analyst: JB	
Electrical Conductivity @ Saturation	14		0.050	mmhos/cm @2	10	6/15/2016 11:20 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JJG		
Chromium, Trivalent	14		0.55	mg/Kg-dry	1	6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/15/16	Analyst: MB	
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/16/2016 04:00 PM
MOISTURE			SW3550C	Analyst: EDL		
Moisture	8.8		0.050	% of sample	1	6/10/2016 09:36 PM
PH			SW9045D	Prep: EXTRACT / 6/10/16	Analyst: EDL	
pH	8.3			s.u.	1	6/10/2016 04:04 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS3
Collection Date: 6/7/2016 11:55 AM

Work Order: 1606628
Lab ID: 1606628-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 6/15/16	Analyst: IT
DRO (C10-C28)	ND		16	mg/Kg-dry	1	6/15/2016 10:17 PM
Surr: 4-Terphenyl-d14	58.5		39-133	%REC	1	6/15/2016 10:17 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/13/16	Analyst: IT
GRO (C6-C10)	ND		4.1	mg/Kg-dry	1	6/14/2016 02:58 AM
Surr: Toluene-d8	99.4		50-150	%REC	1	6/14/2016 02:58 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/14/16	Analyst: LR
Mercury	0.026		0.016	mg/Kg-dry	1	6/14/2016 06:56 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/14/16	Analyst: JEC
Arsenic	9.8		0.44	mg/Kg-dry	1	6/14/2016 10:55 PM
Barium	260		0.44	mg/Kg-dry	1	6/17/2016 05:07 PM
Cadmium	ND		0.44	mg/Kg-dry	1	6/14/2016 10:55 PM
Chromium	13		0.44	mg/Kg-dry	1	6/14/2016 10:55 PM
Copper	17		0.44	mg/Kg-dry	1	6/14/2016 10:55 PM
Lead	15		0.44	mg/Kg-dry	1	6/16/2016 01:42 AM
Nickel	22		0.44	mg/Kg-dry	1	6/16/2016 01:42 AM
Selenium	1.5		0.88	mg/Kg-dry	1	6/17/2016 05:07 PM
Silver	ND		0.44	mg/Kg-dry	1	6/14/2016 10:55 PM
Zinc	120		0.88	mg/Kg-dry	1	6/14/2016 10:55 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Calcium	450		5.0	mg/L	10	6/14/2016 06:17 PM
Magnesium	290		2.0	mg/L	10	6/14/2016 06:17 PM
Sodium	3,500		20	mg/L	100	6/15/2016 11:49 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Sodium Adsorption Ratio	31		0.010	none	1	6/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/14/16	Analyst: RS
Acenaphthene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Anthracene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Benzo(a)anthracene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Benzo(a)pyrene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Benzo(b)fluoranthene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Benzo(k)fluoranthene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Chrysene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Dibenzo(a,h)anthracene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Fluoranthene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS3
Collection Date: 6/7/2016 11:55 AM

Work Order: 1606628
Lab ID: 1606628-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Indeno(1,2,3-cd)pyrene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Naphthalene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Pyrene	ND		0.010	mg/Kg-dry	1	6/14/2016 09:12 PM
Surr: 2-Fluorobiphenyl	67.8		12-100	%REC	1	6/14/2016 09:12 PM
Surr: 4-Terphenyl-d14	93.7		25-137	%REC	1	6/14/2016 09:12 PM
Surr: Nitrobenzene-d5	65.5		37-107	%REC	1	6/14/2016 09:12 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/13/16		Analyst: BG
Benzene	ND		0.049	mg/Kg-dry	1	6/15/2016 09:01 AM
Ethylbenzene	ND		0.049	mg/Kg-dry	1	6/15/2016 09:01 AM
m,p-Xylene	ND		0.098	mg/Kg-dry	1	6/15/2016 09:01 AM
o-Xylene	ND		0.049	mg/Kg-dry	1	6/15/2016 09:01 AM
Toluene	ND		0.049	mg/Kg-dry	1	6/15/2016 09:01 AM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	6/15/2016 09:01 AM
Surr: 1,2-Dichloroethane-d4	81.8		70-130	%REC	1	6/15/2016 09:01 AM
Surr: 4-Bromofluorobenzene	96.1		70-130	%REC	1	6/15/2016 09:01 AM
Surr: Dibromofluoromethane	92.6		70-130	%REC	1	6/15/2016 09:01 AM
Surr: Toluene-d8	88.8		70-130	%REC	1	6/15/2016 09:01 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/14/16		Analyst: JB
Electrical Conductivity @ Saturation	21		0.050	mmhos/cm @2	10	6/15/2016 11:20 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	13		0.66	mg/Kg-dry	1	6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/15/16		Analyst: MB
Chromium, Hexavalent	ND		1.3	mg/Kg-dry	1	6/16/2016 04:00 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	24		0.050	% of sample	1	6/10/2016 09:36 PM
PH			SW9045D	Prep: EXTRACT / 6/10/16		Analyst: EDL
pH	7.8			s.u.	1	6/10/2016 04:04 PM

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

ALS Group USA, Corp**Date:** 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-BG2
Collection Date: 6/7/2016 12:10 PM

Work Order: 1606628
Lab ID: 1606628-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	7.9		SW846 6010C 0.40	mg/Kg-dry	Prep: SW3050B / 6/14/16 1	Analyst: JEC 6/14/2016 11:01 PM
MOISTURE						
Moisture	5.6		SW3550C 0.050	% of sample	1	Analyst: EDL 6/10/2016 09:36 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS4
Collection Date: 6/7/2016 12:25 PM

Work Order: 1606628
Lab ID: 1606628-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 6/15/16	Analyst: IT
DRO (C10-C28)	21		9.1	mg/Kg-dry	1	6/15/2016 10:48 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>48.7</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	6/15/2016 10:48 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/13/16	Analyst: IT
GRO (C6-C10)	ND		3.1	mg/Kg-dry	1	6/14/2016 03:22 AM
<i>Surr: Toluene-d8</i>	<i>106</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	6/14/2016 03:22 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/14/16	Analyst: LR
Mercury	0.030		0.015	mg/Kg-dry	1	6/14/2016 06:58 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/14/16	Analyst: JEC
Arsenic	9.5		0.39	mg/Kg-dry	1	6/14/2016 11:06 PM
Barium	200		0.39	mg/Kg-dry	1	6/17/2016 05:12 PM
Cadmium	ND		0.39	mg/Kg-dry	1	6/14/2016 11:06 PM
Chromium	15		0.39	mg/Kg-dry	1	6/14/2016 11:06 PM
Copper	22		0.39	mg/Kg-dry	1	6/14/2016 11:06 PM
Lead	22		0.39	mg/Kg-dry	1	6/16/2016 01:53 AM
Nickel	26		0.39	mg/Kg-dry	1	6/16/2016 01:53 AM
Selenium	1.5		0.77	mg/Kg-dry	1	6/17/2016 05:12 PM
Silver	ND		0.39	mg/Kg-dry	1	6/14/2016 11:06 PM
Zinc	130		0.77	mg/Kg-dry	1	6/14/2016 11:06 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Calcium	490		5.0	mg/L	10	6/14/2016 06:23 PM
Magnesium	150		2.0	mg/L	10	6/14/2016 06:23 PM
Sodium	1,800		2.0	mg/L	10	6/14/2016 06:23 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Sodium Adsorption Ratio	18		0.010	none	1	6/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/14/16	Analyst: RS
Acenaphthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Benzo(a)anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Benzo(a)pyrene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Benzo(b)fluoranthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Benzo(k)fluoranthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Chrysene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Dibenzo(a,h)anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Fluoranthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS4
Collection Date: 6/7/2016 12:25 PM

Work Order: 1606628
Lab ID: 1606628-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Indeno(1,2,3-cd)pyrene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Naphthalene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Pyrene	ND		0.0074	mg/Kg-dry	1	6/14/2016 09:40 PM
Surr: 2-Fluorobiphenyl	68.7		12-100	%REC	1	6/14/2016 09:40 PM
Surr: 4-Terphenyl-d14	85.7		25-137	%REC	1	6/14/2016 09:40 PM
Surr: Nitrobenzene-d5	65.4		37-107	%REC	1	6/14/2016 09:40 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/13/16		Analyst: BG
Benzene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:28 AM
Ethylbenzene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:28 AM
m,p-Xylene	ND		0.075	mg/Kg-dry	1	6/15/2016 09:28 AM
o-Xylene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:28 AM
Toluene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:28 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	6/15/2016 09:28 AM
Surr: 1,2-Dichloroethane-d4	83.4		70-130	%REC	1	6/15/2016 09:28 AM
Surr: 4-Bromofluorobenzene	96.9		70-130	%REC	1	6/15/2016 09:28 AM
Surr: Dibromofluoromethane	94.1		70-130	%REC	1	6/15/2016 09:28 AM
Surr: Toluene-d8	90.2		70-130	%REC	1	6/15/2016 09:28 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/14/16		Analyst: JB
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @2	10	6/15/2016 11:20 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	15		0.56	mg/Kg-dry	1	6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/15/16		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/16/2016 04:00 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	11		0.050	% of sample	1	6/10/2016 09:36 PM
PH			SW9045D	Prep: EXTRACT / 6/10/16		Analyst: EDL
pH	8.1			s.u.	1	6/10/2016 04:04 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS5
Collection Date: 6/7/2016 12:35 PM

Work Order: 1606628
Lab ID: 1606628-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	92	B	SW8015M		Prep: SW3541 / 6/14/16	Analyst: IT
			4.6	mg/Kg-dry	1	6/15/2016 01:12 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>70.7</i>		<i>39-133</i>	<i>%REC</i>	1	6/15/2016 01:12 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 6/13/16	Analyst: IT
			3.0	mg/Kg-dry	1	6/14/2016 03:47 AM
<i>Surr: Toluene-d8</i>	<i>107</i>		<i>50-150</i>	<i>%REC</i>	1	6/14/2016 03:47 AM
MERCURY BY CVAA						
Mercury	0.036		SW7471B		Prep: SW7471 / 6/14/16	Analyst: LR
			0.014	mg/Kg-dry	1	6/14/2016 07:00 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/14/16	Analyst: JEC
Arsenic	10		0.42	mg/Kg-dry	1	6/14/2016 11:12 PM
Barium	260		0.42	mg/Kg-dry	1	6/17/2016 05:18 PM
Cadmium	ND		0.42	mg/Kg-dry	1	6/14/2016 11:12 PM
Chromium	16		0.42	mg/Kg-dry	1	6/14/2016 11:12 PM
Copper	25		0.42	mg/Kg-dry	1	6/14/2016 11:12 PM
Lead	25		0.42	mg/Kg-dry	1	6/16/2016 01:58 AM
Nickel	30		0.42	mg/Kg-dry	1	6/16/2016 01:58 AM
Selenium	2.0		0.84	mg/Kg-dry	1	6/14/2016 11:12 PM
Silver	ND		0.42	mg/Kg-dry	1	6/14/2016 11:12 PM
Zinc	150		0.84	mg/Kg-dry	1	6/14/2016 11:12 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Calcium	550		5.0	mg/L	10	6/14/2016 06:29 PM
Magnesium	190		2.0	mg/L	10	6/14/2016 06:29 PM
Sodium	1,700		2.0	mg/L	10	6/14/2016 06:29 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/14/16	Analyst: JEC
Sodium Adsorption Ratio	16		0.010	none	1	6/15/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/14/16	Analyst: RS
Acenaphthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Benzo(a)anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Benzo(a)pyrene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Benzo(b)fluoranthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Benzo(k)fluoranthene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Chrysene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Dibenzo(a,h)anthracene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Fluoranthene	0.0096		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM

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

ALS Group USA, Corp

Date: 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-SS5
Collection Date: 6/7/2016 12:35 PM

Work Order: 1606628
Lab ID: 1606628-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Indeno(1,2,3-cd)pyrene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Naphthalene	ND		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Pyrene	0.012		0.0074	mg/Kg-dry	1	6/14/2016 10:07 PM
Surr: 2-Fluorobiphenyl	72.9		12-100	%REC	1	6/14/2016 10:07 PM
Surr: 4-Terphenyl-d14	78.6		25-137	%REC	1	6/14/2016 10:07 PM
Surr: Nitrobenzene-d5	63.3		37-107	%REC	1	6/14/2016 10:07 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/13/16		Analyst: BG
Benzene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:55 AM
Ethylbenzene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:55 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	6/15/2016 09:55 AM
o-Xylene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:55 AM
Toluene	ND		0.037	mg/Kg-dry	1	6/15/2016 09:55 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	6/15/2016 09:55 AM
Surr: 1,2-Dichloroethane-d4	81.6		70-130	%REC	1	6/15/2016 09:55 AM
Surr: 4-Bromofluorobenzene	96.2		70-130	%REC	1	6/15/2016 09:55 AM
Surr: Dibromofluoromethane	95.2		70-130	%REC	1	6/15/2016 09:55 AM
Surr: Toluene-d8	89.1		70-130	%REC	1	6/15/2016 09:55 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/14/16		Analyst: JB
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @2	10	6/15/2016 11:20 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	16		0.56	mg/Kg-dry	1	6/20/2016 08:01 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/15/16		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/16/2016 04:00 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	9.9		0.050	% of sample	1	6/10/2016 09:36 PM
PH			SW9045D	Prep: EXTRACT / 6/10/16		Analyst: EDL
pH	7.8			s.u.	1	6/10/2016 05:36 PM

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

ALS Group USA, Corp**Date:** 20-Jun-16

Client: Olsson Associates
Project: UP 34-31 Spill
Sample ID: UP3431-BG3
Collection Date: 6/7/2016 12:40 PM

Work Order: 1606628
Lab ID: 1606628-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	11		SW846 6010C 0.33	mg/Kg-dry	Prep: SW3050B / 6/14/16 1	Analyst: JEC 6/14/2016 11:17 PM
MOISTURE						
Moisture	4.6		SW3550C 0.050	% of sample	1	Analyst: EDL 6/10/2016 09:36 PM

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87273** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-87273-87273				Units: mg/Kg		Analysis Date: 6/14/2016 05:12 PM		
Client ID:		Run ID: GC8_160614A				SeqNo: 3875101		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	13.25	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.218	0	2	0	60.9	39-133	0			

LCS		Sample ID: DLCSS1-87273-87273				Units: mg/Kg		Analysis Date: 6/14/2016 05:42 PM		
Client ID:		Run ID: GC8_160614A				SeqNo: 3875102		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	208.7	5.0	200	0	104	61-109	0			B
<i>Surr: 4-Terphenyl-d14</i>	1.276	0	2	0	63.8	39-133	0			

MS		Sample ID: 1606630-01A MS				Units: mg/Kg		Analysis Date: 6/14/2016 06:12 PM		
Client ID:		Run ID: GC8_160614A				SeqNo: 3875103		Prep Date: 6/14/2016		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	186.9	21	166.5	30.56	93.9	48-110	0			B
<i>Surr: 4-Terphenyl-d14</i>	0.9807	0	1.665	0	58.9	39-133	0			

MSD		Sample ID: 1606630-01A MSD				Units: mg/Kg		Analysis Date: 6/14/2016 06:42 PM		
Client ID:		Run ID: GC8_160614A				SeqNo: 3875104		Prep Date: 6/14/2016		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	165.4	21	165.8	30.56	81.4	48-110	186.9	12.2	30	B
<i>Surr: 4-Terphenyl-d14</i>	0.9167	0	1.658	0	55.3	39-133	0.9807	6.75	30	

The following samples were analyzed in this batch:

1606628-01A	1606628-03A	1606628-04A
1606628-06A	1606628-07A	

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87342** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-87342-87342				Units: mg/Kg		Analysis Date: 6/15/2016 06:47 PM		
Client ID:		Run ID: GC8_160615A				SeqNo: 3877574		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	8.3								
Surr: 4-Terphenyl-d14	2.311	0	3.333	0	69.3	39-133	0			

LCS		Sample ID: DLCSS1-87342-87342				Units: mg/Kg		Analysis Date: 6/15/2016 07:17 PM		
Client ID:		Run ID: GC8_160615A				SeqNo: 3877575		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	329.6	8.3	333.3	0	98.9	61-109	0			
Surr: 4-Terphenyl-d14	1.91	0	3.333	0	57.3	39-133	0			

MS		Sample ID: 1606628-01A MS				Units: mg/Kg		Analysis Date: 6/15/2016 07:47 PM		
Client ID: UP3431-SS1		Run ID: GC8_160615A				SeqNo: 3877576		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	290.4	8.1	324.8	31.76	79.6	48-110	0			
Surr: 4-Terphenyl-d14	1.531	0	3.248	0	47.1	39-133	0			

MSD		Sample ID: 1606628-01A MSD				Units: mg/Kg		Analysis Date: 6/15/2016 08:17 PM		
Client ID: UP3431-SS1		Run ID: GC8_160615A				SeqNo: 3877577		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	301.2	8.1	324.1	31.76	83.1	48-110	290.4	3.63	30	
Surr: 4-Terphenyl-d14	1.608	0	3.241	0	49.6	39-133	1.531	4.94	30	

The following samples were analyzed in this batch:

1606628-01A	1606628-03A	1606628-04A
1606628-06A		

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87239** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-87239-87239				Units: µg/Kg-dry		Analysis Date: 6/13/2016 08:22 PM		
Client ID:		Run ID: GC9_160613B				SeqNo: 3873445		Prep Date: 6/13/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4707	0	5000	0	94.1	50-150	0			

LCS		Sample ID: LCS-87239-87239				Units: µg/Kg-dry		Analysis Date: 6/13/2016 07:57 PM		
Client ID:		Run ID: GC9_160613B				SeqNo: 3873444		Prep Date: 6/13/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	488300	2,500	500000	0	97.7	70-130	0			
Surr: Toluene-d8	5274	0	5000	0	105	50-150	0			

MS		Sample ID: 1606630-03A MS				Units: µg/Kg-dry		Analysis Date: 6/13/2016 11:15 PM		
Client ID:		Run ID: GC9_160613B				SeqNo: 3873454		Prep Date: 6/13/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	709800	3,300	662800	0	107	70-130	0			
Surr: Toluene-d8	7247	0	6628	0	109	50-150	0			

MSD		Sample ID: 1606630-03A MSD				Units: µg/Kg-dry		Analysis Date: 6/13/2016 11:40 PM		
Client ID:		Run ID: GC9_160613B				SeqNo: 3873455		Prep Date: 6/13/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	716500	3,300	662800	0	108	70-130	709800	0.937	30	
Surr: Toluene-d8	7057	0	6628	0	106	50-150	7247	2.66	30	

The following samples were analyzed in this batch:

1606628-01A	1606628-03A	1606628-04A
1606628-06A	1606628-07A	

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87232** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-87232-87232				Units: mg/Kg		Analysis Date: 6/13/2016 05:31 PM		
Client ID:		Run ID: HG1_160613A				SeqNo: 3873684		Prep Date: 6/13/2016		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-87232-87232				Units: mg/Kg		Analysis Date: 6/13/2016 05:33 PM		
Client ID:		Run ID: HG1_160613A				SeqNo: 3873685		Prep Date: 6/13/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1658 0.020 0.1665 0 99.6 80-120 0

MS		Sample ID: 1606555-07BMS					Units: mg/Kg		Analysis Date: 6/13/2016 05:56 PM		
Client ID:			Run ID: HG1_160613A			SeqNo: 3873696		Prep Date: 6/13/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1135 0.013 0.107 0.007175 99.4 75-125 0

MSD		Sample ID: 1606555-07BMSD					Units: mg/Kg		Analysis Date: 6/13/2016 05:58 PM		
Client ID:			Run ID: HG1_160613A			SeqNo: 3873697		Prep Date: 6/13/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1146 0.013 0.1061 0.007175 101 75-125 0.1135 1.02 35

The following samples were analyzed in this batch:

1606628-01A 1606628-02A

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87289** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-87289-87289				Units: mg/Kg		Analysis Date: 6/14/2016 06:43 PM		
Client ID:		Run ID: HG1_160614A				SeqNo: 3874958		Prep Date: 6/14/2016		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-87289-87289				Units: mg/Kg		Analysis Date: 6/14/2016 06:45 PM		
Client ID:		Run ID: HG1_160614A				SeqNo: 3874959		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1842 0.020 0.1665 0 111 80-120 0

MS		Sample ID: 1606764-01DMS				Units: mg/Kg		Analysis Date: 6/14/2016 07:49 PM		
Client ID:		Run ID: HG1_160614A				SeqNo: 3874988		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1368 0.013 0.1064 0.0237 106 75-125 0

MSD		Sample ID: 1606764-01DMSD				Units: mg/Kg		Analysis Date: 6/14/2016 07:52 PM		
Client ID:		Run ID: HG1_160614A				SeqNo: 3874989		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1371 0.013 0.1066 0.0237 106 75-125 0.1368 0.213 35

The following samples were analyzed in this batch:

1606628-03A	1606628-04A	1606628-06A
1606628-07A		

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87184** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1606579-01BDUP				Units: mg/L		Analysis Date: 6/14/2016 05:54 PM		
Client ID:		Run ID: ICP2_160614B				SeqNo: 3874732		Prep Date: 6/14/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	41.14	5.0	0	0	0	0-0	31.04	28		
Magnesium	2.297	2.0	0	0	0	0-0	1.713	29.2		
Sodium	563.6	2.0	0	0	0	0-0	457.3	20.8		

DUP		Sample ID: 1606579-01BDUP				Units: none		Analysis Date: 6/15/2016		
Client ID:		Run ID: SAR_160615A				SeqNo: 3876239		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	23.15	0.010	0	0	0		21.64	6.76	50	

The following samples were analyzed in this batch:

1606628-01B	1606628-02B	1606628-03B
1606628-04B	1606628-06B	1606628-07B

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87286** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-87286-87286				Units: mg/Kg		Analysis Date: 6/14/2016 10:28 PM		
Client ID:		Run ID: ICP2_160614B				SeqNo: 3874781		Prep Date: 6/14/2016		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	0.0229	0.25								J
Copper	ND	0.50								
Selenium	ND	0.50								
Zinc	0.09736	0.50								J

MBLK		Sample ID: MBLK-87286-87286				Units: mg/Kg		Analysis Date: 6/16/2016 01:15 AM		
Client ID:		Run ID: ICP2_160615C				SeqNo: 3877273		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								
Nickel	ND	0.25								

MBLK		Sample ID: MBLK-87286-87286				Units: mg/Kg		Analysis Date: 6/17/2016 04:38 PM		
Client ID:		Run ID: ICP2_160617A				SeqNo: 3881159		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	ND	0.25								

LCS		Sample ID: LCS-87286-87286				Units: mg/Kg		Analysis Date: 6/14/2016 10:33 PM		
Client ID:		Run ID: ICP2_160614B				SeqNo: 3874782		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.402	0.25	5	0	108	80-120	0			
Cadmium	5.394	0.50	5	0	108	80-120	0			
Chromium	5.755	0.25	5	0	115	80-120	0			
Copper	5.839	0.50	5	0	117	80-120	0			
Selenium	5.463	0.50	5	0	109	80-120	0			
Zinc	5.813	0.50	5	0	116	80-120	0			

LCS		Sample ID: LCS-87286-87286				Units: mg/Kg		Analysis Date: 6/16/2016 01:21 AM		
Client ID:		Run ID: ICP2_160615C				SeqNo: 3877274		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	5.841	0.25	5	0	117	80-120	0			
Nickel	5.802	0.25	5	0	116	80-120	0			

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: 87286 Instrument ID ICP2 Method: SW846 6010C

LCS		Sample ID: LCS-87286-87286				Units: mg/Kg		Analysis Date: 6/17/2016 04:44 PM		
Client ID:		Run ID: ICP2_160617A				SeqNo: 3881160		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Barium 5.223 0.25 5 0 104 80-120 0

MS		Sample ID: 1606739-04AMS				Units: mg/Kg		Analysis Date: 6/17/2016 06:25 PM		
Client ID:		Run ID: ICP2_160617A				SeqNo: 3881178		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic	11.88	0.38	7.657	6.087	75.6	75-125	0			
Barium	49.94	0.38	7.657	46.83	40.7	75-125	0			SO
Cadmium	7.47	0.77	7.657	-0.08939	98.7	75-125	0			
Chromium	18.37	0.38	7.657	10.46	103	75-125	0			
Copper	14.68	0.77	7.657	7.783	90.1	75-125	0			
Lead	14.42	0.38	7.657	8.421	78.4	75-125	0			
Selenium	8.028	0.77	7.657	0.3086	101	75-125	0			
Silver	5.809	0.38	7.657	-2.271	106	75-125	0			

MSD		Sample ID: 1606739-04AMSD				Units: mg/Kg		Analysis Date: 6/17/2016 06:30 PM		
Client ID:		Run ID: ICP2_160617A				SeqNo: 3881179		Prep Date: 6/14/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic	13.08	0.38	7.68	6.087	91.1	75-125	11.88	9.67	20	
Barium	55.48	0.38	7.68	46.83	113	75-125	49.94	10.5	20	O
Cadmium	7.697	0.77	7.68	-0.08939	101	75-125	7.47	2.99	20	
Chromium	19.43	0.38	7.68	10.46	117	75-125	18.37	5.63	20	
Copper	15.76	0.77	7.68	7.783	104	75-125	14.68	7.13	20	
Lead	15.42	0.38	7.68	8.421	91.1	75-125	14.42	6.69	20	
Selenium	8.435	0.77	7.68	0.3086	106	75-125	8.028	4.94	20	
Silver	5.676	0.38	7.68	-2.271	103	75-125	5.809	2.32	20	

The following samples were analyzed in this batch:

1606628-01A	1606628-02A	1606628-03A
1606628-04A	1606628-05A	1606628-06A
1606628-07A	1606628-08A	

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87272** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-87272-87272			Units: µg/Kg		Analysis Date: 6/14/2016 04:56 PM		
Client ID:			Run ID: SVMS5_160614A			SeqNo: 3876096		Prep Date: 6/14/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	ND	6.7									
Anthracene	ND	6.7									
Benzo(a)anthracene	ND	6.7									
Benzo(a)pyrene	ND	6.7									
Benzo(b)fluoranthene	ND	6.7									
Benzo(k)fluoranthene	ND	6.7									
Chrysene	ND	6.7									
Dibenzo(a,h)anthracene	ND	6.7									
Fluoranthene	ND	6.7									
Fluorene	ND	6.7									
Indeno(1,2,3-cd)pyrene	ND	6.7									
Naphthalene	ND	6.7									
Pyrene	ND	6.7									
<i>Surr: 2-Fluorobiphenyl</i>	<i>1195</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>71.7</i>	<i>12-100</i>	<i>0</i>				
<i>Surr: 4-Terphenyl-d14</i>	<i>1432</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>85.9</i>	<i>25-137</i>	<i>0</i>				
<i>Surr: Nitrobenzene-d5</i>	<i>967</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>58</i>	<i>37-107</i>	<i>0</i>				

LCS				Sample ID: SLCSS1-87272-87272			Units: µg/Kg		Analysis Date: 6/14/2016 05:19 PM		
Client ID:			Run ID: SVMS5_160614A			SeqNo: 3876097		Prep Date: 6/14/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	508.7	6.7	666.7	0	76.3	45-110	0				
Anthracene	628	6.7	666.7	0	94.2	55-105	0				
Benzo(a)anthracene	633.3	6.7	666.7	0	95	50-110	0				
Benzo(a)pyrene	593	6.7	666.7	0	88.9	50-110	0				
Benzo(b)fluoranthene	628	6.7	666.7	0	94.2	45-115	0				
Benzo(k)fluoranthene	637.3	6.7	666.7	0	95.6	45-115	0				
Chrysene	620.7	6.7	666.7	0	93.1	55-110	0				
Dibenzo(a,h)anthracene	662.3	6.7	666.7	0	99.3	40-125	0				
Fluoranthene	605	6.7	666.7	0	90.7	55-115	0				
Fluorene	570.7	6.7	666.7	0	85.6	50-110	0				
Indeno(1,2,3-cd)pyrene	619	6.7	666.7	0	92.8	40-120	0				
Naphthalene	580.7	6.7	666.7	0	87.1	40-105	0				
Pyrene	722	6.7	666.7	0	108	45-125	0				
<i>Surr: 2-Fluorobiphenyl</i>	<i>1438</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>86.3</i>	<i>12-100</i>	<i>0</i>				
<i>Surr: 4-Terphenyl-d14</i>	<i>1566</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>94</i>	<i>25-137</i>	<i>0</i>				
<i>Surr: Nitrobenzene-d5</i>	<i>1220</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>73.2</i>	<i>37-107</i>	<i>0</i>				

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: 87272 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1606628-01A MS			Units: µg/Kg		Analysis Date: 6/14/2016 08:40 PM	
Client ID: UP3431-SS1				Run ID: SVMS5_160614A			SeqNo: 3876098		Prep Date: 6/14/2016	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	452.1	6.7	665.4	0	67.9	45-110	0			
Anthracene	587.5	6.7	665.4	0	88.3	55-105	0			
Benzo(a)anthracene	598.1	6.7	665.4	0	89.9	50-110	0			
Benzo(a)pyrene	567.5	6.7	665.4	0	85.3	50-110	0			
Benzo(b)fluoranthene	599.5	6.7	665.4	0	90.1	45-115	0			
Benzo(k)fluoranthene	572.9	6.7	665.4	0	86.1	45-115	0			
Chrysene	581.5	6.7	665.4	0	87.4	55-110	0			
Dibenzo(a,h)anthracene	674.3	6.7	665.4	0	101	40-125	0			
Fluoranthene	596.8	6.7	665.4	10.26	88.2	55-115	0			
Fluorene	509.6	6.7	665.4	0	76.6	50-110	0			
Indeno(1,2,3-cd)pyrene	642.7	6.7	665.4	0	96.6	40-120	0			
Naphthalene	462.4	6.7	665.4	0	69.5	40-105	0			
Pyrene	606.8	6.7	665.4	0	91.2	45-125	0			
Surr: 2-Fluorobiphenyl	1189	0	1663	0	71.5	12-100	0			
Surr: 4-Terphenyl-d14	1224	0	1663	0	73.6	25-137	0			
Surr: Nitrobenzene-d5	964.4	0	1663	0	58	37-107	0			

MSD				Sample ID: 1606628-01A MSD			Units: µg/Kg		Analysis Date: 6/14/2016 09:04 PM	
Client ID: UP3431-SS1				Run ID: SVMS5_160614A			SeqNo: 3876099		Prep Date: 6/14/2016	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	456.9	6.6	656.5	0	69.6	45-110	452.1	1.06	30	
Anthracene	554.4	6.6	656.5	0	84.4	55-105	587.5	5.79	30	
Benzo(a)anthracene	564.9	6.6	656.5	0	86	50-110	598.1	5.71	30	
Benzo(a)pyrene	527.2	6.6	656.5	0	80.3	50-110	567.5	7.38	30	
Benzo(b)fluoranthene	555.1	6.6	656.5	0	84.5	45-115	599.5	7.69	30	
Benzo(k)fluoranthene	533.7	6.6	656.5	0	81.3	45-115	572.9	7.07	30	
Chrysene	549.2	6.6	656.5	0	83.6	55-110	581.5	5.72	30	
Dibenzo(a,h)anthracene	628.9	6.6	656.5	0	95.8	40-125	674.3	6.97	30	
Fluoranthene	578.4	6.6	656.5	10.26	86.5	55-115	596.8	3.14	30	
Fluorene	515	6.6	656.5	0	78.4	50-110	509.6	1.05	30	
Indeno(1,2,3-cd)pyrene	649.6	6.6	656.5	0	98.9	40-120	642.7	1.07	30	
Naphthalene	449	6.6	656.5	0	68.4	40-105	462.4	2.93	30	
Pyrene	564.3	6.6	656.5	0	85.9	45-125	606.8	7.26	30	
Surr: 2-Fluorobiphenyl	1225	0	1641	0	74.6	12-100	1189	2.93	40	
Surr: 4-Terphenyl-d14	1136	0	1641	0	69.2	25-137	1224	7.44	40	
Surr: Nitrobenzene-d5	969.6	0	1641	0	59.1	37-107	964.4	0.541	40	

The following samples were analyzed in this batch:

1606628-01A	1606628-03A	1606628-04A
1606628-06A	1606628-07A	

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87238** Instrument ID **VMS9** Method: **SW8260B**

MBLK				Sample ID: MBLK-87238-87238			Units: µg/Kg-dry		Analysis Date: 6/14/2016 12:38 PM		
Client ID:			Run ID: VMS9_160613A			SeqNo: 3874000		Prep Date: 6/13/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	ND	30	0	0	0	0-0	0				
Ethylbenzene	ND	30	0	0	0	0-0	0				
m,p-Xylene	ND	60	0	0	0	0-0	0				
o-Xylene	ND	30	0	0	0	0-0	0				
Toluene	ND	30	0	0	0	0-0	0				
Xylenes, Total	ND	90	0	0	0	0-0	0				
Surr: 1,2-Dichloroethane-d4	1024	0	1000	0	102	70-130	0				
Surr: 4-Bromofluorobenzene	981.5	0	1000	0	98.2	70-130	0				
Surr: Dibromofluoromethane	967.5	0	1000	0	96.8	70-130	0				
Surr: Toluene-d8	983	0	1000	0	98.3	70-130	0				

LCS				Sample ID: LCS-87238-87238			Units: µg/Kg-dry		Analysis Date: 6/13/2016 11:00 PM		
Client ID:			Run ID: VMS9_160613A			SeqNo: 3873970		Prep Date: 6/13/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1076	30	1000	0	108	75-125	0				
Ethylbenzene	1117	30	1000	0	112	75-125	0				
m,p-Xylene	2252	60	2000	0	113	80-125	0				
o-Xylene	1096	30	1000	0	110	75-125	0				
Toluene	1083	30	1000	0	108	70-125	0				
Xylenes, Total	3348	90	3000	0	112	75-125	0				
Surr: 1,2-Dichloroethane-d4	1000	0	1000	0	100	70-130	0				
Surr: 4-Bromofluorobenzene	1014	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	1010	0	1000	0	101	70-130	0				
Surr: Toluene-d8	1010	0	1000	0	101	70-130	0				

MS				Sample ID: 1606630-03A MS		Units: µg/Kg-dry		Analysis Date: 6/14/2016 08:28 AM		
Client ID:		Run ID: VMS9_160613A			SeqNo: 3873998		Prep Date: 6/13/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1376	40	1326	0	104	75-125	0			
Ethylbenzene	1436	40	1326	0	108	75-125	0			
m,p-Xylene	2892	80	2651	0	109	80-125	0			
o-Xylene	1434	40	1326	0	108	75-125	0			
Toluene	1393	40	1326	0	105	70-125	0			
Xylenes, Total	4326	120	3977	0	109	75-125	0			
Surr: 1,2-Dichloroethane-d4	1296	0	1326	0	97.8	70-130	0			
Surr: 4-Bromofluorobenzene	1372	0	1326	0	104	70-130	0			
Surr: Dibromofluoromethane	1256	0	1326	0	94.8	70-130	0			
Surr: Toluene-d8	1318	0	1326	0	99.4	70-130	0			

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87238** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 1606630-03A MSD			Units: µg/Kg-dry		Analysis Date: 6/14/2016 08:52 AM		
Client ID:		Run ID: VMS9_160613A			SeqNo: 3873999		Prep Date: 6/13/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1404	40	1326	0	106	75-125	1376	2	30		
Ethylbenzene	1455	40	1326	0	110	75-125	1436	1.28	30		
m,p-Xylene	2927	80	2651	0	110	80-125	2892	1.18	30		
o-Xylene	1461	40	1326	0	110	75-125	1434	1.88	30		
Toluene	1408	40	1326	0	106	70-125	1393	1.14	30		
Xylenes, Total	4388	120	3977	0	110	75-125	4326	1.41	30		
Surr: 1,2-Dichloroethane-d4	1284	0	1326	0	96.8	70-130	1296	0.976	30		
Surr: 4-Bromofluorobenzene	1383	0	1326	0	104	70-130	1372	0.818	30		
Surr: Dibromofluoromethane	1236	0	1326	0	93.2	70-130	1256	1.6	30		
Surr: Toluene-d8	1310	0	1326	0	98.8	70-130	1318	0.656	30		

The following samples were analyzed in this batch:

1606628-01A	1606628-03A	1606628-04A
1606628-06A	1606628-07A	

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87184** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1606579-01B DUP				Units: mmhos/cm @25°		Analysis Date: 6/15/2016 11:20 AM		
Client ID:		Run ID: WETCHEM_160615A				SeqNo: 3875783		Prep Date: 6/14/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.83	0.050	0	0	0		2.39	16.9	50	

The following samples were analyzed in this batch:

1606628-01B	1606628-02B	1606628-03B
1606628-04B	1606628-06B	1606628-07B

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87198** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-87198-87198					Units: s.u.		Analysis Date: 6/10/2016 04:04 PM		
Client ID:		Run ID: WETCHEM_160610G					SeqNo: 3870694		Prep Date: 6/10/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH 3.98 0 4 0 99.5 90-110 0

DUP		Sample ID: 1606555-07B DUP					Units: s.u.		Analysis Date: 6/10/2016 04:04 PM		
Client ID:			Run ID: WETCHEM_160610G			SeqNo: 3870702		Prep Date: 6/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH 7.63 0 0 0 0 0-0 7.66 0.392 20

DUP				Sample ID: 1606628-01A DUP				Units: s.u.			Analysis Date: 6/10/2016 04:04 PM			
Client ID: UP3431-SS1				Run ID: WETCHEM_160610G				SeqNo: 3870711			Prep Date: 6/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH 7.92 0 0 0 0 0-0 7.9 0.253 20

The following samples were analyzed in this batch:

1606628-01A	1606628-02A	1606628-03A
1606628-04A	1606628-06A	

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

Client: Olsson Associates
Work Order: 1606628
Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87201** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-87201-87201				Units: s.u.		Analysis Date: 6/10/2016 05:36 PM		
Client ID:		Run ID: WETCHEM_160610I			SeqNo: 3870717		Prep Date: 6/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.98	0	4	0	99.5	90-110	0			

DUP				Sample ID: 1606628-07A DUP				Units: s.u.		Analysis Date: 6/10/2016 05:36 PM			
Client ID: UP3431-SS5				Run ID: WETCHEM_160610I				SeqNo: 3870720		Prep Date: 6/10/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH	8.26	0	0	0	0	0-0	7.81	5.6	20				

The following samples were analyzed in this batch:

1606628-07A

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **87367** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-87367-87367				Units: mg/Kg		Analysis Date: 6/16/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160616M				SeqNo: 3879066		Prep Date: 6/15/2016		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-87367-87367				Units: mg/Kg		Analysis Date: 6/16/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160616M				SeqNo: 3879065		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.39 1.0 5 0 87.8 80-120 0

MS		Sample ID: 1606628-01A MS				Units: mg/Kg		Analysis Date: 6/16/2016 04:00 PM		
Client ID: UP3431-SS1		Run ID: WETCHEM_160616M				SeqNo: 3879051		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.861 0.99 4.95 0.3558 70.8 75-125 0 S

MS		Sample ID: 1606628-01A MSI				Units: mg/Kg		Analysis Date: 6/16/2016 04:00 PM		
Client ID: UP3431-SS1		Run ID: WETCHEM_160616M				SeqNo: 3879053		Prep Date: 6/15/2016		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1554 98 1767 0.3558 87.9 75-125 0

MSD		Sample ID: 1606628-01A MSD				Units: mg/Kg		Analysis Date: 6/16/2016 04:00 PM		
Client ID: UP3431-SS1		Run ID: WETCHEM_160616M				SeqNo: 3879052		Prep Date: 6/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.951 0.98 4.902 0.3558 73.3 75-125 3.861 2.29 20 S

The following samples were analyzed in this batch:

1606628-01A	1606628-02A	1606628-03A
1606628-04A	1606628-06A	1606628-07A

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

Client: Olsson Associates
 Work Order: 1606628
 Project: UP 34-31 Spill

QC BATCH REPORT

Batch ID: **R189359** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R189359				Units: % of sample		Analysis Date: 6/10/2016 09:36 PM		
Client ID:		Run ID: MOIST_160610A				SeqNo: 3870838		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-R189359				Units: % of sample		Analysis Date: 6/10/2016 09:36 PM		
Client ID:		Run ID: MOIST_160610A				SeqNo: 3870837		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: 1606545-01A DUP				Units: % of sample		Analysis Date: 6/10/2016 09:36 PM		
Client ID:		Run ID: MOIST_160610A				SeqNo: 3870816		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 6.72 0.050 0 0 0 5.59 18.4 20

DUP		Sample ID: 1606635-01B DUP				Units: % of sample		Analysis Date: 6/10/2016 09:36 PM		
Client ID:		Run ID: MOIST_160610A				SeqNo: 3870836		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 46.24 0.050 0 0 0 46.16 0.173 20

The following samples were analyzed in this batch:

1606628-01A	1606628-02A	1606628-03A
1606628-04A	1606628-05A	1606628-06A
1606628-07A	1606628-08A	

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



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
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☐ 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	UP 34-31 Spill	A TPH (GRO & DRO)													
Work Order		Project Number	013.3287.100.100004	B BTEX													
Company Name	Oisson Associates	Bill To Company	Oisson 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													
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506	F pH													
Phone	970.263.7800	Phone	970.263.7800	G Metals (See Attached List) CO Table 910													
Fax	970.263.7456	Fax	970.263.7456	H Arsenic Only													
e-Mail Address	tdobransky@oison.com	e-Mail Address		I													
				J													
No.	Sample Description	Date	Time	Matrix	Pres.	# Batches	A	B	C	D	E	F	G	H	I	J	Hold
1	UP3431-SS1	08/07/16	1045	Soil	8	2	X	X	X	X	X	X	X				
2	UP3431-BG1	08/07/16	1055	Soil	8	2				X	X	X	X				
3	UP3431-SS2	08/07/16	1105	Soil	8	2	X	X	X	X	X	X	X				
4	UP3431-SS3	08/07/16	1155	Soil	8	2	X	X	X	X	X	X	X				
5	UP3431-BG2	08/07/16	1210	Soil	8	1								X			
6	UP3431-SS4	08/07/16	1225	Soil	8	2	X	X	X	X	X	X	X				
7	UP3431-SS5	08/07/16	1235	Soil	8	2	X	X	X	X	X	X	X				
8	UP3431-BG3	08/07/16	1240	Soil	8	2								X			
9																	
10																	
11																	
12																	
13																	

Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Results Due Date:	
Jason Malarkey		FedEx		<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			
Relinquished by:	Date:	Time:	Received by:	Notes:			
	6/9/16			Chevron Pricing Applies - Per Bruce Schlatter			
Relinquished by:	Date:	Time:	Received by (Laboratory):	QC Package: (Check Box Below)			
	6-9-16	1700	Wilson 6110	<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			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	Cooler Temp.			
KE	6/16/16	1220		3.00			
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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ORIGIN ID: RILA (815) 288-1033
 NICK MARTINEZ
 ALS ENVIRONMENTAL PARACHUTE
 PARACHUTE SERVICE CENTER
 127 EAST 1ST ST
 PARACHUTE, CO 81635
 UNITED STATES US

SHIP DATE: 09 JUN 18
 ACTWGT: 57.00 LB
 CAD: 22648407 NET 3730
 DIMS: 24x15x15 IN

BILL SENDER

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

HOLLAND MI 49424

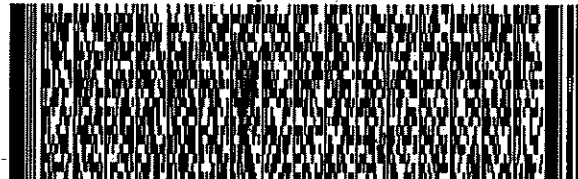
(815) 399-6070

REF: 030916-1

NV

PQ: PARACHUTE

DEPT:



FedEx
Express



REL#
3785346

2 of 2

FRI - 10 JUN 10:30A

PRIORITY OVERNIGHT

MP8#

0283

7764 8892 3958

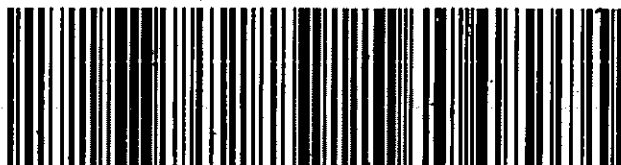
Mstr# 7764 8892 4050

0201

XX HLMA

MI-US

49424
GRR



540.020000727F

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or Inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **10-Jun-16 10:00**

Work Order: **1606628**

Received by: **KRW**

Checklist completed by Keith Wurenga 10-Jun-16
eSignature Date

Reviewed by: Lee Drndol 10-Jun-16
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.0/3.0 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>6/10/2016 12:34:49 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:



02-Jun-2020

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

Re: **UP 34-31 Spill Resampling**

Work Order: **20051948**

Dear Tim,

ALS Environmental received 4 samples on 27-May-2020 11:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 10.

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 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Work Order: 20051948

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>
20051948-01	UP3431-SS2	Soil		5/21/2020 07:00	5/27/2020 11:30	<input type="checkbox"/>
20051948-02	UP3431-SS3	Soil		5/21/2020 07:05	5/27/2020 11:30	<input type="checkbox"/>
20051948-03	UP3431-SS4	Soil		5/21/2020 07:15	5/27/2020 11:30	<input type="checkbox"/>
20051948-04	UP3431-SS5	Soil		5/21/2020 07:20	5/27/2020 11:30	<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>
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

ALS Group, USA

Date: 02-Jun-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS2
Collection Date: 5/21/2020 07:00 AM

Work Order: 20051948
Lab ID: 20051948-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Calcium	610		2.5	5.0	mg/L	10	6/1/2020 16:08
Magnesium	34		0.50	2.0	mg/L	10	6/1/2020 16:08
Sodium	24		0.45	2.0	mg/L	10	6/1/2020 16:08
<hr/>							
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Sodium Adsorption Ratio	0.26		0.010	0.010	none	1	6/1/2020
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: QTN
Electrical Conductivity @ Saturation	4.1		0.011	0.10	mmhos/cm @25°	20	6/1/2020 16:00

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

ALS Group, USA

Date: 02-Jun-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS3
Collection Date: 5/21/2020 07:05 AM

Work Order: 20051948
Lab ID: 20051948-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Calcium	690		2.5	5.0	mg/L	10	6/1/2020 16:10
Magnesium	14		0.50	2.0	mg/L	10	6/1/2020 16:10
Sodium	13		0.45	2.0	mg/L	10	6/1/2020 16:10
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Sodium Adsorption Ratio	0.13		0.010	0.010	none	1	6/1/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: QTN
Electrical Conductivity @ Saturation	4.2		0.011	0.10	mmhos/cm @25°	20	6/1/2020 16:00

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

ALS Group, USA

Date: 02-Jun-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS4
Collection Date: 5/21/2020 07:15 AM

Work Order: 20051948
Lab ID: 20051948-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Calcium	700		2.5	5.0	mg/L	10	6/1/2020 16:11
Magnesium	24		0.50	2.0	mg/L	10	6/1/2020 16:11
Sodium	42		0.45	2.0	mg/L	10	6/1/2020 16:11
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Sodium Adsorption Ratio	0.42		0.010	0.010	none	1	6/1/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: QTN
Electrical Conductivity @ Saturation	4.6		0.011	0.10	mmhos/cm @25°	20	6/1/2020 16:00

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

ALS Group, USA

Date: 02-Jun-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS5
Collection Date: 5/21/2020 07:20 AM

Work Order: 20051948
Lab ID: 20051948-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Calcium	1,500		2.5	5.0	mg/L	10	6/1/2020 16:16
Magnesium	31		0.50	2.0	mg/L	10	6/1/2020 16:16
Sodium	19		0.45	2.0	mg/L	10	6/1/2020 16:16
<hr/>							
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: STP
Sodium Adsorption Ratio	0.13		0.010	0.010	none	1	6/1/2020
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 6/1/20		Analyst: QTN
Electrical Conductivity @ Saturation	8.9		0.011	0.10	mmhos/cm @25°	20	6/1/2020 16:00

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

Client: Entrada Consulting Group
Work Order: 20051948
Project: UP 34-31 Spill Resampling

QC BATCH REPORT

Batch ID: **156746** Instrument ID **ICPMS4** Method: **SW6020B**

DUP		Sample ID: 20051952-01ADUP				Units: mg/L		Analysis Date: 6/1/2020 04:24 PM		
Client ID:		Run ID: ICPMS4_200601A				SeqNo: 6451970		Prep Date: 6/1/2020		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	1885	5.0	0	0	0	0-0	1858	1.48		E
Magnesium	55.48	2.0	0	0	0	0-0	56.39	1.64		
Sodium	81.36	2.0	0	0	0	0-0	85.3	4.73		

The following samples were analyzed in this batch:

20051948-01A	20051948-02A	20051948-03A
20051948-04A		



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

Customer Information		ALS Project Manager:					Work Order #: <u>20051948</u>											
Purchase Order		Project Information					Parameter/Method Request for Analysis											
Work Order		Project Name	UP 34-31 Spill Resampling				A TPH (GRO & DRO)											
Company Name	Entrada Consulting Group	Project Number	018-085				B BTEX											
Send Report To	Tim Dobransky	Bill To Company	Entrada Consulting Group				C PAH (See Attached List) CO Table 910											
Address	330 Grand Ave. STE C	Invoice Attn	Tim Dobransky				D Electrical Conductivity											
City/State/Zip	Grand Junction, CO 81501	Address					E Sodium Adsorption Ratio											
Phone	970.549.1015	City/State/Zip					F pH											
Fax		Phone					G Metals (See Attached List) CO Table 910											
e-Mail Address	tdobransky@entradainc.com	Fax					H Arsenic Only											
		e-Mail Address					I											
							J											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	UP3431-SS2	5/21/20	0700	Soil	8	1					X	X						
2	UP3431-SS3	5/21/20	0705	Soil	8	1					X	X						
3	UP3431-SS4	5/21/20	0715	Soil	8	1					X	X						
4	UP3431-SS5	5/21/20	0720	Soil	8	1					X	X						
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		

Sampler(s): Please Print & Sign		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:		Date: 5/26/20	Time: 1130	Received by:		Notes: Chevron Pricing Applies - Per Bruce Schlatter	
Relinquished by:		Date: 5-26-20	Time: 1830	Received by (Laboratory):		QC Package: (Check Box Below)	
Logged by (Laboratory): DES		Date: 5/27/20	Time: 1530	Checked by (Laboratory):		Cooler Temp: 5.1 3.4°C	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				Level II: Standard QC Level III: Std QC + Raw Data Level IV: SW846 CLP-Like Other:			

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

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Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **27-May-20 11:30**

Work Order: **20051948**

Received by: **DS**

Checklist completed by **Diane Shaw**

27-May-20

Reviewed by: **Chad Whelton**

28-May-20

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): **3.4/3.4 c** **SR1**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **5/27/2020 3:22:18 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:



21-Aug-2020

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

Re: **UP 34-31 Spill Resampling**

Work Order: **20080803**

Dear Tim,

ALS Environmental received 4 samples on 11-Aug-2020 11:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 9.

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

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Work Order: 20080803

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>
20080803-01	UP3431-SS2	Soil		8/7/2020 10:10	8/11/2020 11:30	<input type="checkbox"/>
20080803-02	UP3431-SS3	Soil		8/7/2020 10:15	8/11/2020 11:30	<input type="checkbox"/>
20080803-03	UP3431-SS4	Soil		8/7/2020 10:30	8/11/2020 11:30	<input type="checkbox"/>
20080803-04	UP3431-SS5	Soil		8/7/2020 10:45	8/11/2020 11:30	<input type="checkbox"/>

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
WorkOrder: 20080803

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>
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius

ALS Group, USA

Date: 21-Aug-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS2
Collection Date: 8/7/2020 10:10 AM

Work Order: 20080803
Lab ID: 20080803-01
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 / 8/21/20	
						Analyst: QTN	
Electrical Conductivity @ Saturation	0.57		0.011	0.10	mmhos/cm @25°	20	8/21/2020 14:35

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

ALS Group, USA

Date: 21-Aug-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS3
Collection Date: 8/7/2020 10:15 AM

Work Order: 20080803
Lab ID: 20080803-02
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 / 8/21/20	Analyst: QTN
Electrical Conductivity @ Saturation	1.2		0.011	0.10	mmhos/cm @25°	20	8/21/2020 14:35

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

ALS Group, USA

Date: 21-Aug-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS4
Collection Date: 8/7/2020 10:30 AM

Work Order: 20080803
Lab ID: 20080803-03
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 / 8/21/20	Analyst: QTN
Electrical Conductivity @ Saturation	0.76		0.011	0.10	mmhos/cm @25°	20	8/21/2020 14:35

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

ALS Group, USA

Date: 21-Aug-20

Client: Entrada Consulting Group
Project: UP 34-31 Spill Resampling
Sample ID: UP3431-SS5
Collection Date: 8/7/2020 10:45 AM

Work Order: 20080803
Lab ID: 20080803-04
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 / 8/21/20	Analyst: QTN
Electrical Conductivity @ Saturation	0.49		0.011	0.10	mmhos/cm @25°	20	8/21/2020 14:35

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
 +1 513 733 5336
☐ Everett, WA
 +1 425 356 2600
☐ Fort Collins, CO
 +1 970 490 1511

☐ Holland, MI
 +1 616 399 6070
☐ Houston, TX
 +1 281 530 5656
☐ Middletown, PA
 +1 717 944 5541

☐ Salt Lake City, UT
 +1 801 266 7700
☐ Spring City, PA
 +1 610 948 4903
☐ York, PA
 +1 717 505 5280

Customer Information		Project Information					Parameter/Method Request for Analysis												
Purchase Order		Project Name	UP 34-31 Spill Resampling					A TPH (GRO & DRO)											
Work Order		Project Number	018-065					B BTEX											
Company Name	Entrada Consulting Group	Bill To Company	Entrada Consulting Group					C PAH (See Attached List) CO Table 910											
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky					D Electrical Conductivity											
Address	330 Grand Ave. STE C	Address						E Sodium Adsorption Ratio											
City/State/Zip	Grand Junction, CO 81501	City/State/Zip						F pH											
Phone	970.549.1015	Phone						G Metals (See Attached List) CO Table 910											
Fax		Fax						H Arsenic Only											
e-Mail Address	tdobransky@entradaeng.com	e-Mail Address						I											
								J											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	UP3431-SS2	8/7/20	1010	Soil	8	1				X									
2	UP3431-SS3	8/7/20	1015	Soil	8	1				X									
3	UP3431-SS4	8/7/20	1030	Soil	8	1				X									
4	UP3431-SS5	8/7/20	1045	Soil	8	1				X									
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			

Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Results Due Date:	
		FedEx		<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour			
Relinquished by:	Date:	Time:	Received by:	Notes:			
	8/10/20	1220		Chevron Pricing Applies - Per Bruce Schlatter			
Relinquished by:	Date:	Time:	Received by (Laboratory):	QC Package: (Check Box Below)			
	8/10/20	1540		<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			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	Cooler Temp.			
DFS	8/11/20	1545		19.3.6°C			
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				Other:			

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

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Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **11-Aug-20 11:30**

Work Order: **20080803**

Received by: **DS**

Checklist completed by **Diane Shaw**

11-Aug-20

Reviewed by: **Chad Whelton**

12-Aug-20

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): **3.6/3.6 c** **IR1**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **8/11/2020 3:46:50 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: