



Legend

● Spill Origin

● Soil Sample Location

~ Spill Path

0210420

Ft

1 inch = 210 ft

N

W

E

S


Project No: 018-065	FV Larson 20 Spill Chevron USA, Inc. Rio Blanco County, Colorado NW4 Section 36 T2S R102W	 <div>330 Grand Avenue, Unit C Grand Junction, CO 81501 970-549-1015</div>	Figure
Map By: NDB			1
Date: 3/19/2020			

Table 1
Chevron FV Larson 20 Lateral
Soil Data Summary

SAMPLE SUMMARY																
Location Description	Chevron FV Larson 20 Lateral Spill															
Sample Type	Soil															

LABORATORY DATA SUMMARY																		
Sample ID	FVL20-SS1	FVL20-SS1	FVL20-SS2	FVL20-SS2	FVL20-SS3	FVL20-SS3	FVL20-SS4	FVL20-SS4	FVL20-SS5	FVL20-SS5	FVL20-SS6	FVL20-SS6	FVL20-BG1	FVL20-BG2	FVL20-BG3	FVL20-BG4	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"		
Sample Date	7/7/2015	5/7/2020	7/7/2015	5/7/2020	7/7/2015	5/7/2020	7/7/2015	5/7/2020	7/7/2015	5/7/2020	7/7/2015	5/7/2020	7/7/2015	7/7/2015	7/7/2015	7/7/2015		
Analytical Parameters																		
TPH																		
TPH Gasoline Range Organics	<2.7	NT	<2.6	NT	<2.6	NT	<2.7	NT	<2.8	NT	<2.7	NT	NT	NT	NT	NT	500	mg/kg
TPH Diesel Range Organics	270	NT	64	NT	380	NT	46	NT	32	NT	24	NT	NT	NT	NT	NT		
BTEX																		
Benzene	<0.032	NT	<0.031	NT	<0.031	NT	<0.032	NT	<0.034	NT	<0.032	NT	NT	NT	NT	NT	0.17	mg/kg
Toluene	<0.032	NT	<0.031	NT	<0.031	NT	<0.032	NT	<0.034	NT	<0.032	NT	NT	NT	NT	NT	85	mg/kg
Ethylbenzene	<0.032	NT	<0.031	NT	<0.031	NT	<0.032	NT	<0.034	NT	<0.032	NT	NT	NT	NT	NT	100	mg/kg
Total Xylene	<0.097	NT	<0.093	NT	<0.094	NT	<0.097	NT	<0.100	NT	<0.096	NT	NT	NT	NT	NT	175	mg/kg
Metals																		
Arsenic	7.8	NT	7.3	NT	9.4	NT	9.5	NT	7.5	NT	8.0	NT	9.5	6.9	8.6	8	0.39	mg/kg
Barium	180	NT	370	NT	300	NT	230	NT	140	NT	140	NT	170	NT	NT	NT	15,000	mg/kg
Cadmium	<0.44	NT	<0.40	NT	<0.40	NT	<0.38	NT	<0.39	NT	<0.36	NT	<0.40	NT	NT	NT	70	mg/kg
Chromium	12	NT	11	NT	11	NT	14	NT	8.4	NT	11	NT	11	NT	NT	NT	NA	mg/kg
Copper	13	NT	12	NT	15	NT	18	NT	12	NT	20	NT	15	NT	NT	NT	3,100	mg/kg
Lead	8.6	NT	13	NT	13	NT	15	NT	10	NT	17	NT	11	NT	NT	NT	400	mg/kg
Mercury	<0.014	NT	<0.013	NT	0.028	NT	0.041	NT	0.0016	NT	0.045	NT	0.023	NT	NT	NT	23	mg/kg
Nickel	23	NT	21	NT	28	NT	32	NT	22	NT	33	NT	24	NT	NT	NT	1,600	mg/kg
Selenium	<0.87	NT	<0.80	NT	1.6	NT	1.4	NT	1.5	NT	1.8	NT	<0.81	NT	NT	NT	390	mg/kg
Silver	<0.44	NT	<0.40	NT	<0.40	NT	<0.38	NT	<0.39	NT	<0.36	NT	<0.40	NT	NT	NT	390	mg/kg
Zinc	50	NT	51	NT	70	NT	84	NT	53	NT	83	NT	53	NT	NT	NT	23,000	mg/kg
SAR Metals Analysis																		
Calcium	1300	90	39	110	440	130	100	140	530	100	470	160	69	NT	NT	NT	NA	mg/L
Magnesium	410	11	6.7	12	250	17	56	14	2700	14	290	22	9.6	NT	NT	NT	NA	mg/L
Sodium	4000	2.0	1000	2.6	2100	3.1	1500	5.3	15000	2	1300	2.7	7	NT	NT	NT	NA	mg/L
Sodium Adsorption Ratio	25	0.054	39	0.062	20	0.069	29	0.12	59	0.05	12	0.053	0.21	NT	NT	NT	<12	ratio
Polynuclear Aromatic Hydrocarbons																		
Acenaphthene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	1,000	mg/kg
Anthracene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	2.2	mg/kg
Chrysene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	0.022	mg/kg
Fluoranthene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	1,000	mg/kg
Fluorene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	0.22	mg/kg
Napthalene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	23	mg/kg
Pyrene	<0.007	NT	<0.0068	NT	<0.0068	NT	<0.0072	NT	<0.0073	NT	<0.0071	NT	NT	NT	NT	NT	1,000	mg/kg
General Chemistry																		
Chromium, Hexavalent	<0.96	NT	<1.0	NT	<0.98	NT	<1.1	NT	<1.0	NT	<1.0	NT	<.96	NT	NT	NT	23	mg/kg
Chromium, Trivalent	11	NT	10	NT	11	NT	14	NT	8.1	NT	11	NT	10	NT	NT	NT	120,000	mg/kg
Specific Conductivity	30	0.48	5.4	0.62	15	0.77	9.2	0.76	87	0.60	12	0.91	0.55	NT	NT	NT	<4 or 2 x the background	mmhos/cm
pH	7.9	NT	8.9	NT	8.4	NT	8.4	NT	8.2	NT	8.3	NT	8.3	NT	NT	NT	6-9	su

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millinios 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



16-Jul-2015

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

Re: **Chevron fv Larson 20 Spill**

Work Order: **1507502**

Dear Tim,

ALS Environmental received 10 samples on 09-Jul-2015 01:45 PM for the analyses presented in the following report.

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

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

The total number of pages in this report is 40.

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

Sincerely,

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

Electronically approved by: Les Arnold

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 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Work Order: 1507502

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>
1507502-01	FVL20-SS1	Soil		7/7/2015 13:00	7/9/2015 13:45	<input type="checkbox"/>
1507502-02	FVL20-BG1	Soil		7/7/2015 13:15	7/9/2015 13:45	<input type="checkbox"/>
1507502-03	FVL20-SS2	Soil		7/7/2015 13:25	7/9/2015 13:45	<input type="checkbox"/>
1507502-04	FVL20-BG2	Soil		7/7/2015 13:30	7/9/2015 13:45	<input type="checkbox"/>
1507502-05	FVL20-SS3	Soil		7/7/2015 13:40	7/9/2015 13:45	<input type="checkbox"/>
1507502-06	FVL20-BG3	Soil		7/7/2015 13:45	7/9/2015 13:45	<input type="checkbox"/>
1507502-07	FVL20-SS4	Soil		7/7/2015 13:50	7/9/2015 13:45	<input type="checkbox"/>
1507502-08	FVL20-SS5	Soil		7/7/2015 14:10	7/9/2015 13:45	<input type="checkbox"/>
1507502-09	FVL20-BG4	Soil		7/7/2015 14:15	7/9/2015 13:45	<input type="checkbox"/>
1507502-10	FVL20-SS6	Soil		7/7/2015 14:20	7/9/2015 13:45	<input type="checkbox"/>

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
WorkOrder: 1507502

**QUALIFIERS,
ACRONYMS, UNITS**

<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

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Work Order: 1507502

Case Narrative

Samples for the above noted Work Order were received on 07/09/2015 . The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:

No deviations or anomalies were noted.

Volatile Organics:

No deviations or anomalies were noted.

Extractable Organics:

No deviations or anomalies were noted.

Metals:

No deviations or anomalies were noted.

Wet Chemistry:

No deviations or anomalies were noted.

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS1
Collection Date: 7/7/2015 01:00 PM

Work Order: 1507502
Lab ID: 1507502-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep Date: 7/10/2015	Analyst: RM
DRO (C10-C28)	270		4.4	mg/Kg-dry	1	7/11/2015 12:02 PM
Surr: 4-Terphenyl-d14	108		39-133	%REC	1	7/11/2015 12:02 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep Date: 7/9/2015	Analyst: RM
GRO (C6-C10)	ND		2.7	mg/Kg-dry	1	7/11/2015 01:00 PM
Surr: Toluene-d8	98.7		50-150	%REC	1	7/11/2015 01:00 PM
MERCURY BY CVAA						
			SW7471B		Prep Date: 7/10/2015	Analyst: LR
Mercury	ND		0.014	mg/Kg-dry	1	7/10/2015 11:10 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep Date: 7/10/2015	Analyst: JEC
Arsenic	7.8		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Barium	180		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Cadmium	ND		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Chromium	12		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Copper	13		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Lead	8.6		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Nickel	23		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Selenium	ND		0.87	mg/Kg-dry	1	7/13/2015 05:08 PM
Silver	ND		0.44	mg/Kg-dry	1	7/13/2015 05:08 PM
Zinc	50		0.87	mg/Kg-dry	1	7/13/2015 05:08 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
Calcium	1,300		5.0	mg/L	10	7/13/2015 07:11 PM
Magnesium	410		2.0	mg/L	10	7/13/2015 07:11 PM
Sodium	4,000		20	mg/L	100	7/14/2015 10:33 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
Sodium Adsorption Ratio	25		0.010	none	1	7/13/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
Acenaphthene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Anthracene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Benzo(a)anthracene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Benzo(a)pyrene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Benzo(b)fluoranthene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Benzo(k)fluoranthene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Chrysene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Dibenzo(a,h)anthracene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Fluoranthene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Fluorene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Indeno(1,2,3-cd)pyrene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS1
Collection Date: 7/7/2015 01:00 PM

Work Order: 1507502
Lab ID: 1507502-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Pyrene	ND		7.0	µg/Kg-dry	1	7/11/2015 04:58 AM
Surr: 2-Fluorobiphenyl	69.3		12-100	%REC	1	7/11/2015 04:58 AM
Surr: 4-Terphenyl-d14	89.9		25-137	%REC	1	7/11/2015 04:58 AM
Surr: Nitrobenzene-d5	59.3		37-107	%REC	1	7/11/2015 04:58 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: JNJ
Benzene	ND		32	µg/Kg-dry	1	7/15/2015 09:20 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	7/15/2015 09:20 AM
m,p-Xylene	ND		65	µg/Kg-dry	1	7/15/2015 09:20 AM
o-Xylene	ND		32	µg/Kg-dry	1	7/15/2015 09:20 AM
Toluene	ND		32	µg/Kg-dry	1	7/15/2015 09:20 AM
Xylenes, Total	ND		97	µg/Kg-dry	1	7/15/2015 09:20 AM
Surr: 1,2-Dichloroethane-d4	98.1		70-130	%REC	1	7/15/2015 09:20 AM
Surr: 4-Bromofluorobenzene	95.6		70-130	%REC	1	7/15/2015 09:20 AM
Surr: Dibromofluoromethane	94.8		70-130	%REC	1	7/15/2015 09:20 AM
Surr: Toluene-d8	97.2		70-130	%REC	1	7/15/2015 09:20 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	30		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.54	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		0.96	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	7.5		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	7.9			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-BG1
Collection Date: 7/7/2015 01:15 PM

Work Order: 1507502
Lab ID: 1507502-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA						
Mercury	0.023		SW7471B 0.013	mg/Kg-dry	Prep Date: 7/10/2015 1	Analyst: LR 7/10/2015 11:12 PM
METALS ANALYSIS BY ICP						
Arsenic	9.5		SW846 6010C 0.40	mg/Kg-dry	Prep Date: 7/10/2015 1	Analyst: JEC 7/13/2015 05:35 PM
Barium	170		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Cadmium	ND		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Chromium	11		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Copper	15		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Lead	11		0.81	mg/Kg-dry	2	7/14/2015 12:11 PM
Nickel	24		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Selenium	ND		0.81	mg/Kg-dry	1	7/13/2015 05:35 PM
Silver	ND		0.40	mg/Kg-dry	1	7/13/2015 05:35 PM
Zinc	53		0.81	mg/Kg-dry	1	7/13/2015 05:35 PM
SOLUBLE CATIONS FOR SAR						
Calcium	69		SW846 6010C 5.0	mg/L	Prep Date: 7/11/2015 10	Analyst: JEC 7/13/2015 07:17 PM
Magnesium	9.6		2.0	mg/L	10	7/13/2015 07:17 PM
Sodium	7.0		2.0	mg/L	10	7/13/2015 07:17 PM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.21		USDA H60 METHO 0.010	none	Prep Date: 7/11/2015 1	Analyst: JEC 7/13/2015
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	0.55		USDA H60 METHO 0.050	mmhos/cm @2	Prep Date: 7/11/2015 10	Analyst: JB 7/13/2015 11:45 AM
CHROMIUM, TRIVALENT						
Chromium, Trivalent	10		CALCULATION 0.52	mg/Kg-dry	1	Analyst: JB 7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	ND		SW7196A 0.96	mg/Kg-dry	Prep Date: 7/13/2015 1	Analyst: MB 7/15/2015 09:30 AM
MOISTURE						
Moisture	3.1		E160.3M 0.050	% of sample	1	Analyst: PT 7/13/2015 04:20 PM
PH						
pH	8.3		SW9045D	s.u.	Prep Date: 7/10/2015 1	Analyst: STP 7/10/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS2
Collection Date: 7/7/2015 01:25 PM

Work Order: 1507502
Lab ID: 1507502-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	64		SW8015M		Prep Date: 7/10/2015	Analyst: RM
<i>Surr: 4-Terphenyl-d14</i>	<i>64.0</i>		<i>4.2</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 12:32 PM</i>
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	<i>7/11/2015 12:32 PM</i>
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep Date: 7/9/2015	Analyst: RM
<i>Surr: Toluene-d8</i>	<i>97.0</i>		<i>2.6</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 01:24 PM</i>
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	<i>7/11/2015 01:24 PM</i>
MERCURY BY CVAA						
Mercury	ND		SW7471B		Prep Date: 7/10/2015	Analyst: LR
			<i>0.013</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/10/2015 11:14 PM</i>
METALS ANALYSIS BY ICP						
Arsenic	7.3		SW846 6010C		Prep Date: 7/10/2015	Analyst: JEC
Barium	370		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Cadmium	ND		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Chromium	11		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Copper	12		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Lead	13		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Nickel	21		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Selenium	ND		<i>0.80</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Silver	ND		<i>0.40</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
Zinc	51		<i>0.80</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/13/2015 05:41 PM</i>
SOLUBLE CATIONS FOR SAR						
Calcium	39		SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
Magnesium	6.7		<i>5.0</i>	<i>mg/L</i>	<i>10</i>	<i>7/13/2015 07:28 PM</i>
Sodium	1,000		<i>2.0</i>	<i>mg/L</i>	<i>10</i>	<i>7/13/2015 07:28 PM</i>
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	39		USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
			<i>0.010</i>	<i>none</i>	<i>1</i>	<i>7/13/2015</i>
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
Anthracene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Benzo(a)anthracene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Benzo(a)pyrene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Benzo(b)fluoranthene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Benzo(k)fluoranthene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Chrysene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Dibenzo(a,h)anthracene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Fluoranthene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Fluorene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>
Indeno(1,2,3-cd)pyrene	ND		<i>6.8</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>7/11/2015 05:20 AM</i>

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS2
Collection Date: 7/7/2015 01:25 PM

Work Order: 1507502
Lab ID: 1507502-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		6.8	µg/Kg-dry	1	7/11/2015 05:20 AM
Pyrene	ND		6.8	µg/Kg-dry	1	7/11/2015 05:20 AM
Surr: 2-Fluorobiphenyl	55.4		12-100	%REC	1	7/11/2015 05:20 AM
Surr: 4-Terphenyl-d14	63.4		25-137	%REC	1	7/11/2015 05:20 AM
Surr: Nitrobenzene-d5	52.8		37-107	%REC	1	7/11/2015 05:20 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: JNJ
Benzene	ND		31	µg/Kg-dry	1	7/15/2015 09:46 AM
Ethylbenzene	ND		31	µg/Kg-dry	1	7/15/2015 09:46 AM
m,p-Xylene	ND		62	µg/Kg-dry	1	7/15/2015 09:46 AM
o-Xylene	ND		31	µg/Kg-dry	1	7/15/2015 09:46 AM
Toluene	ND		31	µg/Kg-dry	1	7/15/2015 09:46 AM
Xylenes, Total	ND		93	µg/Kg-dry	1	7/15/2015 09:46 AM
Surr: 1,2-Dichloroethane-d4	99.1		70-130	%REC	1	7/15/2015 09:46 AM
Surr: 4-Bromofluorobenzene	97.6		70-130	%REC	1	7/15/2015 09:46 AM
Surr: Dibromofluoromethane	97.0		70-130	%REC	1	7/15/2015 09:46 AM
Surr: Toluene-d8	98.0		70-130	%REC	1	7/15/2015 09:46 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	5.4		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	10		0.52	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	3.4		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	8.9			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp**Date:** 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-BG2
Collection Date: 7/7/2015 01:30 PM

Work Order: 1507502
Lab ID: 1507502-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	6.9		SW846 6010C 0.39	mg/Kg-dry	1	Prep Date: 7/10/2015 Analyst: JEC 7/13/2015 05:47 PM
MOISTURE						
Moisture	5.3		E160.3M 0.050	% of sample	1	Analyst: PT 7/13/2015 04:20 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS3
Collection Date: 7/7/2015 01:40 PM

Work Order: 1507502
Lab ID: 1507502-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep Date: 7/10/2015	Analyst: RM
DRO (C10-C28)	380		4.3	mg/Kg-dry	1	7/11/2015 01:02 AM
Surr: 4-Terphenyl-d14	101		39-133	%REC	1	7/11/2015 01:02 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep Date: 7/9/2015	Analyst: RM
GRO (C6-C10)	ND		2.6	mg/Kg-dry	1	7/11/2015 01:49 PM
Surr: Toluene-d8	97.8		50-150	%REC	1	7/11/2015 01:49 PM
MERCURY BY CVAA						
			SW7471B		Prep Date: 7/10/2015	Analyst: LR
Mercury	0.028		0.014	mg/Kg-dry	1	7/10/2015 11:16 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep Date: 7/10/2015	Analyst: JEC
Arsenic	9.4		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Barium	300		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Cadmium	ND		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Chromium	11		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Copper	15		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Lead	13		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Nickel	28		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Selenium	1.6		0.81	mg/Kg-dry	1	7/13/2015 05:52 PM
Silver	ND		0.40	mg/Kg-dry	1	7/13/2015 05:52 PM
Zinc	70		0.81	mg/Kg-dry	1	7/13/2015 05:52 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
Calcium	440		5.0	mg/L	10	7/13/2015 07:34 PM
Magnesium	250		2.0	mg/L	10	7/13/2015 07:34 PM
Sodium	2,100		2.0	mg/L	10	7/13/2015 07:34 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
Sodium Adsorption Ratio	20		0.010	none	1	7/13/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
Acenaphthene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Anthracene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Benzo(a)anthracene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Benzo(a)pyrene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Benzo(b)fluoranthene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Benzo(k)fluoranthene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Chrysene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Dibenzo(a,h)anthracene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Fluoranthene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Fluorene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Indeno(1,2,3-cd)pyrene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS3
Collection Date: 7/7/2015 01:40 PM

Work Order: 1507502
Lab ID: 1507502-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Pyrene	ND		6.8	µg/Kg-dry	1	7/13/2015 09:15 PM
Surr: 2-Fluorobiphenyl	67.4		12-100	%REC	1	7/13/2015 09:15 PM
Surr: 4-Terphenyl-d14	88.4		25-137	%REC	1	7/13/2015 09:15 PM
Surr: Nitrobenzene-d5	53.7		37-107	%REC	1	7/13/2015 09:15 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: JNJ
Benzene	ND		31	µg/Kg-dry	1	7/15/2015 10:11 AM
Ethylbenzene	ND		31	µg/Kg-dry	1	7/15/2015 10:11 AM
m,p-Xylene	ND		62	µg/Kg-dry	1	7/15/2015 10:11 AM
o-Xylene	ND		31	µg/Kg-dry	1	7/15/2015 10:11 AM
Toluene	ND		31	µg/Kg-dry	1	7/15/2015 10:11 AM
Xylenes, Total	ND		94	µg/Kg-dry	1	7/15/2015 10:11 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	7/15/2015 10:11 AM
Surr: 4-Bromofluorobenzene	95.6		70-130	%REC	1	7/15/2015 10:11 AM
Surr: Dibromofluoromethane	97.9		70-130	%REC	1	7/15/2015 10:11 AM
Surr: Toluene-d8	97.7		70-130	%REC	1	7/15/2015 10:11 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	15		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.52	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		0.98	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	3.8		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	8.4			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp**Date:** 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-BG3
Collection Date: 7/7/2015 01:45 PM

Work Order: 1507502
Lab ID: 1507502-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
METALS ANALYSIS BY ICP			SW846 6010C		Prep Date: 7/10/2015	Analyst: JEC
Arsenic	8.6		0.41	mg/Kg-dry	1	7/13/2015 05:57 PM
MOISTURE			E160.3M			Analyst: PT
Moisture	2.0		0.050	% of sample	1	7/13/2015 04:20 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS4
Collection Date: 7/7/2015 01:50 PM

Work Order: 1507502
Lab ID: 1507502-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep Date: 7/10/2015	Analyst: RM
DRO (C10-C28)	46		4.5	mg/Kg-dry	1	7/11/2015 01:31 AM
<i>Surr: 4-Terphenyl-d14</i>	75.8		39-133	%REC	1	7/11/2015 01:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep Date: 7/9/2015	Analyst: RM
GRO (C6-C10)	ND		2.7	mg/Kg-dry	1	7/11/2015 02:13 PM
<i>Surr: Toluene-d8</i>	97.9		50-150	%REC	1	7/11/2015 02:13 PM
MERCURY BY CVAA						
			SW7471B		Prep Date: 7/10/2015	Analyst: LR
Mercury	0.041		0.014	mg/Kg-dry	1	7/10/2015 11:19 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep Date: 7/10/2015	Analyst: JEC
Arsenic	9.5		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Barium	230		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Cadmium	ND		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Chromium	14		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Copper	18		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Lead	15		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Nickel	32		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Selenium	1.4		0.77	mg/Kg-dry	1	7/14/2015 12:17 PM
Silver	ND		0.38	mg/Kg-dry	1	7/13/2015 06:03 PM
Zinc	84		0.77	mg/Kg-dry	1	7/13/2015 06:03 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
Calcium	100		5.0	mg/L	10	7/13/2015 07:40 PM
Magnesium	56		2.0	mg/L	10	7/13/2015 07:40 PM
Sodium	1,500		2.0	mg/L	10	7/13/2015 07:40 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
Sodium Adsorption Ratio	29		0.010	none	1	7/13/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
Acenaphthene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Anthracene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Benzo(a)anthracene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Benzo(a)pyrene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Benzo(b)fluoranthene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Benzo(k)fluoranthene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Chrysene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Dibenzo(a,h)anthracene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Fluoranthene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Fluorene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Indeno(1,2,3-cd)pyrene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS4
Collection Date: 7/7/2015 01:50 PM

Work Order: 1507502
Lab ID: 1507502-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Pyrene	ND		7.2	µg/Kg-dry	1	7/13/2015 09:40 PM
Surr: 2-Fluorobiphenyl	63.8		12-100	%REC	1	7/13/2015 09:40 PM
Surr: 4-Terphenyl-d14	87.8		25-137	%REC	1	7/13/2015 09:40 PM
Surr: Nitrobenzene-d5	61.3		37-107	%REC	1	7/13/2015 09:40 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: JNJ
Benzene	ND		32	µg/Kg-dry	1	7/15/2015 10:37 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	7/15/2015 10:37 AM
m,p-Xylene	ND		65	µg/Kg-dry	1	7/15/2015 10:37 AM
o-Xylene	ND		32	µg/Kg-dry	1	7/15/2015 10:37 AM
Toluene	ND		32	µg/Kg-dry	1	7/15/2015 10:37 AM
Xylenes, Total	ND		97	µg/Kg-dry	1	7/15/2015 10:37 AM
Surr: 1,2-Dichloroethane-d4	99.5		70-130	%REC	1	7/15/2015 10:37 AM
Surr: 4-Bromofluorobenzene	96.8		70-130	%REC	1	7/15/2015 10:37 AM
Surr: Dibromofluoromethane	96.3		70-130	%REC	1	7/15/2015 10:37 AM
Surr: Toluene-d8	97.4		70-130	%REC	1	7/15/2015 10:37 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	9.2		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	14		0.54	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	7.6		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	8.4			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS5
Collection Date: 7/7/2015 02:10 PM

Work Order: 1507502
Lab ID: 1507502-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	32		SW8015M		Prep Date: 7/10/2015	Analyst: RM
			4.6	mg/Kg-dry	1	7/11/2015 02:02 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>86.9</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	7/11/2015 02:02 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep Date: 7/9/2015	Analyst: RM
			2.8	mg/Kg-dry	1	7/11/2015 02:37 PM
<i>Surr: Toluene-d8</i>	<i>96.8</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	7/11/2015 02:37 PM
MERCURY BY CVAA						
Mercury	0.016		SW7471B		Prep Date: 7/10/2015	Analyst: LR
			0.014	mg/Kg-dry	1	7/10/2015 11:21 PM
METALS ANALYSIS BY ICP						
Arsenic	7.5		SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
			0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Barium	140		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Cadmium	ND		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Chromium	8.4		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Copper	12		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Lead	10		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Nickel	22		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Selenium	1.5		0.78	mg/Kg-dry	1	7/13/2015 11:13 AM
Silver	ND		0.39	mg/Kg-dry	1	7/13/2015 11:13 AM
Zinc	53		0.78	mg/Kg-dry	1	7/13/2015 11:13 AM
SOLUBLE CATIONS FOR SAR						
Calcium	530		SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
			5.0	mg/L	10	7/13/2015 08:02 PM
Magnesium	2,700		2.0	mg/L	10	7/13/2015 08:02 PM
Sodium	15,000		20	mg/L	100	7/14/2015 10:39 AM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	59		USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
			0.010	none	1	7/13/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
			7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Anthracene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Benzo(a)anthracene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Benzo(a)pyrene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Benzo(b)fluoranthene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Benzo(k)fluoranthene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Chrysene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Dibenzo(a,h)anthracene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Fluoranthene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Fluorene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Indeno(1,2,3-cd)pyrene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS5
Collection Date: 7/7/2015 02:10 PM

Work Order: 1507502
Lab ID: 1507502-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Pyrene	ND		7.3	µg/Kg-dry	1	7/13/2015 10:06 PM
Surr: 2-Fluorobiphenyl	74.8		12-100	%REC	1	7/13/2015 10:06 PM
Surr: 4-Terphenyl-d14	89.7		25-137	%REC	1	7/13/2015 10:06 PM
Surr: Nitrobenzene-d5	71.4		37-107	%REC	1	7/13/2015 10:06 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: JNJ
Benzene	ND		34	µg/Kg-dry	1	7/15/2015 11:02 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	7/15/2015 11:02 AM
m,p-Xylene	ND		68	µg/Kg-dry	1	7/15/2015 11:02 AM
o-Xylene	ND		34	µg/Kg-dry	1	7/15/2015 11:02 AM
Toluene	ND		34	µg/Kg-dry	1	7/15/2015 11:02 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	7/15/2015 11:02 AM
Surr: 1,2-Dichloroethane-d4	98.8		70-130	%REC	1	7/15/2015 11:02 AM
Surr: 4-Bromofluorobenzene	97.1		70-130	%REC	1	7/15/2015 11:02 AM
Surr: Dibromofluoromethane	95.0		70-130	%REC	1	7/15/2015 11:02 AM
Surr: Toluene-d8	97.4		70-130	%REC	1	7/15/2015 11:02 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	87		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	8.1		0.56	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	11		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	8.2			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp**Date:** 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-BG4
Collection Date: 7/7/2015 02:15 PM

Work Order: 1507502
Lab ID: 1507502-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	8.0		SW846 6010C 0.38	mg/Kg-dry	Prep Date: 7/11/2015 1	Analyst: JEC 7/13/2015 11:19 AM
MOISTURE						
Moisture	10		E160.3M 0.050	% of sample	1	Analyst: PT 7/13/2015 04:20 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS6
Collection Date: 7/7/2015 02:20 PM

Work Order: 1507502
Lab ID: 1507502-10
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	24		SW8015M		Prep Date: 7/10/2015	Analyst: RM
			4.4	mg/Kg-dry	1	7/11/2015 02:31 AM
Surr: 4-Terphenyl-d14	82.4		39-133	%REC	1	7/11/2015 02:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep Date: 7/9/2015	Analyst: RM
			2.7	mg/Kg-dry	1	7/11/2015 03:01 PM
Surr: Toluene-d8	97.8		50-150	%REC	1	7/11/2015 03:01 PM
MERCURY BY CVAA						
Mercury	0.045		SW7471B		Prep Date: 7/10/2015	Analyst: LR
			0.014	mg/Kg-dry	1	7/10/2015 11:23 PM
METALS ANALYSIS BY ICP						
Arsenic	8.0		SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
			0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Barium	140		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Cadmium	ND		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Chromium	11		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Copper	20		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Lead	17		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Nickel	33		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Selenium	1.8		0.71	mg/Kg-dry	1	7/13/2015 11:25 AM
Silver	ND		0.36	mg/Kg-dry	1	7/13/2015 11:25 AM
Zinc	83		0.71	mg/Kg-dry	1	7/13/2015 11:25 AM
SOLUBLE CATIONS FOR SAR						
Calcium	470		SW846 6010C		Prep Date: 7/11/2015	Analyst: JEC
			5.0	mg/L	10	7/13/2015 08:08 PM
Magnesium	290		2.0	mg/L	10	7/13/2015 08:08 PM
Sodium	1,300		2.0	mg/L	10	7/13/2015 08:08 PM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12		USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JEC
			0.010	none	1	7/13/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		SW846 8270D		Prep Date: 7/10/2015	Analyst: RS
			7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Anthracene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Benzo(a)anthracene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Benzo(a)pyrene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Benzo(b)fluoranthene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Benzo(k)fluoranthene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Chrysene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Dibenzo(a,h)anthracene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Fluoranthene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Fluorene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Indeno(1,2,3-cd)pyrene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates
Project: Chevron fv Larson 20 Spill
Sample ID: FVL20-SS6
Collection Date: 7/7/2015 02:20 PM

Work Order: 1507502
Lab ID: 1507502-10
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Naphthalene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Pyrene	ND		7.1	µg/Kg-dry	1	7/13/2015 10:31 PM
Surr: 2-Fluorobiphenyl	73.7		12-100	%REC	1	7/13/2015 10:31 PM
Surr: 4-Terphenyl-d14	91.9		25-137	%REC	1	7/13/2015 10:31 PM
Surr: Nitrobenzene-d5	68.5		37-107	%REC	1	7/13/2015 10:31 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep Date: 7/9/2015	Analyst: LSY
Benzene	ND		32	µg/Kg-dry	1	7/16/2015 08:22 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	7/16/2015 08:22 AM
m,p-Xylene	ND		64	µg/Kg-dry	1	7/16/2015 08:22 AM
o-Xylene	ND		32	µg/Kg-dry	1	7/16/2015 08:22 AM
Toluene	ND		32	µg/Kg-dry	1	7/16/2015 08:22 AM
Xylenes, Total	ND		96	µg/Kg-dry	1	7/16/2015 08:22 AM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	7/16/2015 08:22 AM
Surr: 4-Bromofluorobenzene	95.1		70-130	%REC	1	7/16/2015 08:22 AM
Surr: Dibromofluoromethane	101		70-130	%REC	1	7/16/2015 08:22 AM
Surr: Toluene-d8	97.8		70-130	%REC	1	7/16/2015 08:22 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep Date: 7/11/2015	Analyst: JB
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @2	10	7/13/2015 11:45 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	11		0.53	mg/Kg-dry	1	7/15/2015 12:30 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 7/13/2015	Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	7/15/2015 09:30 AM
MOISTURE			E160.3M			Analyst: PT
Moisture	6.2		0.050	% of sample	1	7/13/2015 04:20 PM
PH			SW9045D		Prep Date: 7/10/2015	Analyst: STP
pH	8.3			s.u.	1	7/10/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Jul-15

Client: Olsson Associates

Work Order: 1507502

Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73372**

Instrument ID **GC8**

Method: **SW8015M**

MBLK		Sample ID: DBLKS1-73372-73372				Units: mg/Kg		Analysis Date: 7/10/2015 06:02 PM		
Client ID:		Run ID: GC8_150710C				SeqNo: 3367911		Prep Date: 7/10/2015		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	1.772	0	2	0	88.6	39-133		0		

LCS		Sample ID: DLCSS1-73372-73372				Units: mg/Kg		Analysis Date: 7/10/2015 06:32 PM		
Client ID:		Run ID: GC8_150710C				SeqNo: 3367912		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	170.3	5.0	200	0	85.1	61-109		0		
Surr: 4-Terphenyl-d14	1.496	0	2	0	74.8	39-133		0		

MS		Sample ID: 1507507-02B MS				Units: mg/Kg		Analysis Date: 7/10/2015 07:02 PM		
Client ID:		Run ID: GC8_150710C				SeqNo: 3367913		Prep Date: 7/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	921.5	81	323.9	138.3	242	48-110		0		S
Surr: 4-Terphenyl-d14	2.669	0	3.239	0	82.4	39-133		0		

MSD		Sample ID: 1507507-02B MSD				Units: mg/Kg		Analysis Date: 7/10/2015 07:32 PM		
Client ID:		Run ID: GC8_150710C				SeqNo: 3367914		Prep Date: 7/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	849.3	81	322.3	138.3	221	48-110	921.5	8.16	30	S
Surr: 4-Terphenyl-d14	2.585	0	3.223	0	80.2	39-133	2.669	3.2	30	

The following samples were analyzed in this batch:

1507502-01A	1507502-03A	1507502-05A
1507502-07A	1507502-08A	1507502-10A

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73362** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-73362-73362				Units: µg/Kg		Analysis Date: 7/11/2015 04:09 AM		
Client ID:		Run ID: GC10_150710B				SeqNo: 3367860		Prep Date: 7/9/2015		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	5045	0	5000	0	101	50-150	0			

LCS		Sample ID: LCS-73362-73362				Units: µg/Kg		Analysis Date: 7/11/2015 03:45 AM		
Client ID:		Run ID: GC10_150710B				SeqNo: 3367859		Prep Date: 7/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	518700	2,500	500000	0	104	70-130	0			
Surr: Toluene-d8	5026	0	5000	0	101	50-150	0			

MS		Sample ID: 1507507-02A MS				Units: µg/Kg		Analysis Date: 7/11/2015 06:58 AM		
Client ID:		Run ID: GC10_150710B				SeqNo: 3367867		Prep Date: 7/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	599100	2,500	500000	0	120	70-130	0			
Surr: Toluene-d8	4814	0	5000	0	96.3	50-150	0			

MSD		Sample ID: 1507507-02A MSD				Units: µg/Kg		Analysis Date: 7/11/2015 07:22 AM		
Client ID:		Run ID: GC10_150710B				SeqNo: 3367868		Prep Date: 7/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	591900	2,500	500000	0	118	70-130	599100	1.2	30	
Surr: Toluene-d8	4847	0	5000	0	96.9	50-150	4814	0.673	30	

The following samples were analyzed in this batch:

1507502-01A	1507502-03A	1507502-05A
1507502-07A	1507502-08A	1507502-10A

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73355** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-73355-73355				Units: mg/Kg		Analysis Date: 7/10/2015 10:26 PM		
Client ID:		Run ID: HG1_150710A				SeqNo: 3366432		Prep Date: 7/10/2015		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-73355-73355				Units: mg/Kg		Analysis Date: 7/10/2015 10:28 PM		
Client ID:		Run ID: HG1_150710A				SeqNo: 3366433		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1811 0.020 0.1665 0 109 80-120 0

MS		Sample ID: 1507501-01AMS				Units: mg/Kg		Analysis Date: 7/10/2015 10:53 PM		
Client ID:		Run ID: HG1_150710A				SeqNo: 3366444		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1283 0.013 0.1044 0.02257 101 75-125 0

MSD		Sample ID: 1507501-01AMSD				Units: mg/Kg		Analysis Date: 7/10/2015 10:56 PM		
Client ID:		Run ID: HG1_150710A				SeqNo: 3366445		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1303 0.013 0.1088 0.02257 99 75-125 0.1283 1.56 35

The following samples were analyzed in this batch:

1507502-01A	1507502-02A	1507502-03A
1507502-05A	1507502-07A	1507502-08A
1507502-10A		

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73271** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-73271-73271				Units: mg/L		Analysis Date: 7/10/2015 10:30 AM		
Client ID:		Run ID: ICP2_150710A				SeqNo: 3364466		Prep Date: 7/10/2015		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	0.01158	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Zinc	ND	0.50								

MBLK		Sample ID: MBLK-73271-73271				Units: mg/L		Analysis Date: 7/13/2015 04:17 PM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3368172		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	ND	0.25								

LCS		Sample ID: LCS-73271-73271				Units: mg/L		Analysis Date: 7/10/2015 10:36 AM		
Client ID:		Run ID: ICP2_150710A				SeqNo: 3364468		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.926	0.25	5	0	98.5	80-120	0			
Barium	4.843	0.25	5	0	96.9	80-120	0			
Cadmium	4.66	0.50	5	0	93.2	80-120	0			
Chromium	5.083	0.25	5	0	102	80-120	0			
Copper	5.078	0.50	5	0	102	80-120	0			
Lead	5.017	0.25	5	0	100	80-120	0			
Nickel	5.168	0.25	5	0	103	80-120	0			
Selenium	4.922	0.50	5	0	98.4	80-120	0			
Zinc	4.663	0.50	5	0	93.3	80-120	0			

LCS		Sample ID: LCS-73271-73271				Units: mg/L		Analysis Date: 7/13/2015 04:23 PM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3368173		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	5.032	0.25	5	0	101	80-120	0			

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: 73271 Instrument ID ICP2 Method: SW846 6010C

MS				Sample ID: 1507354-01BMS			Units: mg/Kg		Analysis Date: 7/10/2015 10:47 AM		
Client ID:			Run ID: ICP2_150710A			SeqNo: 3364471		Prep Date: 7/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	14.96	0.33	6.502	7.223	119	75-125	0				
Barium	633.9	0.33	6.502	475.9	2430	75-125	0			SO	
Cadmium	6.285	0.65	6.502	-0.01813	96.9	75-125	0				
Chromium	18.9	0.33	6.502	9.741	141	75-125	0			S	
Copper	23.84	0.65	6.502	13.89	153	75-125	0			S	
Lead	38.92	0.33	6.502	18.15	319	75-125	0			S	
Nickel	30.53	0.33	6.502	23.21	113	75-125	0				
Selenium	7.957	0.65	6.502	0.8827	109	75-125	0				
Silver	6.609	0.33	6.502	-0.07311	103	75-125	0				
Zinc	140.3	0.65	6.502	99.93	621	75-125	0			SO	

MS				Sample ID: 1507354-01BMS				Units: mg/Kg			Analysis Date: 7/13/2015 04:34 PM			
Client ID:				Run ID: ICP2_150713A				SeqNo: 3368175			Prep Date: 7/10/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Silver		6.815	0.33	6.502	-0.09319	106	75-125	0						

MSD				Sample ID: 1507354-01BMSD				Units: mg/Kg		Analysis Date: 7/10/2015 10:53 AM		
Client ID:			Run ID: ICP2_150710A			SeqNo: 3364472		Prep Date: 7/10/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	14.79	0.33	6.596	7.223	115	75-125	14.96	1.1	20			
Barium	363	0.33	6.596	475.9	-1710	75-125	633.9	54.3	20	SRO		
Cadmium	6.308	0.66	6.596	-0.01813	95.9	75-125	6.285	0.369	20			
Chromium	17.7	0.33	6.596	9.741	121	75-125	18.9	6.56	20			
Copper	20.81	0.66	6.596	13.89	105	75-125	23.84	13.6	20			
Lead	29.51	0.33	6.596	18.15	172	75-125	38.92	27.5	20	SR		
Nickel	28.43	0.33	6.596	23.21	79.1	75-125	30.53	7.12	20			
Selenium	8.381	0.66	6.596	0.8827	114	75-125	7.957	5.2	20			
Silver	6.719	0.33	6.596	-0.07311	103	75-125	6.609	1.65	20			
Zinc	113.8	0.66	6.596	99.93	210	75-125	140.3	20.9	20	SRO		

MSD				Sample ID: 1507354-01BMSD				Units: mg/Kg		Analysis Date: 7/13/2015 04:39 PM			
Client ID:				Run ID: ICP2_150713A				SeqNo: 3368176		Prep Date: 7/10/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Silver		6.947	0.33	6.596	-0.09319	107	75-125	6.815	1.92	20			

The following samples were analyzed in this batch:

1507502-01A	1507502-02A	1507502-03A
1507502-04A	1507502-05A	1507502-06A
1507502-07A		

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73373** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1507502-02BDUP				Units: mg/L		Analysis Date: 7/13/2015 07:23 PM		
Client ID: FVL20-BG1		Run ID: ICP2_150713A				SeqNo: 3368205		Prep Date: 7/11/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	71.23	5.0	0	0	0	0-0	68.97	3.22		
Magnesium	10.18	2.0	0	0	0	0-0	9.634	5.51		
Sodium	7.788	2.0	0	0	0	0-0	7.025	10.3		

DUP		Sample ID: 1507502-02BDUP				Units: none		Analysis Date: 7/13/2015		
Client ID: FVL20-BG1		Run ID: SAR_150713A				SeqNo: 3368786		Prep Date: 7/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.2286	0.010	0	0	0		0.21	8.49	50	

The following samples were analyzed in this batch:

1507502-01B	1507502-02B	1507502-03B
1507502-05B	1507502-07B	1507502-08B
1507502-10B		

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73422** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-73422-73422				Units: mg/L		Analysis Date: 7/13/2015 09:22 AM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3367211		Prep Date: 7/11/2015		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	0.01082	0.25								J
Copper	0.0449	0.50								J
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: LCS-73422-73422				Units: mg/L		Analysis Date: 7/13/2015 09:27 AM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3367214		Prep Date: 7/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.982	0.25	5	0	99.6	80-120	0			
Barium	5.141	0.25	5	0	103	80-120	0			
Cadmium	4.626	0.50	5	0	92.5	80-120	0			
Chromium	5.226	0.25	5	0	105	80-120	0			
Copper	5.183	0.50	5	0	104	80-120	0			
Lead	5.108	0.25	5	0	102	80-120	0			
Nickel	5.088	0.25	5	0	102	80-120	0			
Selenium	5.005	0.50	5	0	100	80-120	0			
Silver	4.851	0.25	5	0	97	80-120	0			
Zinc	4.652	0.50	5	0	93	80-120	0			

MS		Sample ID: 1507611-19BMS				Units: mg/Kg		Analysis Date: 7/13/2015 09:44 AM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3367221		Prep Date: 7/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.17	0.33	6.527	3.032	109	75-125	0			
Barium	11.57	0.33	6.527	4.679	106	75-125	0			
Cadmium	6.104	0.65	6.527	-0.1026	95.1	75-125	0			
Chromium	9.115	0.33	6.527	3.243	90	75-125	0			
Copper	9.186	0.65	6.527	2.613	101	75-125	0			
Lead	7.155	0.33	6.527	0.5974	100	75-125	0			
Nickel	11	0.33	6.527	4.881	93.7	75-125	0			
Selenium	7.139	0.65	6.527	0.06398	108	75-125	0			
Silver	6.539	0.33	6.527	-0.05632	101	75-125	0			
Zinc	11.7	0.65	6.527	4.585	109	75-125	0			

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73422** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1507611-19BMSD				Units: mg/Kg		Analysis Date: 7/13/2015 09:49 AM		
Client ID:		Run ID: ICP2_150713A				SeqNo: 3367223		Prep Date: 7/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.77	0.33	6.57	3.032	118	75-125	10.17	5.74	20	
Barium	11.95	0.33	6.57	4.679	111	75-125	11.57	3.22	20	
Cadmium	6.112	0.66	6.57	-0.1026	94.6	75-125	6.104	0.121	20	
Chromium	9.147	0.33	6.57	3.243	89.9	75-125	9.115	0.355	20	
Copper	9.444	0.66	6.57	2.613	104	75-125	9.186	2.77	20	
Lead	7.382	0.33	6.57	0.5974	103	75-125	7.155	3.12	20	
Nickel	11.43	0.33	6.57	4.881	99.7	75-125	11	3.87	20	
Selenium	7.214	0.66	6.57	0.06398	109	75-125	7.139	1.05	20	
Silver	6.541	0.33	6.57	-0.05632	100	75-125	6.539	0.0175	20	
Zinc	12.05	0.66	6.57	4.585	114	75-125	11.7	2.97	20	

The following samples were analyzed in this batch:

1507502-08A 1507502-09A 1507502-10A

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: 73371 Instrument ID SVMS5 Method: SW846 8270D

Sample ID: SBLKS1-73371-73371				Units: µg/Kg			Analysis Date: 7/10/2015 05:43 PM			
Client ID:		Run ID: SVMS5_150710A			SeqNo: 3366760		Prep Date: 7/10/2015		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	1343	0	1667	0	80.6	12-100		0		
Surr: 4-Terphenyl-d14	1471	0	1667	0	88.3	25-137		0		
Surr: Nitrobenzene-d5	1411	0	1667	0	84.6	37-107		0		

LCS		Sample ID: SLCSS1-73371-73371				Units: µg/Kg		Analysis Date: 7/10/2015 06:04 PM		
Client ID:		Run ID: SVMS5_150710A			SeqNo: 3366762		Prep Date: 7/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	539.3	6.7	666.7	0	80.9	45-110	0			
Anthracene	572.3	6.7	666.7	0	85.8	55-105	0			
Benzo(a)anthracene	590.3	6.7	666.7	0	88.5	50-110	0			
Benzo(a)pyrene	579	6.7	666.7	0	86.8	50-110	0			
Benzo(b)fluoranthene	591.7	6.7	666.7	0	88.7	45-115	0			
Benzo(k)fluoranthene	570	6.7	666.7	0	85.5	45-115	0			
Chrysene	587.7	6.7	666.7	0	88.1	55-110	0			
Dibenzo(a,h)anthracene	562.7	6.7	666.7	0	84.4	40-125	0			
Fluoranthene	588.3	6.7	666.7	0	88.2	55-115	0			
Fluorene	534	6.7	666.7	0	80.1	50-110	0			
Indeno(1,2,3-cd)pyrene	582.7	6.7	666.7	0	87.4	40-120	0			
Naphthalene	402	6.7	666.7	0	60.3	40-105	0			
Pyrene	618.3	6.7	666.7	0	92.7	45-125	0			
Surr: 2-Fluorobiphenyl	1380	0	1667	0	82.8	12-100	0			
Surr: 4-Terphenyl-d14	1493	0	1667	0	89.6	25-137	0			
Surr: Nitrobenzene-d5	1433	0	1667	0	86	37-107	0			

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: 73371 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1507531-01A MS			Units: µg/Kg		Analysis Date: 7/10/2015 09:12 PM		
Client ID:			Run ID: SVMS5_150710A			SeqNo: 3366765		Prep Date: 7/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1273	13	1262	76.64	94.8	45-110	0				
Anthracene	1602	13	1262	197.9	111	55-105	0			S	
Benzo(a)anthracene	2125	13	1262	542.8	125	50-110	0			S	
Benzo(a)pyrene	1997	13	1262	481.9	120	50-110	0			S	
Benzo(b)fluoranthene	2427	13	1262	693.1	137	45-115	0			S	
Benzo(k)fluoranthene	1532	13	1262	230.9	103	45-115	0				
Chrysene	2078	13	1262	544.8	121	55-110	0			S	
Dibenzo(a,h)anthracene	1276	13	1262	92.97	93.7	40-125	0				
Fluoranthene	3605	13	1262	1339	179	55-115	0			S	
Fluorene	1274	13	1262	69.65	95.4	50-110	0				
Indeno(1,2,3-cd)pyrene	1723	13	1262	402.5	105	40-120	0				
Naphthalene	807.1	13	1262	0	63.9	40-105	0				
Pyrene	3185	13	1262	1056	169	45-125	0			S	
Surr: 2-Fluorobiphenyl	2652	0	3155	0	84.1	12-100	0				
Surr: 4-Terphenyl-d14	2881	0	3155	0	91.3	25-137	0				
Surr: Nitrobenzene-d5	2891	0	3155	0	91.6	37-107	0				

MSD				Sample ID: 1507531-01A MSD			Units: µg/Kg		Analysis Date: 7/10/2015 09:34 PM		
Client ID:			Run ID: SVMS5_150710A			SeqNo: 3366767		Prep Date: 7/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1259	13	1323	76.64	89.4	45-110	1273	1.08	30		
Anthracene	1596	13	1323	197.9	106	55-105	1602	0.4	30	S	
Benzo(a)anthracene	2210	13	1323	542.8	126	50-110	2125	3.94	30	S	
Benzo(a)pyrene	2024	13	1323	481.9	117	50-110	1997	1.35	30	S	
Benzo(b)fluoranthene	2378	13	1323	693.1	127	45-115	2427	2.03	30	S	
Benzo(k)fluoranthene	1615	13	1323	230.9	105	45-115	1532	5.26	30		
Chrysene	2146	13	1323	544.8	121	55-110	2078	3.19	30	S	
Dibenzo(a,h)anthracene	1280	13	1323	92.97	89.7	40-125	1276	0.292	30		
Fluoranthene	3738	13	1323	1339	181	55-115	3605	3.63	30	S	
Fluorene	1287	13	1323	69.65	92	50-110	1274	1.06	30		
Indeno(1,2,3-cd)pyrene	1742	13	1323	402.5	101	40-120	1723	1.07	30		
Naphthalene	744	13	1323	0	56.2	40-105	807.1	8.14	30		
Pyrene	3254	13	1323	1056	166	45-125	3185	2.14	30	S	
Surr: 2-Fluorobiphenyl	2513	0	3307	0	76	12-100	2652	5.39	40		
Surr: 4-Terphenyl-d14	2880	0	3307	0	87.1	25-137	2881	0.0425	40		
Surr: Nitrobenzene-d5	2615	0	3307	0	79.1	37-107	2891	10	40		

The following samples were analyzed in this batch:

1507502-01A	1507502-03A	1507502-05A
1507502-07A	1507502-08A	1507502-10A

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: 73341 Instrument ID VMS6 Method: SW8260B

MBLK Sample ID: MBLK-73341-73341				Units: µg/Kg			Analysis Date: 7/9/2015 08:41 PM			
Client ID:		Run ID: VMS6_150709A		SeqNo: 3364065		Prep Date: 7/9/2015		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	1060	0	1000	0	106	70-130	0			
Surr: 4-Bromofluorobenzene	1003	0	1000	0	100	70-130	0			
Surr: Dibromofluoromethane	928	0	1000	0	92.8	70-130	0			
Surr: Toluene-d8	1030	0	1000	0	103	70-130	0			

LCS Sample ID: LCS-73341-73341				Units: µg/Kg			Analysis Date: 7/9/2015 07:01 PM			
Client ID:		Run ID: VMS6_150709A		SeqNo: 3364064		Prep Date: 7/9/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1126	30	1000	0	113	75-125	0			
Ethylbenzene	1052	30	1000	0	105	75-125	0			
m,p-Xylene	2149	60	2000	0	107	80-125	0			
o-Xylene	1040	30	1000	0	104	75-125	0			
Toluene	1093	30	1000	0	109	70-125	0			
Xylenes, Total	3189	90	3000	0	106	75-125	0			
Surr: 1,2-Dichloroethane-d4	1061	0	1000	0	106	70-130	0			
Surr: 4-Bromofluorobenzene	1032	0	1000	0	103	70-130	0			
Surr: Dibromofluoromethane	996	0	1000	0	99.6	70-130	0			
Surr: Toluene-d8	1038	0	1000	0	104	70-130	0			

MS Sample ID: 1507502-08A MS				Units: µg/Kg			Analysis Date: 7/15/2015 01:36 PM			
Client ID: FVL20-SS5		Run ID: VMS5_150714B		SeqNo: 3371433		Prep Date: 7/9/2015		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	982.5	30	1000	0	98.2	75-125	0			
m,p-Xylene	2008	60	2000	0	100	80-125	0			
o-Xylene	961	30	1000	0	96.1	75-125	0			
Toluene	1027	30	1000	7	102	70-125	0			
Xylenes, Total	2968	90	3000	0	99	75-125	0			
Surr: 1,2-Dichloroethane-d4	986.5	0	1000	0	98.6	70-130	0			
Surr: 4-Bromofluorobenzene	1008	0	1000	0	101	70-130	0			
Surr: Dibromofluoromethane	983	0	1000	0	98.3	70-130	0			
Surr: Toluene-d8	969.5	0	1000	0	97	70-130	0			

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

Client: Olsson Associates
 Work Order: 1507502
 Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: 73341 Instrument ID VMS6 Method: SW8260B

MSD				Sample ID: 1507502-08A MSD			Units: µg/Kg		Analysis Date: 7/15/2015 02:02 PM		
Client ID: FVL20-SS5			Run ID: VMS5_150714B			SeqNo: 3371434		Prep Date: 7/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1060	30	1000	0	106	75-125	1062	0.141	30		
Ethylbenzene	966	30	1000	0	96.6	75-125	982.5	1.69	30		
m,p-Xylene	1976	60	2000	0	98.8	80-125	2008	1.61	30		
o-Xylene	961.5	30	1000	0	96.2	75-125	961	0.052	30		
Toluene	1025	30	1000	7	102	70-125	1027	0.195	30		
Xylenes, Total	2937	90	3000	0	97.9	75-125	2968	1.07	30		
Surr: 1,2-Dichloroethane-d4	972	0	1000	0	97.2	70-130	986.5	1.48	30		
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	1008	0.445	30		
Surr: Dibromofluoromethane	978	0	1000	0	97.8	70-130	983	0.51	30		
Surr: Toluene-d8	970	0	1000	0	97	70-130	969.5	0.0516	30		

The following samples were analyzed in this batch:

1507502-01A	1507502-03A	1507502-05A
1507502-07A	1507502-08A	1507502-10A

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73373** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1507502-02B DUP				Units: mmhos/cm @25°		Analysis Date: 7/13/2015 11:45 AM		
Client ID: FVL20-BG1		Run ID: WETCHEM_150713C				SeqNo: 3367003		Prep Date: 7/11/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.522	0.050	0	0	0		0.553	5.77	50	

The following samples were analyzed in this batch:

1507502-01B	1507502-02B	1507502-03B
1507502-05B	1507502-07B	1507502-08B
1507502-10B		

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73390** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-73390-73390				Units: s.u.		Analysis Date: 7/10/2015 02:00 PM		
Client ID:		Run ID: WETCHEM_150710H				SeqNo: 3364940		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 3.82 0 4 0 95.5 90-110 0

DUP		Sample ID: 1507503-01A DUP				Units: s.u.		Analysis Date: 7/10/2015 02:00 PM		
Client ID:		Run ID: WETCHEM_150710H				SeqNo: 3364956		Prep Date: 7/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 7.05 0 0 0 0 0-0 7.06 0.142 20

DUP				Sample ID: 1507504-01A DUP				Units: s.u.			Analysis Date: 7/10/2015 02:00 PM		
Client ID:				Run ID: WETCHEM_150710H				SeqNo: 3364958		Prep Date: 7/10/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH 7.29 0 0 0 0 0-0 7.32 0.411 20

The following samples were analyzed in this batch:

1507502-01A	1507502-02A	1507502-03A
1507502-05A	1507502-07A	1507502-08A
1507502-10A		

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **73559** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-73559-73559				Units: mg/Kg		Analysis Date: 7/15/2015 09:30 AM		
Client ID:		Run ID: WETCHEM_150715C		SeqNo: 3370488		Prep Date: 7/13/2015		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-73559-73559				Units: mg/Kg		Analysis Date: 7/15/2015 09:30 AM		
Client ID:		Run ID: WETCHEM_150715C		SeqNo: 3370487		Prep Date: 7/13/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.68 1.0 5 0 93.6 80-120 0

MS		Sample ID: 1507585-01A MS				Units: mg/Kg		Analysis Date: 7/15/2015 09:30 AM		
Client ID:		Run ID: WETCHEM_150715C		SeqNo: 3370483		Prep Date: 7/13/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.6636 0.93 4.673 0.5 3.5 75-125 0 JS

MS		Sample ID: 1507585-01A MSI				Units: mg/Kg		Analysis Date: 7/15/2015 09:30 AM		
Client ID:		Run ID: WETCHEM_150715C		SeqNo: 3370485		Prep Date: 7/13/2015		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2492 110 3557 0.5 70 75-125 0 S

MSD		Sample ID: 1507585-01A MSD				Units: mg/Kg		Analysis Date: 7/15/2015 09:30 AM		
Client ID:		Run ID: WETCHEM_150715C		SeqNo: 3370484		Prep Date: 7/13/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.7241 0.86 4.31 0.5 5.2 75-125 0.6636 0 20 JS

The following samples were analyzed in this batch:

1507502-01A	1507502-02A	1507502-03A
1507502-05A	1507502-07A	1507502-08A
1507502-10A		

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

Client: Olsson Associates
Work Order: 1507502
Project: Chevron fv Larson 20 Spill

QC BATCH REPORT

Batch ID: **R167532** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R167532				Units: % of sample		Analysis Date: 7/13/2015 04:20 PM		
Client ID:		Run ID: MOIST_150713C				SeqNo: 3368770		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-R167532				Units: % of sample		Analysis Date: 7/13/2015 04:20 PM		
Client ID:		Run ID: MOIST_150713C				SeqNo: 3368768		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: 1507501-01A DUP				Units: % of sample		Analysis Date: 7/13/2015 04:20 PM		
Client ID:		Run ID: MOIST_150713C				SeqNo: 3368741		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 11.17 0.050 0 0 0 10.96 1.9 20

DUP		Sample ID: 1507623-04B DUP				Units: % of sample		Analysis Date: 7/13/2015 04:20 PM		
Client ID:		Run ID: MOIST_150713C				SeqNo: 3368767		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 3.49 0.050 0 0 0 3.81 8.77 20

The following samples were analyzed in this batch:

1507502-01A	1507502-02A	1507502-03A
1507502-04A	1507502-05A	1507502-06A
1507502-07A	1507502-08A	1507502-09A
1507502-10A		

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



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #:

1607502

Customer Information

Project Information

Parameter/Method Request for Analysis

Purchase Order		Project Name	Chevron FV Larson 20 Spill	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 Addr	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	870.263.7800	Phone	870.263.7800	G	Metals (See Attached List) CO Table 910
Fax	870.263.7456	Fax	870.263.7456	H	Arsenic Only
e-Mail Address	tdobransky@olssonassociates.com	e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bags	A	B	C	D	E	F	G	H	I	J	K	Hold
1	FVL20-SS1	07/07/15	1300	Soil	8	2	X	X	X	X	X	X	X					
2	FVL20-BG1	07/07/15	1315	Soil	8	2				X	X	X	X					
3	FVL20-SS2	07/07/15	1325	Soil	8	2	X	X	X	X	X	X	X					
4	FVL20-BG2	07/07/15	1330	Soil	8	1									X			
5	FVL20-SS3	07/07/15	1340	Soil	8	2	X	X	X	X	X	X	X					
6	FVL20-BG3	07/07/15	1345	Soil	8	1									X			
	FVL20-SS4	07/07/15	1350	Soil	8	2	X	X	X	X	X	X	X					
	FVL20-SS5	07/07/15	1410	Soil	8	2	X	X	X	X	X	X	X					
	FVL20-BG4	07/07/15	1415	Soil	8	1									X			
	FVL20-SS6	07/07/15	1420	Soil	8	2	X	X	X	X	X	X	X					

Shipments (s): Please Print & Sign Jason McClary		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		Receipts Due Date:	
Requisitioned by: 		Date: 7/8/15		Time: 1500		Received by: 	
Requisitioned by (Laboratory): 		Date: 7-8-15		Time: 1500		Received by (Laboratory): 	
Logged by (Laboratory): DES		Date: 7/9/15		Time: 1430		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				Cooler Temp.: 4.6°C			
QC Package: (Check Box Below)				Other:			
<input checked="" type="checkbox"/> Level II: Standard QC				<input type="checkbox"/> Level III: Std QC + Raw Data			
<input type="checkbox"/> Level IV: SW846 CLP-Like				<input type="checkbox"/> Other:			

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

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7/8/2015

FedEx Ship Manager - Print Your Label(s)

From: (816) 298-1033
Nick Martinez
ALS Environmental Parachute
Parachute service center
127 EAST 1st ST
PARACHUTE, CO 81635

Origin ID: RLA

FedEx
Express



J151215022303uw

SHIP TO: (219) 298-8127

BILL SENDER

Jennifer Hall
ALS Environmental - Valparaiso
2400 Cumberland Drive
North Doors
VALPARAISO, IN 46383

Ship Date: 08 JUL 15
ActWgt: 75.0 LB
CAD: 2264840/NET3610

Dim: 26 X 16 X 16 IN

Delivery Address Bar Code



Ref # ALSID#070815-1
Invoice #
PO #
Dept #

1 of 3

THU - 09 JUL 10:30A
PRIORITY OVERNIGHT

TRK# 7740 1084 7620

8281

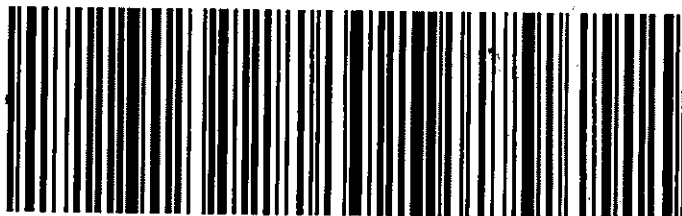
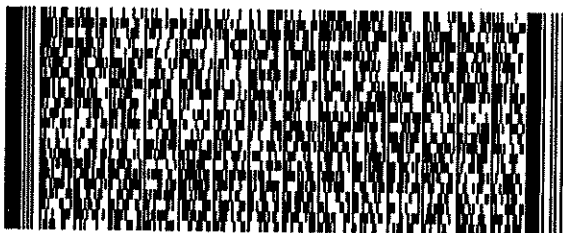
MASTER

XH MGCA

46383

IN-US

SBN



Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **09-Jul-15 13:45**

Work Order: **1507502**

Received by: **DS**

Checklist completed by Diane Shaw
eSignature

09-Jul-15
Date

Reviewed by: Lee Arnold
eSignature

09-Jul-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 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>4.6 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/9/2015 2:28:19 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:



26-May-2020

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

Re: **Chevron FV Larson 20 Spill**

Work Order: **20050734**

Dear Tim,

ALS Environmental received 6 samples on 09-May-2020 10:30 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 12.

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

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Work Order: 20050734

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>
20050734-01	FVL20-SS1	Soil		5/7/2020 08:45	5/9/2020 10:30	<input type="checkbox"/>
20050734-02	FVL20-SS2	Soil		5/7/2020 08:50	5/9/2020 10:30	<input type="checkbox"/>
20050734-03	FVL20-SS3	Soil		5/7/2020 09:00	5/9/2020 10:30	<input type="checkbox"/>
20050734-04	FVL20-SS4	Soil		5/7/2020 09:10	5/9/2020 10:30	<input type="checkbox"/>
20050734-05	FVL20-SS5	Soil		5/7/2020 09:15	5/9/2020 10:30	<input type="checkbox"/>
20050734-06	FVL20-SS6	Soil		5/7/2020 09:25	5/9/2020 10:30	<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:** 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS1
Collection Date: 5/7/2020 08:45 AM

Work Order: 20050734
Lab ID: 20050734-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	90		2.5	5.0	mg/L	10	5/18/2020 17:41
Magnesium	11		0.50	2.0	mg/L	10	5/18/2020 17:41
Sodium	2.0		0.45	2.0	mg/L	10	5/18/2020 17:41
<hr/>							
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.054		0.010	0.010	none	1	5/18/2020
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.48		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

ALS Group, USA

Date: 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS2
Collection Date: 5/7/2020 08:50 AM

Work Order: 20050734
Lab ID: 20050734-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	110		2.5	5.0	mg/L	10	5/18/2020 17:42
Magnesium	12		0.50	2.0	mg/L	10	5/18/2020 17:42
Sodium	2.6		0.45	2.0	mg/L	10	5/18/2020 17:42
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.062		0.010	0.010	none	1	5/18/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.62		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

ALS Group, USA

Date: 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS3
Collection Date: 5/7/2020 09:00 AM

Work Order: 20050734
Lab ID: 20050734-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	130		2.5	5.0	mg/L	10	5/18/2020 17:44
Magnesium	17		0.50	2.0	mg/L	10	5/18/2020 17:44
Sodium	3.1		0.45	2.0	mg/L	10	5/18/2020 17:44
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.069		0.010	0.010	none	1	5/18/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.77		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

ALS Group, USA

Date: 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS4
Collection Date: 5/7/2020 09:10 AM

Work Order: 20050734
Lab ID: 20050734-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	140		2.5	5.0	mg/L	10	5/18/2020 17:45
Magnesium	14		0.50	2.0	mg/L	10	5/18/2020 17:45
Sodium	5.3		0.45	2.0	mg/L	10	5/18/2020 17:45
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.12		0.010	0.010	none	1	5/18/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.76		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

ALS Group, USA**Date:** 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS5
Collection Date: 5/7/2020 09:15 AM

Work Order: 20050734
Lab ID: 20050734-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	100		2.5	5.0	mg/L	10	5/18/2020 17:47
Magnesium	14		0.50	2.0	mg/L	10	5/18/2020 17:47
Sodium	2.0		0.45	2.0	mg/L	10	5/18/2020 17:47
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.050		0.010	0.010	none	1	5/18/2020
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.60		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

ALS Group, USA

Date: 26-May-20

Client: Entrada Consulting Group
Project: Chevron FV Larson 20 Spill
Sample ID: FVL20-SS6
Collection Date: 5/7/2020 09:25 AM

Work Order: 20050734
Lab ID: 20050734-06
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 5/18/20		Analyst: DSC
Calcium	160		2.5	5.0	mg/L	10	5/18/2020 17:48
Magnesium	22		0.50	2.0	mg/L	10	5/18/2020 17:48
Sodium	2.7		0.45	2.0	mg/L	10	5/18/2020 17:48
<hr/>							
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: STP
Sodium Adsorption Ratio	0.053		0.010	0.010	none	1	5/18/2020
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/18/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.91		0.011	0.10	mmhos/cm @25°	20	5/19/2020 14:21

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

Client: Entrada Consulting Group
Work Order: 20050734
Project: Chevron FV Larson 20 Spill

QC BATCH REPORT

Batch ID: **156116** Instrument ID **ICPMS4** Method: **SW6020B**

DUP		Sample ID: 20050738-03ADUP				Units: mg/L		Analysis Date: 5/18/2020 05:59 PM		
Client ID:		Run ID: ICPMS4_200518A				SeqNo: 6422812		Prep Date: 5/18/2020		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	68.29	5.0	0	0	0	0-0	60.72	11.7		
Magnesium	14.96	2.0	0	0	0	0-0	13.55	9.9		
Sodium	2.309	2.0	0	0	0	0-0	1.908	19		

The following samples were analyzed in this batch:

20050734-01A	20050734-02A	20050734-03A
20050734-04A	20050734-05A	20050734-06A

Batch ID: **156116** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 20050738-03ADUP				Units: none		Analysis Date: 5/18/2020		
Client ID:		Run ID: SAR_200518A				SeqNo: 6422864		Prep Date: 5/18/2020		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.06594	0.010	0	0	0		0.05764	13.4	50	

The following samples were analyzed in this batch:

20050734-01A	20050734-02A	20050734-03A
20050734-04A	20050734-05A	20050734-06A

Sample Receipt Checklist

Client Name: **ENTRADA**

Date/Time Received: **09-May-20 10:30**

Work Order: **20050734**

Received by: **DS**

Checklist completed by **Diane Shaw**

11-May-20

Reviewed by: **Alex J. Csaszar**

11-May-20

eSignature

Date

eSignature

Date

Matrices: **Soil**

Carrier name: **FedEx**

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

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

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

Chain of custody present? Yes ☒ No ☐

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

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

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

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

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): **3.6/3.6 c** **SR1**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **5/11/2020 4:36:20 PM**

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

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

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: