

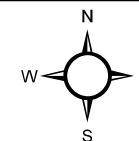


### Legend

- Spill Origin
- Other Soil Sample Location
- Spill Path

0 150 300 600 Feet

1 inch = 251 feet



PROJECT NO:	013-3287
DRAWN BY:	SBS
DATE:	07/11/2014

EMERALD 80X  
SPILL RESPONSE  
CHEVRON USA, INC  
RIO BLANCO COUNTY, COLORADO  
NENW & NWNE S36 T2N R103W



Entrada Consulting Group  
240 Mesa Avenue  
Grand Junction, CO 81501  
(970) 270-2986  
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FIGURE

1

Table 1  
Emerald 80X  
Soil Data Summary

SAMPLE SUMMARY	
Location Description	Emerald 80X
Sample Type	Soil

LABORATORY DATA SUMMARY																		
Sample ID	EM80X-SS1	EM80X-SS1	EM80X-SS1	EM80X-SS2	EM80X-SS2	EM80X-SS2	EM80X-SS3	EM80X-SS4	EM80X-SS5	EM80X-SS6	EM80X-SS7	EM80X-BG1	EM80X-BG2	EM80X-BG3	EM80X-BG4	EM80X-BG5	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	3/12/2014	7/12/2016	10/26/2017	3/12/2014	7/12/2016	10/26/2017	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014	3/12/2014		
Analytical Parameters																		
TPH																		
TPH Gasoline Range Organics	510	<9.6	NT	<3.2	NT	NT	<3.1	<3.0	<3.2	<3.3	<3.3	NT	NT	NT	NT	NT	500	mg/kg
TPH Diesel Range Organics	1200	38	NT	20	NT	NT	18.0	22	350	38	<5.4	NT	NT	NT	NT	NT		
BTEX																		
Benzene	<0.037	NT	NT	<0.039	NT	NT	<0.037	<0.035	<0.038	<0.039	<0.039	NT	NT	NT	NT	NT	0.17	mg/kg
Toluene	0.051	NT	NT	<0.039	NT	NT	<0.037	<0.035	<0.038	<0.039	<0.039	NT	NT	NT	NT	NT	85	mg/kg
Ethylbenzene	0.041	NT	NT	<0.039	NT	NT	<0.037	<0.035	<0.038	<0.039	<0.039	NT	NT	NT	NT	NT	100	mg/kg
Total Xylene	0.27	NT	NT	<0.120	NT	NT	<0.110	<0.110	<0.110	<0.120	<0.120	NT	NT	NT	NT	NT	175	mg/kg
Metals																		
Arsenic	6.8	NT	NT	7.8	NT	NT	6.8	7.7	7	8.3	8.1	6.3	11	7.2	6.2	7.1	0.39	mg/kg
Barium	260	NT	NT	230	NT	NT	190	140	220	170	240	100	NT	NT	NT	NT	15,000	mg/kg
Cadmium	<0.93	NT	NT	<0.92	NT	NT	<0.96	<0.80	<0.85	<1.0	<1.0	<0.85	NT	NT	NT	NT	70	mg/kg
Chromium	11	NT	NT	11	NT	NT	10	11	8.2	12	14	12	NT	NT	NT	NT	NA	mg/kg
Copper	13	NT	NT	13	NT	NT	12	13	10	16	17	11	NT	NT	NT	NT	3,100	mg/kg
Lead	19	NT	NT	18	NT	NT	15	17	17	18	20	13	NT	NT	NT	NT	400	mg/kg
Mercury	0.081	NT	NT	0.037	NT	NT	0.028	0.022	0.026	0.058	0.03	0.025	NT	NT	NT	NT	23	mg/kg
Nickel	17	NT	NT	17	NT	NT	14	18	14	18	21	15	NT	NT	NT	NT	1,600	mg/kg
Selenium	<2.3	NT	NT	<2.3	NT	NT	<2.4	<2.0	<2.1	<2.6	<2.5	<2.1	NT	NT	NT	NT	390	mg/kg
Silver	<2.3	NT	NT	<2.3	NT	NT	<2.4	<2.0	<2.1	<2.6	<2.5	<2.1	NT	NT	NT	NT	390	mg/kg
Zinc	76	NT	NT	74	NT	NT	64	79	61	80	87	66	NT	NT	NT	NT	23,000	mg/kg
SAR Metals Analysis																		
Calcium	590	NT	NT	520	NT	NT	220	230	120	110	78	110	NT	NT	NT	NT	NA	mg/L
Magnesium	86	NT	NT	91	NT	NT	36	53	17	21	14	20	NT	NT	NT	NT	NA	mg/L
Sodium	150	NT	NT	160	NT	NT	40	220	66	73	80	5.7	NT	NT	NT	NT	NA	mg/L
Sodium Adsorption Ratio	1.5	NT	NT	1.7	NT	NT	0.66	3.4	1.5	1.7	2.2	0.13	NT	NT	NT	NT	<12	ratio
Polynuclear Aromatic Hyrdrocarbons																		
Acenaphthene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	1,000	mg/kg
Anthracene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	2.2	mg/kg
Chrysene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	0.022	mg/kg
Fluoranthene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	1,000	mg/kg
Fluorene	0.12	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	0.22	mg/kg
Napthalene	0.31	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	23	mg/kg
Pyrene	<0.0082	NT	NT	<0.0083	NT	NT	<0.016	<0.0078	<0.0084	<0.017	<0.0086	NT	NT	NT	NT	NT	1,000	mg/kg
General Chemistry																		
Chromium, Hexavalent	<0.61	NT	NT	<0.61	NT	NT	<0.62	<0.59	<0.63	<0.64	<0.64	<0.62	NT	NT	NT	NT	23	mg/kg
Chromium, Trivalent	11	NT	NT	11	NT	NT	10	11	8.2	12	13	12	NT	NT	NT	NT	120,000	mg/kg
Specific Conductivity	4.7	6.5	1.2	4.5	4.2	0.99	1.7	3	1.1	1.1	0.8	0.66	NT	NT	NT	NT	<4 or 2 x the background	mmhos/cm
pH	7.6	NT	NT	7.7	NT	NT	7.5	7.7	8.1	7.7	8.5	8.1	NT	NT	NT	NT	6-9	su

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

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



24-Mar-2014

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

Re: **Chevron Emerald 80X 3.12.14**

Work Order: **1403682**

Dear Tim,

ALS Environmental received 12 samples on 17-Mar-2014 11:00 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 44.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
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

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Work Order:** 1403682

**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>
1403682-01	EM80X-SS1	Soil		3/12/2014 13:20	3/17/2014 11:00	<input type="checkbox"/>
1403682-02	EM80X-BG1	Soil		3/12/2014 13:35	3/17/2014 11:00	<input type="checkbox"/>
1403682-03	EM80X-SS2	Soil		3/12/2014 14:00	3/17/2014 11:00	<input type="checkbox"/>
1403682-04	EM80X-BG2	Soil		3/12/2014 14:10	3/17/2014 11:00	<input type="checkbox"/>
1403682-05	EM80X-SS3	Soil		3/12/2014 14:35	3/17/2014 11:00	<input type="checkbox"/>
1403682-06	EM80X-BG3	Soil		3/12/2014 14:45	3/17/2014 11:00	<input type="checkbox"/>
1403682-07	EM80X-SS4	Soil		3/12/2014 15:10	3/17/2014 11:00	<input type="checkbox"/>
1403682-08	EM80X-SS5	Soil		3/12/2014 15:20	3/17/2014 11:00	<input type="checkbox"/>
1403682-09	EM80X-BG4	Soil		3/12/2014 15:25	3/17/2014 11:00	<input type="checkbox"/>
1403682-10	EM80X-SS6	Soil		3/12/2014 15:35	3/17/2014 11:00	<input type="checkbox"/>
1403682-11	EM80X-SS7	Soil		3/12/2014 15:45	3/17/2014 11:00	<input type="checkbox"/>
1403682-12	EM80X-BG5	Soil		3/12/2014 16:00	3/17/2014 11:00	<input type="checkbox"/>

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**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Work Order:** 1403682

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**Case Narrative**

Batch 56707 samples 1403682-03, 1403682-05, 1403682-07 and 1403682-08 reporting limits for Metals were elevated due to dilution for high concentrations of non-target analytes.

Batch 56707 sample 1403682-09A MS/MSD recoveries for Barium and Zinc were outside of the control limits; however, the results in the parent sample were greater than 4x the spike amount. No qualification is required for Barium or Zinc. The MS/MSD recoveries for Chromium were above control limits. The corresponding result in the parent sample may be biased high for Chromium. The MSD recovery for Selenium was below control limits. Both the MS recovery and RPD met quality control criteria. No data requires qualification for Selenium.

Batch 56744 sample s1403682-10 and 11403692-11 reporting limits for Metals were elevated due to dilution for high concentrations of non-target analytes. The MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 56791 sample EM80X-SS4 MS/MSD recoveries for Hexavalent Chromium were below the control limit. The corresponding reporting limit in the parent sample may be biased low.

Batch 56643 duplicate data for pH is not related to this project's samples. No data requires qualification.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS1  
**Collection Date:** 3/12/2014 01:20 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/19/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>1,200</b>		<b>5.1</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/20/2014 11:22 AM
Surr: 4-Terphenyl-d14	62.2		39-115	%REC	1	3/20/2014 11:22 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/17/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>510</b>		<b>3.1</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/18/2014 04:09 PM
Surr: Toluene-d8	102		50-150	%REC	1	3/18/2014 04:09 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 3/20/14	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.081</b>		<b>0.018</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/20/2014 02:20 PM
<b>METALS BY ICP-MS</b>						
			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
<b>Arsenic</b>	<b>6.8</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
<b>Barium</b>	<b>260</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
Cadmium	ND		0.93	mg/Kg-dry	5	3/21/2014 05:21 PM
<b>Chromium</b>	<b>11</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
<b>Copper</b>	<b>13</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
<b>Lead</b>	<b>19</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
<b>Nickel</b>	<b>17</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
Selenium	ND		2.3	mg/Kg-dry	5	3/21/2014 05:21 PM
Silver	ND		2.3	mg/Kg-dry	5	3/21/2014 05:21 PM
<b>Zinc</b>	<b>76</b>		<b>4.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 05:21 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>590</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:06 PM
<b>Magnesium</b>	<b>86</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:06 PM
<b>Sodium</b>	<b>150</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:06 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Sodium Adsorption Ratio</b>	<b>1.5</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	3/20/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	Analyst: <b>RM</b>
Acenaphthene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Anthracene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Benzo(a)anthracene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Benzo(a)pyrene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Benzo(b)fluoranthene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Benzo(k)fluoranthene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Chrysene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Dibenzo(a,h)anthracene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Fluoranthene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS1  
**Collection Date:** 3/12/2014 01:20 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Fluorene</b>	<b>120</b>		<b>8.2</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 01:54 PM
Indeno(1,2,3-cd)pyrene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
<b>Naphthalene</b>	<b>310</b>		<b>8.2</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 01:54 PM
Pyrene	ND		8.2	µg/Kg-dry	1	3/20/2014 01:54 PM
Surr: 2-Fluorobiphenyl	68.7		12-100	%REC	1	3/20/2014 01:54 PM
Surr: 4-Terphenyl-d14	82.1		25-137	%REC	1	3/20/2014 01:54 PM
Surr: Nitrobenzene-d5	82.3		37-107	%REC	1	3/20/2014 01:54 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>			Analyst: <b>BG</b>
Benzene	ND		37	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Ethylbenzene</b>	<b>41</b>		<b>37</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:15 PM
<b>m,p-Xylene</b>	<b>190</b>		<b>74</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:15 PM
<b>o-Xylene</b>	<b>85</b>		<b>37</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:15 PM
<b>Toluene</b>	<b>51</b>		<b>37</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:15 PM
<b>Xylenes, Total</b>	<b>270</b>		<b>110</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:15 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	3/20/2014 03:15 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	3/20/2014 03:15 PM
Surr: Dibromofluoromethane	95.1		70-130	%REC	1	3/20/2014 03:15 PM
Surr: Toluene-d8	99.6		70-130	%REC	1	3/20/2014 03:15 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>4.7</b>		<b>0.050</b>	<b>mmhos/cm @25</b>	<b>10</b>	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
<b>Chromium, Trivalent</b>	<b>11</b>		<b>0.62</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/24/2014 02:32 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
<b>Chromium, Hexavalent</b>	<b>ND</b>		<b>0.61</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
<b>Moisture</b>	<b>19</b>		<b>0.050</b>	<b>% of sample</b>	<b>1</b>	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
<b>pH</b>	<b>7.6</b>			<b>s.u.</b>	<b>1</b>	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-BG1  
**Collection Date:** 3/12/2014 01:35 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>						
Mercury	0.025		SW7471 0.019	mg/Kg-dry	Prep: SW7471 / 3/20/14 1	Analyst: LR 3/20/2014 02:23 PM
<b>METALS BY ICP-MS</b>						
Arsenic	6.3		SW6020A 2.1	mg/Kg-dry	Prep: SW3050B / 3/20/14 5	Analyst: ML 3/21/2014 05:27 PM
Barium	100		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Cadmium	ND		0.85	mg/Kg-dry	5	3/21/2014 05:27 PM
Chromium	12		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Copper	11		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Lead	13		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Nickel	15		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Selenium	ND		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Silver	ND		2.1	mg/Kg-dry	5	3/21/2014 05:27 PM
Zinc	66		4.2	mg/Kg-dry	5	3/21/2014 05:27 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
Calcium	110		SW6020A 10	mg/L	Prep: USDA Method 20B / 3/21/14 20	Analyst: RH 3/21/2014 12:12 PM
Magnesium	20		4.0	mg/L	20	3/21/2014 12:12 PM
Sodium	5.7		4.0	mg/L	20	3/21/2014 12:12 PM
<b>SODIUM ADSORPTION RATIO</b>						
Sodium Adsorption Ratio	0.13		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 3/21/14 1	Analyst: RH 3/20/2014
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>						
Electrical Conductivity @ Saturation	0.66		USDA H60 METHO 0.050	mmhos/cm @25	Prep: USDA Method 20B / 3/21/14 10	Analyst: JB 3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>						
Chromium, Trivalent	12		CALCULATION 0.64	mg/Kg-dry	1	Analyst: JJG 3/24/2014 02:32 PM
<b>CHROMIUM, HEXAVALENT</b>						
Chromium, Hexavalent	ND		SW7196A 0.62	mg/Kg-dry	Prep: SW3060A / 3/20/14 1	Analyst: EE 3/21/2014 03:45 PM
<b>MOISTURE</b>						
Moisture	21		A2540 G 0.050	% of sample	1	Analyst: AT 3/17/2014 02:04 PM
<b>PH</b>						
pH	8.1		SW9045D	s.u.	Prep: EXTRACT / 3/17/14 1	Analyst: AT 3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS2  
**Collection Date:** 3/12/2014 02:00 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-03  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>20</b>		<b>5.2</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/20/2014 11:52 AM</b>
Surr: 4-Terphenyl-d14	53.6		39-115	%REC	1	3/20/2014 11:52 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>3.2</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/18/2014 04:38 PM</b>
Surr: Toluene-d8	113		50-150	%REC	1	3/18/2014 04:38 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.037</b>		<b>0.017</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/20/2014 02:25 PM</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>7.8</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
<b>Barium</b>	<b>230</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
Cadmium	ND		0.92	mg/Kg-dry	5	3/20/2014 09:39 PM
<b>Chromium</b>	<b>11</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
<b>Copper</b>	<b>13</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
<b>Lead</b>	<b>18</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
<b>Nickel</b>	<b>17</b>		<b>2.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
Selenium	ND		2.3	mg/Kg-dry	5	3/20/2014 09:39 PM
Silver	ND		2.3	mg/Kg-dry	5	3/20/2014 09:39 PM
<b>Zinc</b>	<b>74</b>		<b>4.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:39 PM</b>
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Calcium</b>	<b>520</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:23 PM</b>
<b>Magnesium</b>	<b>91</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:23 PM</b>
<b>Sodium</b>	<b>160</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:23 PM</b>
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Sodium Adsorption Ratio</b>	<b>1.7</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	<b>3/20/2014</b>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	<b>Analyst: RM</b>
Acenaphthene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Anthracene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Benzo(a)anthracene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Benzo(a)pyrene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Benzo(b)fluoranthene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Benzo(k)fluoranthene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Chrysene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Dibenzo(a,h)anthracene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Fluoranthene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS2  
**Collection Date:** 3/12/2014 02:00 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-03  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Indeno(1,2,3-cd)pyrene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Naphthalene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Pyrene	ND		8.3	µg/Kg-dry	1	3/20/2014 02:14 PM
Surr: 2-Fluorobiphenyl	64.8		12-100	%REC	1	3/20/2014 02:14 PM
Surr: 4-Terphenyl-d14	93.3		25-137	%REC	1	3/20/2014 02:14 PM
Surr: Nitrobenzene-d5	67.3		37-107	%REC	1	3/20/2014 02:14 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/17/14		Analyst: <b>AK</b>
Benzene	ND		39	µg/Kg-dry	1	3/19/2014 06:10 PM
Ethylbenzene	ND		39	µg/Kg-dry	1	3/19/2014 06:10 PM
m,p-Xylene	ND		77	µg/Kg-dry	1	3/19/2014 06:10 PM
o-Xylene	ND		39	µg/Kg-dry	1	3/19/2014 06:10 PM
Toluene	ND		39	µg/Kg-dry	1	3/19/2014 06:10 PM
Xylenes, Total	ND		120	µg/Kg-dry	1	3/19/2014 06:10 PM
Surr: 1,2-Dichloroethane-d4	87.9		70-130	%REC	1	3/19/2014 06:10 PM
Surr: 4-Bromofluorobenzene	92.0		70-130	%REC	1	3/19/2014 06:10 PM
Surr: Dibromofluoromethane	93.6		70-130	%REC	1	3/19/2014 06:10 PM
Surr: Toluene-d8	94.6		70-130	%REC	1	3/19/2014 06:10 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	4.5		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Prep: SW3060A / 3/20/14		Analyst: <b>JJG</b>
Chromium, Trivalent	11		0.64	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.61	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
Moisture	22		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	7.7			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

Client: Olsson Associates

Project: Chevron Emerald 80X 3.12.14

Sample ID: EM80X-BG2

Collection Date: 3/12/2014 02:10 PM

Work Order: 1403682

Lab ID: 1403682-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
Arsenic	11		2.2	mg/Kg-dry	5	3/20/2014 09:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	27		0.050	% of sample	1	3/17/2014 02:04 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS3  
**Collection Date:** 3/12/2014 02:35 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-05  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>18</b>		<b>10</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/20/2014 12:22 PM</b>
Surr: 4-Terphenyl-d14	61.7		39-115	%REC	1	3/20/2014 12:22 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>3.1</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/18/2014 05:03 PM</b>
Surr: Toluene-d8	116		50-150	%REC	1	3/18/2014 05:03 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.028</b>		<b>0.020</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>3/21/2014 05:07 PM</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>6.8</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
<b>Barium</b>	<b>190</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
Cadmium	ND		0.96	mg/Kg-dry	5	3/20/2014 09:51 PM
<b>Chromium</b>	<b>10</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
<b>Copper</b>	<b>12</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
<b>Lead</b>	<b>15</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
<b>Nickel</b>	<b>14</b>		<b>2.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
Selenium	ND		2.4	mg/Kg-dry	5	3/20/2014 09:51 PM
Silver	ND		2.4	mg/Kg-dry	5	3/20/2014 09:51 PM
<b>Zinc</b>	<b>64</b>		<b>4.8</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>3/20/2014 09:51 PM</b>
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Calcium</b>	<b>220</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:29 PM</b>
<b>Magnesium</b>	<b>36</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:29 PM</b>
<b>Sodium</b>	<b>40</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/21/2014 12:29 PM</b>
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Sodium Adsorption Ratio</b>	<b>0.66</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	<b>3/20/2014</b>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	<b>Analyst: RM</b>
Acenaphthene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Anthracene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Benzo(a)anthracene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Benzo(a)pyrene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Benzo(b)fluoranthene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Benzo(k)fluoranthene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Chrysene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Dibenzo(a,h)anthracene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Fluoranthene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS3  
**Collection Date:** 3/12/2014 02:35 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-05  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Indeno(1,2,3-cd)pyrene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Naphthalene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Pyrene	ND		16	µg/Kg-dry	1	3/20/2014 02:35 PM
Surr: 2-Fluorobiphenyl	67.3		12-100	%REC	1	3/20/2014 02:35 PM
Surr: 4-Terphenyl-d14	86.9		25-137	%REC	1	3/20/2014 02:35 PM
Surr: Nitrobenzene-d5	68.5		37-107	%REC	1	3/20/2014 02:35 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/17/14		Analyst: <b>RS</b>
Benzene	ND		37	µg/Kg-dry	1	3/18/2014 07:03 PM
Ethylbenzene	ND		37	µg/Kg-dry	1	3/18/2014 07:03 PM
m,p-Xylene	ND		74	µg/Kg-dry	1	3/18/2014 07:03 PM
o-Xylene	ND		37	µg/Kg-dry	1	3/18/2014 07:03 PM
Toluene	ND		37	µg/Kg-dry	1	3/18/2014 07:03 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	3/18/2014 07:03 PM
Surr: 1,2-Dichloroethane-d4	109		70-130	%REC	1	3/18/2014 07:03 PM
Surr: 4-Bromofluorobenzene	92.0		70-130	%REC	1	3/18/2014 07:03 PM
Surr: Dibromofluoromethane	100		70-130	%REC	1	3/18/2014 07:03 PM
Surr: Toluene-d8	98.2		70-130	%REC	1	3/18/2014 07:03 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.7		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Prep: SW3060A / 3/20/14		Analyst: <b>JJG</b>
Chromium, Trivalent	10		0.62	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.62	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
Moisture	19		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	7.5			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

Client: Olsson Associates

Project: Chevron Emerald 80X 3.12.14

Sample ID: EM80X-BG3

Collection Date: 3/12/2014 02:45 PM

Work Order: 1403682

Lab ID: 1403682-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
Arsenic	7.2		2.4	mg/Kg-dry	5	3/20/2014 09:57 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	16		0.050	% of sample	1	3/17/2014 02:04 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS4  
**Collection Date:** 3/12/2014 03:10 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-07  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>22</b>		<b>SW8015M</b>		Prep: SW3541 / 3/19/14	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	70.8		4.9	mg/Kg-dry	1	3/20/2014 12:52 PM
			39-115	%REC	1	3/20/2014 12:52 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep: SW5035 / 3/17/14	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	120		3.0	mg/Kg-dry	1	3/18/2014 05:29 PM
			50-150	%REC	1	3/18/2014 05:29 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.022</b>		<b>SW7471</b>		Prep: SW7471 / 3/20/14	Analyst: <b>LR</b>
			0.018	mg/Kg-dry	1	3/20/2014 02:00 PM
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>7.7</b>		<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
<b>Barium</b>	<b>140</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Cadmium</b>	<b>ND</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Chromium</b>	<b>11</b>		0.80	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Copper</b>	<b>13</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Lead</b>	<b>17</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Nickel</b>	<b>18</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Selenium</b>	<b>ND</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Silver</b>	<b>ND</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>Zinc</b>	<b>79</b>		2.0	mg/Kg-dry	5	3/20/2014 10:03 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>230</b>		10	mg/L	20	3/21/2014 12:35 PM
<b>Magnesium</b>	<b>53</b>		4.0	mg/L	20	3/21/2014 12:35 PM
<b>Sodium</b>	<b>220</b>		4.0	mg/L	20	3/21/2014 12:35 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Sodium Adsorption Ratio</b>	<b>3.4</b>		0.010	none	1	3/20/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Anthracene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Chrysene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
<b>Fluoranthene</b>	<b>ND</b>		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS4  
**Collection Date:** 3/12/2014 03:10 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-07  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
Indeno(1,2,3-cd)pyrene	ND		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
Naphthalene	ND		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
Pyrene	ND		7.8	µg/Kg-dry	1	3/20/2014 03:15 PM
Surr: 2-Fluorobiphenyl	80.2		12-100	%REC	1	3/20/2014 03:15 PM
Surr: 4-Terphenyl-d14	104		25-137	%REC	1	3/20/2014 03:15 PM
Surr: Nitrobenzene-d5	80.9		37-107	%REC	1	3/20/2014 03:15 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/17/14		Analyst: <b>RS</b>
Benzene	ND		35	µg/Kg-dry	1	3/18/2014 07:28 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	3/18/2014 07:28 PM
m,p-Xylene	ND		71	µg/Kg-dry	1	3/18/2014 07:28 PM
o-Xylene	ND		35	µg/Kg-dry	1	3/18/2014 07:28 PM
Toluene	ND		35	µg/Kg-dry	1	3/18/2014 07:28 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	3/18/2014 07:28 PM
Surr: 1,2-Dichloroethane-d4	110		70-130	%REC	1	3/18/2014 07:28 PM
Surr: 4-Bromofluorobenzene	92.0		70-130	%REC	1	3/18/2014 07:28 PM
Surr: Dibromofluoromethane	102		70-130	%REC	1	3/18/2014 07:28 PM
Surr: Toluene-d8	98.5		70-130	%REC	1	3/18/2014 07:28 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	3.0		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Prep: SW3060A / 3/20/14		Analyst: <b>JJG</b>
Chromium, Trivalent	11		0.59	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.59	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
Moisture	15		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	7.7			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS5  
**Collection Date:** 3/12/2014 03:20 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-08  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>350</b>		<b>SW8015M</b>		Prep: SW3541 / 3/19/14	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>49.5</i>		<i>21</i>	<i>mg/Kg-dry</i>	<i>4</i>	3/20/2014 01:22 PM
			<i>39-115</i>	<i>%REC</i>	<i>4</i>	3/20/2014 01:22 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep: SW5035 / 3/17/14	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>119</i>		<i>3.2</i>	<i>mg/Kg-dry</i>	<i>1</i>	3/18/2014 05:54 PM
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	3/18/2014 05:54 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.026</b>		<b>SW7471</b>		Prep: SW7471 / 3/20/14	Analyst: <b>LR</b>
			<b>0.019</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/21/2014 05:09 PM
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>7.0</b>		<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
<b>Barium</b>	<b>220</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Cadmium</b>	<b>ND</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Chromium</b>	<b>8.2</b>		<b>0.85</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Copper</b>	<b>10</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Lead</b>	<b>17</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Nickel</b>	<b>14</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Selenium</b>	<b>ND</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Silver</b>	<b>ND</b>		<b>2.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>Zinc</b>	<b>61</b>		<b>4.3</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/20/2014 10:09 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>120</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:41 PM
<b>Magnesium</b>	<b>17</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:41 PM
<b>Sodium</b>	<b>66</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:41 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
<b>Sodium Adsorption Ratio</b>	<b>1.5</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	3/20/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Anthracene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Chrysene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM
<b>Fluoranthene</b>	<b>ND</b>		<b>8.4</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:36 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS5  
**Collection Date:** 3/12/2014 03:20 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-08  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		8.4	µg/Kg-dry	1	3/20/2014 03:36 PM
Indeno(1,2,3-cd)pyrene	ND		8.4	µg/Kg-dry	1	3/20/2014 03:36 PM
Naphthalene	ND		8.4	µg/Kg-dry	1	3/20/2014 03:36 PM
Pyrene	ND		8.4	µg/Kg-dry	1	3/20/2014 03:36 PM
Surr: 2-Fluorobiphenyl	62.0		12-100	%REC	1	3/20/2014 03:36 PM
Surr: 4-Terphenyl-d14	72.8		25-137	%REC	1	3/20/2014 03:36 PM
Surr: Nitrobenzene-d5	54.9		37-107	%REC	1	3/20/2014 03:36 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>			Analyst: <b>BG</b>
Benzene	ND		38	µg/Kg-dry	1	3/20/2014 02:49 PM
Ethylbenzene	ND		38	µg/Kg-dry	1	3/20/2014 02:49 PM
m,p-Xylene	ND		76	µg/Kg-dry	1	3/20/2014 02:49 PM
o-Xylene	ND		38	µg/Kg-dry	1	3/20/2014 02:49 PM
Toluene	ND		38	µg/Kg-dry	1	3/20/2014 02:49 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	3/20/2014 02:49 PM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	3/20/2014 02:49 PM
Surr: 4-Bromofluorobenzene	99.4		70-130	%REC	1	3/20/2014 02:49 PM
Surr: Dibromofluoromethane	97.0		70-130	%REC	1	3/20/2014 02:49 PM
Surr: Toluene-d8	98.8		70-130	%REC	1	3/20/2014 02:49 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.1		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
Chromium, Trivalent	8.2		0.64	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.63	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	21		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	8.1			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-BG4  
**Collection Date:** 3/12/2014 03:25 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-09  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
Arsenic	6.2		2.1	mg/Kg-dry	5	3/20/2014 10:15 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	14		0.050	% of sample	1	3/17/2014 02:04 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS6  
**Collection Date:** 3/12/2014 03:35 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-10  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>38</b>		<b>10</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: IT</b>
Surr: 4-Terphenyl-d14	66.3		39-115	%REC	1	3/20/2014 01:52 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>3.3</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: IT</b>
Surr: Toluene-d8	118		50-150	%REC	1	3/18/2014 06:20 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.058</b>		<b>0.021</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: LR</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>8.3</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>Analyst: ML</b>
<b>Barium</b>	<b>170</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
Cadmium	ND		1.0	mg/Kg-dry	5	3/21/2014 01:58 AM
<b>Chromium</b>	<b>12</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
<b>Copper</b>	<b>16</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
<b>Lead</b>	<b>18</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
<b>Nickel</b>	<b>18</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
Selenium	ND		2.6	mg/Kg-dry	5	3/21/2014 01:58 AM
Silver	ND		2.6	mg/Kg-dry	5	3/21/2014 01:58 AM
<b>Zinc</b>	<b>80</b>		<b>5.1</b>	<b>mg/Kg-dry</b>	<b>5</b>	3/21/2014 01:58 AM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Calcium</b>	<b>110</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:47 PM
<b>Magnesium</b>	<b>21</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:47 PM
<b>Sodium</b>	<b>73</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/21/2014 12:47 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	<b>Analyst: RH</b>
<b>Sodium Adsorption Ratio</b>	<b>1.7</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	3/20/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	<b>Analyst: RM</b>
Acenaphthene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Anthracene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Benzo(a)anthracene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Benzo(a)pyrene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Benzo(b)fluoranthene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Benzo(k)fluoranthene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Chrysene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Dibenzo(a,h)anthracene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Fluoranthene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS6  
**Collection Date:** 3/12/2014 03:35 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-10  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Indeno(1,2,3-cd)pyrene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Naphthalene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Pyrene	ND		17	µg/Kg-dry	1	3/20/2014 03:56 PM
Surr: 2-Fluorobiphenyl	77.3		12-100	%REC	1	3/20/2014 03:56 PM
Surr: 4-Terphenyl-d14	95.6		25-137	%REC	1	3/20/2014 03:56 PM
Surr: Nitrobenzene-d5	76.6		37-107	%REC	1	3/20/2014 03:56 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/17/14		Analyst: <b>RS</b>
Benzene	ND		39	µg/Kg-dry	1	3/18/2014 07:52 PM
Ethylbenzene	ND		39	µg/Kg-dry	1	3/18/2014 07:52 PM
m,p-Xylene	ND		78	µg/Kg-dry	1	3/18/2014 07:52 PM
o-Xylene	ND		39	µg/Kg-dry	1	3/18/2014 07:52 PM
Toluene	ND		39	µg/Kg-dry	1	3/18/2014 07:52 PM
Xylenes, Total	ND		120	µg/Kg-dry	1	3/18/2014 07:52 PM
Surr: 1,2-Dichloroethane-d4	110		70-130	%REC	1	3/18/2014 07:52 PM
Surr: 4-Bromofluorobenzene	94.7		70-130	%REC	1	3/18/2014 07:52 PM
Surr: Dibromofluoromethane	102		70-130	%REC	1	3/18/2014 07:52 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	3/18/2014 07:52 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.1		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
Chromium, Trivalent	12		0.65	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.64	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	23		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	7.7			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS7  
**Collection Date:** 3/12/2014 03:45 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-11  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/19/14	Analyst: <b>IT</b>
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	3/20/2014 02:52 PM
Surr: 4-Terphenyl-d14	71.3		39-115	%REC	1	3/20/2014 02:52 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/17/14	Analyst: <b>IT</b>
GRO (C6-C10)	ND		3.3	mg/Kg-dry	1	3/18/2014 06:46 PM
Surr: Toluene-d8	115		50-150	%REC	1	3/18/2014 06:46 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 3/20/14	Analyst: <b>LR</b>
Mercury	0.030		0.019	mg/Kg-dry	1	3/21/2014 05:01 PM
<b>METALS BY ICP-MS</b>						
			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
Arsenic	8.1		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Barium	240		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Cadmium	ND		1.0	mg/Kg-dry	5	3/21/2014 02:04 AM
Chromium	14		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Copper	17		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Lead	20		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Nickel	21		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Selenium	ND		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Silver	ND		2.5	mg/Kg-dry	5	3/21/2014 02:04 AM
Zinc	87		5.0	mg/Kg-dry	5	3/21/2014 02:04 AM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
Calcium	78		10	mg/L	20	3/21/2014 01:10 PM
Magnesium	14		4.0	mg/L	20	3/21/2014 01:10 PM
Sodium	80		4.0	mg/L	20	3/21/2014 01:10 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/21/14	Analyst: <b>RH</b>
Sodium Adsorption Ratio	2.2		0.010	none	1	3/20/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/19/14	Analyst: <b>RM</b>
Acenaphthene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Anthracene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Benzo(a)anthracene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Benzo(a)pyrene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Benzo(b)fluoranthene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Benzo(k)fluoranthene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Chrysene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Dibenzo(a,h)anthracene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Fluoranthene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-SS7  
**Collection Date:** 3/12/2014 03:45 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-11  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Indeno(1,2,3-cd)pyrene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Naphthalene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Pyrene	ND		8.6	µg/Kg-dry	1	3/20/2014 04:16 PM
Surr: 2-Fluorobiphenyl	73.6		12-100	%REC	1	3/20/2014 04:16 PM
Surr: 4-Terphenyl-d14	93.3		25-137	%REC	1	3/20/2014 04:16 PM
Surr: Nitrobenzene-d5	72.5		37-107	%REC	1	3/20/2014 04:16 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/17/14		Analyst: <b>RS</b>
Benzene	ND		39	µg/Kg-dry	1	3/18/2014 08:17 PM
Ethylbenzene	ND		39	µg/Kg-dry	1	3/18/2014 08:17 PM
m,p-Xylene	ND		79	µg/Kg-dry	1	3/18/2014 08:17 PM
o-Xylene	ND		39	µg/Kg-dry	1	3/18/2014 08:17 PM
Toluene	ND		39	µg/Kg-dry	1	3/18/2014 08:17 PM
Xylenes, Total	ND		120	µg/Kg-dry	1	3/18/2014 08:17 PM
Surr: 1,2-Dichloroethane-d4	109		70-130	%REC	1	3/18/2014 08:17 PM
Surr: 4-Bromofluorobenzene	91.1		70-130	%REC	1	3/18/2014 08:17 PM
Surr: Dibromofluoromethane	101		70-130	%REC	1	3/18/2014 08:17 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	3/18/2014 08:17 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/21/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	0.80		0.050	mmhos/cm @25	10	3/21/2014 01:30 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
Chromium, Trivalent	13		0.66	mg/Kg-dry	1	3/24/2014 08:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/20/14		Analyst: <b>EE</b>
Chromium, Hexavalent	ND		0.64	mg/Kg-dry	1	3/21/2014 03:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	24		0.050	% of sample	1	3/17/2014 02:04 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/17/14		Analyst: <b>AT</b>
pH	8.5			s.u.	1	3/17/2014 04:35 PM

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

# ALS Group USA, Corp

Date: 24-Mar-14

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X 3.12.14  
**Sample ID:** EM80X-BG5  
**Collection Date:** 3/12/2014 04:00 PM

**Work Order:** 1403682  
**Lab ID:** 1403682-12  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 3/20/14	Analyst: <b>ML</b>
Arsenic	7.1		2.9	mg/Kg-dry	5	3/21/2014 02:10 AM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	32		0.050	% of sample	1	3/17/2014 03:29 PM

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

Client: Olsson Associates

Work Order: 1403682

Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: 56693

Instrument ID GC8

Method: SW8015M

<b>MBLK</b>		Sample ID: <b>DBLKS1-56693-56693</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 09:22 AM</b>		
Client ID:		Run ID: <b>GC8_140320B</b>				SeqNo: <b>2679131</b>		Prep Date: <b>3/19/2014</b>		DF: <b>1</b>
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	1.291	0	1.667	0	77.5	39-115	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-56693-56693</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 09:52 AM</b>		
Client ID:		Run ID: <b>GC8_140320B</b>				SeqNo: <b>2679132</b>		Prep Date: <b>3/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	136.3	4.2	166.7	0	81.8	49-124	0			
Surr: 4-Terphenyl-d14	0.9937	0	1.667	0	59.6	39-115	0			

<b>MS</b>		Sample ID: <b>1403682-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 10:22 AM</b>		
Client ID: <b>EM80X-SS1</b>		Run ID: <b>GC8_140320B</b>				SeqNo: <b>2679133</b>		Prep Date: <b>3/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1297	8.1	323.6	935.6	112	49-130	0			
Surr: 4-Terphenyl-d14	1.824	0	3.236	0	56.4	39-115	0			

<b>MSD</b>		Sample ID: <b>1403682-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 10:52 AM</b>		
Client ID: <b>EM80X-SS1</b>		Run ID: <b>GC8_140320B</b>				SeqNo: <b>2679134</b>		Prep Date: <b>3/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1161	8.2	327.4	935.6	68.8	49-130	1297	11.1	30	
Surr: 4-Terphenyl-d14	2.013	0	3.274	0	61.5	39-115	1.824	9.84	30	

The following samples were analyzed in this batch:

1403682-01B	1403682-03B	1403682-05B
1403682-07B	1403682-08B	1403682-10B
1403682-11B		

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56633** Instrument ID **GC9** Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-56633-56633</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/17/2014 06:22 PM</b>		
Client ID:		Run ID: <b>GC9_140317A</b>				SeqNo: <b>2675664</b>		Prep Date: <b>3/17/2014</b>		DF: <b>1</b>
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	5882	0	5000	0	118	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-56633-56633</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/17/2014 05:56 PM</b>		
Client ID:		Run ID: <b>GC9_140317A</b>				SeqNo: <b>2675663</b>		Prep Date: <b>3/17/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	575800	2,500	500000	0	115	70-130	0			
Surr: Toluene-d8	5168	0	5000	0	103	50-150	0			

<b>MS</b>		Sample ID: <b>1403610-02A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/17/2014 11:10 PM</b>		
Client ID:		Run ID: <b>GC9_140317A</b>				SeqNo: <b>2675675</b>		Prep Date: <b>3/17/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	495800	2,500	500000	0	99.2	70-130	0			
Surr: Toluene-d8	5134	0	5000	0	103	50-150	0			

<b>MSD</b>		Sample ID: <b>1403610-02A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/17/2014 11:36 PM</b>		
Client ID:		Run ID: <b>GC9_140317A</b>				SeqNo: <b>2675676</b>		Prep Date: <b>3/17/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	472100	2,500	500000	0	94.4	70-130	495800	4.91	30	
Surr: Toluene-d8	5108	0	5000	0	102	50-150	5134	0.508	30	

The following samples were analyzed in this batch:

1403682-01A	1403682-03A	1403682-05A
1403682-07A	1403682-08A	1403682-10A
1403682-11A		

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56733** Instrument ID **HG1** Method: **SW7471**

MBLK				Sample ID: MBLK-56733-56733				Units: mg/Kg			Analysis Date: 3/20/2014 01:34 PM			
Client ID:				Run ID: HG1_140320A				SeqNo: 2679028			Prep Date: 3/20/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Mercury		0.001	0.020								J			

LCS				Sample ID: LCS-56733-56733				Units: mg/Kg			Analysis Date: 3/20/2014 01:36 PM			
Client ID:				Run ID: HG1_140320A				SeqNo: 2679029			Prep Date: 3/20/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Mercury		0.162	0.020	0.1665	0	97.3	80-120	0						

MS				Sample ID: 1403682-07BMS			Units: mg/Kg		Analysis Date: 3/20/2014 02:02 PM		
Client ID: EM80X-SS4				Run ID: HG1_140320A			SeqNo: 2679036		Prep Date: 3/20/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.1427	0.015	0.1265	0.01854	98.2	75-125	0				

MSD		Sample ID: 1403682-07BMSD				Units: mg/Kg		Analysis Date: 3/20/2014 02:04 PM		
Client ID: EM80X-SS4		Run ID: HG1_140320A				SeqNo: 2679037		Prep Date: 3/20/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1473	0.015	0.1277	0.01854	101	75-125	0.1427	3.17	35	

The following samples were analyzed in this batch:

1403682-01B	1403682-02A	1403682-03B
1403682-05B	1403682-07B	1403682-08B
1403682-10B	1403682-11B	

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56707** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK				Sample ID: MBLK-56707-56707				Units: mg/Kg		Analysis Date: 3/20/2014 05:49 PM	
Client ID:			Run ID: ICPMS1_140320A			SeqNo: 2679401		Prep Date: 3/20/2014		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	0.009155	0.10								J	
Chromium	ND	0.25									
Copper	ND	0.25									
Lead	ND	0.25									
Nickel	ND	0.25									
Selenium	0.072	0.25								J	
Silver	0.002412	0.25								J	
Zinc	ND	0.50									

LCS					Sample ID: LCS-56707-56707			Units: mg/Kg		Analysis Date: 3/20/2014 05:55 PM		
Client ID:			Run ID: ICPMS1_140320A			SeqNo: 2679402		Prep Date: 3/20/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	4.588	0.25	5	0	91.8	80-120	0					
Barium	4.769	0.25	5	0	95.4	80-120	0					
Cadmium	4.735	0.10	5	0	94.7	80-120	0					
Chromium	4.694	0.25	5	0	93.9	80-120	0					
Copper	4.739	0.25	5	0	94.8	80-120	0					
Lead	4.793	0.25	5	0	95.9	80-120	0					
Nickel	4.628	0.25	5	0	92.6	80-120	0					
Selenium	4.306	0.25	5	0	86.1	80-120	0					
Silver	4.592	0.25	5	0	91.8	80-120	0					
Zinc	4.526	0.50	5	0	90.5	80-120	0					

MS					Sample ID: 1403682-09AMS		Units: mg/Kg		Analysis Date: 3/20/2014 10:27 PM		
Client ID: EM80X-BG4			Run ID: ICPMS1_140320A		SeqNo: 2679469		Prep Date: 3/20/2014		DF: 5		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	11.49	1.8	7.289	5.273	85.4	75-125	0				
Barium	92.2	1.8	7.289	87.02	71.1	75-125	0			SO	
Cadmium	6.378	0.73	7.289	0.1998	84.8	75-125	0				
Chromium	17.91	1.8	7.289	8.562	128	75-125	0			S	
Copper	15.55	1.8	7.289	10.01	76	75-125	0				
Lead	17.59	1.8	7.289	12.04	76	75-125	0				
Nickel	17.79	1.8	7.289	11.84	81.7	75-125	0				
Selenium	7.773	1.8	7.289	1.56	85.3	75-125	0				
Silver	5.911	1.8	7.289	0.05154	80.4	75-125	0				
Zinc	61.95	3.6	7.289	57.25	64.6	75-125	0			SO	

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56707**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1403682-09AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 10:33 PM</b>		
Client ID: <b>EM80X-BG4</b>		Run ID: <b>ICPMS1_140320A</b>				SeqNo: <b>2679470</b>		Prep Date: <b>3/20/2014</b>		DF: <b>5</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.49	1.8	7.205	5.273	86.4	75-125	11.49	0.00685	25	
Barium	91.21	1.8	7.205	87.02	58.2	75-125	92.2	1.08	25	SO
Cadmium	6.481	0.72	7.205	0.1998	87.2	75-125	6.378	1.6	25	
Chromium	18.06	1.8	7.205	8.562	132	75-125	17.91	0.815	25	S
Copper	15.43	1.8	7.205	10.01	75.1	75-125	15.55	0.809	25	
Lead	17.47	1.8	7.205	12.04	75.4	75-125	17.59	0.643	25	
Nickel	17.67	1.8	7.205	11.84	81	75-125	17.79	0.669	25	
Selenium	6.898	1.8	7.205	1.56	74.1	75-125	7.773	11.9	25	S
Silver	5.803	1.8	7.205	0.05154	79.8	75-125	5.911	1.84	25	
Zinc	60.09	3.6	7.205	57.25	39.4	75-125	61.95	3.06	25	SO

The following samples were analyzed in this batch:

1403682-01B	1403682-02A	1403682-03B
1403682-04A	1403682-05B	1403682-06A
1403682-07B	1403682-08B	1403682-09A

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56744**      Instrument ID **ICPMS1**      Method: **SW6020A**

MBLK				Sample ID: <b>MBLK-56744-56744</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 10:57 PM</b>	
Client ID:				Run ID: <b>ICPMS1_140320A</b>			SeqNo: <b>2679474</b>		Prep Date: <b>3/20/2014</b>	
							DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	0.007115	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	0.002206	0.25								J
Nickel	ND	0.25								
Selenium	0.04118	0.25								J
Silver	0.001388	0.25								J
Zinc	0.1382	0.50								J

LCS				Sample ID: <b>LCS-56744-56744</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 11:03 PM</b>	
Client ID:				Run ID: <b>ICPMS1_140320A</b>			SeqNo: <b>2679475</b>		Prep Date: <b>3/20/2014</b>	
							DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.636	0.25	5	0	92.7	80-120	0			
Barium	4.87	0.25	5	0	97.4	80-120	0			
Cadmium	4.8	0.10	5	0	96	80-120	0			
Chromium	4.845	0.25	5	0	96.9	80-120	0			
Copper	4.792	0.25	5	0	95.8	80-120	0			
Lead	4.856	0.25	5	0	97.1	80-120	0			
Nickel	4.868	0.25	5	0	97.4	80-120	0			
Selenium	4.736	0.25	5	0	94.7	80-120	0			
Silver	4.795	0.25	5	0	95.9	80-120	0			
Zinc	4.664	0.50	5	0	93.3	80-120	0			

MS				Sample ID: <b>1403304-04AMS</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 11:33 PM</b>	
Client ID:				Run ID: <b>ICPMS1_140320A</b>			SeqNo: <b>2679480</b>		Prep Date: <b>3/20/2014</b>	
							DF: <b>5</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.608	1.9	7.541	2.27	97.3	75-125	0			
Barium	56.49	1.9	7.541	49.47	93.1	75-125	0			O
Cadmium	7.617	0.75	7.541	0.0962	99.7	75-125	0			
Chromium	23.45	1.9	7.541	10.88	167	75-125	0			S
Copper	18.18	1.9	7.541	10.03	108	75-125	0			
Lead	18.95	1.9	7.541	10.75	109	75-125	0			
Nickel	17.47	1.9	7.541	9.13	111	75-125	0			
Selenium	8.454	1.9	7.541	1.453	92.8	75-125	0			
Silver	7.07	1.9	7.541	0.03444	93.3	75-125	0			
Zinc	49.59	3.8	7.541	35.32	189	75-125	0			SO

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56744**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1403304-04AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/20/2014 11:39 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140320A</b>				SeqNo: <b>2679481</b>		Prep Date: <b>3/20/2014</b>		DF: <b>5</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.26	1.9	7.68	2.27	117	75-125	9.608	15.9	25	
Barium	72.89	1.9	7.68	49.47	305	75-125	56.49	25.4	25	SRO
Cadmium	8.452	0.77	7.68	0.0962	109	75-125	7.617	10.4	25	
Chromium	26.46	1.9	7.68	10.88	203	75-125	23.45	12.1	25	S
Copper	21.12	1.9	7.68	10.03	144	75-125	18.18	15	25	S
Lead	20.78	1.9	7.68	10.75	131	75-125	18.95	9.18	25	S
Nickel	20.41	1.9	7.68	9.13	147	75-125	17.47	15.5	25	S
Selenium	9.236	1.9	7.68	1.453	101	75-125	8.454	8.84	25	
Silver	7.7	1.9	7.68	0.03444	99.8	75-125	7.07	8.52	25	
Zinc	55.65	3.8	7.68	35.32	265	75-125	49.59	11.5	25	SO

The following samples were analyzed in this batch:      1403682-10B      1403682-11B      1403682-12A

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56779** Instrument ID **SAR** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1403682-02BDUP</b>				Units: <b>none</b>		Analysis Date: <b>3/20/2014</b>		
Client ID: <b>EM80X-BG1</b>		Run ID: <b>SAR_140320A</b>				SeqNo: <b>2680373</b>		Prep Date: <b>3/21/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.1181	0.010	0	0	0		0.1324	11.5	50	

The following samples were analyzed in this batch:

1403682-01C	1403682-02B	1403682-03C
1403682-05C	1403682-07C	1403682-08C
1403682-10C	1403682-11C	

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56692** Instrument ID **SVMS8** Method: **SW8270**

Sample ID: <b>SBLKS1-56692-56692</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>3/20/2014 11:52 AM</b>			
Client ID:		Run ID: <b>SVMS8_140320A</b>			SeqNo: <b>2680490</b>		Prep Date: <b>3/19/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	<i>1189</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>71.3</i>	<i>12-100</i>	<i>0</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>1643</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>98.6</i>	<i>25-137</i>	<i>0</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>1247</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>74.8</i>	<i>37-107</i>	<i>0</i>			

LCS		Sample ID: SLCSS1-56692-56692				Units: µg/Kg		Analysis Date: 3/20/2014 12:12 PM		
Client ID:		Run ID: SVMS8_140320A			SeqNo: 2680491		Prep Date: 3/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	498.7	6.7	666.7	0	74.8	45-110	0			
Anthracene	614.7	6.7	666.7	0	92.2	55-105	0			
Benzo(a)anthracene	606	6.7	666.7	0	90.9	50-110	0			
Benzo(a)pyrene	615.3	6.7	666.7	0	92.3	50-110	0			
Benzo(b)fluoranthene	587.7	6.7	666.7	0	88.1	45-115	0			
Benzo(k)fluoranthene	589.7	6.7	666.7	0	88.4	45-115	0			
Chrysene	595.7	6.7	666.7	0	89.3	55-110	0			
Dibenzo(a,h)anthracene	592	6.7	666.7	0	88.8	40-125	0			
Fluoranthene	574.3	6.7	666.7	0	86.1	55-115	0			
Fluorene	518.7	6.7	666.7	0	77.8	50-110	0			
Indeno(1,2,3-cd)pyrene	622.7	6.7	666.7	0	93.4	40-120	0			
Naphthalene	445.7	6.7	666.7	0	66.8	40-105	0			
Pyrene	624.3	6.7	666.7	0	93.6	45-125	0			
Surr: 2-Fluorobiphenyl	1079	0	1667	0	64.8	12-100	0			
Surr: 4-Terphenyl-d14	1643	0	1667	0	98.6	25-137	0			
Surr: Nitrobenzene-d5	1183	0	1667	0	71	37-107	0			

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56692** Instrument ID **SVMS8** Method: **SW8270**

MS				Sample ID: 1403676-01B MS			Units: µg/Kg		Analysis Date: 3/20/2014 12:32 PM		
Client ID:			Run ID: SVMS8_140320A			SeqNo: 2680492		Prep Date: 3/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	932.4	13	1321	0	70.6	45-110	0				
Anthracene	1150	13	1321	0	87	55-105	0				
Benzo(a)anthracene	1164	13	1321	0	88.1	50-110	0				
Benzo(a)pyrene	1199	13	1321	0	90.8	50-110	0				
Benzo(b)fluoranthene	1137	13	1321	0	86.1	45-115	0				
Benzo(k)fluoranthene	1149	13	1321	0	87	45-115	0				
Chrysene	1124	13	1321	0	85.1	55-110	0				
Dibenzo(a,h)anthracene	1105	13	1321	0	83.6	40-125	0				
Fluoranthene	1117	13	1321	0	84.5	55-115	0				
Fluorene	1026	13	1321	0	77.7	50-110	0				
Indeno(1,2,3-cd)pyrene	1238	13	1321	0	93.7	40-120	0				
Naphthalene	906.7	13	1321	0	68.6	40-105	0				
Pyrene	1140	13	1321	0	86.3	45-125	0				
Surr: 2-Fluorobiphenyl	2299	0	3302	0	69.6	12-100	0				
Surr: 4-Terphenyl-d14	3030	0	3302	0	91.8	25-137	0				
Surr: Nitrobenzene-d5	2521	0	3302	0	76.4	37-107	0				

MSD				Sample ID: 1403676-01B MSD				Units: µg/Kg		Analysis Date: 3/20/2014 12:53 PM	
Client ID:			Run ID: SVMS8_140320A			SeqNo: 2680493		Prep Date: 3/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	943.5	13	1301	0	72.5	45-110	932.4	1.17	30		
Anthracene	1124	13	1301	0	86.4	55-105	1150	2.23	30		
Benzo(a)anthracene	1156	13	1301	0	88.8	50-110	1164	0.69	30		
Benzo(a)pyrene	1178	13	1301	0	90.5	50-110	1199	1.81	30		
Benzo(b)fluoranthene	1128	13	1301	0	86.6	45-115	1137	0.845	30		
Benzo(k)fluoranthene	1122	13	1301	0	86.2	45-115	1149	2.41	30		
Chrysene	1097	13	1301	0	84.3	55-110	1124	2.43	30		
Dibenzo(a,h)anthracene	1133	13	1301	0	87.1	40-125	1105	2.56	30		
Fluoranthene	1101	13	1301	0	84.6	55-115	1117	1.42	30		
Fluorene	1016	13	1301	0	78.1	50-110	1026	0.968	30		
Indeno(1,2,3-cd)pyrene	1241	13	1301	0	95.3	40-120	1238	0.211	30		
Naphthalene	890.8	13	1301	0	68.4	40-105	906.7	1.77	30		
Pyrene	1142	13	1301	0	87.7	45-125	1140	0.185	30		
Surr: 2-Fluorobiphenyl	2320	0	3253	0	71.3	12-100	2299	0.931	40		
Surr: 4-Terphenyl-d14	3020	0	3253	0	92.8	25-137	3030	0.333	40		
Surr: Nitrobenzene-d5	2443	0	3253	0	75.1	37-107	2521	3.14	40		

The following samples were analyzed in this batch:

1403682-01B	1403682-03B	1403682-05B
1403682-07B	1403682-08B	1403682-10B
1403682-11B		

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56635** Instrument ID **VMS9** Method: **SW8260B**

MBLK				Sample ID: MBLK-56635-56635				Units: µg/Kg			Analysis Date: 3/18/2014 02:35 AM			
Client ID:				Run ID: VMS9_140317B				SeqNo: 2676163			Prep Date: 3/17/2014		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	1030	0	1000	0	103	70-130		0						
Surr: 4-Bromofluorobenzene	950.5	0	1000	0	95	70-130		0						
Surr: Dibromofluoromethane	983	0	1000	0	98.3	70-130		0						
Surr: Toluene-d8	1007	0	1000	0	101	70-130		0						

LCS				Sample ID: LCS-56635-56635			Units: µg/Kg		Analysis Date: 3/18/2014 12:57 PM		
Client ID:			Run ID: VMS9_140317B			SeqNo: 2676164		Prep Date: 3/17/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	985.5	30	1000	0	98.6	75-125	0				
Ethylbenzene	951.5	30	1000	0	95.2	75-125	0				
m,p-Xylene	1878	60	2000	0	93.9	80-125	0				
o-Xylene	971	30	1000	0	97.1	75-125	0				
Toluene	1010	30	1000	0	101	70-125	0				
Xylenes, Total	2850	90	3000	0	95	75-125	0				
Surr: 1,2-Dichloroethane-d4	1042	0	1000	0	104	70-130	0				
Surr: 4-Bromofluorobenzene	1032	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	1017	0	1000	0	102	70-130	0				
Surr: Toluene-d8	1008	0	1000	0	101	70-130	0				

MS				Sample ID: 1403682-03A MS			Units: µg/Kg		Analysis Date: 3/19/2014 08:40 PM		
Client ID: EM80X-SS2			Run ID: VMS7_140319A			SeqNo: 2678545		Prep Date: 3/17/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1063	30	1000	0	106	75-125		0			
Ethylbenzene	987.5	30	1000	0	98.8	75-125		0			
m,p-Xylene	1994	60	2000	23.5	98.5	80-125		0			
o-Xylene	1044	30	1000	0	104	75-125		0			
Toluene	1164	30	1000	0	116	70-125		0			
Xylenes, Total	3037	90	3000	24	100	75-125		0			
Surr: 1,2-Dichloroethane-d4	860	0	1000	0	86	70-130		0			
Surr: 4-Bromofluorobenzene	943.5	0	1000	0	94.4	70-130		0			
Surr: Dibromofluoromethane	962.5	0	1000	0	96.2	70-130		0			
Surr: Toluene-d8	970.5	0	1000	0	97	70-130		0			

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

# QC BATCH REPORT

Batch ID: **56635**      Instrument ID **VMS9**      Method: **SW8260B**

MSD				Sample ID: 1403682-03A MSD			Units: µg/Kg		Analysis Date: 3/19/2014 09:07 PM	
Client ID: EM80X-SS2				Run ID: VMS7_140319A			SeqNo: 2678546		Prep Date: 3/17/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	961	30	1000	0	96.1	75-125	1063	10.1	30	
Ethylbenzene	903.5	30	1000	0	90.4	75-125	987.5	8.88	30	
m,p-Xylene	1752	60	2000	23.5	86.4	80-125	1994	12.9	30	
o-Xylene	916.5	30	1000	0	91.6	75-125	1044	13	30	
Toluene	920	30	1000	0	92	70-125	1164	23.5	30	
Xylenes, Total	2668	90	3000	24	88.2	75-125	3037	12.9	30	
Surr: 1,2-Dichloroethane-d4	842	0	1000	0	84.2	70-130	860	2.12	30	
Surr: 4-Bromofluorobenzene	992	0	1000	0	99.2	70-130	943.5	5.01	30	
Surr: Dibromofluoromethane	943.5	0	1000	0	94.4	70-130	962.5	1.99	30	
Surr: Toluene-d8	943	0	1000	0	94.3	70-130	970.5	2.87	30	

The following samples were analyzed in this batch:

1403682-01A	1403682-03A	1403682-05A
1403682-07A	1403682-08A	1403682-10A
1403682-11A		

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **R137435** Instrument ID **VMS5** Method: **SW8260**

MBLK				Sample ID: VBLKW1-140320-R137435				Units: µg/L		Analysis Date: 3/20/2014 12:12 PM	
Client ID:			Run ID: VMS5_140320A			SeqNo: 2679306		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	ND	2.0									
o-Xylene	ND	1.0									
Toluene	ND	1.0									
Xylenes, Total	ND	3.0									
Surr: 1,2-Dichloroethane-d4	20.81	0	20	0	104	70-120		0			
Surr: 4-Bromofluorobenzene	19.62	0	20	0	98.1	75-120		0			
Surr: Dibromofluoromethane	19.45	0	20	0	97.2	85-115		0			
Surr: Toluene-d8	19.89	0	20	0	99.4	85-120		0			

LCS				Sample ID: VLCSW1-140320-R137435				Units: µg/L		Analysis Date: 3/20/2014 11:20 AM	
Client ID:		Run ID: VMS5_140320A				SeqNo: 2679305		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	18.77	1.0	20	0	93.8	80-120	0				
Ethylbenzene	18.36	1.0	20	0	91.8	75-125	0				
m,p-Xylene	36.5	2.0	40	0	91.2	75-130	0				
o-Xylene	18.13	1.0	20	0	90.6	80-120	0				
Toluene	18.3	1.0	20	0	91.5	75-120	0				
Xylenes, Total	54.63	3.0	60	0	91	75-130	0				
Surr: 1,2-Dichloroethane-d4	20.12	0	20	0	101	70-120	0				
Surr: 4-Bromofluorobenzene	20.18	0	20	0	101	75-120	0				
Surr: Dibromofluoromethane	19.89	0	20	0	99.4	85-115	0				
Surr: Toluene-d8	19.5	0	20	0	97.5	85-120	0				

MS					Sample ID: 1403849-05A MS			Units: µg/L		Analysis Date: 3/20/2014 09:20 PM	
Client ID:			Run ID: VMS5_140320A			SeqNo: 2679314		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	19.18	1.0	20	0	95.9	80-120	0				
Ethylbenzene	19.21	1.0	20	0	96	75-125	0				
m,p-Xylene	37.7	2.0	40	0	94.2	75-130	0				
o-Xylene	18.63	1.0	20	0	93.2	80-120	0				
Toluene	18.51	1.0	20	0	92.6	75-120	0				
Xylenes, Total	56.33	3.0	60	0	93.9	75-130	0				
Surr: 1,2-Dichloroethane-d4	20.48	0	20	0	102	70-120	0				
Surr: 4-Bromofluorobenzene	21.12	0	20	0	106	75-120	0				
Surr: Dibromofluoromethane	19.48	0	20	0	97.4	85-115	0				
Surr: Toluene-d8	19.74	0	20	0	98.7	85-120	0				

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **R137435**      Instrument ID **VMS5**      Method: **SW8260**

MSD				Sample ID: 1403849-05A MSD				Units: µg/L		Analysis Date: 3/20/2014 09:45 PM	
Client ID:			Run ID: VMS5_140320A			SeqNo: 2679315		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	18.54	1.0	20	0	92.7	80-120	19.18	3.39	30		
Ethylbenzene	19.06	1.0	20	0	95.3	75-125	19.21	0.784	30		
m,p-Xylene	38.11	2.0	40	0	95.3	75-130	37.7	1.08	30		
o-Xylene	18.76	1.0	20	0	93.8	80-120	18.63	0.695	30		
Toluene	18.22	1.0	20	0	91.1	75-120	18.51	1.58	30		
Xylenes, Total	56.87	3.0	60	0	94.8	75-130	56.33	0.954	30		
Surr: 1,2-Dichloroethane-d4	20.27	0	20	0	101	70-120	20.48	1.03	30		
Surr: 4-Bromofluorobenzene	20.96	0	20	0	105	75-120	21.12	0.76	30		
Surr: Dibromofluoromethane	19.54	0	20	0	97.7	85-115	19.48	0.308	30		
Surr: Toluene-d8	19.74	0	20	0	98.7	85-120	19.74	0	30		

The following samples were analyzed in this batch:      1403682-01A      1403682-08A

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56643**      Instrument ID **WETCHEM**      Method: **SW9045D**

LCS		Sample ID: LCS-56643-56643				Units: s.u.		Analysis Date: 3/17/2014 04:35 PM			
Client ID:		Run ID: WETCHEM_140317Q				SeqNo: 2675060		Prep Date: 3/17/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH      3.99      0      4      0      99.8      90-110      0

DUP		Sample ID: 1403624-01A DUP					Units: s.u.		Analysis Date: 3/17/2014 04:35 PM		
Client ID:		Run ID: WETCHEM_140317Q			SeqNo: 2675107		Prep Date: 3/17/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH      7.42      0      0      0      0      0-0      7.38      0.541      20      H

DUP		Sample ID: 1403676-01B DUP					Units: s.u.		Analysis Date: 3/17/2014 04:35 PM		
Client ID:			Run ID: WETCHEM_140317Q			SeqNo: 2675108		Prep Date: 3/17/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH      8.21      0      0      0      0      0-0      8.14      0.856      20

The following samples were analyzed in this batch:

1403682-01B	1403682-02A	1403682-03B
1403682-05B	1403682-07B	1403682-08B
1403682-10B	1403682-11B	

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56779** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1403682-02B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>3/21/2014 01:30 PM</b>		
Client ID: <b>EM80X-BG1</b>		Run ID: <b>WETCHEM_140321F</b>				SeqNo: <b>2680482</b>		Prep Date: <b>3/21/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.697	0.050	0	0	0		0.661	5.3	50	

The following samples were analyzed in this batch:

1403682-01C	1403682-02B	1403682-03C
1403682-05C	1403682-07C	1403682-08C
1403682-10C	1403682-11C	

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **56791**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-56791-56791</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 03:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140321Q</b>				SeqNo: <b>2680785</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>		Sample ID: <b>LCS-56791-56791</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 03:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140321Q</b>				SeqNo: <b>2680786</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2.144      0.50      2      0      107      80-120      0

<b>MS</b>		Sample ID: <b>1403682-07B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 03:45 PM</b>		
Client ID: <b>EM80X-SS4</b>		Run ID: <b>WETCHEM_140321Q</b>				SeqNo: <b>2680794</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.052      0.50      1.984      0      53      75-125      0      S

<b>MS</b>		Sample ID: <b>1403682-07B MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 03:45 PM</b>		
Client ID: <b>EM80X-SS4</b>		Run ID: <b>WETCHEM_140321Q</b>				SeqNo: <b>2680796</b>		Prep Date: <b>3/20/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      925.6      49      1026      0      90.2      75-125      0

<b>MSD</b>		Sample ID: <b>1403682-07B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 03:45 PM</b>		
Client ID: <b>EM80X-SS4</b>		Run ID: <b>WETCHEM_140321Q</b>				SeqNo: <b>2680795</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.151      0.50      1.992      0      57.8      75-125      1.052      9.06      20      S

The following samples were analyzed in this batch:

1403682-01B	1403682-02A	1403682-03B
1403682-05B	1403682-07B	1403682-08B
1403682-10B	1403682-11B	

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

Client: Olsson Associates  
 Work Order: 1403682  
 Project: Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **R137298** Instrument ID **MOIST** Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R137298</b>				Units: % of sample		Analysis Date: <b>3/17/2014 02:04 PM</b>		
Client ID:		Run ID: <b>MOIST_140317A</b>				SeqNo: <b>2675861</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

<b>LCS</b>		Sample ID: <b>LCS-R137298</b>				Units: % of sample		Analysis Date: <b>3/17/2014 02:04 PM</b>		
Client ID:		Run ID: <b>MOIST_140317A</b>				SeqNo: <b>2675860</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1403676-01B DUP</b>				Units: % of sample		Analysis Date: <b>3/17/2014 02:04 PM</b>		
Client ID:		Run ID: <b>MOIST_140317A</b>				SeqNo: <b>2675847</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 9.57 0.050 0 0 0 0-0 9.86 2.99 20

<b>DUP</b>		Sample ID: <b>1403682-02A DUP</b>				Units: % of sample		Analysis Date: <b>3/17/2014 02:04 PM</b>		
Client ID: <b>EM80X-BG1</b>		Run ID: <b>MOIST_140317A</b>				SeqNo: <b>2675850</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 23.25 0.050 0 0 0 0-0 21.46 8.01 20

The following samples were analyzed in this batch:

1403682-01B	1403682-02A	1403682-03B
1403682-04A	1403682-05B	1403682-06A
1403682-07B	1403682-08B	1403682-09A
1403682-10B	1403682-11B	

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

**Client:** Olsson Associates  
**Work Order:** 1403682  
**Project:** Chevron Emerald 80X 3.12.14

## QC BATCH REPORT

Batch ID: **R137299**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R137299</b>				Units: % of sample		Analysis Date: <b>3/17/2014 03:29 PM</b>		
Client ID:		Run ID: <b>MOIST_140317B</b>				SeqNo: <b>2675869</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R137299</b>				Units: % of sample		Analysis Date: <b>3/17/2014 03:29 PM</b>		
Client ID:		Run ID: <b>MOIST_140317B</b>				SeqNo: <b>2675868</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1403682-12A DUP</b>				Units: % of sample		Analysis Date: <b>3/17/2014 03:29 PM</b>		
Client ID: <b>EM80X-BG5</b>		Run ID: <b>MOIST_140317B</b>				SeqNo: <b>2675867</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      30.96      0.050      0      0      0      0-0      32.23      4.02      20

The following samples were analyzed in this batch:

1403682-12A

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



**Environmental**

# Chain of Custody Form

Page 1 of 1

COC ID: 123456

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Cincinnati, OH<br>+1 513 733 5336   | <input checked="" type="checkbox"/> Holland, MI<br>+1 616 399 6070 | <input type="checkbox"/> Salt Lake City, UT<br>+1 801 266 7700 |
| <input type="checkbox"/> Everett, WA<br>+1 425 356 2600      | <input type="checkbox"/> Houston, TX<br>+1 281 530 5656            | <input type="checkbox"/> Spring City, PA<br>+1 610 948 4903    |
| <input type="checkbox"/> Fort Collins, CO<br>+1 970 490 1511 | <input type="checkbox"/> Middletown, PA<br>+1 717 944 5541         | <input type="checkbox"/> York, PA<br>+1 717 505 5280           |

<b>ALS Project Manager:</b>		<b>Work Order #</b>		<b>11403682</b>														
<b>Customer Information</b>		<b>Project Information</b>		<b>Parameter/Method Request for Analysis</b>														
Purchase Order		Project Name	Chevron Emerald 80X	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@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	EM80X-SS1	03/12/14	1320	Soil	8	3	X	X	X	X	X	X	X					
	EM80X-BG1	03/12/14	1335	Soil	8	2				X	X	X	X					
3	EM80X-SS2	03/12/14	1400	Soil	8	3	X	X	X	X	X	X	X					
4	EM80X-BG2	03/12/14	1410	Soil	8	1									X			
5	EM80X-SS3	03/12/14	1435	Soil	8	3	X	X	X	X	X	X	X					
6	EM80X-BG3	03/12/14	1445	Soil	8	1									X			
7	EM80X-SS4	03/12/14	1510	Soil	8	3	X	X	X	X	X	X	X					
8	EM80X-SS5	03/12/14	1520	Soil	8	3	X	X	X	X	X	X	X					
9	EM80X-BG4	03/12/14	1525	Soil	8	1									X			
10	EM80X-SS6	03/12/14	1535	Soil	8	3	X	X	X	X	X	X	X					
11	EM80X-SS7	03/12/14	1545	Soil	8	3	X	X	X	X	X	X	X					
12	EM80X-BG5	03/12/14	1600	Soil	8	1									X			
Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:										
Relinquished by: 		Date: 3/13/14	Time: 1630	Received by: 		Notes: Chevron Pricing Applies - Per Bruce Schlatter												
Relinquished by: 		Date: 3/17/14	Time: 1100	Received by (Laboratory): 		QC Package: (Check Box Below)												
Logged by (Laboratory): 		Date: 3/17/14	Time: 1100	Shipped by (Laboratory): 		<input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:												
Preservative Key: 1:HCL 2:HNO3 3:H2SO4 4:NaOH 5:Na2S2O3 6:NaHSO4 7:Other 8:40000000 9:5035																		

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

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Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **17-Mar-14 11:00**

Work Order: **1403682**

Received by: **KRW**

Checklist completed by <u>Keith Wurenga</u>	17-Mar-14	Reviewed by: <u>Ann Preston</u>	18-Mar-14
eSignature	Date	eSignature	Date

Matrices: **Soil**

Carrier name: **ALSHN**

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>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>3/17/2014 11:18:35 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



28-Jul-2016

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

Re: **Chevron Emerald 80X**

Work Order: **1607695**

Dear Tim,

ALS Environmental received 2 samples on 14-Jul-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 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 11.

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 998501

## Report of Laboratory Analysis

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

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X  
**Work Order:** 1607695

## 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>
1607695-01	EM80X-SS1	Soil		7/12/2016 14:15	7/14/2016	<input type="checkbox"/>
1607695-01	EM80X-SS1	Soil		7/12/2016 14:15	7/14/2016 09:30	<input type="checkbox"/>
1607695-02	EM80X-SS2	Soil		7/12/2016 14:20	7/14/2016 09:30	<input type="checkbox"/>

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X  
**WorkOrder:** 1607695

## **QUALIFIERS, ACRONYMS, UNITS**

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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius

# ALS Group USA, Corp

Date: 28-Jul-16

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X  
**Sample ID:** EM80X-SS1  
**Collection Date:** 7/12/2016 02:15 PM

**Work Order:** 1607695  
**Lab ID:** 1607695-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>38</b>		<b>SW8015M</b>		Prep: SW3546 / 7/18/16	Analyst: <b>RM</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>67.7</i>		<b>9.6</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/18/2016 10:27 PM
			<b>39-133</b>	<b>%REC</b>	<b>1</b>	7/18/2016 10:27 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015D</b>		Prep: SW5035 / 7/15/16	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>102</i>		<b>3.5</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/15/2016 02:50 PM
			<b>50-150</b>	<b>%REC</b>	<b>1</b>	7/15/2016 02:50 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>						
<b>Electrical Conductivity @ Saturation</b>	<b>6.5</b>		<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 7/18/16	Analyst: <b>JB</b>
			<b>0.050</b>	<b>mmhos/cm @2</b>	<b>10</b>	7/20/2016 01:00 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>16</b>		<b>SW3550C</b>			Analyst: <b>EDL</b>
			<b>0.050</b>	<b>% of sample</b>	<b>1</b>	7/18/2016 07:51 PM

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

## ALS Group USA, Corp

Date: 28-Jul-16

**Client:** Olsson Associates  
**Project:** Chevron Emerald 80X  
**Sample ID:** EM80X-SS2  
**Collection Date:** 7/12/2016 02:20 PM

**Work Order:** 1607695  
**Lab ID:** 1607695-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 7/18/16		
Electrical Conductivity @ Saturation	4.2		0.050	mmhos/cm @2	10	Analyst: <b>JB</b> 7/20/2016 01:00 PM

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

Client: Olsson Associates

## QC BATCH REPORT

Work Order: 1607695

Project: Chevron Emerald 80X

Batch ID: 88719

Instrument ID GC8

Method: SW8015M

<b>MBLK</b>		Sample ID: <b>DBLKS1-88719-88719</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2016 08:27 PM</b>		
Client ID:		Run ID: <b>GC8_160718A</b>				SeqNo: <b>3930573</b>		Prep Date: <b>7/18/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	8.3								
Surr: 4-Terphenyl-d14	2.31	0	3.333	0	69.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-88719-88719</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2016 08:57 PM</b>		
Client ID:		Run ID: <b>GC8_160718A</b>				SeqNo: <b>3930574</b>		Prep Date: <b>7/18/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	266.7	8.3	333.3	0	80	61-109	0			
Surr: 4-Terphenyl-d14	2.095	0	3.333	0	62.9	39-133	0			

<b>MS</b>		Sample ID: <b>1607695-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2016 09:27 PM</b>		
Client ID: <b>EM80X-SS1</b>		Run ID: <b>GC8_160718A</b>				SeqNo: <b>3930575</b>		Prep Date: <b>7/18/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	245.7	8.3	332.4	32.28	64.2	48-110	0			
Surr: 4-Terphenyl-d14	2.191	0	3.324	0	65.9	39-133	0			

<b>MSD</b>		Sample ID: <b>1607695-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2016 09:57 PM</b>		
Client ID: <b>EM80X-SS1</b>		Run ID: <b>GC8_160718A</b>				SeqNo: <b>3930576</b>		Prep Date: <b>7/18/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	237.6	8.1	322.8	32.28	63.6	48-110	245.7	3.36	30	
Surr: 4-Terphenyl-d14	1.993	0	3.228	0	61.7	39-133	2.191	9.46	30	

The following samples were analyzed in this batch: 1607695-01A

**Client:** Olsson Associates  
**Work Order:** 1607695  
**Project:** Chevron Emerald 80X

## QC BATCH REPORT

Batch ID: **88674** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>1607695-02A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>7/20/2016 01:00 PM</b>		
Client ID: <b>EM80X-SS2</b>		Run ID: <b>WETCHEM_160720F</b>				SeqNo: <b>3932778</b>		Prep Date: <b>7/18/2016</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.16	0.050	0	0	0		4.22	1.43	50	

The following samples were analyzed in this batch:

1607695-01B	1607695-02A
-------------	-------------

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

**Client:** Olsson Associates  
**Work Order:** 1607695  
**Project:** Chevron Emerald 80X

## QC BATCH REPORT

Batch ID: **R191796** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R191796				Units: % of sample		Analysis Date: 7/18/2016 07:51 PM		
Client ID:		Run ID: MOIST_160718E				SeqNo: 3929933		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-R191796				Units: % of sample		Analysis Date: 7/18/2016 07:51 PM		
Client ID:		Run ID: MOIST_160718E			SeqNo: 3929932		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: 1607705-01A DUP					Units: % of sample		Analysis Date: 7/18/2016 07:51 PM		
Client ID:		Run ID: MOIST_160718E			SeqNo: 3929920		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	20.65	0.050	0	0	0		21.93	6.01	20		

DUP		Sample ID: 1607705-06A DUP					Units: % of sample		Analysis Date: 7/18/2016 07:51 PM		
Client ID:		Run ID: MOIST_160718E			SeqNo: 3929926		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	12.2	0.050	0	0	0		12.78	4.64	20		

The following samples were analyzed in this batch:

1607695-01A

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



# Chain of Custody Form

Page 1 of 1

COC ID: 123456

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Cincinnati, OH<br>+1 513 733 5336   | <input checked="" type="checkbox"/> Holland, MI<br>+1 616 399 6070 | <input type="checkbox"/> Salt Lake City, UT<br>+1 801 266 7700 |
| <input type="checkbox"/> Everett, WA<br>+1 425 356 2600      | <input type="checkbox"/> Houston, TX<br>+1 281 530 5656            | <input type="checkbox"/> Spring City, PA<br>+1 610 948 4903    |
| <input type="checkbox"/> Fort Collins, CO<br>+1 970 490 1511 | <input type="checkbox"/> Middletown, PA<br>+1 717 944 5541         | <input type="checkbox"/> York, PA<br>+1 717 505 5280           |

ALS Project Manager:

Work Order #: 1607695

Customer Information		Project Information		Parameter/Method Request for Analysis														
Purchase Order		Project Name	Chevron Emerald 80X	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 810													
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 81508	F	pH													
Phone	970.263.7800	Phone	970.263.7800	G	Metals (See Attached List) CO Table 810													
Fax	970.263.7456	Fax	970.263.7456	H	Arsenic Only													
E-Mail Address	tdobransk@olssonconsulting.com	E-Mail Address		I														
				J														
No.	Sample Description	Date	Time	Matrix	Pres.	# Reps	A	B	C	D	E	F	G	H	I	J	Hold	
1	EM80X-SS1	07/12/16	1415	Soil	8	2	X			X								
	EM80X-SS2	07/12/16	1420	Soil	8	1				X								
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Signatures: Please Print & Sign Tim Dobransky		Shipment Method: FedEx	Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date:
Requisitioned By: <i>[Signature]</i> Date: <u>7-13-16</u> Time: <u>1:00</u>	Received by: <i>[Signature]</i> Date: <u>7/14/16</u> Time: <u>11:35</u>	Notes: Chevron Pricing Applies - Per Bruce Schletter		
Logged by (Laboratory): <i>[Signature]</i> Date: <u>7/14/16</u> Time: <u>11:35</u>	Checked by (Laboratory): <i>[Signature]</i> Date: <u>7/14/16</u> Time: <u>11:35</u>	Cooler Temp.: <u>2.8°C</u>	QC Package: (Check Box Below) <input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				

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

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ORIGIN ID: RLA (616) 298-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81635  
 UNITED STATES US

SHIP DATE: 13 JUL 16  
 ACTWGT: 67.00 LB  
 CAD: 22648400 NET 3730  
 DIMS: 24x15x15 IN  
 BILL SENDER

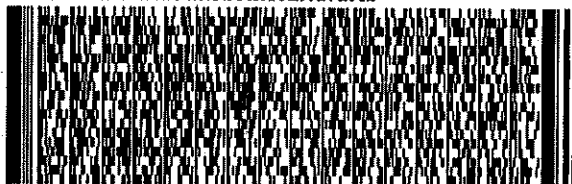
TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

(616) 399-6070  
 NV  
 PO: PARACHUTE

REF: 071316-1

DEPT:



FedEx  
 Express



REL#  
 3785346

2 of 2

MPS# 7767 4107 3980

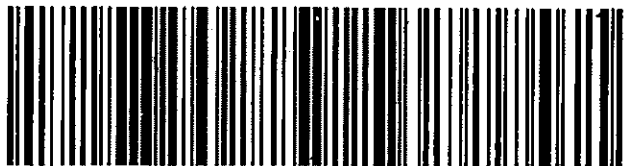
Mstr# 7767 4107 4380

0201

THU - 14 JUL 10:30A  
 PRIORITY OVERNIGHT

**XX HLMA**

49424  
 GRR  
 MO-US



540115080727F

**After printing this label:**

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

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

<b>ALS Environmental</b> 3352 128th Avenue Holland, Michigan 49424 Tel. +1 616 399 6070 Fax. +1 616 399 6185	<b>CUSTODY SEAL</b> Date: 7/13/16 Time: 10:30 AM Name: [Signature] Company: [Signature]		Seal Broken? Yes <input type="checkbox"/> No <input type="checkbox"/>
			Bill to:

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **14-Jul-16 09:30**

Work Order: **1607695**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

14-Jul-16  
Date

Reviewed by: Chad Whelton  
eSignature

15-Jul-16  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.8/2.8 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/14/2016 11:41:36 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



17-Nov-2017

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

Re: **Emerald 80X Resampling**

Work Order: **17102055**

Dear Tim,

ALS Environmental received 2 samples on 31-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 8.

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager

Certificate No: MN 998501

### Report of Laboratory Analysis

ADDRESS 3352 128th 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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** Olsson Associates  
**Project:** Emerald 80X Resampling  
**Work Order:** 17102055

**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>
17102055-01	EM80X-SS1	Soil		10/26/2017 11:40	10/31/2017 09:30	<input type="checkbox"/>
17102055-02	EM80X-SS2	Soil		10/26/2017 11:50	10/31/2017 09:30	<input type="checkbox"/>

**Client:** Olsson Associates  
**Project:** Emerald 80X Resampling  
**WorkOrder:** 17102055

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius

## ALS Group, USA

Date: 17-Nov-17

**Client:** Olsson Associates  
**Project:** Emerald 80X Resampling  
**Sample ID:** EM80X-SS1  
**Collection Date:** 10/26/2017 11:40 AM

**Work Order:** 17102055  
**Lab ID:** 17102055-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>				Method: <b>USDA H60 METHOD 2</b>	Prep: USDA Method 20B / 11/6/17		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.2		0.011	0.10	mmhos/cm @25°	20	11/6/2017 15:10

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

## ALS Group, USA

Date: 17-Nov-17

**Client:** Olsson Associates  
**Project:** Emerald 80X Resampling  
**Sample ID:** EM80X-SS2  
**Collection Date:** 10/26/2017 11:50 AM

**Work Order:** 17102055  
**Lab ID:** 17102055-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>				Method: <b>USDA H60 METHOD 2</b>	Prep: USDA Method 20B / 11/6/17		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	0.99		0.011	0.10	mmhos/cm @25°	20	11/6/2017 15:10

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

Client: Olsson Associates

Work Order: 17102055

Project: Emerald 80X Resampling

## QC BATCH REPORT

Batch ID: 110104

Instrument ID WETCHEM

Method: USDA H60 Metho

DUP		Sample ID: 17102053-05A DUP				Units: mmhos/cm @25°		Analysis Date: 11/6/2017 03:10 PM		
Client ID:		Run ID: WETCHEM_171106G				SeqNo: 4743258		Prep Date: 11/6/2017		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.922	0.10	0	0	0		0.894	3.08	50	

The following samples were analyzed in this batch:

17102055-01A	17102055-02A
--------------	--------------



**Environmental**

# Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH  
+1 513 733 5336

☐ Everett, WA  
+1 425 356 2600

☐ Fort Collins, CO  
+1 970 490 1511

☒ Holland, MI  
+1 616 399 6070

☐ Houston, TX  
+1 281 530 5656

☐ Middletown, PA  
+1 717 944 5541

☐ Salt Lake City, UT  
+1 801 266 7700

☐ Spring City, PA  
+1 610 948 4903

☐ York, PA  
+1 717 505 5280

Customer Information		Project Information					Parameter/Method Request for Analysis												
Purchase Order		Project Name	Emerald 80X Resampling					A TPH (GRO & DRO)											
Work Order		Project Number	013.3257.400.400004					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@olssonassoc.com	e-Mail Address	tdobransky@olssonassoc.com					I											
								J											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	EM80X-SS1	10/26/17	1140	Soil	8	1				X									
2	EM80X-SS2	10/26/17	1150	Soil	8	1				X									
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:	Date: 10/30/17	Time: 1200	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter			
Relinquished by:	Date: 10/30/17	Time: 1830	Received by (Laboratory):	Cooler Temp. 4.2°C			
Logged by (Laboratory):	Date: 10/31/17	Time: 1530	Checked by (Laboratory):	QC Package: (Check Box Below)			
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				<input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:			

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

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Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **31-Oct-17 09:30**

Work Order: **17102055**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

31-Oct-17  
Date

Reviewed by: Chad Whelton  
eSignature

02-Nov-17  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/31/2017 3:32:19 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:

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: