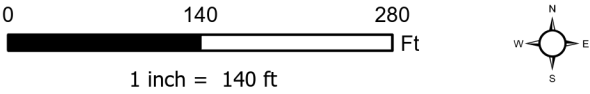




Legend

● Spill Origin ● Soil Sample Location ~ Spill Path



Project No: 018-065	UP 55-17 Spill Chevron USA, Inc. Rio Blanco County, Colorado SE4 Section 17 T2S R102W	 <div>330 Grand Avenue, Unit C Grand Junction, CO 81501 970-549-1015</div>	Figure
Map By: NDB			1
Date: 3/18/2020			

Table 1
UP 55-17 Spill
Soil Data Summary

SAMPLE SUMMARY	
Location Description	UP 55-17 Spill
Sample Type	Soil

LABORATORY DATA SUMMARY																			
Sample ID	UP 55-17-SS1	UP 55-17-SS1	UP 55-17-SS1	UP 55-17-SS2	UP 55-17-SS2	UP 55-17-SS3	UP 55-17-SS3	UP 55-17-SS3	UP 55-17-SS3	UP 55-17-SS4	UP 55-17-SS4	UP 55-17-SS5	UP 55-17-SS5	UP 55-17-SS6	UP 55-17-BG1	UP 55-17-BG2	UP 55-17-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	6/1/2015	7/13/2018	4/1/2021	6/1/2015	4/1/2021	6/1/2015	7/13/2018	4/1/2021	6/1/2015	7/13/2018	6/1/2015	7/13/2018	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015		
Analytical Parameters																			
TPH																			
TPH Gasoline Range Organics	<2.9	NT	NT	<3.0	NT	<3.1	NT	NT	<3.0	NT	<3.0	NT	<2.9	34	NT	<2.7	500	mg/kg	
TPH Diesel Range Organics	34	NT	NT	31	NT	34	NT	NT	35	NT	33	NT	39	<2.8	NT	22			
BTEX																			
Benzene	<0.035	NT	NT	<0.036	NT	<0.037	NT	NT	<0.036	NT	<0.037	NT	<0.035	NT	NT	<0.033	0.17	mg/kg	
Toluene	<0.035	NT	NT	<0.036	NT	<0.037	NT	NT	<0.036	NT	<0.037	NT	<0.035	NT	NT	<0.033	85	mg/kg	
Ethylbenzene	<0.035	NT	NT	<0.036	NT	<0.037	NT	NT	<0.036	NT	<0.037	NT	<0.035	NT	NT	<0.033	100	mg/kg	
Total Xylene	<0.100	NT	NT	<0.100	NT	<0.110	NT	NT	<0.110	NT	<0.110	NT	<0.100	NT	NT	<0.099	175	mg/kg	
Metals																			
Arsenic	9.8	7.7	NT	8.7	NT	9.3	NT	NT	9.0	NT	6.2	NT	7.7	8.4	8.1	7.4	0.39	mg/kg	
Barium	98	NT	NT	120	NT	190	NT	NT	200	NT	110	NT	220	160	NT	120	15,000	mg/kg	
Cadmium	<0.38	NT	NT	<0.41	NT	<0.48	NT	NT	<0.44	NT	<0.42	NT	<0.46	<0.40	NT	<0.39	70	mg/kg	
Chromium	11.00	NT	NT	11	NT	13	NT	NT	12	NT	10	NT	14	11	NT	11	NA	mg/kg	
Copper	19	NT	NT	18	NT	17	NT	NT	17	NT	12	NT	16	16	NT	13	3,100	mg/kg	
Lead	20	NT	NT	20	NT	21	NT	NT	20	NT	13	NT	20	17	NT	15	400	mg/kg	
Mercury	0.046	NT	NT	0.054	NT	<0.023	NT	NT	0.024	NT	0.027	NT	0.024	0.023	NT	0.017	23	mg/kg	
Nickel	21	NT	NT	20	NT	19	NT	NT	20	NT	14	NT	19	19	NT	14	1,600	mg/kg	
Selenium	1.5	NT	NT	1.5	NT	1.20	NT	NT	1.20	NT	<0.93	NT	1.500	1.0	NT	<0.78	390	mg/kg	
Silver	<0.38	NT	NT	<0.41	NT	<0.48	NT	NT	<0.44	NT	<0.42	NT	<0.46	<0.40	NT	<0.39	390	mg/kg	
Zinc	110	NT	NT	110	NT	110	NT	NT	110	NT	70	NT	110	95	NT	83	23,000	mg/kg	
SAR Metals Analysis																			
Calcium	430	1700	NT	480	43	120	2300	NT	1200	220	46	160	220	200	NT	140	NA	mg/L	
Magnesium	430	110	NT	500	8.5	21	150	NT	110	35	6.8	20	29	22	NT	27	NA	mg/L	
Sodium	4000	400	NT	5000	66	2000	670	NT	2700	140	930	30	140	19	NT	52	NA	mg/L	
Sodium Adsorption Ratio	32	2.5	NT	38	2.4	43	3.70	NT	20	2.30	34	0.6	2.40	0.34	NT	1.1	<12	ratio	
Polynuclear Aromatic Hyrdrocarbons																			
Acenaphthene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	1,000	mg/kg	
Anthracene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	1,000	mg/kg	
Benzo(a)anthracene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	0.22	mg/kg	
Benzo(a)pyrene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	0.022	mg/kg	
Benzo(b)fluoranthene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	0.22	mg/kg	
Benzo(k)fluoranthene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	2.2	mg/kg	
Chrysene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	22	mg/kg	
Dibenzo(a,h)anthracene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	0.022	mg/kg	
Fluoranthene	<0.0091	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	0.010	NT	<0.0076	NT	NT	<0.0071	1,000	mg/kg	
Fluorene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	1,000	mg/kg	
Indeno(1,2,3-cd)pyrene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	0.22	mg/kg	
Napthalene	<0.0076	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	23	mg/kg	
Pyrene	0.0095	NT	NT	<0.0079	NT	<0.0082	NT	NT	<0.0078	NT	<0.0080	NT	<0.0076	NT	NT	<0.0071	1,000	mg/kg	
General Chemistry																			
Chromium, Hexavalent	<1.0	NT	NT	<1.1	NT	<1.1	NT	NT	<1.0	NT	<1.2	NT	<1.2	<1.1	NT	<1.1	23	mg/kg	
Chromium, Trivalent	11	NT	NT	11	NT	13	NT	NT	12	NT	10	NT	12	11	NT	11	120,000	mg/kg	
Specific Conductivity	23	12	0.60	29	0.54	11	18	0.69	21	2.1	4.8	1.2	2.1	1.30	NT	0.72	<4 or 2 x the background	mmhos/cm	
pH	8.1	NT	NT	8.3	NT	8.4	NT	NT	8.3	NT	8.8	NT	8.1	8.3	NT	8.3	6-9	su	

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

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



18-Jun-2015

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

Re: **Chevron UP 55-17 Spill**

Work Order: **1506373**

Dear Tim,

ALS Environmental received 9 samples on 05-Jun-2015 07:00 PM for the analyses presented in the following report.

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

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

The total number of pages in this report is 43.

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

Sincerely,

A handwritten signature in black ink that reads "Les Arnold".

Electronically approved by: Chad Whelton

Les Arnold
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

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Environmental The ALS logo, a stylized 'A' with a flame-like shape inside.

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Work Order: 1506373

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>
1506373-01	UP55-17-SS1	Soil		6/1/2015 12:15	6/5/2015 19:00	<input type="checkbox"/>
1506373-02	UP55-17-SS2	Soil		6/1/2015 12:25	6/5/2015 19:00	<input type="checkbox"/>
1506373-03	UP55-17-SS3	Soil		6/1/2015 12:50	6/5/2015 19:00	<input type="checkbox"/>
1506373-04	UP55-17-BG1	Soil		6/1/2015 13:00	6/5/2015 19:00	<input type="checkbox"/>
1506373-05	UP55-17-SS4	Soil		6/1/2015 13:10	6/5/2015 19:00	<input type="checkbox"/>
1506373-06	UP55-17-SS5	Soil		6/1/2015 13:30	6/5/2015 19:00	<input type="checkbox"/>
1506373-07	UP55-17-SS6	Soil		6/1/2015 13:45	6/5/2015 19:00	<input type="checkbox"/>
1506373-08	UP55-17-BG2	Soil		6/1/2015 13:55	6/5/2015 19:00	<input type="checkbox"/>
1506373-09	UP55-17-BG3	Soil		6/1/2015 14:00	6/5/2015 19:00	<input type="checkbox"/>

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Work Order: 1506373

Case Narrative

Batch 72004, Method ICP_6010_S, Sample 1506373-04B MS/MSD: The MS and MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high.

Batch 72004, Method ICP_6010_S, Sample 1506373-04B MS/MSD: The MS and MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Batch 72059, Method ICP_6010_S, Sample 1506373-09B MS/MSD: The MS and MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high.

Batch 72059, Method ICP_6010_S, Sample 1506373-09B MS/MSD: The MS and MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

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

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

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS1
Collection Date: 6/1/2015 12:15 PM

Work Order: 1506373
Lab ID: 1506373-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/8/15	Analyst: IT
DRO (C10-C28)	34		4.7	mg/Kg-dry	1	6/9/2015 12:11 PM
<i>Surr: 4-Terphenyl-d14</i>	63.2		39-133	%REC	1	6/9/2015 12:11 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	6/9/2015 06:59 AM
<i>Surr: Toluene-d8</i>	102		50-150	%REC	1	6/9/2015 06:59 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.046		0.015	mg/Kg-dry	1	6/17/2015 01:38 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	9.8		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Barium	98		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Cadmium	ND		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Chromium	11		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Copper	19		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Lead	20		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Nickel	21		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Selenium	1.5		0.75	mg/Kg-dry	1	6/8/2015 08:53 PM
Silver	ND		0.38	mg/Kg-dry	1	6/8/2015 08:53 PM
Zinc	110		0.75	mg/Kg-dry	1	6/8/2015 08:53 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	430		5.0	mg/L	10	6/15/2015 04:18 PM
Magnesium	430		2.0	mg/L	10	6/15/2015 04:18 PM
Sodium	4,000		20	mg/L	100	6/16/2015 10:26 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	32		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/9/15	Analyst: RS
Acenaphthene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Anthracene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Chrysene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Fluoranthene	9.1		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS1
Collection Date: 6/1/2015 12:15 PM

Work Order: 1506373
Lab ID: 1506373-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Naphthalene	ND		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Pyrene	9.5		7.6	µg/Kg-dry	1	6/9/2015 10:00 PM
Surr: 2-Fluorobiphenyl	85.9		12-100	%REC	1	6/9/2015 10:00 PM
Surr: 4-Terphenyl-d14	103		25-137	%REC	1	6/9/2015 10:00 PM
Surr: Nitrobenzene-d5	80.3		37-107	%REC	1	6/9/2015 10:00 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15	Analyst: AK	
Benzene	ND		35	µg/Kg-dry	1	6/9/2015 07:15 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	6/9/2015 07:15 PM
m,p-Xylene	ND		70	µg/Kg-dry	1	6/9/2015 07:15 PM
o-Xylene	ND		35	µg/Kg-dry	1	6/9/2015 07:15 PM
Toluene	ND		35	µg/Kg-dry	1	6/9/2015 07:15 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/9/2015 07:15 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	1	6/9/2015 07:15 PM
Surr: 4-Bromofluorobenzene	96.9		70-130	%REC	1	6/9/2015 07:15 PM
Surr: Dibromofluoromethane	94.2		70-130	%REC	1	6/9/2015 07:15 PM
Surr: Toluene-d8	98.3		70-130	%REC	1	6/9/2015 07:15 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15	Analyst: JB	
Electrical Conductivity @ Saturation	23		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	11		0.58	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15	Analyst: MB	
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M	Analyst: PT		
Moisture	14		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15	Analyst: JB	
pH	8.1			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS2
Collection Date: 6/1/2015 12:25 PM

Work Order: 1506373
Lab ID: 1506373-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/8/15	Analyst: IT
DRO (C10-C28)	31		4.9	mg/Kg-dry	1	6/9/2015 12:38 PM
Surr: 4-Terphenyl-d14	59.4		39-133	%REC	1	6/9/2015 12:38 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	6/9/2015 05:19 AM
Surr: Toluene-d8	97.0		50-150	%REC	1	6/9/2015 05:19 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.054		0.015	mg/Kg-dry	1	6/17/2015 01:41 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	8.7		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Barium	120		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Cadmium	ND		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Chromium	11		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Copper	18		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Lead	20		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Nickel	20		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Selenium	1.5		0.82	mg/Kg-dry	1	6/9/2015 12:29 PM
Silver	ND		0.41	mg/Kg-dry	1	6/8/2015 08:59 PM
Zinc	110		0.82	mg/Kg-dry	1	6/8/2015 08:59 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	480		5.0	mg/L	10	6/15/2015 04:24 PM
Magnesium	500		2.0	mg/L	10	6/15/2015 04:24 PM
Sodium	5,000		20	mg/L	100	6/16/2015 10:32 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	38		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/9/15	Analyst: RS
Acenaphthene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Anthracene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Benzo(a)anthracene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Benzo(a)pyrene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Benzo(b)fluoranthene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Benzo(k)fluoranthene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Chrysene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Dibenzo(a,h)anthracene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Fluoranthene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS2
Collection Date: 6/1/2015 12:25 PM

Work Order: 1506373
Lab ID: 1506373-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Indeno(1,2,3-cd)pyrene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Naphthalene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Pyrene	ND		7.9	µg/Kg-dry	1	6/9/2015 10:25 PM
Surr: 2-Fluorobiphenyl	76.3		12-100	%REC	1	6/9/2015 10:25 PM
Surr: 4-Terphenyl-d14	94.6		25-137	%REC	1	6/9/2015 10:25 PM
Surr: Nitrobenzene-d5	69.4		37-107	%REC	1	6/9/2015 10:25 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: AK
Benzene	ND		36	µg/Kg-dry	1	6/9/2015 07:40 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	6/9/2015 07:40 PM
m,p-Xylene	ND		72	µg/Kg-dry	1	6/9/2015 07:40 PM
o-Xylene	ND		36	µg/Kg-dry	1	6/9/2015 07:40 PM
Toluene	ND		36	µg/Kg-dry	1	6/9/2015 07:40 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/9/2015 07:40 PM
Surr: 1,2-Dichloroethane-d4	104		70-130	%REC	1	6/9/2015 07:40 PM
Surr: 4-Bromofluorobenzene	98.3		70-130	%REC	1	6/9/2015 07:40 PM
Surr: Dibromofluoromethane	93.4		70-130	%REC	1	6/9/2015 07:40 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	6/9/2015 07:40 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	29		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.60	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	17		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.3			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS3
Collection Date: 6/1/2015 12:50 PM

Work Order: 1506373
Lab ID: 1506373-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
DRO (C10-C28)	34		5.1	mg/Kg-dry	1	6/10/2015 01:37 AM
<i>Surr: 4-Terphenyl-d14</i>	92.2		39-133	%REC	1	6/10/2015 01:37 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		3.1	mg/Kg-dry	1	6/9/2015 05:44 AM
<i>Surr: Toluene-d8</i>	98.0		50-150	%REC	1	6/9/2015 05:44 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.023		0.015	mg/Kg-dry	1	6/17/2015 01:43 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	9.3		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Barium	190		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Cadmium	ND		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Chromium	13		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Copper	17		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Lead	21		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Nickel	19		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Selenium	1.2		0.96	mg/Kg-dry	1	6/9/2015 12:34 PM
Silver	ND		0.48	mg/Kg-dry	1	6/8/2015 09:04 PM
Zinc	110		0.96	mg/Kg-dry	1	6/8/2015 09:04 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	120		5.0	mg/L	10	6/15/2015 04:30 PM
Magnesium	21		2.0	mg/L	10	6/15/2015 04:30 PM
Sodium	2,000		2.0	mg/L	10	6/16/2015 10:54 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	43		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/9/15	Analyst: RS
Acenaphthene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Anthracene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Benzo(a)anthracene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Benzo(a)pyrene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Benzo(b)fluoranthene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Benzo(k)fluoranthene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Chrysene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Dibenzo(a,h)anthracene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Fluoranthene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS3
Collection Date: 6/1/2015 12:50 PM

Work Order: 1506373
Lab ID: 1506373-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Indeno(1,2,3-cd)pyrene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Naphthalene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Pyrene	ND		8.2	µg/Kg-dry	1	6/9/2015 10:50 PM
Surr: 2-Fluorobiphenyl	70.8		12-100	%REC	1	6/9/2015 10:50 PM
Surr: 4-Terphenyl-d14	100		25-137	%REC	1	6/9/2015 10:50 PM
Surr: Nitrobenzene-d5	63.7		37-107	%REC	1	6/9/2015 10:50 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: AK
Benzene	ND		37	µg/Kg-dry	1	6/9/2015 08:05 PM
Ethylbenzene	ND		37	µg/Kg-dry	1	6/9/2015 08:05 PM
m,p-Xylene	ND		74	µg/Kg-dry	1	6/9/2015 08:05 PM
o-Xylene	ND		37	µg/Kg-dry	1	6/9/2015 08:05 PM
Toluene	ND		37	µg/Kg-dry	1	6/9/2015 08:05 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/9/2015 08:05 PM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1	6/9/2015 08:05 PM
Surr: 4-Bromofluorobenzene	97.2		70-130	%REC	1	6/9/2015 08:05 PM
Surr: Dibromofluoromethane	94.1		70-130	%REC	1	6/9/2015 08:05 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	6/9/2015 08:05 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	13		0.62	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	19		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.4			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-BG1
Collection Date: 6/1/2015 01:00 PM

Work Order: 1506373
Lab ID: 1506373-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
DRO (C10-C28)	34		4.6	mg/Kg-dry	1	6/10/2015 02:07 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>91.6</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	6/10/2015 02:07 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		2.8	mg/Kg-dry	1	6/9/2015 06:09 AM
<i>Surr: Toluene-d8</i>	<i>97.8</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	6/9/2015 06:09 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.023		0.014	mg/Kg-dry	1	6/17/2015 01:45 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	8.4		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Barium	160		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Cadmium	ND		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Chromium	11		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Copper	16		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Lead	17		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Nickel	19		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Selenium	1.0		0.80	mg/Kg-dry	1	6/9/2015 12:39 PM
Silver	ND		0.40	mg/Kg-dry	1	6/8/2015 09:10 PM
Zinc	95		0.80	mg/Kg-dry	1	6/8/2015 09:10 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	200		5.0	mg/L	10	6/15/2015 04:52 PM
Magnesium	22		2.0	mg/L	10	6/15/2015 04:52 PM
Sodium	19		2.0	mg/L	10	6/17/2015 11:27 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	0.34		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/9/15	Analyst: RS
Acenaphthene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Anthracene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Chrysene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Fluoranthene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-BG1
Collection Date: 6/1/2015 01:00 PM

Work Order: 1506373
Lab ID: 1506373-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Pyrene	ND		7.4	µg/Kg-dry	1	6/9/2015 11:15 PM
Surr: 2-Fluorobiphenyl	63.9		12-100	%REC	1	6/9/2015 11:15 PM
Surr: 4-Terphenyl-d14	99.3		25-137	%REC	1	6/9/2015 11:15 PM
Surr: Nitrobenzene-d5	48.4		37-107	%REC	1	6/9/2015 11:15 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: AK
Benzene	ND		34	µg/Kg-dry	1	6/9/2015 06:01 PM
Ethylbenzene	ND		34	µg/Kg-dry	1	6/9/2015 06:01 PM
m,p-Xylene	ND		67	µg/Kg-dry	1	6/9/2015 06:01 PM
o-Xylene	ND		34	µg/Kg-dry	1	6/9/2015 06:01 PM
Toluene	ND		34	µg/Kg-dry	1	6/9/2015 06:01 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/9/2015 06:01 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	6/9/2015 06:01 PM
Surr: 4-Bromofluorobenzene	97.2		70-130	%REC	1	6/9/2015 06:01 PM
Surr: Dibromofluoromethane	95.7		70-130	%REC	1	6/9/2015 06:01 PM
Surr: Toluene-d8	99.2		70-130	%REC	1	6/9/2015 06:01 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	1.3		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.56	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	11		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.3			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS4
Collection Date: 6/1/2015 01:10 PM

Work Order: 1506373
Lab ID: 1506373-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
DRO (C10-C28)	35		4.9	mg/Kg-dry	1	6/10/2015 02:37 AM
<i>Surr: 4-Terphenyl-d14</i>	69.7		39-133	%REC	1	6/10/2015 02:37 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	6/9/2015 06:34 AM
<i>Surr: Toluene-d8</i>	99.4		50-150	%REC	1	6/9/2015 06:34 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.024		0.016	mg/Kg-dry	1	6/17/2015 01:48 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	9.0		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Barium	200		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Cadmium	ND		0.44	mg/Kg-dry	1	6/9/2015 12:45 PM
Chromium	12		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Copper	17		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Lead	20		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Nickel	20		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Selenium	1.2		0.88	mg/Kg-dry	1	6/9/2015 12:45 PM
Silver	ND		0.44	mg/Kg-dry	1	6/8/2015 09:48 PM
Zinc	110		0.88	mg/Kg-dry	1	6/8/2015 09:48 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	1,200		5.0	mg/L	10	6/15/2015 04:58 PM
Magnesium	110		2.0	mg/L	10	6/15/2015 04:58 PM
Sodium	2,700		2.0	mg/L	10	6/16/2015 11:06 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	20		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/9/15	Analyst: RS
Acenaphthene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Anthracene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Benzo(a)anthracene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Benzo(a)pyrene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Benzo(b)fluoranthene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Benzo(k)fluoranthene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Chrysene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Dibenzo(a,h)anthracene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Fluoranthene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS4
Collection Date: 6/1/2015 01:10 PM

Work Order: 1506373
Lab ID: 1506373-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Indeno(1,2,3-cd)pyrene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Naphthalene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Pyrene	ND		7.8	µg/Kg-dry	1	6/9/2015 11:40 PM
Surr: 2-Fluorobiphenyl	68.5		12-100	%REC	1	6/9/2015 11:40 PM
Surr: 4-Terphenyl-d14	89.5		25-137	%REC	1	6/9/2015 11:40 PM
Surr: Nitrobenzene-d5	65.3		37-107	%REC	1	6/9/2015 11:40 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: AK
Benzene	ND		36	µg/Kg-dry	1	6/9/2015 06:50 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	6/9/2015 06:50 PM
m,p-Xylene	ND		72	µg/Kg-dry	1	6/9/2015 06:50 PM
o-Xylene	ND		36	µg/Kg-dry	1	6/9/2015 06:50 PM
Toluene	ND		36	µg/Kg-dry	1	6/9/2015 06:50 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/9/2015 06:50 PM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	6/9/2015 06:50 PM
Surr: 4-Bromofluorobenzene	98.8		70-130	%REC	1	6/9/2015 06:50 PM
Surr: Dibromofluoromethane	94.0		70-130	%REC	1	6/9/2015 06:50 PM
Surr: Toluene-d8	98.9		70-130	%REC	1	6/9/2015 06:50 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	21		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	12		0.60	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	17		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.3			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS5
Collection Date: 6/1/2015 01:30 PM

Work Order: 1506373
Lab ID: 1506373-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
DRO (C10-C28)	33		5.0	mg/Kg-dry	1	6/10/2015 03:07 AM
Surr: 4-Terphenyl-d14	69.7		39-133	%REC	1	6/10/2015 03:07 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	6/8/2015 11:09 PM
Surr: Toluene-d8	108		50-150	%REC	1	6/8/2015 11:09 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.027		0.015	mg/Kg-dry	1	6/17/2015 01:57 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/8/15	Analyst: JEC
Arsenic	6.2		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Barium	110		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Cadmium	ND		0.42	mg/Kg-dry	1	6/9/2015 12:50 PM
Chromium	10		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Copper	12		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Lead	13		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Nickel	14		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Selenium	0.93		0.84	mg/Kg-dry	1	6/8/2015 09:53 PM
Silver	ND		0.42	mg/Kg-dry	1	6/8/2015 09:53 PM
Zinc	70		0.84	mg/Kg-dry	1	6/8/2015 09:53 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	46		5.0	mg/L	10	6/15/2015 05:04 PM
Magnesium	6.8		2.0	mg/L	10	6/15/2015 05:04 PM
Sodium	930		2.0	mg/L	10	6/16/2015 11:12 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	34		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/10/15	Analyst: RS
Acenaphthene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Anthracene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Benzo(a)anthracene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Benzo(a)pyrene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Benzo(b)fluoranthene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Benzo(k)fluoranthene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Chrysene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Dibenzo(a,h)anthracene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Fluoranthene	10		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS5
Collection Date: 6/1/2015 01:30 PM

Work Order: 1506373
Lab ID: 1506373-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Indeno(1,2,3-cd)pyrene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Naphthalene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Pyrene	ND		8.0	µg/Kg-dry	1	6/11/2015 12:30 PM
Surr: 2-Fluorobiphenyl	74.6		12-100	%REC	1	6/11/2015 12:30 PM
Surr: 4-Terphenyl-d14	102		25-137	%REC	1	6/11/2015 12:30 PM
Surr: Nitrobenzene-d5	77.8		37-107	%REC	1	6/11/2015 12:30 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: AK
Benzene	ND		37	µg/Kg-dry	1	6/9/2015 06:25 PM
Ethylbenzene	ND		37	µg/Kg-dry	1	6/9/2015 06:25 PM
m,p-Xylene	ND		73	µg/Kg-dry	1	6/9/2015 06:25 PM
o-Xylene	ND		37	µg/Kg-dry	1	6/9/2015 06:25 PM
Toluene	ND		37	µg/Kg-dry	1	6/9/2015 06:25 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/9/2015 06:25 PM
Surr: 1,2-Dichloroethane-d4	104		70-130	%REC	1	6/9/2015 06:25 PM
Surr: 4-Bromofluorobenzene	99.8		70-130	%REC	1	6/9/2015 06:25 PM
Surr: Dibromofluoromethane	83.4		70-130	%REC	1	6/9/2015 06:25 PM
Surr: Toluene-d8	100		70-130	%REC	1	6/9/2015 06:25 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	4.8		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	10		0.61	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	18		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.8			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS6
Collection Date: 6/1/2015 01:45 PM

Work Order: 1506373
Lab ID: 1506373-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
DRO (C10-C28)	39		4.7	mg/Kg-dry	1	6/10/2015 03:37 AM
Surr: 4-Terphenyl-d14	67.2		39-133	%REC	1	6/10/2015 03:37 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	6/8/2015 11:33 PM
Surr: Toluene-d8	112		50-150	%REC	1	6/8/2015 11:33 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
Mercury	0.024		0.014	mg/Kg-dry	1	6/17/2015 02:16 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 6/9/15	Analyst: JEC
Arsenic	7.7		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Barium	220		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Cadmium	ND		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Chromium	14		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Copper	16		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Lead	20		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Nickel	19		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Selenium	1.5		0.92	mg/Kg-dry	1	6/9/2015 03:57 PM
Silver	ND		0.46	mg/Kg-dry	1	6/9/2015 03:57 PM
Zinc	110		0.92	mg/Kg-dry	1	6/9/2015 03:57 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	220		5.0	mg/L	10	6/15/2015 05:09 PM
Magnesium	29		2.0	mg/L	10	6/15/2015 05:09 PM
Sodium	140		2.0	mg/L	10	6/16/2015 11:17 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	2.4		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/10/15	Analyst: RS
Acenaphthene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Anthracene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Chrysene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Fluoranthene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-SS6
Collection Date: 6/1/2015 01:45 PM

Work Order: 1506373
Lab ID: 1506373-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Naphthalene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Pyrene	ND		7.6	µg/Kg-dry	1	6/11/2015 12:52 PM
Surr: 2-Fluorobiphenyl	67.9		12-100	%REC	1	6/11/2015 12:52 PM
Surr: 4-Terphenyl-d14	96.4		25-137	%REC	1	6/11/2015 12:52 PM
Surr: Nitrobenzene-d5	65.8		37-107	%REC	1	6/11/2015 12:52 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15		Analyst: LSY
Benzene	ND		35	µg/Kg-dry	1	6/11/2015 07:16 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	6/11/2015 07:16 PM
m,p-Xylene	ND		69	µg/Kg-dry	1	6/11/2015 07:16 PM
o-Xylene	ND		35	µg/Kg-dry	1	6/11/2015 07:16 PM
Toluene	ND		35	µg/Kg-dry	1	6/11/2015 07:16 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/11/2015 07:16 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	6/11/2015 07:16 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	6/11/2015 07:16 PM
Surr: Dibromofluoromethane	97.2		70-130	%REC	1	6/11/2015 07:16 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	6/11/2015 07:16 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15		Analyst: JB
Electrical Conductivity @ Saturation	2.1		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	12		0.58	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	13		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15		Analyst: JB
pH	8.1			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp**Date:** 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-BG2
Collection Date: 6/1/2015 01:55 PM

Work Order: 1506373
Lab ID: 1506373-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	8.1		SW846 6010C 0.40	mg/Kg-dry	Prep: SW3050B / 6/9/15 1	Analyst: JEC 6/9/2015 04:03 PM
MOISTURE						
Moisture	13		E160.3M 0.050	% of sample	1	Analyst: PT 6/10/2015 04:01 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-BG3
Collection Date: 6/1/2015 02:00 PM

Work Order: 1506373
Lab ID: 1506373-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	22		SW8015M		Prep: SW3541 / 6/9/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	<i>87.5</i>		<i>4.4</i>	<i>mg/Kg-dry</i>	<i>1</i>	6/10/2015 04:37 AM
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	6/10/2015 04:37 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 6/8/15	Analyst: IT
<i>Surr: Toluene-d8</i>	<i>106</i>		<i>2.7</i>	<i>mg/Kg-dry</i>	<i>1</i>	6/8/2015 06:11 PM
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	6/8/2015 06:11 PM
MERCURY BY CVAA						
Mercury	0.017		SW7471B		Prep: SW7471 / 6/16/15	Analyst: LR
			0.014	mg/Kg-dry	1	6/17/2015 02:18 PM
METALS ANALYSIS BY ICP						
Arsenic	7.4		SW846 6010C		Prep: SW3050B / 6/9/15	Analyst: JEC
Barium	120		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Cadmium	ND		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Chromium	11		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Copper	13		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Lead	15		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Nickel	14		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Selenium	ND		0.78	mg/Kg-dry	1	6/9/2015 02:46 PM
Silver	ND		0.39	mg/Kg-dry	1	6/9/2015 02:46 PM
Zinc	83		0.78	mg/Kg-dry	1	6/9/2015 02:46 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Calcium	140		5.0	mg/L	10	6/15/2015 05:15 PM
Magnesium	27		2.0	mg/L	10	6/15/2015 05:15 PM
Sodium	52		2.0	mg/L	10	6/16/2015 11:23 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 6/12/15	Analyst: JEC
Sodium Adsorption Ratio	1.1		0.010	none	1	6/16/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 6/10/15	Analyst: RS
Acenaphthene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Anthracene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Benzo(a)anthracene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Benzo(a)pyrene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Benzo(b)fluoranthene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Benzo(k)fluoranthene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Chrysene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Dibenzo(a,h)anthracene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Fluoranthene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates
Project: Chevron UP 55-17 Spill
Sample ID: UP55-17-BG3
Collection Date: 6/1/2015 02:00 PM

Work Order: 1506373
Lab ID: 1506373-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Indeno(1,2,3-cd)pyrene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Naphthalene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Pyrene	ND		7.1	µg/Kg-dry	1	6/11/2015 01:15 AM
Surr: 2-Fluorobiphenyl	63.6		12-100	%REC	1	6/11/2015 01:15 AM
Surr: 4-Terphenyl-d14	112		25-137	%REC	1	6/11/2015 01:15 AM
Surr: Nitrobenzene-d5	60.2		37-107	%REC	1	6/11/2015 01:15 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 6/8/15	Analyst: LSY	
Benzene	ND		33	µg/Kg-dry	1	6/11/2015 05:25 PM
Ethylbenzene	ND		33	µg/Kg-dry	1	6/11/2015 05:25 PM
m,p-Xylene	ND		66	µg/Kg-dry	1	6/11/2015 05:25 PM
o-Xylene	ND		33	µg/Kg-dry	1	6/11/2015 05:25 PM
Toluene	ND		33	µg/Kg-dry	1	6/11/2015 05:25 PM
Xylenes, Total	ND		99	µg/Kg-dry	1	6/11/2015 05:25 PM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1	6/11/2015 05:25 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	6/11/2015 05:25 PM
Surr: Dibromofluoromethane	97.6		70-130	%REC	1	6/11/2015 05:25 PM
Surr: Toluene-d8	96.0		70-130	%REC	1	6/11/2015 05:25 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 6/12/15	Analyst: JB	
Electrical Conductivity @ Saturation	1.1		0.050	mmhos/cm @2	10	6/14/2015 02:20 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	11		0.55	mg/Kg-dry	1	6/15/2015 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 6/8/15	Analyst: MB	
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	6/9/2015 04:00 PM
MOISTURE			E160.3M	Analyst: PT		
Moisture	9.0		0.050	% of sample	1	6/10/2015 04:01 PM
PH			SW9045D	Prep: EXTRACT / 6/8/15	Analyst: JB	
pH	8.6			s.u.	1	6/8/2015 12:30 PM

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

ALS Group USA, Corp

Date: 18-Jun-15

Client: Olsson Associates

Work Order: 1506373

Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **71980**

Instrument ID **GC8**

Method: **SW8015M**

MBLK		Sample ID: DBLKS1-71980-71980				Units: mg/Kg		Analysis Date: 6/8/2015 05:25 PM		
Client ID:		Run ID: GC8_150608A				SeqNo: 3312600		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.557	0	2	0	77.8	39-133	0			

LCS		Sample ID: DLCSS1-71980-71980				Units: mg/Kg		Analysis Date: 6/8/2015 05:52 PM		
Client ID:		Run ID: GC8_150608A				SeqNo: 3312601		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	165.1	5.0	200	0	82.5	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.409	0	2	0	70.5	39-133	0			

MS		Sample ID: 1506380-01B MS				Units: mg/Kg		Analysis Date: 6/8/2015 06:19 PM		
Client ID:		Run ID: GC8_150608A				SeqNo: 3312602		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	400.3	8.2	329.6	194	62.6	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.138	0	3.296	0	64.9	39-133	0			

MSD		Sample ID: 1506380-01B MSD				Units: mg/Kg		Analysis Date: 6/8/2015 06:46 PM		
Client ID:		Run ID: GC8_150608A				SeqNo: 3312603		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	400.2	8.3	332.5	194	62	48-110	400.3	0.0122	30	
<i>Surr: 4-Terphenyl-d14</i>	2.362	0	3.325	0	71	39-133	2.138	9.94	30	

The following samples were analyzed in this batch:

1506373-01B	1506373-02B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72043** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-72043-72043				Units: mg/Kg		Analysis Date: 6/9/2015 05:37 PM		
Client ID:		Run ID: GC8_150609B				SeqNo: 3314545		Prep Date: 6/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.522	0	2	0	76.1	39-133	0			

LCS		Sample ID: DLCSS1-72043-72043				Units: mg/Kg		Analysis Date: 6/9/2015 06:07 PM		
Client ID:		Run ID: GC8_150609B				SeqNo: 3314547		Prep Date: 6/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	162.2	5.0	200	0	81.1	61-109	0			
Surr: 4-Terphenyl-d14	1.296	0	2	0	64.8	39-133	0			

MS		Sample ID: 1506372-04B MS				Units: mg/Kg		Analysis Date: 6/9/2015 06:37 PM		
Client ID:		Run ID: GC8_150609B				SeqNo: 3314549		Prep Date: 6/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	282.9	8.0	318.8	19.97	82.5	48-110	0			
Surr: 4-Terphenyl-d14	2.29	0	3.188	0	71.8	39-133	0			

MSD		Sample ID: 1506372-04B MSD				Units: mg/Kg		Analysis Date: 6/9/2015 07:07 PM		
Client ID:		Run ID: GC8_150609B				SeqNo: 3314552		Prep Date: 6/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	258.4	8.3	331.3	19.97	71.9	48-110	282.9	9.07	30	
Surr: 4-Terphenyl-d14	2.095	0	3.313	0	63.2	39-133	2.29	8.88	30	

The following samples were analyzed in this batch:

1506373-03B	1506373-04B	1506373-05B
1506373-06B	1506373-07B	1506373-09B

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 71991 Instrument ID GC9 Method: SW8015D

MBLK		Sample ID: MBLK-71991-71991				Units: µg/Kg		Analysis Date: 6/8/2015 02:16 PM		
Client ID:		Run ID: GC9_150608A				SeqNo: 3312650		Prep Date: 6/8/2015		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	4960	0	5000	0	99.2	50-150	0			

LCS		Sample ID: LCS-71991-71991				Units: µg/Kg		Analysis Date: 6/8/2015 01:02 PM		
Client ID:		Run ID: GC9_150608A				SeqNo: 3312648		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	431500	2,500	500000	0	86.3	70-130	0			
Surr: Toluene-d8	4252	0	5000	0	85	50-150	0			

MS		Sample ID: 1506373-09A MS				Units: µg/Kg		Analysis Date: 6/8/2015 06:36 PM		
Client ID: UP55-17-BG3		Run ID: GC9_150608A				SeqNo: 3312660		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	538200	2,500	500000	0	108	70-130	0			
Surr: Toluene-d8	5556	0	5000	0	111	50-150	0			

MSD		Sample ID: 1506373-09A MSD				Units: µg/Kg		Analysis Date: 6/8/2015 07:01 PM		
Client ID: UP55-17-BG3		Run ID: GC9_150608A				SeqNo: 3312661		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	502200	2,500	500000	0	100	70-130	538200	6.93	30	
Surr: Toluene-d8	4696	0	5000	0	93.9	50-150	5556	16.8	30	

The following samples were analyzed in this batch:

1506373-01A	1506373-02A	1506373-03A
1506373-04A	1506373-05A	1506373-06A
1506373-07A	1506373-09A	

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72333** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-72333-72333					Units: mg/Kg		Analysis Date: 6/17/2015 01:00 PM		
Client ID:		Run ID: HG1_150617A					SeqNo: 3327077		Prep Date: 6/16/2015		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-72333-72333				Units: mg/Kg		Analysis Date: 6/17/2015 01:02 PM		
Client ID:		Run ID: HG1_150617A				SeqNo: 3327078		Prep Date: 6/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1818 0.020 0.1665 0 109 80-120 0

MS		Sample ID: 1506372-01BMS				Units: mg/Kg		Analysis Date: 6/17/2015 01:11 PM		
Client ID:		Run ID: HG1_150617A			SeqNo: 3327082		Prep Date: 6/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1216 0.013 0.1046 0.01492 102 75-125 0

MSD		Sample ID: 1506372-01BMSD				Units: mg/Kg		Analysis Date: 6/17/2015 01:13 PM		
Client ID:		Run ID: HG1_150617A			SeqNo: 3327084		Prep Date: 6/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.122 0.012 0.1032 0.01492 104 75-125 0.1216 0.271 35

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-09B	

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72004** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-72004-72004				Units: mg/L		Analysis Date: 6/8/2015 07:09 PM		
Client ID:		Run ID: ICP2_150608B				SeqNo: 3312087		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1425	0.50								J

LCS		Sample ID: LCS-72004-72004				Units: mg/L		Analysis Date: 6/8/2015 07:15 PM		
Client ID:		Run ID: ICP2_150608B				SeqNo: 3312088		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.655	0.25	5	0	93.1	80-120	0			
Barium	4.929	0.25	5	0	98.6	80-120	0			
Cadmium	4.738	0.50	5	0	94.8	80-120	0			
Chromium	5.198	0.25	5	0	104	80-120	0			
Copper	5.048	0.50	5	0	101	80-120	0			
Lead	5.024	0.25	5	0	100	80-120	0			
Nickel	4.916	0.25	5	0	98.3	80-120	0			
Selenium	4.887	0.50	5	0	97.7	80-120	0			
Silver	4.924	0.25	5	0	98.5	80-120	0			
Zinc	4.958	0.50	5	0	99.2	80-120	0			

MS		Sample ID: 1506373-04BMS				Units: mg/Kg		Analysis Date: 6/8/2015 09:32 PM		
Client ID: UP55-17-BG1		Run ID: ICP2_150608B				SeqNo: 3312119		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.2	0.35	7.092	7.47	109	75-125	0			
Barium	165.5	0.35	7.092	140.4	354	75-125	0			SO
Chromium	21.67	0.35	7.092	9.991	165	75-125	0			S
Copper	22.13	0.71	7.092	14.69	105	75-125	0			
Lead	22.41	0.35	7.092	15.35	99.6	75-125	0			
Nickel	23.3	0.35	7.092	16.5	95.9	75-125	0			
Selenium	8.484	0.71	7.092	0.8388	108	75-125	0			
Silver	7.451	0.35	7.092	-0.05526	106	75-125	0			
Zinc	94.31	0.71	7.092	84.52	138	75-125	0			SO

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 72004 Instrument ID ICP2 Method: SW846 6010C

MS				Sample ID: 1506373-04BMS			Units: mg/Kg		Analysis Date: 6/11/2015 11:01 AM		
Client ID: UP55-17-BG1			Run ID: ICP2_150611A			SeqNo: 3317197		Prep Date: 6/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Cadmium	7.44	0.71	7.092	0	105	75-125	0				

MSD					Sample ID: 1506373-04BMSD		Units: mg/Kg		Analysis Date: 6/8/2015 09:37 PM		
Client ID: UP55-17-BG1			Run ID: ICP2_150608B			SeqNo: 3312120		Prep Date: 6/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.08	0.35	7.082	7.47	108	75-125	15.2	0.79	20		
Barium	154.9	0.35	7.082	140.4	205	75-125	165.5	6.64	20	SO	
Chromium	20.52	0.35	7.082	9.991	149	75-125	21.67	5.41	20	S	
Copper	22.01	0.71	7.082	14.69	103	75-125	22.13	0.545	20		
Lead	22.55	0.35	7.082	15.35	102	75-125	22.41	0.64	20		
Nickel	23.13	0.35	7.082	16.5	93.6	75-125	23.3	0.732	20		
Selenium	8.388	0.71	7.082	0.8388	107	75-125	8.484	1.14	20		
Silver	7.448	0.35	7.082	-0.05526	106	75-125	7.451	0.0316	20		
Zinc	93.19	0.71	7.082	84.52	123	75-125	94.31	1.19	20	O	

MSD				Sample ID: 1506373-04BMSD				Units: mg/Kg			Analysis Date: 6/11/2015 11:06 AM			
Client ID: UP55-17-BG1				Run ID: ICP2_150611A				SeqNo: 3317198			Prep Date: 6/8/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Cadmium		7.484	0.71	7.082	0	106	75-125	7.44	0.589	20				

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72017** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 1505372-05BDUP				Units: mg/L			Analysis Date: 6/15/2015 12:37 PM		
Client ID:			Run ID: ICP2_150615A				SeqNo: 3321600		Prep Date: 6/12/2015		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Calcium	57.94	5.0	0	0	0	0-0	0						
Magnesium	8.179	2.0	0	0	0	0-0	0						
Sodium	991.5	2.0	0	0	0	0-0	0						

DUP				Sample ID: 1506372-05BDUP				Units: none			Analysis Date: 6/15/2015			
Client ID:				Run ID: SAR_150615A				SeqNo: 3321810			Prep Date: 6/12/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Sodium Adsorption Ratio		32.31	0.010	0	0	0		34.06	5.29	50				

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-09B	

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72059** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK				Sample ID: MBLK-72059-72059				Units: mg/Kg		Analysis Date: 6/9/2015 02:30 PM	
Client ID:			Run ID: ICP2_150609A			SeqNo: 3313637		Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	ND	0.25									
Barium	ND	0.25									
Cadmium	ND	0.50									
Chromium	0.0164	0.25								J	
Copper	ND	0.50									
Lead	ND	0.25									
Nickel	ND	0.25									
Selenium	ND	0.50									
Silver	ND	0.25									
Zinc	ND	0.50									

LCS				Sample ID: LCS-72059-72059				Units: mg/Kg			Analysis Date: 6/9/2015 02:35 PM			
Client ID:				Run ID: ICP2_150609A				SeqNo: 3313639			Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	4.546	0.25	5	0	90.9	80-120	0							
Barium	5.146	0.25	5	0	103	80-120	0							
Cadmium	4.78	0.50	5	0	95.6	80-120	0							
Chromium	5.171	0.25	5	0	103	80-120	0							
Copper	5.121	0.50	5	0	102	80-120	0							
Lead	5.113	0.25	5	0	102	80-120	0							
Nickel	4.933	0.25	5	0	98.7	80-120	0							
Selenium	4.837	0.50	5	0	96.7	80-120	0							
Silver	5.299	0.25	5	0	106	80-120	0							
Zinc	5.115	0.50	5	0	102	80-120	0							

MS				Sample ID: 1506373-09BMS			Units: mg/Kg		Analysis Date: 6/9/2015 02:52 PM		
Client ID: UP55-17-BG3			Run ID: ICP2_150609A		SeqNo: 3313643		Prep Date: 6/9/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	13.79	0.36	7.112	6.719	99.5	75-125	0				
Barium	127	0.36	7.112	106.4	290	75-125	0			SO	
Cadmium	7.049	0.71	7.112	-0.04641	99.8	75-125	0				
Chromium	20.95	0.36	7.112	10.4	148	75-125	0			S	
Copper	19.49	0.71	7.112	11.79	108	75-125	0				
Lead	21.42	0.36	7.112	13.74	108	75-125	0				
Nickel	19.49	0.36	7.112	12.56	97.4	75-125	0				
Selenium	8.601	0.71	7.112	0.6606	112	75-125	0				
Silver	8.085	0.36	7.112	-0.05504	114	75-125	0				
Zinc	87.31	0.71	7.112	75.28	169	75-125	0			SO	

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72059** Instrument ID **ICP2** Method: **SW846 6010C**

MSD				Sample ID: 1506373-09BMSD			Units: mg/Kg		Analysis Date: 6/9/2015 02:57 PM		
Client ID: UP55-17-BG3			Run ID: ICP2_150609A			SeqNo: 3313644		Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	13.74	0.35	7.092	6.719	99	75-125	13.79	0.411	20		
Barium	126.8	0.35	7.092	106.4	289	75-125	127	0.127	20	SO	
Cadmium	6.984	0.71	7.092	-0.04641	99.1	75-125	7.049	0.919	20		
Chromium	20.81	0.35	7.092	10.4	147	75-125	20.95	0.661	20	S	
Copper	19.57	0.71	7.092	11.79	110	75-125	19.49	0.415	20		
Lead	21.56	0.35	7.092	13.74	110	75-125	21.42	0.627	20		
Nickel	19.56	0.35	7.092	12.56	98.7	75-125	19.49	0.376	20		
Selenium	8.425	0.71	7.092	0.6606	109	75-125	8.601	2.08	20		
Silver	7.984	0.35	7.092	-0.05504	113	75-125	8.085	1.26	20		
Zinc	87.7	0.71	7.092	75.28	175	75-125	87.31	0.436	20	SO	

The following samples were analyzed in this batch:

1506373-07B 1506373-08A 1506373-09B

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72042** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-72042-72042				Units: µg/Kg			Analysis Date: 6/9/2015 05:48 PM		
Client ID:			Run ID: SVMS4_150609A				SeqNo: 3315304			Prep Date: 6/9/2015		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>	1291	0	1667	0	77.5	12-100	0						
<i>Surr: 4-Terphenyl-d14</i>	1772	0	1667	0	106	25-137	0						
<i>Surr: Nitrobenzene-d5</i>	1206	0	1667	0	72.3	37-107	0						

LCS				Sample ID: SLCSS1-72042-72042				Units: µg/Kg		Analysis Date: 6/9/2015 06:13 PM	
Client ID:			Run ID: SVMS4_150609A			SeqNo: 3315305		Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	546.3	6.7	666.7	0	81.9	45-110	0				
Anthracene	656.7	6.7	666.7	0	98.5	55-105	0				
Benzo(a)anthracene	659.3	6.7	666.7	0	98.9	50-110	0				
Benzo(a)pyrene	703	6.7	666.7	0	105	50-110	0				
Benzo(b)fluoranthene	653.3	6.7	666.7	0	98	45-115	0				
Benzo(k)fluoranthene	618.3	6.7	666.7	0	92.7	45-115	0				
Chrysene	614.3	6.7	666.7	0	92.1	55-110	0				
Dibenzo(a,h)anthracene	731.7	6.7	666.7	0	110	40-125	0				
Fluoranthene	651.7	6.7	666.7	0	97.7	55-115	0				
Fluorene	554.3	6.7	666.7	0	83.1	50-110	0				
Indeno(1,2,3-cd)pyrene	707	6.7	666.7	0	106	40-120	0				
Naphthalene	592.3	6.7	666.7	0	88.8	40-105	0				
Pyrene	716.3	6.7	666.7	0	107	45-125	0				
<i>Surr: 2-Fluorobiphenyl</i>	1430	0	1667	0	85.8	12-100	0				
<i>Surr: 4-Terphenyl-d14</i>	1917	0	1667	0	115	25-137	0				
<i>Surr: Nitrobenzene-d5</i>	1417	0	1667	0	85	37-107	0				

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 72042 Instrument ID SVMS4 Method: SW846 8270D

MS				Sample ID: 1506411-02B MS				Units: µg/Kg		Analysis Date: 6/9/2015 06:38 PM	
Client ID:			Run ID: SVMS4_150609A			SeqNo: 3315306		Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	982.1	13	1280	0	76.7	45-110	0				
Anthracene	1226	13	1280	0	95.8	55-105	0				
Benzo(a)anthracene	1246	13	1280	0	97.3	50-110	0				
Benzo(a)pyrene	1326	13	1280	0	104	50-110	0				
Benzo(b)fluoranthene	1225	13	1280	0	95.7	45-115	0				
Benzo(k)fluoranthene	1163	13	1280	0	90.9	45-115	0				
Chrysene	1156	13	1280	0	90.3	55-110	0				
Dibenzo(a,h)anthracene	1342	13	1280	0	105	40-125	0				
Fluoranthene	1238	13	1280	0	96.7	55-115	0				
Fluorene	1024	13	1280	0	80	50-110	0				
Indeno(1,2,3-cd)pyrene	1299	13	1280	0	101	40-120	0				
Naphthalene	1066	13	1280	0	83.3	40-105	0				
Pyrene	1355	13	1280	0	106	45-125	0				
Surr: 2-Fluorobiphenyl	2498	0	3199	0	78.1	12-100	0				
Surr: 4-Terphenyl-d14	3554	0	3199	0	111	25-137	0				
Surr: Nitrobenzene-d5	2449	0	3199	0	76.5	37-107	0				

MSD				Sample ID: 1506411-02B MSD				Units: µg/Kg		Analysis Date: 6/9/2015 07:04 PM	
Client ID:			Run ID: SVMS4_150609A			SeqNo: 3315307		Prep Date: 6/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1029	13	1298	0	79.2	45-110	982.1	4.63	30		
Anthracene	1253	13	1298	0	96.5	55-105	1226	2.15	30		
Benzo(a)anthracene	1204	13	1298	0	92.7	50-110	1246	3.42	30		
Benzo(a)pyrene	1291	13	1298	0	99.4	50-110	1326	2.71	30		
Benzo(b)fluoranthene	1206	13	1298	0	92.9	45-115	1225	1.6	30		
Benzo(k)fluoranthene	1160	13	1298	0	89.4	45-115	1163	0.24	30		
Chrysene	1146	13	1298	0	88.3	55-110	1156	0.871	30		
Dibenzo(a,h)anthracene	1376	13	1298	0	106	40-125	1342	2.51	30		
Fluoranthene	1174	13	1298	0	90.4	55-115	1238	5.31	30		
Fluorene	1044	13	1298	0	80.4	50-110	1024	1.86	30		
Indeno(1,2,3-cd)pyrene	1299	13	1298	0	100	40-120	1299	0.0147	30		
Naphthalene	1099	13	1298	0	84.6	40-105	1066	3.03	30		
Pyrene	1376	13	1298	0	106	45-125	1355	1.57	30		
Surr: 2-Fluorobiphenyl	2656	0	3245	0	81.8	12-100	2498	6.13	40		
Surr: 4-Terphenyl-d14	3486	0	3245	0	107	25-137	3554	1.94	40		
Surr: Nitrobenzene-d5	2595	0	3245	0	80	37-107	2449	5.82	40		

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 72087 Instrument ID SVMS5 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-72087-72087				Units: µg/Kg		Analysis Date: 6/10/2015 06:14 PM		
Client ID:		Run ID: SVMS5_150610A				SeqNo: 3316737		Prep Date: 6/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	1323	0	1667	0	79.4	12-100	0			
Surr: 4-Terphenyl-d14	1823	0	1667	0	109	25-137	0			
Surr: Nitrobenzene-d5	1356	0	1667	0	81.4	37-107	0			

LCS		Sample ID: SLCSS1-72087-72087				Units: µg/Kg		Analysis Date: 6/10/2015 06:36 PM		
Client ID:		Run ID: SVMS5_150610A				SeqNo: 3316739		Prep Date: 6/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	486.3	6.7	666.7	0	72.9	45-110	0			
Anthracene	608.7	6.7	666.7	0	91.3	55-105	0			
Benzo(a)anthracene	569.7	6.7	666.7	0	85.4	50-110	0			
Benzo(a)pyrene	625.3	6.7	666.7	0	93.8	50-110	0			
Benzo(b)fluoranthene	674	6.7	666.7	0	101	45-115	0			
Benzo(k)fluoranthene	662.7	6.7	666.7	0	99.4	45-115	0			
Chrysene	543.3	6.7	666.7	0	81.5	55-110	0			
Dibenzo(a,h)anthracene	643	6.7	666.7	0	96.4	40-125	0			
Fluoranthene	614.3	6.7	666.7	0	92.1	55-115	0			
Fluorene	518	6.7	666.7	0	77.7	50-110	0			
Indeno(1,2,3-cd)pyrene	699	6.7	666.7	0	105	40-120	0			
Naphthalene	482	6.7	666.7	0	72.3	40-105	0			
Pyrene	606.7	6.7	666.7	0	91	45-125	0			
Surr: 2-Fluorobiphenyl	1250	0	1667	0	75	12-100	0			
Surr: 4-Terphenyl-d14	1788	0	1667	0	107	25-137	0			
Surr: Nitrobenzene-d5	1306	0	1667	0	78.4	37-107	0			

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 72087 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1506462-01B MS				Units: µg/Kg		Analysis Date: 6/10/2015 06:58 PM	
Client ID:			Run ID: SVMS5_150610A			SeqNo: 3316741		Prep Date: 6/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1025	13	1272	0	80.5	45-110	0				
Anthracene	1214	13	1272	0	95.4	55-105	0				
Benzo(a)anthracene	1151	13	1272	0	90.5	50-110	0				
Benzo(a)pyrene	1253	13	1272	0	98.5	50-110	0				
Benzo(b)fluoranthene	1363	13	1272	0	107	45-115	0				
Benzo(k)fluoranthene	1347	13	1272	0	106	45-115	0				
Chrysene	1102	13	1272	0	86.6	55-110	0				
Dibenzo(a,h)anthracene	1260	13	1272	0	99	40-125	0				
Fluoranthene	1242	13	1272	0	97.6	55-115	0				
Fluorene	1086	13	1272	0	85.3	50-110	0				
Indeno(1,2,3-cd)pyrene	1401	13	1272	0	110	40-120	0				
Naphthalene	1019	13	1272	0	80.1	40-105	0				
Pyrene	1215	13	1272	0	95.5	45-125	0				
Surr: 2-Fluorobiphenyl	2567	0	3181	0	80.7	12-100	0				
Surr: 4-Terphenyl-d14	3540	0	3181	0	111	25-137	0				
Surr: Nitrobenzene-d5	2602	0	3181	0	81.8	37-107	0				

MSD				Sample ID: 1506462-01B MSD				Units: µg/Kg		Analysis Date: 6/10/2015 07:21 PM	
Client ID:			Run ID: SVMS5_150610A			SeqNo: 3316742		Prep Date: 6/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	956.3	13	1256	0	76.1	45-110	1025	6.91	30		
Anthracene	1226	13	1256	0	97.6	55-105	1214	0.984	30		
Benzo(a)anthracene	1157	13	1256	0	92.1	50-110	1151	0.457	30		
Benzo(a)pyrene	1245	13	1256	0	99.1	50-110	1253	0.638	30		
Benzo(b)fluoranthene	1364	13	1256	0	109	45-115	1363	0.0953	30		
Benzo(k)fluoranthene	1322	13	1256	0	105	45-115	1347	1.86	30		
Chrysene	1096	13	1256	0	87.2	55-110	1102	0.548	30		
Dibenzo(a,h)anthracene	1314	13	1256	0	105	40-125	1260	4.2	30		
Fluoranthene	1279	13	1256	0	102	55-115	1242	2.97	30		
Fluorene	1076	13	1256	0	85.6	50-110	1086	0.945	30		
Indeno(1,2,3-cd)pyrene	1388	13	1256	0	111	40-120	1401	0.933	30		
Naphthalene	970.1	13	1256	0	77.2	40-105	1019	4.92	30		
Pyrene	1227	13	1256	0	97.7	45-125	1215	0.982	30		
Surr: 2-Fluorobiphenyl	2384	0	3140	0	75.9	12-100	2567	7.4	40		
Surr: 4-Terphenyl-d14	3506	0	3140	0	112	25-137	3540	0.955	40		
Surr: Nitrobenzene-d5	2451	0	3140	0	78.1	37-107	2602	6	40		

The following samples were analyzed in this batch:

1506373-06B 1506373-07B 1506373-09B

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: 71990 Instrument ID VMS8 Method: SW8260B

MBLK Sample ID: MBLK-71990-71990				Units: µg/Kg			Analysis Date: 6/8/2015 12:30 PM			
Client ID:		Run ID: VMS8_150608A		SeqNo: 3313427		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	999.5	0	1000	0	100	70-130	0			
Surr: 4-Bromofluorobenzene	1014	0	1000	0	101	70-130	0			
Surr: Dibromofluoromethane	957	0	1000	0	95.7	70-130	0			
Surr: Toluene-d8	988.5	0	1000	0	98.8	70-130	0			

LCS Sample ID: LCS-71990-71990				Units: µg/Kg			Analysis Date: 6/8/2015 10:53 AM			
Client ID:		Run ID: VMS8_150608A		SeqNo: 3313426		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	938	30	1000	0	93.8	75-125	0			
Ethylbenzene	878.5	30	1000	0	87.8	75-125	0			
m,p-Xylene	1811	60	2000	0	90.6	80-125	0			
o-Xylene	857.5	30	1000	0	85.8	75-125	0			
Toluene	885.5	30	1000	0	88.6	70-125	0			
Xylenes, Total	2668	90	3000	0	89	75-125	0			
Surr: 1,2-Dichloroethane-d4	1023	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	959	0	1000	0	95.9	70-130	0			
Surr: Dibromofluoromethane	1036	0	1000	0	104	70-130	0			
Surr: Toluene-d8	996	0	1000	0	99.6	70-130	0			

MS Sample ID: 1506373-07A MS				Units: µg/Kg			Analysis Date: 6/11/2015 09:21 PM			
Client ID: UP55-17-SS6		Run ID: VMS7_150611A		SeqNo: 3318863		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1062	30	1000	0	106	75-125	0			
Ethylbenzene	1055	30	1000	0	106	75-125	0			
m,p-Xylene	2041	60	2000	0	102	80-125	0			
o-Xylene	1006	30	1000	0	101	75-125	0			
Toluene	1030	30	1000	0	103	70-125	0			
Xylenes, Total	3048	90	3000	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	1027	0	1000	0	103	70-130	0			
Surr: 4-Bromofluorobenzene	1013	0	1000	0	101	70-130	0			
Surr: Dibromofluoromethane	984.5	0	1000	0	98.4	70-130	0			
Surr: Toluene-d8	996.5	0	1000	0	99.6	70-130	0			

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **71990** Instrument ID **VMS8** Method: **SW8260B**

MSD				Sample ID: 1506373-07A MSD			Units: µg/Kg		Analysis Date: 6/11/2015 09:48 PM		
Client ID: UP55-17-SS6			Run ID: VMS7_150611A			SeqNo: 3318865		Prep Date: 6/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1083	30	1000	0	108	75-125	1062	1.91	30		
Ethylbenzene	1105	30	1000	0	110	75-125	1055	4.63	30		
m,p-Xylene	2140	60	2000	0	107	80-125	2041	4.74	30		
o-Xylene	1058	30	1000	0	106	75-125	1006	4.94	30		
Toluene	1085	30	1000	0	108	70-125	1030	5.2	30		
Xylenes, Total	3198	90	3000	0	107	75-125	3048	4.8	30		
Surr: 1,2-Dichloroethane-d4	983.5	0	1000	0	98.4	70-130	1027	4.33	30		
Surr: 4-Bromofluorobenzene	1021	0	1000	0	102	70-130	1013	0.787	30		
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130	984.5	1.64	30		
Surr: Toluene-d8	1008	0	1000	0	101	70-130	996.5	1.2	30		

The following samples were analyzed in this batch:

1506373-01A	1506373-02A	1506373-03A
1506373-04A	1506373-05A	1506373-06A
1506373-07A	1506373-09A	

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72003** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-72003-72003					Units: s.u.		Analysis Date: 6/8/2015 12:30 PM		
Client ID:		Run ID: WETCHEM_150608J					SeqNo: 3311586		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH 4.05 0 4 0 101 90-110 0

DUP		Sample ID: 1506372-01B DUP				Units: s.u.		Analysis Date: 6/8/2015 12:30 PM		
Client ID:		Run ID: WETCHEM_150608J				SeqNo: 3311588		Prep Date: 6/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 7.91 0 0 0 0 0-0 7.91 0 20

DUP				Sample ID: 1506373-01B DUP				Units: s.u.			Analysis Date: 6/8/2015 12:30 PM			
Client ID: UP55-17-SS1				Run ID: WETCHEM_150608J				SeqNo: 3311597			Prep Date: 6/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH 8.24 0 0 0 0 0-0 8.11 1.59 20

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-09B	

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

Client: Olsson Associates
Work Order: 1506373
Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72017** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

Dup		Sample ID: 1506372-05B DUP				Units: mmhos/cm @25°		Analysis Date: 6/14/2015 02:20 PM		
Client ID:		Run ID: WETCHEM_150614A				SeqNo: 3320299		Prep Date: 6/12/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	5.42	0.050	0	0	0		5.74	5.73	50	

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-09B	

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **72077** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-72077-72077				Units: mg/Kg		Analysis Date: 6/9/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1506090		SeqNo: 3313987		Prep Date: 6/8/2015		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-72077-72077				Units: mg/Kg		Analysis Date: 6/9/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1506090		SeqNo: 3313986		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.44 1.0 5 0 88.8 80-120 0

MS		Sample ID: 1506202-01A MS				Units: mg/Kg		Analysis Date: 6/9/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1506090		SeqNo: 3313970		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.108 0.98 4.902 0.7129 89.7 75-125 0

MS		Sample ID: 1506202-01A MSI				Units: mg/Kg		Analysis Date: 6/9/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1506090		SeqNo: 3313972		Prep Date: 6/8/2015		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2377 100 2454 0.7129 96.8 75-125 0

MSD		Sample ID: 1506202-01A MSD				Units: mg/Kg		Analysis Date: 6/9/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1506090		SeqNo: 3313971		Prep Date: 6/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.237 1.0 5.155 0.7129 87.8 75-125 5.108 2.5 20

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-09B	

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

Client: Olsson Associates
 Work Order: 1506373
 Project: Chevron UP 55-17 Spill

QC BATCH REPORT

Batch ID: **R165267** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R165267				Units: % of sample		Analysis Date: 6/10/2015 04:01 PM		
Client ID:		Run ID: MOIST_150610B				SeqNo: 3317459		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-R165267				Units: % of sample		Analysis Date: 6/10/2015 04:01 PM		
Client ID:		Run ID: MOIST_150610B				SeqNo: 3317458		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: 1506373-01B DUP				Units: % of sample		Analysis Date: 6/10/2015 04:01 PM		
Client ID: UP55-17-SS1		Run ID: MOIST_150610B				SeqNo: 3317441		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.86 0.050 0 0 0 13.85 0.0722 20

DUP		Sample ID: 1506373-02B DUP				Units: % of sample		Analysis Date: 6/10/2015 04:01 PM		
Client ID: UP55-17-SS2		Run ID: MOIST_150610B				SeqNo: 3317443		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 15.89 0.050 0 0 0 16.78 5.45 20

The following samples were analyzed in this batch:

1506373-01B	1506373-02B	1506373-03B
1506373-04B	1506373-05B	1506373-06B
1506373-07B	1506373-08A	1506373-09B

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



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5341

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #:

1506373

Customer Information		Project Information						Parameter/Method Request for Analysis											
Purchase Order		Project Name	Chevron UP 55-17 Spill					A TPH (BRO & DRO)											
Work Order		Project Number	013.3287.200.200004					B BTEX											
Company Name	Olsson Associates	Bill To Company	Olsson Associates					C PAH (See Attached List) CO Table 910											
Sand Report To	Tim Dobransky	Invoice Attn	Tim Dobransky					D Electrical Conductivity											
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102					E Sodium Adsorption Ratio											
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506					F pH											
Phone	970.263.7800	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@olssonassoc.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	UP55-17-SS1	06/01/15	1215	Soil	8	2	X	X	X	X	X	X	X						
2	UP55-17-SS2	06/01/15	1225	Soil	8	2	X	X	X	X	X	X	X						
3	UP55-17-SS3	06/01/15	1250	Soil	8	2	X	X	X	X	X	X	X						
4	UP55-17-BG1	06/01/15	1300	Soil	8	2	X	X	X	X	X	X	X						
5	UP55-17-SS4	06/01/15	1310	Soil	8	2	X	X	X	X	X	X	X						
6	UP55-17-SS5	06/01/15	1330	Soil	8	2	X	X	X	X	X	X	X						
7	UP55-17-SS6	06/01/15	1345	Soil	8	2	X	X	X	X	X	X	X						
8	UP55-17-BG2	06/01/15	1355	Soil	8	1								X					
9	UP55-17-BG3	06/01/15	1400	Soil	8	2	X	X	X	X	X	X	X						
Shipper(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:											
Received by (Client): 		Date: 4/3/15	Time: 1630	Received by (Laboratory): 				Notes: Chevron Pricing Applies - Per Bruce Schlatter											
Received by (Laboratory): 		Date: 6-3-15	Time: 1050	Received by (Laboratory): 				QC Package: (Check Box Below)											
Logged by (Laboratory): DFS		Date: 6/6/15	Time: 0900	Checked by (Laboratory):				Cooler Temp: 54°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.

Copyright 2011 by ALS Group

From: (616) 298-1033
 Nick Martinez
 ALS Environmental
 127 E. 1st Street

Origin ID: RILA



J151215022303UN

PARACHUTE, CO 81635

Ship Date: 03 JUN 15
 ActWgt: 87.0 LB
 CAD: 2284840/INET3610

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code



Ref # 060315-1
 Invoice #
 PO # Parachute
 Dept #

SHIP TO: (616) 399-6870

BILL SENDER

sample receiving
 ALS Laboratory Group
 3352 128TH AVE

HOLLAND, MI 49424

2 of 5

THU - 04 JUN 10:30A
 PRIORITY OVERNIGHT

MP# 7737 5257 9042

0263

Mstr# 7737 5257 9215

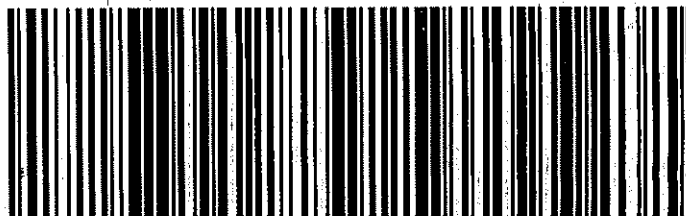
0281

49424

MI-US

GRR

XX HLMA



537J118A0E/EE4B

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: **05-Jun-15 19:00**

Work Order: **1506373**

Received by: **DS**

Checklist completed by Diane Shaw
eSignature

06-Jun-15
Date

Reviewed by: Lee Arnold
eSignature

07-Jun-15
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>5.4 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>6/6/2015 9:30:19 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



31-Jul-2018

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

Re: **Chevron UP 55-17 Spill Resampling**

Work Order: **1807963**

Dear Tim,

ALS Environmental received 4 samples on 17-Jul-2018 09:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 12.

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

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron UP 55-17 Spill Resampling
Work Order: 1807963

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>
1807963-01	UP5517-SS1	Soil		7/13/2018 10:20	7/17/2018 09:00	<input type="checkbox"/>
1807963-02	UP5517-SS3	Soil		7/13/2018 10:30	7/17/2018 09:00	<input type="checkbox"/>
1807963-03	UP5517-SS4	Soil		7/13/2018 10:35	7/17/2018 09:00	<input type="checkbox"/>
1807963-04	UP5517-SS5	Soil		7/13/2018 10:40	7/17/2018 09:00	<input type="checkbox"/>

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

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

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

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Chevron UP 55-17 Spill Resampling
Sample ID: UP5517-SS1
Collection Date: 7/13/2018 10:20 AM

Work Order: 1807963
Lab ID: 1807963-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP							
Arsenic	7.7		0.098	0.38	mg/Kg-dry	1	7/25/2018 05:39
SOLUBLE CATIONS FOR SAR							
Calcium	1,700		0.86	5.0	mg/L	10	7/25/2018 00:06
Magnesium	110		0.068	2.0	mg/L	10	7/25/2018 00:06
Sodium	400		0.34	2.0	mg/L	10	7/25/2018 00:06
SODIUM ADSORPTION RATIO							
Sodium Adsorption Ratio	2.5		0.010	0.010	none	1	7/24/2018
ELECTRICAL CONDUCTIVITY (SAR)							
Electrical Conductivity @ Saturation	12		0.014	0.12	mmhos/cm @25°	25	7/25/2018 11:45
MOISTURE							
Moisture	1.3		0.025	0.050	% of sample	1	7/26/2018 12:45

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

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Chevron UP 55-17 Spill Resampling
Sample ID: UP5517-SS3
Collection Date: 7/13/2018 10:30 AM

Work Order: 1807963
Lab ID: 1807963-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Calcium	2,300		8.6	50	mg/L	100	7/25/2018 19:52
Magnesium	150		0.068	2.0	mg/L	10	7/25/2018 00:09
Sodium	670		0.34	2.0	mg/L	10	7/25/2018 00:09
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Sodium Adsorption Ratio	3.7		0.010	0.010	none	1	7/24/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: JB
Electrical Conductivity @ Saturation	18		0.014	0.12	mmhos/cm @25°	25	7/25/2018 11:45

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

ALS Group, USA**Date:** 31-Jul-18

Client: Olsson Associates
Project: Chevron UP 55-17 Spill Resampling
Sample ID: UP5517-SS4
Collection Date: 7/13/2018 10:35 AM

Work Order: 1807963
Lab ID: 1807963-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Calcium	220		0.86	5.0	mg/L	10	7/25/2018 00:11
Magnesium	35		0.068	2.0	mg/L	10	7/25/2018 00:11
Sodium	140		0.34	2.0	mg/L	10	7/25/2018 00:11
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Sodium Adsorption Ratio	2.3		0.010	0.010	none	1	7/24/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: JB
Electrical Conductivity @ Saturation	2.1		0.014	0.12	mmhos/cm @25°	25	7/25/2018 11:45

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

ALS Group, USA

Date: 31-Jul-18

Client: Olsson Associates
Project: Chevron UP 55-17 Spill Resampling
Sample ID: UP5517-SS5
Collection Date: 7/13/2018 10:40 AM

Work Order: 1807963
Lab ID: 1807963-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020A		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Calcium	160		0.86	5.0	mg/L	10	7/25/2018 00:13
Magnesium	20		0.068	2.0	mg/L	10	7/25/2018 00:13
Sodium	30		0.34	2.0	mg/L	10	7/25/2018 00:13
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: STP
Sodium Adsorption Ratio	0.60		0.010	0.010	none	1	7/24/2018
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 7/24/18		Analyst: JB
Electrical Conductivity @ Saturation	1.2		0.014	0.12	mmhos/cm @25°	25	7/25/2018 11:45

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

Client: Olsson Associates

Work Order: 1807963

Project: Chevron UP 55-17 Spill Resampling

QC BATCH REPORT

Batch ID: 121789

Instrument ID ICP2

Method: SW846 6010C

MBLK		Sample ID: MBLK-121789-121789				Units: mg/Kg		Analysis Date: 7/25/2018 02:34 AM		
Client ID:		Run ID: ICP2_180724A				SeqNo: 5165598		Prep Date: 7/24/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic U 0.25

LCS		Sample ID: LCS-121789-121789				Units: mg/Kg		Analysis Date: 7/25/2018 02:59 AM		
Client ID:		Run ID: ICP2_180724A				SeqNo: 5165602		Prep Date: 7/24/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 4.768 0.25 5 0 95.4 80-120 0

MS		Sample ID: 1807957-05BMS				Units: mg/Kg		Analysis Date: 7/25/2018 05:09 AM		
Client ID:		Run ID: ICP2_180724A				SeqNo: 5165623		Prep Date: 7/24/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 12.61 0.34 6.878 6.575 87.7 75-125 0

MSD		Sample ID: 1807957-05BMSD				Units: mg/Kg		Analysis Date: 7/25/2018 05:14 AM		
Client ID:		Run ID: ICP2_180724A				SeqNo: 5165624		Prep Date: 7/24/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 12.75 0.34 6.887 6.575 89.7 75-125 12.61 1.13 20

The following samples were analyzed in this batch:

1807963-01B

Client: Olsson Associates
Work Order: 1807963
Project: Chevron UP 55-17 Spill Resampling

QC BATCH REPORT

Batch ID: **121776** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1807963-01ADUP				Units: mg/L		Analysis Date: 7/25/2018 12:08 AM		
Client ID: UP5517-SS1		Run ID: ICPMS3_180724A				SeqNo: 5166251		Prep Date: 7/24/2018		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	1559	5.0	0	0	0	0-0	1709	9.19		
Magnesium	95.03	2.0	0	0	0	0-0	108.9	13.6		
Sodium	349.1	2.0	0	0	0	0-0	396.2	12.6		

The following samples were analyzed in this batch:

1807963-01A	1807963-02A	1807963-03A
1807963-04A		

Batch ID: **121776** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1807963-01ADUP				Units: none		Analysis Date: 7/24/2018		
Client ID: UP5517-SS1		Run ID: SAR_180724A				SeqNo: 5172826		Prep Date: 7/24/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	2.321	0.010	0	0	0		2.511	7.85	50	

The following samples were analyzed in this batch:

1807963-01A	1807963-02A	1807963-03A
1807963-04A		

Batch ID: **121776** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1807963-01A DUP				Units: mmhos/cm @25°		Analysis Date: 7/25/2018 11:45 AM		
Client ID: UP5517-SS1		Run ID: WETCHEM_180725E				SeqNo: 5166644		Prep Date: 7/24/2018		DF: 25
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	11.5	0.12	0	0	0		11.85	3	50	

The following samples were analyzed in this batch:

1807963-01A	1807963-02A	1807963-03A
1807963-04A		

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

Client: Olsson Associates
Work Order: 1807963
Project: Chevron UP 55-17 Spill Resampling

QC BATCH REPORT

Batch ID: **R241046** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R241046				Units: % of sample		Analysis Date: 7/26/2018 12:45 PM		
Client ID:		Run ID: MOIST_180726B				SeqNo: 5171622		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.050

LCS		Sample ID: LCS-R241046				Units: % of sample		Analysis Date: 7/26/2018 12:45 PM		
Client ID:		Run ID: MOIST_180726B				SeqNo: 5171621		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: 18071369-03A DUP				Units: % of sample		Analysis Date: 7/26/2018 12:45 PM		
Client ID:		Run ID: MOIST_180726B				SeqNo: 5171602		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.81 0.050 0 0 0 0-0 13.84 0.217 10

DUP		Sample ID: 18071369-08A DUP				Units: % of sample		Analysis Date: 7/26/2018 12:45 PM		
Client ID:		Run ID: MOIST_180726B				SeqNo: 5171608		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.64 0.050 0 0 0 0-0 13.84 1.46 10

The following samples were analyzed in this batch:

1807963-01B

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
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☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #:

1807963

Customer Information

Project Information

Parameter/Method Request for Analysis

Purchase Order

Project Name Chevron UP 55-17 Spill Resampling

A TPH (GRO & DRO)

Work Order

Project Number 013.3287.200.200004

B BTEX

Company Name Olsson Associates

Bill To Company Olsson Associates

C PAH (See Attached List) CO Table 910

Send Report To Tim Dobransky

Invoice Attn. Dana Mack

D Electrical Conductivity

Address

Address

760 Horizon Drive, Ste. 102

E Sodium Adsorption Ratio

F pH

City/State/Zip

City/State/Zip Grand Junction, CO 81506

G Metals (See Attached List) CO Table 910

Phone

Phone 970.263.7800

H Arsenic Only

Fax

Fax 970.263.7466

e-Mail Address tdobransky@entradainc.com

e-Mail Address dmack@olssonassociates.com

J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	UP5517-SS1	07/13/18	1020	Soil	8	2				X	X			X			
2	UP5517-SS3	07/13/18	1030	Soil	8	1				X	X						
3	UP5517-SS4	07/13/18	1035	Soil	8	1				X	X						
4	UP5517-SS5	07/13/18	1040	Soil	8	1				X	X						
5																	
6																	
7																	
8																	
9																	

Sampler(s): Please Print & Sign

Tim Dobransky

Shipment Method:

FedEx

Required Turnaround Time:

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

Results Due Date:

Relinquished by:

Date:

7/16/18

Time:

Received by:

Received by (Laboratory):

Notes:

Chevron Pricing Applies - Per Bruce Schlatter

Relinquished by:

Date:

7/16/18

Time:

7:30

Received by (Laboratory):

Received by (Laboratory):

Cooler Temp.

4.2°C

QC Package: (Check Box Below)

☒ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like

Logged by (Laboratory):

Date:

7/17/18

Time:

1005

Checked by (Laboratory):

Checked by (Laboratory):

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

SP2

Other:

Sample Receipt Checklist

Client Name: **OLSSON**

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

Work Order: **1807963**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

17-Jul-18
Date

Reviewed by: Chad Whelton
eSignature

18-Jul-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/17/2018 4:16:52 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:



09-Apr-2021

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

Re: **UP 55-17 Spill Resampling**

Work Order: **21040267**

Dear Tim,

ALS Environmental received 3 samples on 03-Apr-2021 09:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 9.

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

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: UP 55-17 Spill Resampling
Work Order: 21040267

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>
21040267-01	UP5517-SS1	Soil		4/1/2021 10:30	4/3/2021 09:30	<input type="checkbox"/>
21040267-02	UP5517-SS2	Soil		4/1/2021 10:40	4/3/2021 09:30	<input type="checkbox"/>
21040267-03	UP5517-SS3	Soil		4/1/2021 10:50	4/3/2021 09:30	<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: 09-Apr-21

Client: Entrada Consulting Group
Project: UP 55-17 Spill Resampling
Sample ID: UP5517-SS1
Collection Date: 4/1/2021 10:30 AM

Work Order: 21040267
Lab ID: 21040267-01
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 / 4/8/21	Analyst: QTN
Electrical Conductivity @ Saturation	0.60		0.011	0.10	mmhos/cm @25°	20	4/8/2021 12:48

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

ALS Group, USA

Date: 09-Apr-21

Client: Entrada Consulting Group
Project: UP 55-17 Spill Resampling
Sample ID: UP5517-SS2
Collection Date: 4/1/2021 10:40 AM

Work Order: 21040267
Lab ID: 21040267-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 4/8/21		Analyst: STP
Calcium	43		2.5	5.0	mg/L	10	4/8/2021 17:19
Magnesium	8.5		0.50	2.0	mg/L	10	4/8/2021 17:19
Sodium	66		1.8	2.0	mg/L	10	4/8/2021 17:19
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 4/8/21		Analyst: STP
Sodium Adsorption Ratio	2.4		0.010	0.010	none	1	4/8/2021
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 4/8/21		Analyst: QTN
Electrical Conductivity @ Saturation	0.54		0.011	0.10	mmhos/cm @25°	20	4/8/2021 12:48

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

ALS Group, USA

Date: 09-Apr-21

Client: Entrada Consulting Group
Project: UP 55-17 Spill Resampling
Sample ID: UP5517-SS3
Collection Date: 4/1/2021 10:50 AM

Work Order: 21040267
Lab ID: 21040267-03
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 / 4/8/21	Analyst: QTN
Electrical Conductivity @ Saturation	0.69		0.011	0.10	mmhos/cm @25°	20	4/8/2021 12:48

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

Client: Entrada Consulting Group
Work Order: 21040267
Project: UP 55-17 Spill Resampling

QC BATCH REPORT

Batch ID: **174766** Instrument ID **ICPMS3** Method: **SW6020B**

DUP		Sample ID: 21040090-01ADUP				Units: mg/L		Analysis Date: 4/8/2021 05:01 PM		
Client ID:		Run ID: ICPMS3_210408A				SeqNo: 7288825		Prep Date: 4/8/2021		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Magnesium	118.7	2.0	0	0	0	0-0	120.9	1.86		
Sodium	327.4	2.0	0	0	0	0-0	323.3	1.24		

DUP		Sample ID: 21040090-01ADUP				Units: mg/L		Analysis Date: 4/8/2021 05:26 PM		
Client ID:		Run ID: ICPMS3_210408A				SeqNo: 7288840		Prep Date: 4/8/2021		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	2220	50	0	0	0	0-0	2207	0.559		

The following samples were analyzed in this batch: 21040267-01A 21040267-02A 21040267-03A

Batch ID: **174766** Instrument ID **SAR** Method: **USDA H60 Method**

DUP		Sample ID: 21040090-01ADUP				Units: none		Analysis Date: 4/8/2021		
Client ID:		Run ID: SAR_210408A				SeqNo: 7288849		Prep Date: 4/8/2021		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	1.834	0.010	0	0	0		1.543	17.3	50	

The following samples were analyzed in this batch: 21040267-01A 21040267-02A 21040267-03A

Page 1 of 1

COC ID: 123456

- ☐ York, PA
+1 717 505 5280

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

Sample Receipt Checklist

Client Name: **ENTRADA**

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

Work Order: **21040267**

Received by: **DS**

Checklist completed by **Diane Shaw**

05-Apr-21

Reviewed by: **Chad Whelton**

05-Apr-21

eSignature

Date

eSignature

Date

Matrices: **Soil**

Carrier name: **FedEx**

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

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

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

Chain of custody present? Yes ☒ No ☐

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

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

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

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

Sample(s) received on ice? Yes ☒ No ☐

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

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **4/5/2021 9:06:08 AM**

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

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

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by: **-**

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: