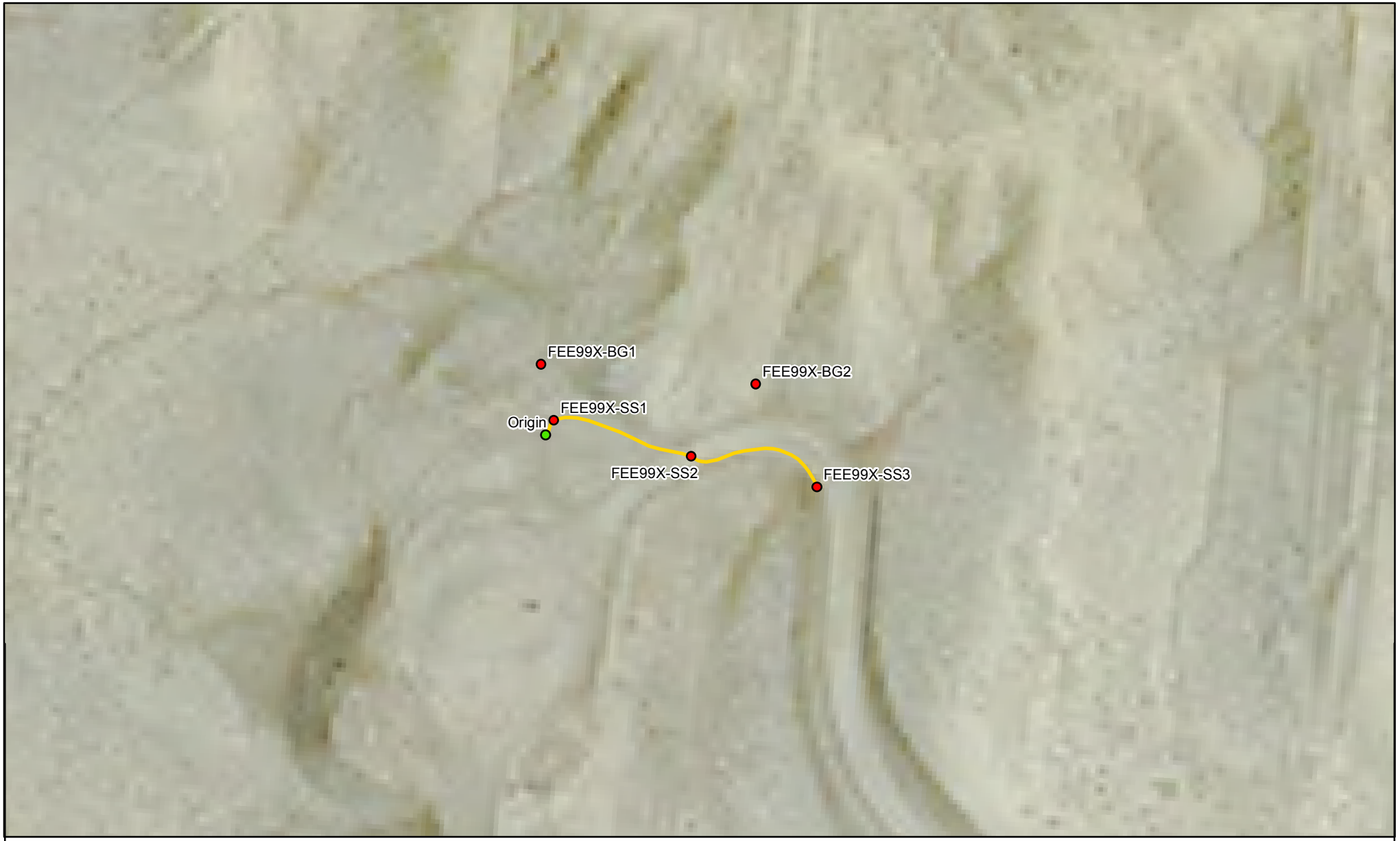


Legend

- Spill Origin
- Soil Sample Location
- Spill Path

0 50 100 200 Feet

1 inch = 96 feet

N
W E
S

PROJECT NO:	017-031
DRAWN BY:	TPD
DATE:	08/07/18

FEE 99X
SPILL RESPONSE
CHEVRON USA, INC
RIO BLANCO COUNTY, COLORADO
NWNW & NENW S19 & SWSW & SESW S18 T2N

ENTRADA CONSULTING GROUP

240 MESA AVENUE
GRAND JUNCTION, CO 81501
TEL 970.270.2986
www.entradainc.com

FIGURE

1

Table 1
FEE 99X
Soil Data Summary

SAMPLE SUMMARY	
Location Description	FEE 99X
Sample Type	Soil

LABORATORY DATA SUMMARY										
Sample ID	FEE99X-SS1	FEE99X-SS1	FEE99X-SS1	FEE99X-SS2	FEE99X-SS3	FEE99X-SS3	FEE99X-BG1	FEE99X-BG2	**COGCC TABLE 910-1 CONCENTRATION LEVELS**	**UNITS**
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	3/19/2014	11/2/2016	10/6/2017	3/19/2014	3/19/2014	11/2/2016	3/19/2014	3/19/2014		
Analytical Parameters										
TPH										
TPH Gasoline Range Organics	260	<3.8	NT	27	460	<3.9	NT	NT	500	mg/kg
TPH Diesel Range Organics	1700	14	NT	310	5700	12	NT	NT		
BTEX										
Benzene	0.042	NT	NT	<0.034	<3.3	NT	NT	NT	0.17	mg/kg
Toluene	0.1	NT	NT	<0.034	<3.3	NT	NT	NT	85	mg/kg
Ethylbenzene	0.11	NT	NT	<0.034	<3.3	NT	NT	NT	100	mg/kg
Total Xylene	0.92	NT	NT	<0.100	25	NT	NT	NT	175	mg/kg
Metals										
Arsenic	6.5	NT	NT	6.70	6.6	NT	6.2	6.8	0.39	mg/kg
Barium	140	NT	NT	210	220	NT	150	NT	15,000	mg/kg
Cadmium	0.91	NT	NT	<0.90	<0.89	NT	0.86	NT	70	mg/kg
Chromium	11	NT	NT	12	14	NT	12	NT	NA	mg/kg
Copper	18	NT	NT	16	16	NT	18	NT	3,100	mg/kg
Lead	18	NT	NT	20	17	NT	20	NT	400	mg/kg
Mercury	0.042	NT	NT	0.029	0.024	NT	0.041	NT	23	mg/kg
Nickel	21	NT	NT	20	22	NT	22	NT	1,600	mg/kg
Selenium	3	NT	NT	2.6	2.9	NT	3	NT	390	mg/kg
Silver	<2.2	NT	NT	<2.2	<2.2	NT	<1.9	NT	390	mg/kg
Zinc	85	NT	NT	80	78	NT	91	NT	23,000	mg/kg
SAR Metals Analysis										
Calcium	520	350	120	570	240	NT	460	NT	NA	mg/L
Magnesium	170	40	19	64	26	NT	43	NT	NA	mg/L
Sodium	1400	980	130	170	140	NT	34	NT	NA	mg/L
Sodium Adsorption Ratio	14	13	2.9	1.8	2.3	NT	0.4	NT	<12	ratio
Polynuclear Aromatic Hyrdrocarbons										
Acenaphthene	0.042	NT	NT	<0.0074	<0.290	NT	NT	NT	1,000	mg/kg
Anthracene	0.082	NT	NT	<0.0074	2.6	NT	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.0076	NT	NT	<0.0074	1.7	<0.0085	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.0076	NT	NT	<0.0074	<0.290	NT	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.0076	NT	NT	<0.0074	<0.290	NT	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.0076	NT	NT	<0.0074	<0.290	NT	NT	NT	2.2	mg/kg
Chrysene	<0.0076	NT	NT	<0.0074	1.2	NT	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.0076	NT	NT	<0.0074	<0.290	NT	NT	NT	0.022	mg/kg
Fluoranthene	0.066	NT	NT	0.05	1.2	NT	NT	NT	1,000	mg/kg
Fluorene	0.16	NT	NT	0.023	3.7	NT	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.0076	NT	NT	<0.0074	<0.290	NT	NT	NT	0.22	mg/kg
Napthalene	0.1	NT	NT	<0.0074	10	NT	NT	NT	23	mg/kg
Pyrene	0.07	NT	NT	0.038	1.1	NT	NT	NT	1,000	mg/kg
General Chemistry										
Chromium, Hexavalent	<0.58	NT	NT	<0.55	<0.54	NT	<0.56	NT	23	mg/kg
Chromium, Trivalent	11	NT	NT	12	14	NT	12	NT	120,000	mg/kg
Specific Conductivity	12	9.4	1.4	4.8	2.3	NT	3.2	NT	<4 or 2 x the background	mmhos/cm
pH	7.6	NT	NT	7.8	7.7	NT	7.8	NT	6-9	su

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

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

01-Apr-2014

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

Re: **Chevron FEE 99X 3.19.14** Work Order: **1403949**

Dear Tim,

ALS Environmental received 5 samples on 21-Mar-2014 09:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 34.

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

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 01-Apr-14

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: **1403949**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1403949-01	FEE99X-SS1	Soil		3/19/2014 10:05	3/21/2014 09:00	☐
1403949-02	FEE99X-BG1	Soil		3/19/2014 10:20	3/21/2014 09:00	☐
1403949-03	FEE99X-SS2	Soil		3/19/2014 10:15	3/21/2014 09:00	☐
1403949-04	FEE99X-BG2	Soil		3/19/2014 10:40	3/21/2014 09:00	☐
1403949-05	FEE99X-SS3	Soil		3/19/2014 10:35	3/21/2014 09:00	☐

ALS Group USA, Corp

Date: 01-Apr-14

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949

Case Narrative

Batch 56820 sample 1403949-01 and 1403949-05 DRO surrogate recoveries were high due to matrix interference. No data requires qualification. The MS/MSD data for DRO is not related to this project's samples. No data requires qualification.

Batch 56881 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 56895 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

Qualifier	Description
*	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

Acronym	Description
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

Units Reported	Description
% 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: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-SS1
Lab ID: 1403949-01
Collection Date: 3/19/2014 10:05 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 3/24/14	Analyst: **IT**
DRO (C10-C28)	**1,700**		**4.8**	**mg/Kg-dry**	1	3/25/2014 01:39 PM
Surr: 4-Terphenyl-d14	*403*	S	*39-115*	*%REC*	1	3/25/2014 01:39 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**		Prep: SW5035 / 3/24/14	Analyst: **IT**
GRO (C6-C10)	**260**		**2.9**	**mg/Kg-dry**	1	3/26/2014 05:57 AM
Surr: Toluene-d8	*102*		*50-150*	*%REC*	1	3/26/2014 05:57 AM
MERCURY BY CVAA			**SW7471**		Prep: SW7471 / 3/26/14	Analyst: **LR**
Mercury	**0.042**		**0.018**	**mg/Kg-dry**	1	3/26/2014 02:06 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 3/25/14	Analyst: **ML**
Arsenic	**6.5**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Barium	**140**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Cadmium	**0.91**		**0.90**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Chromium	**11**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Copper	**18**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Lead	**18**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Nickel	**21**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Selenium	**3.0**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
Silver	ND		2.2	mg/Kg-dry	5	3/25/2014 09:09 PM
Zinc	**85**		**4.5**	**mg/Kg-dry**	5	3/25/2014 09:09 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Calcium	**520**		**10**	**mg/L**	20	3/25/2014 03:08 PM
Magnesium	**170**		**4.0**	**mg/L**	20	3/25/2014 03:08 PM
Sodium	**1,400**		**4.0**	**mg/L**	20	3/25/2014 03:08 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Sodium Adsorption Ratio	**14**		**0.010**	**none**	1	3/25/2014
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep: SW3541 / 3/24/14	Analyst: **RM**
Acenaphthene	**42**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM
Anthracene	**82**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Chrysene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Fluoranthene	**66**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14 **Work Order:** 1403949
Sample ID: FEE99X-SS1 **Lab ID:** 1403949-01
Collection Date: 3/19/2014 10:05 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	**160**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	3/25/2014 10:53 PM
Naphthalene	**100**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM
Pyrene	**70**		**7.6**	**µg/Kg-dry**	1	3/25/2014 10:53 PM
Surr: 2-Fluorobiphenyl	*83.0*		*12-100*	*%REC*	1	3/25/2014 10:53 PM
Surr: 4-Terphenyl-d14	*86.0*		*25-137*	*%REC*	1	3/25/2014 10:53 PM
Surr: Nitrobenzene-d5	*95.6*		*37-107*	*%REC*	1	3/25/2014 10:53 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 3/21/14	Analyst: **RS**
Benzene	**42**		**35**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
Ethylbenzene	**110**		**35**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
m,p-Xylene	**700**		**69**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
o-Xylene	**230**		**35**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
Toluene	**100**		**35**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
Xylenes, Total	**920**		**100**	**µg/Kg-dry**	1	3/26/2014 07:56 AM
Surr: 1,2-Dichloroethane-d4	*101*		*70-130*	*%REC*	1	3/26/2014 07:56 AM
Surr: 4-Bromofluorobenzene	*95.9*		*70-130*	*%REC*	1	3/26/2014 07:56 AM
Surr: Dibromofluoromethane	*91.2*		*70-130*	*%REC*	1	3/26/2014 07:56 AM
Surr: Toluene-d8	*103*		*70-130*	*%REC*	1	3/26/2014 07:56 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**12**		**0.050**	**mmhos/cm @25**	10	3/25/2014 04:00 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**11**		**0.58**	**mg/Kg-dry**	1	3/27/2014 07:56 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 3/24/14	Analyst: **MB**
Chromium, Hexavalent	ND		0.58	mg/Kg-dry	1	3/25/2014 03:00 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**13**		**0.050**	**% of sample**	1	3/24/2014 11:12 AM
PH			**SW9045D**		Prep: EXTRACT / 3/24/14	Analyst: **AT**
pH	**7.6**			**s.u.**	1	3/24/2014 03:00 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-BG1
Lab ID: 1403949-02
Collection Date: 3/19/2014 10:20 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7471**		Prep: SW7471 / 3/26/14	Analyst: **LR**
Mercury	**0.041**		**0.017**	**mg/Kg-dry**	1	3/26/2014 02:08 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 3/25/14	Analyst: **ML**
Arsenic	**6.2**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Barium	**150**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Cadmium	**0.86**		**0.77**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Chromium	**12**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Copper	**18**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Lead	**20**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Nickel	**22**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Selenium	**3.0**		**1.9**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
Silver	ND		1.9	mg/Kg-dry	5	3/25/2014 09:15 PM
Zinc	**91**		**3.8**	**mg/Kg-dry**	5	3/25/2014 09:15 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Calcium	**460**		**10**	**mg/L**	20	3/25/2014 03:14 PM
Magnesium	**43**		**4.0**	**mg/L**	20	3/25/2014 03:14 PM
Sodium	**34**		**4.0**	**mg/L**	20	3/25/2014 03:14 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Sodium Adsorption Ratio	**0.40**		**0.010**	**none**	1	3/25/2014
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**3.2**		**0.050**	**mmhos/cm @25**	10	3/25/2014 04:00 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**12**		**0.57**	**mg/Kg-dry**	1	3/27/2014 07:56 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 3/24/14	Analyst: **MB**
Chromium, Hexavalent	ND		0.56	mg/Kg-dry	1	3/25/2014 03:00 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**12**		**0.050**	**% of sample**	1	3/24/2014 11:12 AM
PH			**SW9045D**		Prep: EXTRACT / 3/24/14	Analyst: **AT**
pH	**7.8**			**s.u.**	1	3/24/2014 03:00 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-SS2
Lab ID: 1403949-03
Collection Date: 3/19/2014 10:15 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 3/24/14	Analyst: **IT**
DRO (C10-C28)	**310**		**4.7**	**mg/Kg-dry**	1	3/25/2014 02:09 PM
Surr: 4-Terphenyl-d14	*73.3*		*39-115*	*%REC*	1	3/25/2014 02:09 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**		Prep: SW5035 / 3/24/14	Analyst: **IT**
GRO (C6-C10)	**27**		**2.8**	**mg/Kg-dry**	1	3/26/2014 06:22 AM
Surr: Toluene-d8	*116*		*50-150*	*%REC*	1	3/26/2014 06:22 AM
MERCURY BY CVAA			**SW7471**		Prep: SW7471 / 3/26/14	Analyst: **LR**
Mercury	**0.029**		**0.015**	**mg/Kg-dry**	1	3/26/2014 02:10 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 3/25/14	Analyst: **ML**
Arsenic	**6.7**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Barium	**210**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Cadmium	ND		0.90	mg/Kg-dry	5	3/25/2014 09:21 PM
Chromium	**12**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Copper	**16**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Lead	**20**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Nickel	**20**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Selenium	**2.6**		**2.2**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
Silver	ND		2.2	mg/Kg-dry	5	3/25/2014 09:21 PM
Zinc	**80**		**4.5**	**mg/Kg-dry**	5	3/25/2014 09:21 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Calcium	**570**		**10**	**mg/L**	20	3/25/2014 03:19 PM
Magnesium	**64**		**4.0**	**mg/L**	20	3/25/2014 03:19 PM
Sodium	**170**		**4.0**	**mg/L**	20	3/25/2014 03:19 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Sodium Adsorption Ratio	**1.8**		**0.010**	**none**	1	3/25/2014
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep: SW3541 / 3/24/14	Analyst: **RM**
Acenaphthene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Anthracene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Chrysene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Fluoranthene	**50**		**7.4**	**µg/Kg-dry**	1	3/25/2014 11:13 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-SS2
Lab ID: 1403949-03
Collection Date: 3/19/2014 10:15 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	**23**		**7.4**	**µg/Kg-dry**	1	3/25/2014 11:13 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	3/25/2014 11:13 PM
Pyrene	**38**		**7.4**	**µg/Kg-dry**	1	3/25/2014 11:13 PM
Surr: 2-Fluorobiphenyl	*41.4*		*12-100*	*%REC*	1	3/25/2014 11:13 PM
Surr: 4-Terphenyl-d14	*50.0*		*25-137*	*%REC*	1	3/25/2014 11:13 PM
Surr: Nitrobenzene-d5	*38.6*		*37-107*	*%REC*	1	3/25/2014 11:13 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 3/24/14	Analyst: **RS**
Benzene	ND		34	µg/Kg-dry	1	3/25/2014 10:06 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	3/25/2014 10:06 AM
m,p-Xylene	ND		68	µg/Kg-dry	1	3/25/2014 10:06 AM
o-Xylene	ND		34	µg/Kg-dry	1	3/25/2014 10:06 AM
Toluene	ND		34	µg/Kg-dry	1	3/25/2014 10:06 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	3/25/2014 10:06 AM
Surr: 1,2-Dichloroethane-d4	*100*		*70-130*	*%REC*	1	3/25/2014 10:06 AM
Surr: 4-Bromofluorobenzene	*102*		*70-130*	*%REC*	1	3/25/2014 10:06 AM
Surr: Dibromofluoromethane	*91.8*		*70-130*	*%REC*	1	3/25/2014 10:06 AM
Surr: Toluene-d8	*95.2*		*70-130*	*%REC*	1	3/25/2014 10:06 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**4.8**		**0.050**	**mmhos/cm @25**	10	3/25/2014 04:00 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**12**		**0.56**	**mg/Kg-dry**	1	3/27/2014 07:56 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 3/24/14	Analyst: **MB**
Chromium, Hexavalent	ND		0.55	mg/Kg-dry	1	3/25/2014 03:00 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**11**		**0.050**	**% of sample**	1	3/24/2014 11:12 AM
PH			**SW9045D**		Prep: EXTRACT / 3/24/14	Analyst: **AT**
pH	**7.8**			**s.u.**	1	3/24/2014 03:00 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-BG2
Lab ID: 1403949-04
Collection Date: 3/19/2014 10:40 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 3/25/14	Analyst: **ML**
Arsenic	**6.8**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:22 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**13**		**0.050**	**% of sample**	1	3/24/2014 09:30 AM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14
Work Order: 1403949
Sample ID: FEE99X-SS3
Lab ID: 1403949-05
Collection Date: 3/19/2014 10:35 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 3/24/14	Analyst: **IT**
DRO (C10-C28)	**5,700**		**18**	**mg/Kg-dry**	4	3/25/2014 02:39 PM
Surr: 4-Terphenyl-d14	*1,210*	S	*39-115*	*%REC*	4	3/25/2014 02:39 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**		Prep: SW5035 / 3/24/14	Analyst: **IT**
GRO (C6-C10)	**460**		**2.7**	**mg/Kg-dry**	1	3/26/2014 06:48 AM
Surr: Toluene-d8	*105*		*50-150*	*%REC*	1	3/26/2014 06:48 AM
MERCURY BY CVAA			**SW7471**		Prep: SW7471 / 3/26/14	Analyst: **LR**
Mercury	**0.024**		**0.017**	**mg/Kg-dry**	1	3/26/2014 02:12 PM
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 3/25/14	Analyst: **ML**
Arsenic	**6.6**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Barium	**220**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Cadmium	ND		0.89	mg/Kg-dry	5	3/25/2014 11:28 PM
Chromium	**14**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Copper	**16**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Lead	**17**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Nickel	**22**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Selenium	**2.9**		**2.2**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
Silver	ND		2.2	mg/Kg-dry	5	3/25/2014 11:28 PM
Zinc	**78**		**4.5**	**mg/Kg-dry**	5	3/25/2014 11:28 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Calcium	**240**		**10**	**mg/L**	20	3/25/2014 03:25 PM
Magnesium	**26**		**4.0**	**mg/L**	20	3/25/2014 03:25 PM
Sodium	**140**		**4.0**	**mg/L**	20	3/25/2014 03:25 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **RH**
Sodium Adsorption Ratio	**2.3**		**0.010**	**none**	1	3/25/2014
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep: SW3541 / 3/26/14	Analyst: **RM**
Acenaphthene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Anthracene	**2,600**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Benzo(a)anthracene	**1,700**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Benzo(a)pyrene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Benzo(b)fluoranthene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Benzo(k)fluoranthene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Chrysene	**1,200**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Dibenzo(a,h)anthracene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Fluoranthene	**1,200**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM

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

ALS Group USA, Corp

Date: *01-Apr-14*

Client: Olsson Associates
Project: Chevron FEE 99X 3.19.14 **Work Order:** 1403949
Sample ID: FEE99X-SS3 **Lab ID:** 1403949-05
Collection Date: 3/19/2014 10:35 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	**3,700**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Indeno(1,2,3-cd)pyrene	ND		290	µg/Kg-dry	5	3/26/2014 07:16 PM
Naphthalene	**10,000**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Pyrene	**1,100**		**290**	**µg/Kg-dry**	5	3/26/2014 07:16 PM
Surr: 2-Fluorobiphenyl	*91.2*		*12-100*	*%REC*	5	3/26/2014 07:16 PM
Surr: 4-Terphenyl-d14	*108*		*25-137*	*%REC*	5	3/26/2014 07:16 PM
Surr: Nitrobenzene-d5	*83.2*		*37-107*	*%REC*	5	3/26/2014 07:16 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 3/24/14	Analyst: **BG**
Benzene	ND		3,300	µg/Kg-dry	100	3/25/2014 04:07 AM
Ethylbenzene	ND		3,300	µg/Kg-dry	100	3/25/2014 04:07 AM
m,p-Xylene	**16,000**		**6,600**	**µg/Kg-dry**	100	3/25/2014 04:07 AM
o-Xylene	**8,500**		**3,300**	**µg/Kg-dry**	100	3/25/2014 04:07 AM
Toluene	ND		3,300	µg/Kg-dry	100	3/25/2014 04:07 AM
Xylenes, Total	**25,000**		**9,900**	**µg/Kg-dry**	100	3/25/2014 04:07 AM
Surr: 1,2-Dichloroethane-d4	*99.8*		*70-130*	*%REC*	100	3/25/2014 04:07 AM
Surr: 4-Bromofluorobenzene	*99.4*		*70-130*	*%REC*	100	3/25/2014 04:07 AM
Surr: Dibromofluoromethane	*101*		*70-130*	*%REC*	100	3/25/2014 04:07 AM
Surr: Toluene-d8	*97.6*		*70-130*	*%REC*	100	3/25/2014 04:07 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 3/25/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**2.3**		**0.050**	**mmhos/cm @25**	10	3/25/2014 04:00 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**14**		**0.55**	**mg/Kg-dry**	1	3/27/2014 07:56 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 3/24/14	Analyst: **MB**
Chromium, Hexavalent	ND		0.54	mg/Kg-dry	1	3/25/2014 03:00 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**8.8**		**0.050**	**% of sample**	1	3/24/2014 11:12 AM
PH			**SW9045D**		Prep: EXTRACT / 3/24/14	Analyst: **AT**
pH	**7.7**			**s.u.**	1	3/24/2014 03:00 PM

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

Batch ID: **56820** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-56820-56820** Units: **mg/Kg** Analysis Date: **3/25/2014 01:51 AM**

Client ID: Run ID: **GC8_140324A** SeqNo: **2683337** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	*1.238*	0	*1.667*	0	*74.3*	*39-115*	0			

LCS Sample ID: **DLCSS1-56820-56820** Units: **mg/Kg** Analysis Date: **3/25/2014 02:21 AM**

Client ID: Run ID: **GC8_140324A** SeqNo: **2683341** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	148.6	4.2	166.7	0	89.1	49-124	0			
Surr: 4-Terphenyl-d14	*1.224*	0	*1.667*	0	*73.5*	*39-115*	0			

MS Sample ID: **1403950-07A MS** Units: **mg/Kg** Analysis Date: **3/25/2014 02:51 AM**

Client ID: Run ID: **GC8_140324A** SeqNo: **2683342** Prep Date: **3/24/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	585.2	82	328.8	188.2	121	49-130	0			
Surr: 4-Terphenyl-d14	*2.677*	0	*3.288*	0	*81.4*	*39-115*	0			

MSD Sample ID: **1403950-07A MSD** Units: **mg/Kg** Analysis Date: **3/25/2014 03:21 AM**

Client ID: Run ID: **GC8_140324A** SeqNo: **2683343** Prep Date: **3/24/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	797.6	83	330.3	188.2	185	49-130	585.2	30.7	30	SR
Surr: 4-Terphenyl-d14	*2.285*	0	*3.303*	0	*69.2*	*39-115*	2.677	*15.8*	*30*	

The following samples were analyzed in this batch: 1403949-01A 1403949-03A 1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56824** Instrument ID **GC9** Method: **SW8015**

MBLK Sample ID: **MBLK-56824-56824** Units: **µg/Kg** Analysis Date: **3/24/2014 08:20 PM**
Client ID: Run ID: **GC9_140324B** SeqNo: **2683447** Prep Date: **3/24/2014** 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	*5778*	0	*5000*	0	*116*	*50-150*	0			

LCS Sample ID: **LCS-56824-56824** Units: **µg/Kg** Analysis Date: **3/24/2014 07:54 PM**
Client ID: Run ID: **GC9_140324B** SeqNo: **2683446** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	531400	2,500	500000	0	106	70-130	0			
Surr: Toluene-d8	*4124*	0	*5000*	0	*82.5*	*50-150*	0			

MS Sample ID: **14031002-02B MS** Units: **µg/Kg** Analysis Date: **3/25/2014 05:57 AM**
Client ID: Run ID: **GC9_140324B** SeqNo: **2683477** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	550200	2,500	500000	0	110	70-130	0			
Surr: Toluene-d8	*5148*	0	*5000*	0	*103*	*50-150*	0			

MSD Sample ID: **14031002-02B MSD** Units: **µg/Kg** Analysis Date: **3/25/2014 06:22 AM**
Client ID: Run ID: **GC9_140324B** SeqNo: **2683479** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	544900	2,500	500000	0	109	70-130	550200	0.952	30	
Surr: Toluene-d8	*4870*	0	*5000*	0	*97.4*	*50-150*	5148	*5.53*	*30*	

The following samples were analyzed in this batch: 1403949-01A 1403949-03A 1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56901** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-56901-56901** Units: **mg/Kg** Analysis Date: **3/26/2014 12:59 PM**
Client ID: Run ID: **HG1_140326A** SeqNo: **2686114** Prep Date: **3/26/2014** 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-56901-56901** Units: **mg/Kg** Analysis Date: **3/26/2014 01:01 PM**
Client ID: Run ID: **HG1_140326A** SeqNo: **2686115** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1868	0.020	0.1665	0	112	80-120	0			

MS Sample ID: **1403950-01AMS** Units: **mg/Kg** Analysis Date: **3/26/2014 02:24 PM**
Client ID: Run ID: **HG1_140326A** SeqNo: **2686141** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1582	0.013	0.1085	0.03591	113	75-125	0			

MSD Sample ID: **1403950-01AMSD** Units: **mg/Kg** Analysis Date: **3/26/2014 02:26 PM**
Client ID: Run ID: **HG1_140326A** SeqNo: **2686142** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1607	0.013	0.1061	0.03591	118	75-125	0.1582	1.55	35	

The following samples were analyzed in this batch:

1403949-01A	1403949-02A	1403949-03A
1403949-05A		

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56802** Instrument ID **ICPMS2** Method: **SW6020A**

DUP	Sample ID: **1403947-02BDUP**				Units: **mg/L**			Analysis Date: **3/25/2014 02:34 PM**
Client ID:		Run ID: **ICPMS2_140325A**			SeqNo: **2684164**	Prep Date:		DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	542.4	10	0	0	0	0-0	540.6	0.332		
Magnesium	37.62	4.0	0	0	0	0-0	38.08	1.22		
Sodium	7.598	4.0	0	0	0	0-0	7.104	6.72		

DUP	Sample ID: **1403947-02BDUP**				Units: **none**			Analysis Date: **3/25/2014**
Client ID:		Run ID: **SAR_140325A**			SeqNo: **2684170**	Prep Date:		DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.0851	0.010	0	0	0		0.07968	6.58	50	

The following samples were analyzed in this batch: 1403949-01B 1403949-02B 1403949-03B 1403949-05B

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56881** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-56881-56881** Units: **mg/Kg** Analysis Date: **3/25/2014 04:46 PM**
Client ID: Run ID: **ICPMS1_140325A** SeqNo: **2684989** Prep Date: **3/25/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	0.006355	0.10								J
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	0.03872	0.25								J
Silver	0.00593	0.25								J
Zinc	ND	0.50								

LCS Sample ID: **LCS-56881-56881** Units: **mg/Kg** Analysis Date: **3/25/2014 04:53 PM**
Client ID: Run ID: **ICPMS1_140325A** SeqNo: **2684990** Prep Date: **3/25/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.678	0.25	5	0	93.6	80-120	0			
Barium	4.905	0.25	5	0	98.1	80-120	0			
Cadmium	4.856	0.10	5	0	97.1	80-120	0			
Chromium	4.843	0.25	5	0	96.9	80-120	0			
Copper	4.817	0.25	5	0	96.3	80-120	0			
Lead	4.92	0.25	5	0	98.4	80-120	0			
Nickel	4.725	0.25	5	0	94.5	80-120	0			
Selenium	4.568	0.25	5	0	91.4	80-120	0			
Silver	4.726	0.25	5	0	94.5	80-120	0			
Zinc	4.702	0.50	5	0	94	80-120	0			

MS Sample ID: **14031043-02BMS** Units: **mg/Kg** Analysis Date: **3/25/2014 05:40 PM**
Client ID: Run ID: **ICPMS1_140325A** SeqNo: **2684997** Prep Date: **3/25/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.93	1.9	7.716	5.503	109	75-125	0			
Barium	181	1.9	7.716	168.1	167	75-125	0			SO
Cadmium	8.183	0.77	7.716	0.5047	99.5	75-125	0			
Lead	19.23	1.9	7.716	10.5	113	75-125	0			

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56881** Instrument ID **ICPMS1** Method: **SW6020A**

MS Sample ID: **14031043-02BMS** Units: **mg/Kg** Analysis Date: **3/26/2014 02:47 PM**
Client ID: Run ID: **ICPMS1_140326A** SeqNo: **2686417** Prep Date: **3/25/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	20.87	1.9	7.716	10.61	133	75-125	0			S
Copper	18.71	1.9	7.716	11.87	88.6	75-125	0			
Nickel	24.25	1.9	7.716	16.53	100	75-125	0			
Selenium	8.198	1.9	7.716	1.353	88.7	75-125	0			
Silver	6.914	1.9	7.716	0.04758	89	75-125	0			
Zinc	67.52	3.9	7.716	58.5	117	75-125	0			O

MSD Sample ID: **14031043-02BMSD** Units: **mg/Kg** Analysis Date: **3/25/2014 05:47 PM**
Client ID: Run ID: **ICPMS1_140325A** SeqNo: **2684998** Prep Date: **3/25/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.64	1.9	7.764	5.503	92	75-125	13.93	9.69	25	
Barium	182.5	1.9	7.764	168.1	186	75-125	181	0.853	25	SO
Cadmium	7.943	0.78	7.764	0.5047	95.8	75-125	8.183	2.98	25	
Lead	17.9	1.9	7.764	10.5	95.3	75-125	19.23	7.18	25	

MSD Sample ID: **14031043-02BMSD** Units: **mg/Kg** Analysis Date: **3/26/2014 02:54 PM**
Client ID: Run ID: **ICPMS1_140326A** SeqNo: **2686418** Prep Date: **3/25/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	20.26	1.9	7.764	10.61	124	75-125	20.87	2.99	25	
Copper	18.22	1.9	7.764	11.87	81.7	75-125	18.71	2.65	25	
Nickel	23.71	1.9	7.764	16.53	92.4	75-125	24.25	2.27	25	
Selenium	8.494	1.9	7.764	1.353	92	75-125	8.198	3.54	25	
Silver	6.949	1.9	7.764	0.04758	88.9	75-125	6.914	0.508	25	
Zinc	65.41	3.9	7.764	58.5	89	75-125	67.52	3.17	25	O

The following samples were analyzed in this batch:

1403949-01A	1403949-02A	1403949-03A
1403949-04A	1403949-05A	

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56819** Instrument ID **SVMS8** Method: **SW8270**

MBLK Sample ID: **SBLKS1-56819-56819** Units: **µg/Kg** Analysis Date: **3/24/2014 11:56 PM**
Client ID: Run ID: **SVMS8_140324B** SeqNo: **2684409** Prep Date: **3/24/2014** 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	*1300*	0	*1667*	0	*78*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1458*	0	*1667*	0	*87.5*	*25-137*	0			
Surr: Nitrobenzene-d5	*1242*	0	*1667*	0	*74.5*	*37-107*	0			

LCS Sample ID: **SLCSS1-56819-56819** Units: **µg/Kg** Analysis Date: **3/25/2014 12:16 AM**
Client ID: Run ID: **SVMS8_140324B** SeqNo: **2684410** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	404.7	6.7	666.7	0	60.7	45-110	0			
Anthracene	593.3	6.7	666.7	0	89	55-105	0			
Benzo(a)anthracene	619	6.7	666.7	0	92.8	50-110	0			
Benzo(a)pyrene	657	6.7	666.7	0	98.5	50-110	0			
Benzo(b)fluoranthene	620.3	6.7	666.7	0	93	45-115	0			
Benzo(k)fluoranthene	583	6.7	666.7	0	87.4	45-115	0			
Chrysene	577	6.7	666.7	0	86.5	55-110	0			
Dibenzo(a,h)anthracene	637.7	6.7	666.7	0	95.6	40-125	0			
Fluoranthene	611	6.7	666.7	0	91.6	55-115	0			
Fluorene	472.3	6.7	666.7	0	70.8	50-110	0			
Indeno(1,2,3-cd)pyrene	677	6.7	666.7	0	102	40-120	0			
Naphthalene	376.3	6.7	666.7	0	56.4	40-105	0			
Pyrene	559	6.7	666.7	0	83.8	45-125	0			
Surr: 2-Fluorobiphenyl	*1012*	0	*1667*	0	*60.7*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1456*	0	*1667*	0	*87.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*975.3*	0	*1667*	0	*58.5*	*37-107*	0			

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56819** Instrument ID **SVMS8** Method: **SW8270**

MS Sample ID: **1403950-07A MS** Units: **µg/Kg** Analysis Date: **3/25/2014 12:37 AM**
Client ID: Run ID: **SVMS8_140324B** SeqNo: **2684411** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	999.7	13	1293	0	77.3	45-110	0			
Anthracene	1201	13	1293	0	92.8	55-105	0			
Benzo(a)anthracene	1225	13	1293	0	94.7	50-110	0			
Benzo(a)pyrene	1261	13	1293	0	97.5	50-110	0			
Benzo(b)fluoranthene	1195	13	1293	0	92.4	45-115	0			
Benzo(k)fluoranthene	1140	13	1293	0	88.1	45-115	0			
Chrysene	1121	13	1293	0	86.6	55-110	0			
Dibenzo(a,h)anthracene	1250	13	1293	0	96.6	40-125	0			
Fluoranthene	1222	13	1293	0	94.5	55-115	0			
Fluorene	1121	13	1293	0	86.6	50-110	0			
Indeno(1,2,3-cd)pyrene	1335	13	1293	0	103	40-120	0			
Naphthalene	862	13	1293	0	66.6	40-105	0			
Pyrene	1108	13	1293	0	85.7	45-125	0			
Surr: 2-Fluorobiphenyl	*2544*	0	*3233*	0	*78.7*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2890*	0	*3233*	0	*89.4*	*25-137*	0			
Surr: Nitrobenzene-d5	*2217*	0	*3233*	0	*68.6*	*37-107*	0			

MSD Sample ID: **1403950-07A MSD** Units: **µg/Kg** Analysis Date: **3/25/2014 12:57 AM**
Client ID: Run ID: **SVMS8_140324B** SeqNo: **2684412** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1042	13	1315	0	79.2	45-110	999.7	4.11	30	
Anthracene	1242	13	1315	0	94.5	55-105	1201	3.38	30	
Benzo(a)anthracene	1240	13	1315	0	94.3	50-110	1225	1.2	30	
Benzo(a)pyrene	1283	13	1315	0	97.6	50-110	1261	1.73	30	
Benzo(b)fluoranthene	1214	13	1315	0	92.3	45-115	1195	1.57	30	
Benzo(k)fluoranthene	1156	13	1315	0	87.9	45-115	1140	1.4	30	
Chrysene	1140	13	1315	0	86.7	55-110	1121	1.74	30	
Dibenzo(a,h)anthracene	1242	13	1315	0	94.4	40-125	1250	0.679	30	
Fluoranthene	1256	13	1315	0	95.5	55-115	1222	2.73	30	
Fluorene	1136	13	1315	0	86.4	50-110	1121	1.39	30	
Indeno(1,2,3-cd)pyrene	1334	13	1315	0	101	40-120	1335	0.135	30	
Naphthalene	878.1	13	1315	0	66.8	40-105	862	1.85	30	
Pyrene	1140	13	1315	0	86.7	45-125	1108	2.78	30	
Surr: 2-Fluorobiphenyl	*2588*	0	*3286*	0	*78.8*	*12-100*	2544	*1.72*	*40*	
Surr: 4-Terphenyl-d14	*2959*	0	*3286*	0	*90*	*25-137*	2890	*2.36*	*40*	
Surr: Nitrobenzene-d5	*2294*	0	*3286*	0	*69.8*	*37-107*	2217	*3.41*	*40*	

The following samples were analyzed in this batch: 1403949-01A 1403949-03A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56915** Instrument ID **SVMS8** Method: **SW8270**

MBLK Sample ID: **SBLKS1-56915-56915** Units: **µg/Kg** Analysis Date: **3/26/2014 05:34 PM**
Client ID: Run ID: **SVMS8_140326A** SeqNo: **2687752** Prep Date: **3/26/2014** 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	*1190*	0	*1667*	0	*71.4*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1726*	0	*1667*	0	*104*	*25-137*	0			
Surr: Nitrobenzene-d5	*1246*	0	*1667*	0	*74.8*	*37-107*	0			

LCS Sample ID: **SLCSS1-56915-56915** Units: **µg/Kg** Analysis Date: **3/26/2014 05:55 PM**
Client ID: Run ID: **SVMS8_140326A** SeqNo: **2687712** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	497.3	6.7	666.7	0	74.6	45-110	0			
Anthracene	600	6.7	666.7	0	90	55-105	0			
Benzo(a)anthracene	602.3	6.7	666.7	0	90.3	50-110	0			
Benzo(a)pyrene	620.7	6.7	666.7	0	93.1	50-110	0			
Benzo(b)fluoranthene	601	6.7	666.7	0	90.1	45-115	0			
Benzo(k)fluoranthene	587	6.7	666.7	0	88	45-115	0			
Chrysene	582.3	6.7	666.7	0	87.3	55-110	0			
Dibenzo(a,h)anthracene	644.3	6.7	666.7	0	96.6	40-125	0			
Fluoranthene	566	6.7	666.7	0	84.9	55-115	0			
Fluorene	519.3	6.7	666.7	0	77.9	50-110	0			
Indeno(1,2,3-cd)pyrene	641.7	6.7	666.7	0	96.2	40-120	0			
Naphthalene	451.7	6.7	666.7	0	67.7	40-105	0			
Pyrene	637	6.7	666.7	0	95.5	45-125	0			
Surr: 2-Fluorobiphenyl	*1147*	0	*1667*	0	*68.8*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1740*	0	*1667*	0	*104*	*25-137*	0			
Surr: Nitrobenzene-d5	*1248*	0	*1667*	0	*74.9*	*37-107*	0			

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56915** Instrument ID **SVMS8** Method: **SW8270**

MS Sample ID: **14031137-04B MS** Units: **µg/Kg** Analysis Date: **3/26/2014 06:15 PM**

Client ID: Run ID: **SVMS8_140326A** SeqNo: **2687715** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	994.5	13	1285	0	77.4	45-110	0			
Anthracene	1144	13	1285	0	89	55-105	0			
Benzo(a)anthracene	1144	13	1285	0	89	50-110	0			
Benzo(a)pyrene	1153	13	1285	0	89.7	50-110	0			
Benzo(b)fluoranthene	1126	13	1285	0	87.6	45-115	0			
Benzo(k)fluoranthene	1081	13	1285	0	84.1	45-115	0			
Chrysene	1053	13	1285	0	81.9	55-110	0			
Dibenzo(a,h)anthracene	1216	13	1285	0	94.6	40-125	0			
Fluoranthene	1055	13	1285	0	82.1	55-115	0			
Fluorene	1020	13	1285	0	79.4	50-110	0			
Indeno(1,2,3-cd)pyrene	1206	13	1285	0	93.9	40-120	0			
Naphthalene	909.7	13	1285	0	70.8	40-105	0			
Pyrene	1199	13	1285	0	93.3	45-125	0			
Surr: 2-Fluorobiphenyl	*2381*	0	*3212*	0	*74.1*	*12-100*	0			
Surr: 4-Terphenyl-d14	*3264*	0	*3212*	0	*102*	*25-137*	0			
Surr: Nitrobenzene-d5	*2576*	0	*3212*	0	*80.2*	*37-107*	0			

MSD Sample ID: **14031137-04B MSD** Units: **µg/Kg** Analysis Date: **3/26/2014 06:35 PM**

Client ID: Run ID: **SVMS8_140326A** SeqNo: **2687717** Prep Date: **3/26/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1024	13	1298	0	78.9	45-110	994.5	2.93	30	
Anthracene	1156	13	1298	0	89.1	55-105	1144	1.13	30	
Benzo(a)anthracene	1151	13	1298	0	88.6	50-110	1144	0.62	30	
Benzo(a)pyrene	1169	13	1298	0	90	50-110	1153	1.4	30	
Benzo(b)fluoranthene	1143	13	1298	0	88.1	45-115	1126	1.53	30	
Benzo(k)fluoranthene	1083	13	1298	0	83.4	45-115	1081	0.238	30	
Chrysene	1070	13	1298	0	82.4	55-110	1053	1.56	30	
Dibenzo(a,h)anthracene	1231	13	1298	0	94.8	40-125	1216	1.22	30	
Fluoranthene	1094	13	1298	0	84.3	55-115	1055	3.66	30	
Fluorene	1045	13	1298	0	80.5	50-110	1020	2.39	30	
Indeno(1,2,3-cd)pyrene	1275	13	1298	0	98.2	40-120	1206	5.54	30	
Naphthalene	937.8	13	1298	0	72.2	40-105	909.7	3.04	30	
Pyrene	1190	13	1298	0	91.7	45-125	1199	0.77	30	
Surr: 2-Fluorobiphenyl	*2398*	0	*3245*	0	*73.9*	*12-100*	2381	*0.716*	*40*	
Surr: 4-Terphenyl-d14	*3240*	0	*3245*	0	*99.8*	*25-137*	3264	*0.753*	*40*	
Surr: Nitrobenzene-d5	*2590*	0	*3245*	0	*79.8*	*37-107*	2576	*0.539*	*40*	

The following samples were analyzed in this batch: 1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56765** Instrument ID **VMS6** Method: **SW8260B**

MBLK Sample ID: **MBLK-56765-56765** Units: **µg/Kg** Analysis Date: **3/21/2014 03:01 PM**
Client ID: Run ID: **VMS6_140321A** SeqNo: **2681744** Prep Date: **3/21/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17	30								J
Ethylbenzene	14	30								J
m,p-Xylene	27.5	60								J
o-Xylene	ND	30								
Toluene	15	30								J
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*972*	0	*1000*	0	*97.2*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*988.5*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Dibromofluoromethane	*949.5*	0	*1000*	0	*95*	*70-130*	0			
Surr: Toluene-d8	*970*	0	*1000*	0	*97*	*70-130*	0			

LCS Sample ID: **LCS-56765-56765** Units: **µg/Kg** Analysis Date: **3/21/2014 01:14 PM**
Client ID: Run ID: **VMS6_140321A** SeqNo: **2681743** Prep Date: **3/21/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1018	30	1000	0	102	75-125	0			
Ethylbenzene	962.5	30	1000	0	96.2	75-125	0			
m,p-Xylene	1914	60	2000	0	95.7	80-125	0			
o-Xylene	964.5	30	1000	0	96.4	75-125	0			
Toluene	963	30	1000	0	96.3	70-125	0			
Xylenes, Total	2878	90	3000	0	95.9	75-125	0			
Surr: 1,2-Dichloroethane-d4	*985.5*	0	*1000*	0	*98.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1012*	0	*1000*	0	*101*	*70-130*	0			
Surr: Dibromofluoromethane	*988.5*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Toluene-d8	*966*	0	*1000*	0	*96.6*	*70-130*	0			

MS Sample ID: **1403953-01A MS** Units: **µg/Kg** Analysis Date: **3/27/2014 12:26 PM**
Client ID: Run ID: **VMS9_140326A** SeqNo: **2686776** Prep Date: **3/21/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1011	30	1000	0	101	75-125	0			
Ethylbenzene	1040	30	1000	0	104	75-125	0			
m,p-Xylene	2140	60	2000	0	107	80-125	0			
o-Xylene	1075	30	1000	0	108	75-125	0			
Toluene	1008	30	1000	0	101	70-125	0			
Xylenes, Total	3216	90	3000	0	107	75-125	0			
Surr: 1,2-Dichloroethane-d4	*967.5*	0	*1000*	0	*96.8*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1038*	0	*1000*	0	*104*	*70-130*	0			
Surr: Dibromofluoromethane	*971*	0	*1000*	0	*97.1*	*70-130*	0			
Surr: Toluene-d8	*1026*	0	*1000*	0	*103*	*70-130*	0			

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56765** Instrument ID **VMS6** Method: **SW8260B**

MSD	Sample ID: **1403953-01A MSD**				Units: **µg/Kg**			Analysis Date: **3/27/2014 12:51 PM**		
Client ID:		Run ID: **VMS9_140326A**			SeqNo: **2686777**		Prep Date: **3/21/2014**		DF: **1**	

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	972.5	30	1000	0	97.2	75-125	1011	3.88	30	
Ethylbenzene	1004	30	1000	0	100	75-125	1040	3.42	30	
m,p-Xylene	2064	60	2000	0	103	80-125	2140	3.61	30	
o-Xylene	1026	30	1000	0	103	75-125	1075	4.71	30	
Toluene	962	30	1000	0	96.2	70-125	1008	4.72	30	
Xylenes, Total	3090	90	3000	0	103	75-125	3216	3.98	30	
Surr: 1,2-Dichloroethane-d4	*972*	0	*1000*	0	*97.2*	*70-130*	967.5	*0.464*	*30*	
Surr: 4-Bromofluorobenzene	*1018*	0	*1000*	0	*102*	*70-130*	1038	*1.9*	*30*	
Surr: Dibromofluoromethane	*941.5*	0	*1000*	0	*94.2*	*70-130*	971	*3.08*	*30*	
Surr: Toluene-d8	*988*	0	*1000*	0	*98.8*	*70-130*	1026	*3.77*	*30*	

The following samples were analyzed in this batch: 1403949-01A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56823** Instrument ID **VMS5** Method: **SW8260B**

MBLK Sample ID: **MBLK-56823-56823** Units: **µg/Kg** Analysis Date: **3/24/2014 01:31 PM**
Client ID: Run ID: **VMS5_140324A** SeqNo: **2682420** Prep Date: **3/24/2014** 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	*1012*	0	*1000*	0	*101*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*980.5*	0	*1000*	0	*98*	*70-130*	0			
Surr: Dibromofluoromethane	*1003*	0	*1000*	0	*100*	*70-130*	0			
Surr: Toluene-d8	*996.5*	0	*1000*	0	*99.6*	*70-130*	0			

LCS Sample ID: **LCS-56823-56823** Units: **µg/Kg** Analysis Date: **3/24/2014 12:12 PM**
Client ID: Run ID: **VMS5_140324A** SeqNo: **2682416** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	958.5	30	1000	0	95.8	75-125	0			
Ethylbenzene	975	30	1000	0	97.5	75-125	0			
m,p-Xylene	1919	60	2000	0	96	80-125	0			
o-Xylene	979	30	1000	0	97.9	75-125	0			
Toluene	942	30	1000	0	94.2	70-125	0			
Xylenes, Total	2898	90	3000	0	96.6	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1001*	0	*1000*	0	*100*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*996*	0	*1000*	0	*99.6*	*70-130*	0			
Surr: Dibromofluoromethane	*1004*	0	*1000*	0	*100*	*70-130*	0			
Surr: Toluene-d8	*982*	0	*1000*	0	*98.2*	*70-130*	0			

MS Sample ID: **1403976-08A MS** Units: **µg/Kg** Analysis Date: **3/25/2014 11:00 AM**
Client ID: Run ID: **VMS6_140324B** SeqNo: **2683860** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1238	33	1095	0	113	75-125	0			
Ethylbenzene	1173	33	1095	0	107	75-125	0			
m,p-Xylene	2340	66	2191	0	107	80-125	0			
o-Xylene	1169	33	1095	0	107	75-125	0			
Toluene	1154	33	1095	0	105	70-125	0			
Xylenes, Total	3508	99	3286	0	107	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1084*	0	*1095*	0	*99*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1152*	0	*1095*	0	*105*	*70-130*	0			
Surr: Dibromofluoromethane	*1082*	0	*1095*	0	*98.8*	*70-130*	0			
Surr: Toluene-d8	*1068*	0	*1095*	0	*97.6*	*70-130*	0			

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56823** Instrument ID **VMS5** Method: **SW8260B**

MSD	Sample ID: **1403976-08A MSD**				Units: **µg/Kg**			Analysis Date: **3/25/2014 11:26 AM**		
Client ID:		Run ID: **VMS6_140324B**			SeqNo: **2683861**		Prep Date: **3/24/2014**		DF: **1**	

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1170	33	1095	0	107	75-125	1238	5.69	30	
Ethylbenzene	1116	33	1095	0	102	75-125	1173	5.03	30	
m,p-Xylene	2215	66	2191	0	101	80-125	2340	5.48	30	
o-Xylene	1100	33	1095	0	100	75-125	1169	6.03	30	
Toluene	1084	33	1095	0	99	70-125	1154	6.31	30	
Xylenes, Total	3315	99	3286	0	101	75-125	3508	5.67	30	
Surr: 1,2-Dichloroethane-d4	*1071*	0	*1095*	0	*97.8*	*70-130*	1084	*1.22*	*30*	
Surr: 4-Bromofluorobenzene	*1145*	0	*1095*	0	*105*	*70-130*	1152	*0.62*	*30*	
Surr: Dibromofluoromethane	*1087*	0	*1095*	0	*99.2*	*70-130*	1082	*0.505*	*30*	
Surr: Toluene-d8	*1041*	0	*1095*	0	*95*	*70-130*	1068	*2.65*	*30*	

The following samples were analyzed in this batch: 1403949-03A 1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56802** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1403947-02B DUP** Units: **mmhos/cm @25°C** Analysis Date: **3/25/2014 04:00 PM**

Client ID: Run ID: **WETCHEM_140325I** SeqNo: **2684481** Prep Date: **3/25/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	3.43	0.050	0	0	0		3.62	5.39	50	

The following samples were analyzed in this batch:

1403949-01B 1403949-02B 1403949-03B
1403949-05B

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56851** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-56851-56851** Units: **s.u.** Analysis Date: **3/24/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140324P** SeqNo: **2682822** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.98	0	4	0	99.5	90-110	0			

DUP Sample ID: **1403950-03A DUP** Units: **s.u.** Analysis Date: **3/24/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140324P** SeqNo: **2682836** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.68	0	0	0	0	0-0	8.66	0.231	20	

DUP Sample ID: **1403947-02A DUP** Units: **s.u.** Analysis Date: **3/24/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140324P** SeqNo: **2682847** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.68	0	0	0	0	0-0	7.62	0.784	20	

The following samples were analyzed in this batch:

1403949-01A 1403949-02A 1403949-03A
1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **56895** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-56895-56895** Units: **mg/Kg** Analysis Date: **3/25/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140325Q** SeqNo: **2684660** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.50								

LCS Sample ID: **LCS-56895-56895** Units: **mg/Kg** Analysis Date: **3/25/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140325Q** SeqNo: **2684659** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.76	0.50	2	0	88	80-120	0			

MS Sample ID: **1403950-07A MS** Units: **mg/Kg** Analysis Date: **3/25/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140325Q** SeqNo: **2684655** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.50	1.992	0	0	75-125	0			S

MS Sample ID: **1403950-07A MSI** Units: **mg/Kg** Analysis Date: **3/25/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140325Q** SeqNo: **2684657** Prep Date: **3/24/2014** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	835.3	49	1186	0	70.4	75-125	0			S

MSD Sample ID: **1403950-07A MSD** Units: **mg/Kg** Analysis Date: **3/25/2014 03:00 PM**
Client ID: Run ID: **WETCHEM_140325Q** SeqNo: **2684656** Prep Date: **3/24/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.50	2	0	0	75-125	0.1195	0	20	S

The following samples were analyzed in this batch:

1403949-01A 1403949-02A 1403949-03A
1403949-05A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **R137684** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R137684** Units: **% of sample** Analysis Date: **3/24/2014 09:30 AM**
Client ID: Run ID: **MOIST_140324A** SeqNo: **2683747** 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-R137684** Units: **% of sample** Analysis Date: **3/24/2014 09:30 AM**
Client ID: Run ID: **MOIST_140324A** SeqNo: **2683746** 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: **1403934-01A DUP** Units: **% of sample** Analysis Date: **3/24/2014 09:30 AM**
Client ID: Run ID: **MOIST_140324A** SeqNo: **2683726** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.09	0.050	0	0	0	0-0	14.09	6.85	20	

DUP Sample ID: **1403953-11A DUP** Units: **% of sample** Analysis Date: **3/24/2014 09:30 AM**
Client ID: Run ID: **MOIST_140324A** SeqNo: **2683736** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	10.35	0.050	0	0	0	0-0	10.19	1.56	20	

The following samples were analyzed in this batch: 1403949-04A

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

Client: Olsson Associates
Work Order: 1403949
Project: Chevron FEE 99X 3.19.14

QC BATCH REPORT

Batch ID: **R137685** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R137685** Units: **% of sample** Analysis Date: **3/24/2014 11:12 AM**
Client ID: Run ID: **MOIST_140324B** SeqNo: **2683778** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.050								J

LCS Sample ID: **LCS-R137685** Units: **% of sample** Analysis Date: **3/24/2014 11:12 AM**
Client ID: Run ID: **MOIST_140324B** SeqNo: **2683777** 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: **1403976-09B DUP** Units: **% of sample** Analysis Date: **3/24/2014 11:12 AM**
Client ID: Run ID: **MOIST_140324B** SeqNo: **2683770** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	5.29	0.050	0	0	0	0-0	5.05	4.64	20	

DUP Sample ID: **1403976-10B DUP** Units: **% of sample** Analysis Date: **3/24/2014 11:12 AM**
Client ID: Run ID: **MOIST_140324B** SeqNo: **2683772** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	4.46	0.050	0	0	0	0-0	4.6	3.09	20	

The following samples were analyzed in this batch:

1403949-01A	1403949-02A	1403949-03A
1403949-05A		

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

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☑ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1403459

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Chevron FEE 99X	A	TPH (GRO & DRO)
Work Order		Project Number	013.3287.100.100004	B	BTEX
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C	PAH (See Attached List) CO Table 910
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky	D	Electrical Conductivity
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102	E	Sodium Adsorption Ratio
				F	pH
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506	G	Metals (See Attached List) CO Table 910
Phone	970.263.7800	Phone	970.263.7800	H	Arsenic Only
Fax	970.263.7456	Fax	970.263.7456	I	
e-Mail Address	tdobransky@oaconsulting.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FEE99X-SS1	03/19/14	1005	Soil	8	2	X	X	X	X	X	X	X				
	FEE99X-BG1	03/19/14	1020	Soil	8	2				X	X	X	X				
3	FEE99X-SS2	03/19/14	1015	Soil	8	2	X	X	X	X	X	X	X				
4	FEE99X-BG2	03/19/14	1040	Soil	8	1								X			
5	FEE99X-SS3	03/19/14	1035	Soil	8	2	X	X	X	X	X	X	X				

Sampler(s): Please Print & Sign: Tim Dobransky

Shipment Method: FedEx

Required Turnaround Time: ☑ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
	3/20/14	1630	FedEx
Relinquished by: FedEx	Date: 3/21/14	Time: 0900	Received by (Laboratory):
Logged by (Laboratory):	Date: 3/21/14	Time: 1145	Checked by (Laboratory):

Notes: Chevron Pricing Applies - Per Bruce Schlatter

Cooler Temp: 4.6a

QC Package: (Check Box Below)

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

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

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

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **OLSSON** Date/Time Received: **21-Mar-14 09:00**

Work Order: **1403949** Received by: **JR**

Checklist completed by Joseph Ribar (eSignature) 21-Mar-14 (Date) Reviewed by: Ann Preston (eSignature) 24-Mar-14 (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):	4.6 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	3/21/2014 12:02:13 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:			

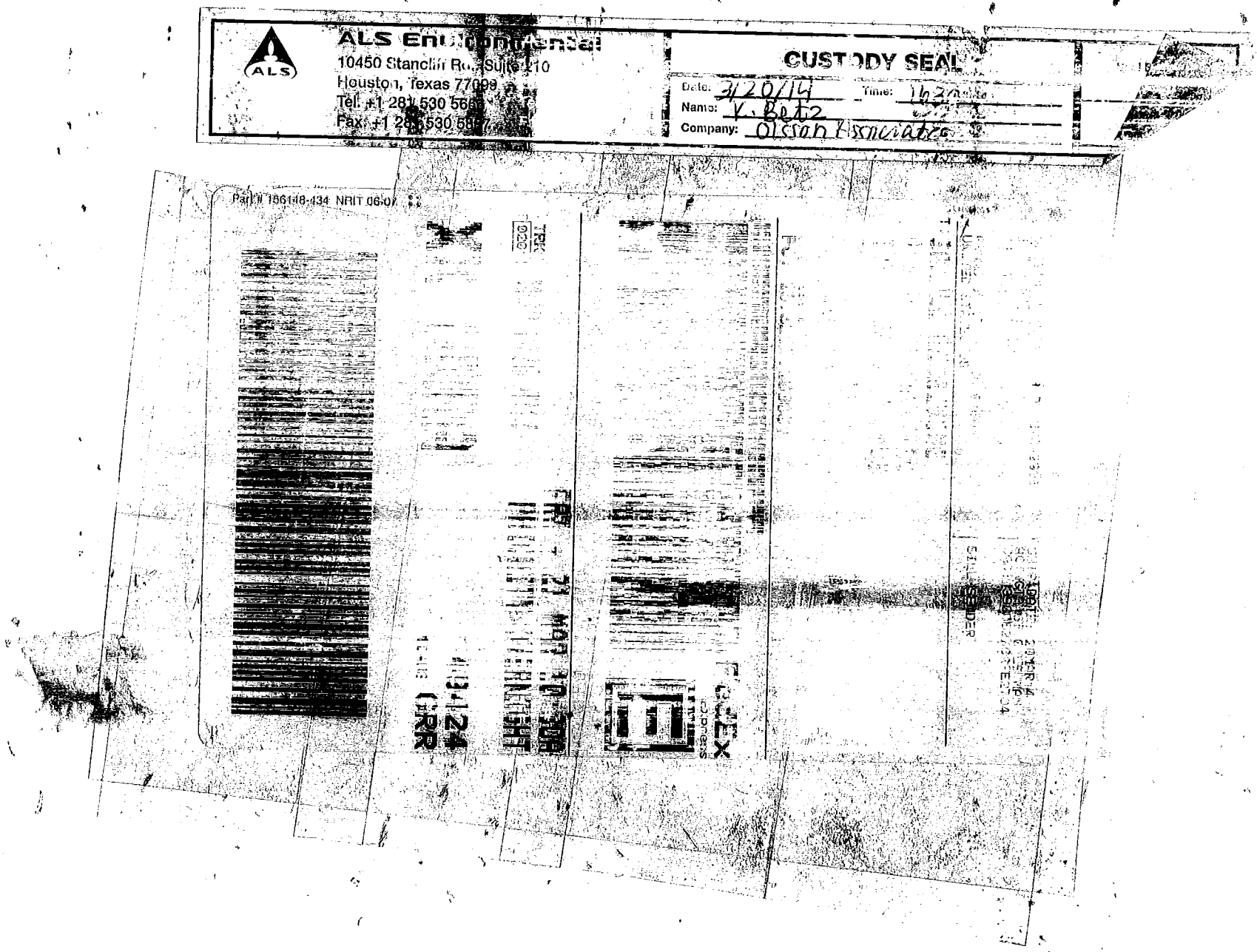
Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



ALS Environmental
10450 Stanolin Rd, Suite 210
Houston, Texas 77099
Tel: +1 281 530 5656
Fax: +1 281 530 5887

CUSTODY SEAL

Date: 3/20/14 Time: 1620
Name: V. Betz
Company: Olsen Associates

Part # 156148-434 NRIT 0600

17-Nov-2016

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

Re: **Chevron FEE 99X** Work Order: **1611391**

Dear Tim,

ALS Environmental received 2 samples on 04-Nov-2016 09:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 13.

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

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates
Project: Chevron FEE 99X
Work Order: **1611391**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1611391-01	FEE99X-SS1	Soil		11/2/2016 14:20	11/4/2016 09:30	☐
1611391-02	FEE99X-SS3	Soil		11/2/2016 14:30	11/4/2016 09:30	☐

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates
Project: Chevron FEE 99X
WorkOrder: **1611391**

QUALIFIERS, ACRONYMS, UNITS

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

Acronym	Description
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

Units Reported	Description
% 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: *17-Nov-16*

Client: Olsson Associates
Project: Chevron FEE 99X
Work Order: 1611391
Sample ID: FEE99X-SS1
Lab ID: 1611391-01
Collection Date: 11/2/2016 02:20 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 11/11/16	Analyst: **IT**
DRO (C10-C28)	**14**		**6.2**	**mg/Kg-dry**	1	11/11/2016 09:34 PM
Surr: 4-Terphenyl-d14	*58.6*		*39-133*	*%REC*	1	11/11/2016 09:34 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 11/10/16	Analyst: **IT**
GRO (C6-C10)	ND		3.8	mg/Kg-dry	1	11/10/2016 09:30 PM
Surr: Toluene-d8	*96.3*		*50-150*	*%REC*	1	11/10/2016 09:30 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 11/9/16	Analyst: **RH**
Calcium	**350**		**5.0**	**mg/L**	10	11/10/2016 01:20 AM
Magnesium	**40**		**2.0**	**mg/L**	10	11/10/2016 01:20 AM
Sodium	**980**		**2.0**	**mg/L**	10	11/10/2016 01:20 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 11/9/16	Analyst: **RH**
Sodium Adsorption Ratio	**13**		**0.010**	**none**	1	11/9/2016
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 11/9/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**9.4**		**0.25**	**mmhos/cm @2**	50	11/9/2016 04:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**21**		**0.050**	**% of sample**	1	11/10/2016 01:37 PM

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

ALS Group, USA

Date: *17-Nov-16*

Client: Olsson Associates
Project: Chevron FEE 99X
Work Order: 1611391
Sample ID: FEE99X-SS3
Lab ID: 1611391-02
Collection Date: 11/2/2016 02:30 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 11/11/16	Analyst: **IT**
DRO (C10-C28)	**12**		**6.4**	**mg/Kg-dry**	1	11/11/2016 11:02 PM
Surr: 4-Terphenyl-d14	*54.3*		*39-133*	*%REC*	1	11/11/2016 11:02 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 11/10/16	Analyst: **IT**
GRO (C6-C10)	ND		3.9	mg/Kg-dry	1	11/10/2016 09:55 PM
Surr: Toluene-d8	*103*		*50-150*	*%REC*	1	11/10/2016 09:55 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 11/11/16	Analyst: **RS**
Benzo(a)anthracene	ND		0.0085	mg/Kg-dry	1	11/12/2016 01:23 AM
Surr: 2-Fluorobiphenyl	*87.9*		*12-100*	*%REC*	1	11/12/2016 01:23 AM
Surr: 4-Terphenyl-d14	*99.4*		*25-137*	*%REC*	1	11/12/2016 01:23 AM
Surr: Nitrobenzene-d5	*71.0*		*37-107*	*%REC*	1	11/12/2016 01:23 AM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**22**		**0.050**	**% of sample**	1	11/10/2016 01:37 PM

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

ALS Group, USA

Date: 17-Nov-16

Client: Olsson Associates

Work Order: 1611391

Project: Chevron FEE 99X

QC BATCH REPORT

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

MBLK	Sample ID: **DBLKS1-94410-94410**			Units: **mg/Kg**			Analysis Date: **11/11/2016 05:39 PM**			
Client ID:	Run ID: **GC8_161111B**			SeqNo: **4150501**			Prep Date: **11/11/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.139*	0	*3.33*	0	*64.2*	*39-133*	0			

LCS	Sample ID: **DLCSS1-94410-94410**			Units: **mg/Kg**			Analysis Date: **11/11/2016 06:08 PM**			
Client ID:	Run ID: **GC8_161111B**			SeqNo: **4150502**			Prep Date: **11/11/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	253.5	5.0	333	0	76.1	61-109	0			
Surr: 4-Terphenyl-d14	*1.88*	0	*3.33*	0	*56.5*	*39-133*	0			

MS	Sample ID: **1611542-09B MS**			Units: **mg/Kg**			Analysis Date: **11/11/2016 06:38 PM**			
Client ID:	Run ID: **GC8_161111B**			SeqNo: **4150503**			Prep Date: **11/11/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	250.2	4.8	318.7	17.34	73.1	48-110	0			
Surr: 4-Terphenyl-d14	*1.841*	0	*3.187*	0	*57.8*	*39-133*	0			

MSD	Sample ID: **1611542-09B MSD**			Units: **mg/Kg**			Analysis Date: **11/11/2016 07:07 PM**			
Client ID:	Run ID: **GC8_161111B**			SeqNo: **4150504**			Prep Date: **11/11/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	278.4	5.0	332.1	17.34	78.6	48-110	250.2	10.6	30	
Surr: 4-Terphenyl-d14	*1.874*	0	*3.321*	0	*56.4*	*39-133*	1.841	*1.77*	*30*	

The following samples were analyzed in this batch: 1611391-01A 1611391-02A

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

Client: Olsson Associates
Work Order: 1611391
Project: Chevron FEE 99X

QC BATCH REPORT

Batch ID: **94344** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-94344-94344** Units: **µg/Kg-dry** Analysis Date: **11/10/2016 12:48 PM**
Client ID: Run ID: **GC9_161110A** SeqNo: **4147106** Prep Date: **11/10/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*4330*	0	*5000*	0	*86.6*	*50-150*	0			

LCS Sample ID: **LCS-94344-94344** Units: **µg/Kg-dry** Analysis Date: **11/10/2016 12:23 PM**
Client ID: Run ID: **GC9_161110A** SeqNo: **4147105** Prep Date: **11/10/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	450100	2,500	500000	0	90	70-130	0			
Surr: Toluene-d8	*5025*	0	*5000*	0	*100*	*50-150*	0			

MS Sample ID: **1611449-04A MS** Units: **µg/Kg-dry** Analysis Date: **11/10/2016 03:42 PM**
Client ID: Run ID: **GC9_161110A** SeqNo: **4147113** Prep Date: **11/10/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	799800	3,900	782100	0	102	70-130	0			
Surr: Toluene-d8	*8648*	0	*7821*	0	*111*	*50-150*	0			

MSD Sample ID: **1611449-04A MSD** Units: **µg/Kg-dry** Analysis Date: **11/10/2016 04:07 PM**
Client ID: Run ID: **GC9_161110A** SeqNo: **4147114** Prep Date: **11/10/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	830000	3,900	782100	0	106	70-130	799800	3.7	30	
Surr: Toluene-d8	*8728*	0	*7821*	0	*112*	*50-150*	8648	*0.927*	*30*	

The following samples were analyzed in this batch: 1611391-01A 1611391-02A

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

Client: Olsson Associates
Work Order: 1611391
Project: Chevron FEE 99X

QC BATCH REPORT

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

DUP Sample ID: **1611387-02CDUP** Units: **mg/L** Analysis Date: **11/10/2016 12:41 A**

Client ID: Run ID: **ICP2_161109A** SeqNo: **4144324** Prep Date: **11/9/2016** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	250.3	5.0	0	0	0	0-0	0			
Magnesium	53.03	2.0	0	0	0	0-0	0			
Sodium	1312	2.0	0	0	0	0-0	0			

The following samples were analyzed in this batch: 1611391-01B

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

Client: Olsson Associates
Work Order: 1611391
Project: Chevron FEE 99X

QC BATCH REPORT

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

MBLK Sample ID: **SBLKS1-94409-94409** Units: **µg/Kg** Analysis Date: **11/13/2016 12:45 PM**
Client ID: Run ID: **SVMS5_161113A** SeqNo: **4150862** Prep Date: **11/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)anthracene	ND	6.7								
Surr: 2-Fluorobiphenyl	*2733*	0	*3333*	0	*82*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2845*	0	*3333*	0	*85.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*2095*	0	*3333*	0	*62.9*	*37-107*	0			

LCS Sample ID: **SLCSS1-94409-94409** Units: **µg/Kg** Analysis Date: **11/13/2016 01:08 PM**
Client ID: Run ID: **SVMS5_161113A** SeqNo: **4150864** Prep Date: **11/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)anthracene	1148	6.7	1333	0	86.1	50-110	0			
Surr: 2-Fluorobiphenyl	*2799*	0	*3333*	0	*84*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2879*	0	*3333*	0	*86.4*	*25-137*	0			
Surr: Nitrobenzene-d5	*2109*	0	*3333*	0	*63.3*	*37-107*	0			

MS Sample ID: **1611393-04A MS** Units: **µg/Kg** Analysis Date: **11/13/2016 02:05 PM**
Client ID: Run ID: **SVMS5_161113A** SeqNo: **4150867** Prep Date: **11/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)anthracene	1063	6.6	1320	0	80.6	50-110	0			
Surr: 2-Fluorobiphenyl	*2650*	0	*3300*	0	*80.3*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2597*	0	*3300*	0	*78.7*	*25-137*	0			
Surr: Nitrobenzene-d5	*2089*	0	*3300*	0	*63.3*	*37-107*	0			

MSD Sample ID: **1611393-04A MSD** Units: **µg/Kg** Analysis Date: **11/13/2016 02:28 PM**
Client ID: Run ID: **SVMS5_161113A** SeqNo: **4150868** Prep Date: **11/11/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)anthracene	1063	6.7	1331	0	79.9	50-110	1063	0.0377	30	
Surr: 2-Fluorobiphenyl	*2557*	0	*3327*	0	*76.8*	*12-100*	2650	*3.57*	*40*	
Surr: 4-Terphenyl-d14	*2970*	0	*3327*	0	*89.2*	*25-137*	2597	*13.4*	*40*	
Surr: Nitrobenzene-d5	*2091*	0	*3327*	0	*62.8*	*37-107*	2089	*0.0739*	*40*	

The following samples were analyzed in this batch: 1611391-02A

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

Client: Olsson Associates
Work Order: 1611391
Project: Chevron FEE 99X

QC BATCH REPORT

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

DUP Sample ID: **1611387-02C DUP** Units: **mmhos/cm @25°** Analysis Date: **11/9/2016 04:00 PM**

Client ID: Run ID: **WETCHEM_161109O** SeqNo: **4143384** Prep Date: **11/9/2016** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	12.3	0.25	0	0	0		11.45	7.16	50	

The following samples were analyzed in this batch: 1611391-01B

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

Client: Olsson Associates
Work Order: 1611391
Project: Chevron FEE 99X

QC BATCH REPORT

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

MBLK Sample ID: **WBLKS-R200352** Units: **% of sample** Analysis Date: **11/10/2016 01:37 PM**
Client ID: Run ID: **MOIST_161110A** SeqNo: **4147178** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R200352** Units: **% of sample** Analysis Date: **11/10/2016 01:37 PM**
Client ID: Run ID: **MOIST_161110A** SeqNo: **4147177** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1611391-01A DUP** Units: **% of sample** Analysis Date: **11/10/2016 01:37 PM**
Client ID: **FEE99X-SS1** Run ID: **MOIST_161110A** SeqNo: **4147147** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.02	0.050	0	0	0		20.8	1.05	20	

DUP Sample ID: **1611393-03A DUP** Units: **% of sample** Analysis Date: **11/10/2016 01:37 PM**
Client ID: Run ID: **MOIST_161110A** SeqNo: **4147161** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	25.65	0.050	0	0	0		27.54	7.11	20	

The following samples were analyzed in this batch: 1611391-01A 1611391-02A

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

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH +1 513 733 5336 ☑ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1601391

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Chevron FEE 99X	A	TPH (GRO & DRO)
Work Order		Project Number	013.3287.100.100004	B	BTEX
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C	PAH (See Attached List) CO Table 910
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky	D	Electrical Conductivity
Address	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	Benzo(a)anthracene
				J	

No.	Sample Description	Date	Time	Matrix	Proc.	# bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FEE99X-SS1	11/02/16	1420	Soil	8	2	X			X	X						
2	FEE99X-SS3	11/02/16	1430	Soil	8	2	X								X		
3																	
4																	
5																	

Sampler(s): Please Print & Sign: Tim Dobransky

Shipment Method: FedEx

Required Turnaround Time: ☑ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
	11/3/16			Chevron Pricing Applies - Per Bruce Schlatter
Relinquished by:	Date: 11/3/16	Time: 1730	Received by (Laboratory):	Cooler Temp:
Logged by (Laboratory): Kau	Date: 11/4/16	Time: 1725	Checked by (Laboratory):	3.4°C

QC Package: (Check Box Below)

x	Level II: Standard QC
	Level III: Std QC + Raw Data
	Level IV: SW846 CLP-Like
	Other: _____

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

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

ALS Group, USA

Sample Receipt Checklist

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

Work Order: **1611391** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 04-Nov-16 (Date) Reviewed by: Chad Whelton (eSignature) 06-Nov-16 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4/3.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	11/4/2016 5:28:37 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:

18-Oct-2017

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

Re: **FEE 99X Resample** Work Order: **1710598**

Dear Tim,

ALS Environmental received 1 sample on 10-Oct-2017 09:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 7.

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

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group, USA

Date: 18-Oct-17

Client: Olsson Associates
Project: FEE 99X Resample
Work Order: **1710598**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1710598-01	FEE99X-SS1	Soil		10/6/2017 13:30	10/10/2017 09:30	☐

ALS Group, USA

Date: 18-Oct-17

Client: Olsson Associates
Project: FEE 99X Resample
WorkOrder: **1710598**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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
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.

Acronym	Description
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

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

ALS Group, USA

Date: *18-Oct-17*

Client: Olsson Associates
Project: FEE 99X Resample
Sample ID: FEE99X-SS1
Collection Date: 10/6/2017 01:30 PM

Work Order: 1710598
Lab ID: 1710598-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 10/13/17		Analyst: **RH**
Sodium Adsorption Ratio	**2.9**		**0.010**	**0.010**	**none**	1	10/16/2017
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 10/13/17		Analyst: **JF**
Calcium	**120**		**0.86**	**5.0**	**mg/L**	10	10/17/2017 19:00
Magnesium	**19**		**0.068**	**2.0**	**mg/L**	10	10/17/2017 19:00
Sodium	**130**		**0.34**	**2.0**	**mg/L**	10	10/17/2017 19:00
ELECTRICAL CONDUCTIVITY (SAR)		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 10/13/17		Analyst: **JB**
Electrical Conductivity @ Saturation	**1.4**		**0.028**	**0.25**	**mmhos/cm @25°**	50	10/16/2017 12:30

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

ALS Group, USA

Date: 18-Oct-17

Client: Olsson Associates

Work Order: 1710598

Project: FEE 99X Resample

QC BATCH REPORT

Batch ID: **108993** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **1710598-01ADUP** Units: **none** Analysis Date: **10/16/2017**

Client ID: **FEE99X-SS1** Run ID: **SAR_171016C** SeqNo: **4707940** Prep Date: **10/13/2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	3.271	0.010	0	0	0		2.919	11.4	50	

The following samples were analyzed in this batch: 1710598-01A

Batch ID: **108993** Instrument ID **ICPMS3** Method: **SW6020A**

DUP Sample ID: **1710598-01ADUP** Units: **mg/L** Analysis Date: **10/17/2017 07:01 PM**

Client ID: **FEE99X-SS1** Run ID: **ICPMS3_171017A** SeqNo: **4706738** Prep Date: **10/13/2017** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	123.8	5.0	0	0	0	0-0	123.9	0.034		
Magnesium	18.46	2.0	0	0	0	0-0	19.12	3.52		
Sodium	147.5	2.0	0	0	0	0-0	132.1	11		

The following samples were analyzed in this batch: 1710598-01A

Batch ID: **108993** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **1710598-01A DUP** Units: **mmhos/cm @25°** Analysis Date: **10/16/2017 12:30 PM**

Client ID: **FEE99X-SS1** Run ID: **WETCHEM_171016F** SeqNo: **4702093** Prep Date: **10/13/2017** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.39	0.25	0	0	0		1.39	0	50	

The following samples were analyzed in this batch: 1710598-01A

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

Chain of Custody Form

Page 1 of 1

COC ID: 123456

ALS Environmental

☐ Cincinnati, OH +1 513 733 5336 ☑ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1710598

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	FEE 99X Resample	A	TPH (GRO & DRO)
Work Order		Project Number	013.3287.400.400004	B	BTEX
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C	PAH (See Attached List) CO Table 910
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky	D	Electrical Conductivity
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102	E	Sodium Adsorption Ratio
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506	F	pH
Phone	970.263.7800	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@oaconsulting.com	e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FEE99X-SS1	10/06/17	1330	Soil	8	1				X	X						
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: Tim Dobransky

Shipment Method: FedEx

Required Turnaround Time: ☐ STD 10 Wk Days ☑ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
T.D	10-9-17	1130	W.M
Relinquished by:	Date:	Time:	Received by (Laboratory):
	10-9-17	1830	10/10/17 0930
Logged by (Laboratory): DFS	Date: 10/10/17	Time: 1100	Checked by (Laboratory):

Notes: Chevron Pricing Applies - Per Bruce Schlatter

Cooler Temp: SO2 3.6c

QC Package: (Check Box Below)

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

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

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

ALS Group, USA

Sample Receipt Checklist

Client Name: **OLSSON** Date/Time Received: **10-Oct-17 09:30**

Work Order: **1710598** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 10-Oct-17 (Date) Reviewed by: Chad Whelton (eSignature) 11-Oct-17 (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	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/10/2017 11:06:22 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: