

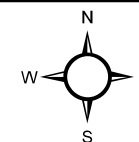


# Legend

- Soil Sample Location
- Spill Path
- ▨ Spill Path Area

0 50 100 200 Feet

1 inch = 108 feet



PROJECT NO:	013-3287
DRAWN BY:	SBS
DATE:	07/14/2014

KITTY FAIRFIELD B1  
SPILL RESPONSE  
CHEVRON USA, INC  
RIO BLANCO COUNTY, COLORADO  
NWNW S17 T2N R102W



Entrada Consulting Group  
240 Mesa Avenue  
Grand Junction, CO 81501  
(970) 270-2986  
www.entradainc.com

FIGURE

1

Table 1  
Kitty Fairfield B1  
Soil Data Summary

SAMPLE SUMMARY	
Location Description	Kitty Fairfield B1
Sample Type	Soil

LABORATORY DATA SUMMARY													
Sample ID	KFB1-SS1	KFB1-SS1	KFB1-SS2	KFB1-SS2	KFB1-SS3	KFB1-SS3	KFB1-SS4	KFB1-BG1	KFB1-BG2	KFB1-BG3	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS	
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"			
Sample Date	6/17/2014	10/12/2017	6/17/2014	10/12/2017	6/17/2014	10/12/2017	6/17/2014	6/17/2014	6/17/2014	6/17/2014			
Analytical Parameters													
TPH													
TPH Gasoline Range Organics	<2.5	NT	<2.8	NT	<2.8	NT	<3.0	NT	NT	NT	500	mg/kg	
TPH Diesel Range Organics	18	NT	35	NT	110	NT	29	NT	NT	NT			
BTEX													
Benzene	<0.030	NT	<0.034	NT	<0.034	NT	<0.036	NT	NT	NT	0.17	mg/kg	
Toluene	<0.030	NT	<0.034	NT	<0.034	NT	<0.036	NT	NT	NT	85	mg/kg	
Ethylbenzene	<0.030	NT	<0.034	NT	<0.034	NT	<0.036	NT	NT	NT	100	mg/kg	
Total Xylene	<0.091	NT	<0.10	NT	<0.10	NT	<0.110	NT	NT	NT	175	mg/kg	
Metals													
Arsenic	6.5	NT	6.7	NT	6.2	NT	6.9	6.5	6.2	6.3	0.39	mg/kg	
Barium	220	NT	350	NT	110	NT	890	110	NT	NT	15,000	mg/kg	
Cadmium	<0.78	NT	<0.74	NT	<0.80	NT	<0.82	<0.69	NT	NT	70	mg/kg	
Chromium	13.00	NT	14	NT	14	NT	14	13	NT	NT	NA	mg/kg	
Copper	8.1	NT	12	NT	12	NT	12	11	NT	NT	3,100	mg/kg	
Lead	11.0	NT	19	NT	17	NT	19	17	NT	NT	400	mg/kg	
Mercury	0.14	NT	0.029	NT	0.035	NT	0.021	0.019	NT	NT	23	mg/kg	
Nickel	16	NT	18	NT	17	NT	17	16	NT	NT	1,600	mg/kg	
Selenium	<2.0	NT	2.7	NT	2.9	NT	2.4	2.4	NT	NT	390	mg/kg	
Silver	<2.0	NT	<1.8	NT	<2.0	NT	<2.0	<1.7	NT	NT	390	mg/kg	
Zinc	49	NT	84	NT	74	NT	80	72	NT	NT	23,000	mg/kg	
SAR Metals Analysis													
Calcium	2300	74	99	85	350	76	190	160	NT	NT	NA	mg/L	
Magnesium	460	25	15	20	54	19	40	32	NT	NT	NA	mg/L	
Sodium	6400	270	1500	21	3800	27	160	80	NT	NT	NA	mg/L	
Sodium Adsorption Ratio	32	6.9	36	0.54	51	0.71	2.7	1.5	NT	NT	<12	ratio	
Polynuclear Aromatic Hydrocarbons													
Acenaphthene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	1,000	mg/kg	
Anthracene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	1,000	mg/kg	
Benzo(a)anthracene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	0.22	mg/kg	
Benzo(a)pyrene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	0.022	mg/kg	
Benzo(b)fluoranthene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	0.22	mg/kg	
Benzo(k)fluoranthene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	2.2	mg/kg	
Chrysene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	22	mg/kg	
Dibenzo(a,h)anthracene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	0.022	mg/kg	
Fluoranthene	0.017	NT	0.018	NT	<0.0073	NT	<0.0079	NT	NT	NT	1,000	mg/kg	
Fluorene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	1,000	mg/kg	
Indeno(1,2,3-cd)pyrene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	0.22	mg/kg	
Napthalene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	23	mg/kg	
Pyrene	<0.0067	NT	<0.0074	NT	<0.0073	NT	<0.0079	NT	NT	NT	1,000	mg/kg	
General Chemistry													
Chromium, Hexavalent	<0.51	NT	<0.56	NT	<0.55	NT	<0.59	<0.52	NT	NT	23	mg/kg	
Chromium, Trivalent	12	NT	14	NT	14	NT	14	13	NT	NT	120,000	mg/kg	
Specific Conductivity	53	2.0	8.1	0.74	25	0.72	1.6	1.0	NT	NT	<4 or 2 x the background	mmhos/cm	
pH	7.6	NT	8.2	NT	8.1	NT	8.2	8.3	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



30-Jun-2014

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

Re: **Chevron Kitty Fairfield Spill 6.17.14**

Work Order: **14061125**

Dear Tim,

ALS Environmental received 7 samples on 20-Jun-2014 for the analyses presented in the following report.

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

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

The total number of pages in this report is 34.

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

Sincerely,

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 

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RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** Olsson Associates  
**Project:** Chevron Kitty Fairfield Spill 6.17.14  
**Work Order:** 14061125

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**Work Order Sample Summary**

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<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>
14061125-01	KFB1-SS1	Soil		6/17/2014 14:00	6/20/2014 09:30	<input type="checkbox"/>
14061125-02	KFB1-BG1	Soil		6/17/2014 14:05	6/20/2014 09:30	<input type="checkbox"/>
14061125-03	KFB1-SS2	Soil		6/17/2014 14:15	6/20/2014 09:30	<input type="checkbox"/>
14061125-04	KFB1-BG2	Soil		6/17/2014 14:20	6/20/2014 09:30	<input type="checkbox"/>
14061125-05	KFB1-SS3	Soil		6/17/2014 14:30	6/20/2014 09:30	<input type="checkbox"/>
14061125-06	KFB1-BG3	Soil		6/17/2014 14:35	6/20/2014 09:30	<input type="checkbox"/>
14061125-07	KFB1-SS4	Soil		6/17/2014 14:45	6/20/2014 09:30	<input type="checkbox"/>

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**Client:** Olsson Associates  
**Project:** Chevron Kitty Fairfield Spill 6.17.14  
**Work Order:** 14061125

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**Case Narrative**

Batch 59952 sample KFB1-SS4 RPD for SAR was above control limits. No data requires qualification.

Batch 59971 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 59993 sample 14061125-07 PAH surrogate recovery was low due to matrix interference. The reporting limits may be biased low for PAHs.

<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: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS1

Collection Date: 6/17/2014 02:00 PM

Work Order: 14061125

Lab ID: 14061125-01

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>18</b>		<b>SW8015M</b>		Prep: SW3541 / 6/23/14	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>65.0</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	<i>6/24/2014 09:32 PM</i>
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep: SW5035 / 6/23/14	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>103</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	<i>6/23/2014 11:03 PM</i>
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.14</b>		<b>SW7471</b>		Prep: SW7471 / 6/23/14	Analyst: <b>LR</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>6.5</b>		<b>SW6020A</b>		Prep: SW3050B / 6/23/14	Analyst: <b>ML</b>
<b>Barium</b>	<b>220</b>					
<b>Cadmium</b>	<b>ND</b>					
<b>Chromium</b>	<b>13</b>					
<b>Copper</b>	<b>8.1</b>					
<b>Lead</b>	<b>11</b>					
<b>Nickel</b>	<b>16</b>					
<b>Selenium</b>	<b>ND</b>					
<b>Silver</b>	<b>ND</b>					
<b>Zinc</b>	<b>49</b>					
<b>SOLUBLE CATIONS FOR SAR</b>						
<b>Calcium</b>	<b>2,300</b>		<b>SW6020A</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>RH</b>
<b>Magnesium</b>	<b>460</b>					
<b>Sodium</b>	<b>6,400</b>					
<b>SODIUM ADSORPTION RATIO</b>						
<b>Sodium Adsorption Ratio</b>	<b>32</b>		<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>ML</b>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>Acenaphthene</b>	<b>ND</b>		<b>SW8270</b>		Prep: SW3541 / 6/24/14	Analyst: <b>RM</b>
<b>Anthracene</b>	<b>ND</b>					
<b>Benzo(a)anthracene</b>	<b>ND</b>					
<b>Benzo(a)pyrene</b>	<b>ND</b>					
<b>Benzo(b)fluoranthene</b>	<b>ND</b>					
<b>Benzo(k)fluoranthene</b>	<b>ND</b>					
<b>Chrysene</b>	<b>ND</b>					
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>					
<b>Fluoranthene</b>	<b>17</b>					

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS1

Collection Date: 6/17/2014 02:00 PM

Work Order: 14061125

Lab ID: 14061125-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		6.7	µg/Kg-dry	1	6/26/2014 04:24 PM
Indeno(1,2,3-cd)pyrene	ND		6.7	µg/Kg-dry	1	6/26/2014 04:24 PM
Naphthalene	ND		6.7	µg/Kg-dry	1	6/26/2014 04:24 PM
Pyrene	ND		6.7	µg/Kg-dry	1	6/26/2014 04:24 PM
Surr: 2-Fluorobiphenyl	70.7		12-100	%REC	1	6/26/2014 04:24 PM
Surr: 4-Terphenyl-d14	101		25-137	%REC	1	6/26/2014 04:24 PM
Surr: Nitrobenzene-d5	61.5		37-107	%REC	1	6/26/2014 04:24 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/23/14		Analyst: <b>BG</b>
Benzene	ND		30	µg/Kg-dry	1	6/26/2014 07:36 AM
Ethylbenzene	ND		30	µg/Kg-dry	1	6/26/2014 07:36 AM
m,p-Xylene	ND		61	µg/Kg-dry	1	6/26/2014 07:36 AM
o-Xylene	ND		30	µg/Kg-dry	1	6/26/2014 07:36 AM
Toluene	ND		30	µg/Kg-dry	1	6/26/2014 07:36 AM
Xylenes, Total	ND		91	µg/Kg-dry	1	6/26/2014 07:36 AM
Surr: 1,2-Dichloroethane-d4	90.2		70-130	%REC	1	6/26/2014 07:36 AM
Surr: 4-Bromofluorobenzene	95.2		70-130	%REC	1	6/26/2014 07:36 AM
Surr: Dibromofluoromethane	94.0		70-130	%REC	1	6/26/2014 07:36 AM
Surr: Toluene-d8	99.6		70-130	%REC	1	6/26/2014 07:36 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/26/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	53		0.050	mmhos/cm @25	10	6/27/2014 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>EE</b>
Chromium, Trivalent	12		0.51	mg/Kg-dry	1	6/25/2014 04:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/24/14		Analyst: <b>JI</b>
Chromium, Hexavalent	ND		0.51	mg/Kg-dry	1	6/24/2014 04:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	1.6		0.050	% of sample	1	6/23/2014 10:10 AM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/23/14		Analyst: <b>AT</b>
pH	7.6			s.u.	1	6/23/2014 04:06 PM

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



# ALS Group USA, Corp

Date: 30-Jun-14

**Client:** Olsson Associates  
**Project:** Chevron Kitty Fairfield Spill 6.17.14  
**Sample ID:** KFB1-BG1  
**Collection Date:** 6/17/2014 02:05 PM

**Work Order:** 14061125  
**Lab ID:** 14061125-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>						
Mercury	0.019		SW7471 0.015	mg/Kg-dry	Prep: SW7471 / 6/26/14 1	Analyst: LR 6/26/2014 09:09 PM
<b>METALS BY ICP-MS</b>						
Arsenic	6.5		SW6020A 1.7	mg/Kg-dry	Prep: SW3050B / 6/23/14 5	Analyst: ML 6/24/2014 07:26 PM
Barium	110		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Cadmium	ND		0.69	mg/Kg-dry	5	6/24/2014 07:26 PM
Chromium	13		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Copper	11		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Lead	17		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Nickel	16		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Selenium	2.4		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Silver	ND		1.7	mg/Kg-dry	5	6/24/2014 07:26 PM
Zinc	72		6.9	mg/Kg-dry	5	6/24/2014 07:26 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
Calcium	160		SW6020A 10	mg/L	Prep: USDA Method 20B / 6/26/14 20	Analyst: RH 6/30/2014 10:03 AM
Magnesium	32		4.0	mg/L	20	6/30/2014 10:03 AM
Sodium	80		4.0	mg/L	20	6/30/2014 10:03 AM
<b>SODIUM ADSORPTION RATIO</b>						
Sodium Adsorption Ratio	1.5		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 6/26/14 1	Analyst: ML 6/29/2014
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>						
Electrical Conductivity @ Saturation	1.0		USDA H60 METHO 0.050	mmhos/cm @25	Prep: USDA Method 20B / 6/26/14 10	Analyst: JB 6/27/2014 12:00 PM
<b>CHROMIUM, TRIVALENT</b>						
Chromium, Trivalent	13		CALCULATION 0.52	mg/Kg-dry	1	Analyst: EE 6/25/2014 04:15 PM
<b>CHROMIUM, HEXAVALENT</b>						
Chromium, Hexavalent	ND		SW7196A 0.52	mg/Kg-dry	Prep: SW3060A / 6/24/14 1	Analyst: JI 6/24/2014 04:45 PM
<b>MOISTURE</b>						
Moisture	3.7		A2540 G 0.050	% of sample	1	Analyst: TM 6/23/2014 10:10 AM
<b>PH</b>						
pH	8.3		SW9045D	s.u.	Prep: EXTRACT / 6/23/14 1	Analyst: AT 6/23/2014 04:06 PM

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS2

Collection Date: 6/17/2014 02:15 PM

Work Order: 14061125

Lab ID: 14061125-03

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>35</b>		<b>SW8015M</b>		Prep: SW3541 / 6/24/14	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>74.6</i>		<i>4.6</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>6/25/2014 12:19 PM</i>
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	<i>6/25/2014 12:19 PM</i>
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep: SW5035 / 6/23/14	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>102</i>		<i>2.8</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>6/23/2014 11:29 PM</i>
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	<i>6/23/2014 11:29 PM</i>
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.029</b>		<b>SW7471</b>		Prep: SW7471 / 6/26/14	Analyst: <b>LR</b>
			<i>0.017</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 09:12 PM</i>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>6.7</b>		<b>SW6020A</b>		Prep: SW3050B / 6/23/14	Analyst: <b>ML</b>
<b>Barium</b>	<b>350</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Cadmium</b>	<b>ND</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Chromium</b>	<b>14</b>		<i>0.74</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Copper</b>	<b>12</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Lead</b>	<b>19</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Nickel</b>	<b>18</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Selenium</b>	<b>2.7</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Silver</b>	<b>ND</b>		<i>1.8</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>Zinc</b>	<b>84</b>		<i>7.4</i>	<i>mg/Kg-dry</i>	<i>5</i>	<i>6/24/2014 07:32 PM</i>
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>99</b>		<i>10</i>	<i>mg/L</i>	<i>20</i>	<i>6/30/2014 10:09 AM</i>
<b>Magnesium</b>	<b>15</b>		<i>4.0</i>	<i>mg/L</i>	<i>20</i>	<i>6/30/2014 10:09 AM</i>
<b>Sodium</b>	<b>1,500</b>		<i>4.0</i>	<i>mg/L</i>	<i>20</i>	<i>6/30/2014 10:09 AM</i>
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>ML</b>
<b>Sodium Adsorption Ratio</b>	<b>36</b>		<i>0.010</i>	<i>none</i>	<i>1</i>	<i>6/29/2014</i>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 6/24/14	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Anthracene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Benzo(a)anthracene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Benzo(a)pyrene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Chrysene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>
<b>Fluoranthene</b>	<b>18</b>		<i>7.4</i>	<i>µg/Kg-dry</i>	<i>1</i>	<i>6/26/2014 04:44 PM</i>

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS2

Collection Date: 6/17/2014 02:15 PM

Work Order: 14061125

Lab ID: 14061125-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.4	µg/Kg-dry	1	6/26/2014 04:44 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	6/26/2014 04:44 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	6/26/2014 04:44 PM
Pyrene	ND		7.4	µg/Kg-dry	1	6/26/2014 04:44 PM
Surr: 2-Fluorobiphenyl	67.5		12-100	%REC	1	6/26/2014 04:44 PM
Surr: 4-Terphenyl-d14	87.1		25-137	%REC	1	6/26/2014 04:44 PM
Surr: Nitrobenzene-d5	56.0		37-107	%REC	1	6/26/2014 04:44 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/23/14		Analyst: <b>BG</b>
Benzene	ND		34	µg/Kg-dry	1	6/26/2014 08:02 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	6/26/2014 08:02 AM
m,p-Xylene	ND		67	µg/Kg-dry	1	6/26/2014 08:02 AM
o-Xylene	ND		34	µg/Kg-dry	1	6/26/2014 08:02 AM
Toluene	ND		34	µg/Kg-dry	1	6/26/2014 08:02 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/26/2014 08:02 AM
Surr: 1,2-Dichloroethane-d4	91.6		70-130	%REC	1	6/26/2014 08:02 AM
Surr: 4-Bromofluorobenzene	96.3		70-130	%REC	1	6/26/2014 08:02 AM
Surr: Dibromofluoromethane	92.6		70-130	%REC	1	6/26/2014 08:02 AM
Surr: Toluene-d8	101		70-130	%REC	1	6/26/2014 08:02 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/26/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	8.1		0.050	mmhos/cm @25	10	6/27/2014 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>EE</b>
Chromium, Trivalent	14		0.56	mg/Kg-dry	1	6/25/2014 04:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/24/14		Analyst: <b>JI</b>
Chromium, Hexavalent	ND		0.56	mg/Kg-dry	1	6/24/2014 04:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	11		0.050	% of sample	1	6/23/2014 10:10 AM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/23/14		Analyst: <b>AT</b>
pH	8.2			s.u.	1	6/23/2014 04:06 PM

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

**ALS Group USA, Corp****Date:** 30-Jun-14**Client:** Olsson Associates**Project:** Chevron Kitty Fairfield Spill 6.17.14**Work Order:** 14061125**Sample ID:** KFB1-BG2**Lab ID:** 14061125-04**Collection Date:** 6/17/2014 02:20 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 6/23/14	Analyst: <b>ML</b>
Arsenic	6.2		1.9	mg/Kg-dry	5	6/24/2014 07:38 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	0.21		0.050	% of sample	1	6/23/2014 10:10 AM

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS3

Collection Date: 6/17/2014 02:30 PM

Work Order: 14061125

Lab ID: 14061125-05

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>110</b>		<b>18</b>	<b>mg/Kg-dry</b>	<b>4</b>	<b>Analyst: IT</b>
Surr: 4-Terphenyl-d14	58.2		39-133	%REC	4	6/25/2014 03:48 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>2.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: IT</b>
Surr: Toluene-d8	104		50-150	%REC	1	6/23/2014 11:54 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.035</b>		<b>0.014</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: LR</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>6.2</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>Analyst: ML</b>
<b>Barium</b>	<b>110</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
Cadmium	ND		0.80	mg/Kg-dry	5	6/24/2014 08:02 PM
<b>Chromium</b>	<b>14</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
<b>Copper</b>	<b>12</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
<b>Lead</b>	<b>17</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
<b>Nickel</b>	<b>17</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
<b>Selenium</b>	<b>2.9</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
Silver	ND		2.0	mg/Kg-dry	5	6/24/2014 08:02 PM
<b>Zinc</b>	<b>74</b>		<b>8.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	6/24/2014 08:02 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 6/26/14	<b>Analyst: RH</b>
<b>Calcium</b>	<b>350</b>		<b>100</b>	<b>mg/L</b>	<b>200</b>	6/30/2014 10:35 AM
<b>Magnesium</b>	<b>54</b>		<b>40</b>	<b>mg/L</b>	<b>200</b>	6/30/2014 10:35 AM
<b>Sodium</b>	<b>3,800</b>		<b>40</b>	<b>mg/L</b>	<b>200</b>	6/30/2014 10:35 AM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/26/14	<b>Analyst: ML</b>
<b>Sodium Adsorption Ratio</b>	<b>51</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	6/29/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 6/24/14	<b>Analyst: RM</b>
Acenaphthene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Anthracene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Benzo(a)anthracene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Benzo(a)pyrene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Benzo(b)fluoranthene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Benzo(k)fluoranthene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Chrysene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Dibenzo(a,h)anthracene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Fluoranthene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS3

Collection Date: 6/17/2014 02:30 PM

Work Order: 14061125

Lab ID: 14061125-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Indeno(1,2,3-cd)pyrene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Naphthalene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Pyrene	ND		7.3	µg/Kg-dry	1	6/26/2014 05:05 PM
Surr: 2-Fluorobiphenyl	60.1		12-100	%REC	1	6/26/2014 05:05 PM
Surr: 4-Terphenyl-d14	80.6		25-137	%REC	1	6/26/2014 05:05 PM
Surr: Nitrobenzene-d5	39.5		37-107	%REC	1	6/26/2014 05:05 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/23/14		Analyst: <b>RS</b>
Benzene	ND		34	µg/Kg-dry	1	6/26/2014 06:12 PM
Ethylbenzene	ND		34	µg/Kg-dry	1	6/26/2014 06:12 PM
m,p-Xylene	ND		67	µg/Kg-dry	1	6/26/2014 06:12 PM
o-Xylene	ND		34	µg/Kg-dry	1	6/26/2014 06:12 PM
Toluene	ND		34	µg/Kg-dry	1	6/26/2014 06:12 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/26/2014 06:12 PM
Surr: 1,2-Dichloroethane-d4	106		70-130	%REC	1	6/26/2014 06:12 PM
Surr: 4-Bromofluorobenzene	90.6		70-130	%REC	1	6/26/2014 06:12 PM
Surr: Dibromofluoromethane	98.3		70-130	%REC	1	6/26/2014 06:12 PM
Surr: Toluene-d8	91.0		70-130	%REC	1	6/26/2014 06:12 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/26/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	25		0.050	mmhos/cm @25	10	6/27/2014 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>EE</b>
Chromium, Trivalent	14		0.56	mg/Kg-dry	1	6/25/2014 04:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/24/14		Analyst: <b>JI</b>
Chromium, Hexavalent	ND		0.55	mg/Kg-dry	1	6/24/2014 04:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	11		0.050	% of sample	1	6/23/2014 10:10 AM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/23/14		Analyst: <b>AT</b>
pH	8.1			s.u.	1	6/23/2014 04:06 PM

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

**ALS Group USA, Corp****Date:** 30-Jun-14**Client:** Olsson Associates**Project:** Chevron Kitty Fairfield Spill 6.17.14**Work Order:** 14061125**Sample ID:** KFB1-BG3**Lab ID:** 14061125-06**Collection Date:** 6/17/2014 02:35 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep: SW3050B / 6/23/14	Analyst: <b>ML</b>
Arsenic	6.3		1.8	mg/Kg-dry	5	6/24/2014 08:08 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	1.4		0.050	% of sample	1	6/23/2014 10:10 AM

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

# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS4

Collection Date: 6/17/2014 02:45 PM

Work Order: 14061125

Lab ID: 14061125-07

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>29</b>		<b>4.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>6/25/2014 04:18 PM</b>
Surr: 4-Terphenyl-d14	72.2		39-133	%REC	1	6/25/2014 04:18 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>3.0</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>6/24/2014 12:20 PM</b>
Surr: Toluene-d8	104		50-150	%REC	1	6/24/2014 12:20 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.021</b>		<b>0.021</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>6/26/2014 09:16 PM</b>
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>6.9</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>Barium</b>	<b>890</b>		<b>20</b>	<b>mg/Kg-dry</b>	<b>50</b>	<b>6/25/2014 12:15 PM</b>
Cadmium	ND		0.82	mg/Kg-dry	5	6/24/2014 08:14 PM
<b>Chromium</b>	<b>14</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>Copper</b>	<b>12</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>Lead</b>	<b>19</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>Nickel</b>	<b>17</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>Selenium</b>	<b>2.4</b>		<b>2.0</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
Silver	ND		2.0	mg/Kg-dry	5	6/24/2014 08:14 PM
<b>Zinc</b>	<b>80</b>		<b>8.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	<b>6/24/2014 08:14 PM</b>
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>190</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	<b>6/30/2014 10:42 AM</b>
<b>Magnesium</b>	<b>40</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>6/30/2014 10:42 AM</b>
<b>Sodium</b>	<b>160</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>6/30/2014 10:42 AM</b>
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/26/14	Analyst: <b>ML</b>
<b>Sodium Adsorption Ratio</b>	<b>2.7</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	<b>6/29/2014</b>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 6/24/14	Analyst: <b>RM</b>
Acenaphthene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Anthracene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Benzo(a)anthracene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Benzo(a)pyrene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Benzo(b)fluoranthene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Benzo(k)fluoranthene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Chrysene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Dibenzo(a,h)anthracene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Fluoranthene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM

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



# ALS Group USA, Corp

Date: 30-Jun-14

Client: Olsson Associates

Project: Chevron Kitty Fairfield Spill 6.17.14

Sample ID: KFB1-SS4

Collection Date: 6/17/2014 02:45 PM

Work Order: 14061125

Lab ID: 14061125-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Indeno(1,2,3-cd)pyrene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Naphthalene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Pyrene	ND		7.9	µg/Kg-dry	1	6/26/2014 05:25 PM
Surr: 2-Fluorobiphenyl	51.7		12-100	%REC	1	6/26/2014 05:25 PM
Surr: 4-Terphenyl-d14	81.2		25-137	%REC	1	6/26/2014 05:25 PM
Surr: Nitrobenzene-d5	33.2	S	37-107	%REC	1	6/26/2014 05:25 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/23/14		Analyst: <b>RS</b>
Benzene	ND		36	µg/Kg-dry	1	6/26/2014 06:37 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	6/26/2014 06:37 PM
m,p-Xylene	ND		72	µg/Kg-dry	1	6/26/2014 06:37 PM
o-Xylene	ND		36	µg/Kg-dry	1	6/26/2014 06:37 PM
Toluene	ND		36	µg/Kg-dry	1	6/26/2014 06:37 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/26/2014 06:37 PM
Surr: 1,2-Dichloroethane-d4	107		70-130	%REC	1	6/26/2014 06:37 PM
Surr: 4-Bromofluorobenzene	89.5		70-130	%REC	1	6/26/2014 06:37 PM
Surr: Dibromofluoromethane	97.6		70-130	%REC	1	6/26/2014 06:37 PM
Surr: Toluene-d8	89.9		70-130	%REC	1	6/26/2014 06:37 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/26/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.6		0.050	mmhos/cm @25	10	6/27/2014 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>EE</b>
Chromium, Trivalent	14		0.60	mg/Kg-dry	1	6/25/2014 04:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/24/14		Analyst: <b>JI</b>
Chromium, Hexavalent	ND		0.59	mg/Kg-dry	1	6/24/2014 04:45 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>TM</b>
Moisture	17		0.050	% of sample	1	6/23/2014 10:10 AM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/23/14		Analyst: <b>AT</b>
pH	8.2			s.u.	1	6/23/2014 04:06 PM

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

Client: Olsson Associates

# QC BATCH REPORT

Work Order: 14061125

Project: Chevron Kitty Fairfield Spill 6.17.14

Batch ID: 59943

Instrument ID GC8

Method: SW8015M

MBLK				Sample ID: DBLKS1-59943-59943				Units: mg/Kg			Analysis Date: 6/24/2014 10:33 AM		
Client ID:			Run ID: GC8_140624A			SeqNo: 2823168			Prep Date: 6/23/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
DRO (C10-C28)	ND	4.2											
Surr: 4-Terphenyl-d14	1.565	0	1.667	0	93.9	39-133	0						

LCS				Sample ID: <b>DLCSS1-59943-59943</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 11:03 AM</b>	
Client ID:			Run ID: <b>GC8_140624A</b>			SeqNo: <b>2823169</b>		Prep Date: <b>6/23/2014</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)	134.8	4.2	166.7	0	80.9	61-109	0				
<i>Surr: 4-Terphenyl-d14</i>	1.388	0	1.667	0	83.3	39-133	0				

MS				Sample ID: 14061151-01A MS				Units: mg/Kg			Analysis Date: 6/24/2014 11:33 AM			
Client ID:				Run ID: GC8_140624A				SeqNo: 2823170			Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
DRO (C10-C28)	252.8	8.1	324.4	24.54	70.4	48-110	0							
Surr: 4-Terphenyl-d14	2.231	0	3.244	0	68.8	39-133	0							

MSD				Sample ID: 14061151-01A MSD			Units: mg/Kg		Analysis Date: 6/24/2014 12:03 PM	
Client ID:			Run ID: GC8_140624A			SeqNo: 2823171		Prep Date: 6/23/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	247.6	7.9	317.5	24.54	70.2	48-110	252.8	2.11	30	
Surr: 4-Terphenyl-d14	2.105	0	3.175	0	66.3	39-133	2.231	5.82	30	

The following samples were analyzed in this batch:

14061125-01A

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59995**      Instrument ID **GC8**      Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-59995-59995</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/25/2014 10:19 AM</b>		
Client ID:		Run ID: <b>GC8_140625A</b>				SeqNo: <b>2824369</b>		Prep Date: <b>6/24/2014</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	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.781	0	2	0	89.1	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-59995-59995</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/25/2014 10:49 AM</b>		
Client ID:		Run ID: <b>GC8_140625A</b>				SeqNo: <b>2824370</b>		Prep Date: <b>6/24/2014</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)	154.5	5.0	200	0	77.3	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.722	0	2	0	86.1	39-133	0			

<b>MS</b>		Sample ID: <b>14061125-03A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/25/2014 11:19 AM</b>		
Client ID: <b>KFB1-SS2</b>		Run ID: <b>GC8_140625A</b>				SeqNo: <b>2824371</b>		Prep Date: <b>6/24/2014</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)	240.9	8.0	322	30.84	65.2	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.586	0	3.22	0	80.3	39-133	0			

<b>MSD</b>		Sample ID: <b>14061125-03A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/25/2014 11:49 AM</b>		
Client ID: <b>KFB1-SS2</b>		Run ID: <b>GC8_140625A</b>				SeqNo: <b>2824372</b>		Prep Date: <b>6/24/2014</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)	254.7	7.9	317.9	30.84	70.4	48-110	240.9	5.59	30	
<i>Surr: 4-Terphenyl-d14</i>	2.532	0	3.179	0	79.7	39-133	2.586	2.12	30	

The following samples were analyzed in this batch:

14061125-03A	14061125-05A	14061125-07A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59947**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-59947-59947</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/23/2014 05:52 PM</b>		
Client ID:		Run ID: <b>GC9_140623A</b>				SeqNo: <b>2821620</b>		Prep Date: <b>6/23/2014</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								
<i>Surr: Toluene-d8</i>	5212	0	5000	0	104	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-59947-59947</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/23/2014 05:26 PM</b>		
Client ID:		Run ID: <b>GC9_140623A</b>				SeqNo: <b>2821618</b>		Prep Date: <b>6/23/2014</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)	468700	2,500	500000	0	93.7	70-130	0			
<i>Surr: Toluene-d8</i>	6051	0	5000	0	121	50-150	0			

<b>MS</b>		Sample ID: <b>14061155-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/23/2014 06:44 PM</b>		
Client ID:		Run ID: <b>GC9_140623A</b>				SeqNo: <b>2821624</b>		Prep Date: <b>6/23/2014</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)	494100	2,500	500000	28670	93.1	70-130	0			
<i>Surr: Toluene-d8</i>	6065	0	5000	0	121	50-150	0			

<b>MSD</b>		Sample ID: <b>14061155-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/23/2014 07:10 PM</b>		
Client ID:		Run ID: <b>GC9_140623A</b>				SeqNo: <b>2821626</b>		Prep Date: <b>6/23/2014</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)	485200	2,500	500000	28670	91.3	70-130	494100	1.82	30	
<i>Surr: Toluene-d8</i>	6054	0	5000	0	121	50-150	6065	0.19	30	

The following samples were analyzed in this batch:

14061125-01A	14061125-03A	14061125-05A
14061125-07A		

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59970**      Instrument ID **HG1**      Method: **SW7471**

MBLK		Sample ID: MBLK-59970-59970				Units: mg/Kg		Analysis Date: 6/25/2014 03:44 PM		
Client ID:		Run ID: HG1_140625A				SeqNo: 2824151		Prep Date: 6/23/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      ND      0.020

LCS		Sample ID: LCS-59970-59970					Units: mg/Kg		Analysis Date: 6/25/2014 03:46 PM		
Client ID:			Run ID: HG1_140625A			SeqNo: 2824152		Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1719      0.020      0.1665      0      103      80-120      0

MS		Sample ID: 14061051-01AMS					Units: mg/Kg		Analysis Date: 6/25/2014 03:39 PM		
Client ID:			Run ID: HG1_140625A			SeqNo: 2824149		Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1428      0.013      0.111      0.01772      113      75-125      0

MSD		Sample ID: 14061051-01AMSD					Units: mg/Kg		Analysis Date: 6/25/2014 03:42 PM		
Client ID:			Run ID: HG1_140625A			SeqNo: 2824150		Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1393      0.013      0.1089      0.01772      112      75-125      0.1428      2.5      35

The following samples were analyzed in this batch:

14061125-01A

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **60083**      Instrument ID **HG1**      Method: **SW7471**

MBLK		Sample ID: MBLK-60083-60083					Units: mg/Kg		Analysis Date: 6/26/2014 08:56 PM		
Client ID:			Run ID: HG1_140626A			SeqNo: 2826367		Prep Date: 6/26/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      ND      0.020

LCS		Sample ID: LCS-60083-60083					Units: mg/Kg		Analysis Date: 6/26/2014 08:58 PM		
Client ID:			Run ID: HG1_140626A			SeqNo: 2826368		Prep Date: 6/26/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1592      0.020      0.1665      0      95.6      80-120      0

MS		Sample ID: 14061346-03BMS					Units: mg/Kg		Analysis Date: 6/26/2014 09:53 PM		
Client ID:			Run ID: HG1_140626A			SeqNo: 2826440		Prep Date: 6/26/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1194      0.014      0.1168      0.004877      98      75-125      0

MSD		Sample ID: 14061346-03BMSD					Units: mg/Kg		Analysis Date: 6/26/2014 09:56 PM		
Client ID:			Run ID: HG1_140626A			SeqNo: 2826441		Prep Date: 6/26/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury      0.1218      0.015      0.1212      0.004877      96.5      75-125      0.1194      2.01      35

The following samples were analyzed in this batch:

14061125-02A	14061125-03A	14061125-05A
14061125-07A		

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59952**      Instrument ID **ICPMS2**      Method: **SW6020A**

<b>DUP</b>		Sample ID: <b>14061125-07BDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>6/30/2014 10:48 AM</b>		
Client ID: <b>KFB1-SS4</b>		Run ID: <b>ICPMS2_140629A</b>				SeqNo: <b>2829344</b>		Prep Date: <b>6/26/2014</b>		DF: <b>20</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	185.4	10	0	0	0	0-0	189.5	2.22		
Magnesium	39.4	4.0	0	0	0	0-0	40	1.51		
Sodium	91.86	4.0	0	0	0	0-0	158.1	53		

<b>DUP</b>		Sample ID: <b>14061125-07BDUP</b>				Units: <b>none</b>		Analysis Date: <b>6/29/2014</b>		
Client ID: <b>KFB1-SS4</b>		Run ID: <b>SAR_140629A</b>				SeqNo: <b>2829433</b>		Prep Date: <b>6/26/2014</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	1.599	0.010	0	0	0		2.724	52.1	50	R

The following samples were analyzed in this batch:

14061125-01B	14061125-02B	14061125-03B
14061125-05B	14061125-07B	

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59971** Instrument ID **ICPMS1** Method: **SW6020A**

Sample ID: MBLK-59971-59971				Units: mg/Kg			Analysis Date: 6/25/2014 10:58 AM			
Client ID:		Run ID: ICPMS1_140624A			SeqNo: 2823621		Prep Date: 6/23/2014		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	0.05385	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	0.02884	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.08535	0.50								J

LCS				Sample ID: LCS-59971-59971				Units: mg/Kg			Analysis Date: 6/25/2014 11:04 AM			
Client ID:				Run ID: ICPMS1_140624A				SeqNo: 2823622			Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	4.648	0.25	5	0	93	80-120	0							
Barium	4.9	0.25	5	0	98	80-120	0							
Cadmium	4.751	0.10	5	0	95	80-120	0							
Chromium	5.145	0.25	5	0	103	80-120	0							
Copper	5.015	0.25	5	0	100	80-120	0							
Lead	4.728	0.25	5	0	94.6	80-120	0							
Nickel	5.11	0.25	5	0	102	80-120	0							
Selenium	4.5	0.25	5	0	90	80-120	0							
Silver	4.98	0.25	5	0	99.6	80-120	0							
Zinc	5.285	0.50	5	0	106	80-120	0							

MS					Sample ID: 14061172-02AMS		Units: mg/Kg		Analysis Date: 6/24/2014 08:38 PM		
Client ID:			Run ID: ICPMS1_140624A			SeqNo: 2822893		Prep Date: 6/23/2014		DF: 4	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	11.14	1.4	6.766	4.24	102	75-125	0				
Barium	85.93	1.4	6.766	74.74	165	75-125	0			SO	
Cadmium	6.793	0.54	6.766	0.3613	95.1	75-125	0				
Chromium	13.24	1.4	6.766	4.999	122	75-125	0				
Copper	9.905	1.4	6.766	3.316	97.4	75-125	0				
Lead	20.67	1.4	6.766	14.52	90.8	75-125	0				
Nickel	11.61	1.4	6.766	4.483	105	75-125	0				
Selenium	7.954	1.4	6.766	1.104	101	75-125	0				
Silver	6.352	1.4	6.766	0.03973	93.3	75-125	0				
Zinc	50.5	2.7	6.766	40.64	146	75-125	0			BSO	

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



**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59971**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>14061172-02AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 08:44 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140624A</b>				SeqNo: <b>2822894</b>		Prep Date: <b>6/23/2014</b>		DF: <b>4</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.2	1.4	6.766	4.24	147	75-125	11.14	24.2	25	S
Barium	102.5	1.4	6.766	74.74	410	75-125	85.93	17.6	25	SO
Cadmium	6.75	0.54	6.766	0.3613	94.4	75-125	6.793	0.639	25	
Chromium	13.53	1.4	6.766	4.999	126	75-125	13.24	2.16	25	S
Copper	9.867	1.4	6.766	3.316	96.8	75-125	9.905	0.383	25	
Lead	20.42	1.4	6.766	14.52	87.3	75-125	20.67	1.17	25	
Nickel	11.45	1.4	6.766	4.483	103	75-125	11.61	1.46	25	
Selenium	7.862	1.4	6.766	1.104	99.9	75-125	7.954	1.16	25	
Silver	6.476	1.4	6.766	0.03973	95.1	75-125	6.352	1.94	25	
Zinc	48.88	2.7	6.766	40.64	122	75-125	50.5	3.27	25	BO

The following samples were analyzed in this batch:

14061125-01A	14061125-02A	14061125-03A
14061125-04A	14061125-05A	14061125-06A
14061125-07A		

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59993**      Instrument ID **SVMS8**      Method: **SW8270**

MBLK				Sample ID: SBLKS1-59993-59993			Units: µg/Kg		Analysis Date: 6/26/2014 09:10 AM		
Client ID:			Run ID: SVMS8_140626A			SeqNo: 2825739		Prep Date: 6/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	ND	6.7									
Anthracene	ND	6.7									
Benzo(a)anthracene	ND	6.7									
Benzo(a)pyrene	ND	6.7									
Benzo(b)fluoranthene	ND	6.7									
Benzo(k)fluoranthene	ND	6.7									
Chrysene	ND	6.7									
Dibenzo(a,h)anthracene	ND	6.7									
Fluoranthene	ND	6.7									
Fluorene	ND	6.7									
Indeno(1,2,3-cd)pyrene	ND	6.7									
Naphthalene	ND	6.7									
Pyrene	ND	6.7									
Surr: 2-Fluorobiphenyl	1111	0	1667	0	66.6	12-100		0			
Surr: 4-Terphenyl-d14	1534	0	1667	0	92.1	25-137		0			
Surr: Nitrobenzene-d5	909	0	1667	0	54.5	37-107		0			

LCS				Sample ID: SLCSS1-59993-59993				Units: µg/Kg		Analysis Date: 6/26/2014 09:30 AM	
Client ID:			Run ID: SVMS8_140626A			SeqNo: 2825740		Prep Date: 6/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	598.7	6.7	666.7	0	89.8	45-110	0				
Anthracene	694.7	6.7	666.7	0	104	55-105	0				
Benzo(a)anthracene	629.7	6.7	666.7	0	94.4	50-110	0				
Benzo(a)pyrene	703.3	6.7	666.7	0	105	50-110	0				
Benzo(b)fluoranthene	677	6.7	666.7	0	102	45-115	0				
Benzo(k)fluoranthene	677.7	6.7	666.7	0	102	45-115	0				
Chrysene	650	6.7	666.7	0	97.5	55-110	0				
Dibenzo(a,h)anthracene	596	6.7	666.7	0	89.4	40-125	0				
Fluoranthene	690	6.7	666.7	0	103	55-115	0				
Fluorene	640	6.7	666.7	0	96	50-110	0				
Indeno(1,2,3-cd)pyrene	630	6.7	666.7	0	94.5	40-120	0				
Naphthalene	539.3	6.7	666.7	0	80.9	40-105	0				
Pyrene	701.3	6.7	666.7	0	105	45-125	0				
Surr: 2-Fluorobiphenyl	1297	0	1667	0	77.8	12-100	0				
Surr: 4-Terphenyl-d14	1710	0	1667	0	103	25-137	0				
Surr: Nitrobenzene-d5	1163	0	1667	0	69.8	37-107	0				

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

Client: Olsson Associates  
 Work Order: 14061125  
 Project: Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59993** Instrument ID **SVMS8** Method: **SW8270**

MS				Sample ID: 14061172-02A MS			Units: µg/Kg		Analysis Date: 6/26/2014 01:01 PM		
Client ID:		Run ID: SVMS8_140626A			SeqNo: 2825755		Prep Date: 6/24/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1541	20	1991	0	77.4	45-110	0				
Anthracene	1899	20	1991	19.94	94.3	55-105	0				
Benzo(a)anthracene	1740	20	1991	183.4	78.2	50-110	0				
Benzo(a)pyrene	2012	20	1991	239.3	89	50-110	0				
Benzo(b)fluoranthene	1838	20	1991	193.4	82.6	45-115	0				
Benzo(k)fluoranthene	1626	20	1991	96.71	76.8	45-115	0				
Chrysene	1698	20	1991	107.7	79.8	55-110	0				
Dibenzo(a,h)anthracene	1699	20	1991	76.77	81.4	40-125	0				
Fluoranthene	1932	20	1991	180.5	87.9	55-115	0				
Fluorene	1768	20	1991	0	88.8	50-110	0				
Indeno(1,2,3-cd)pyrene	2091	20	1991	196.4	95.1	40-120	0				
Naphthalene	1261	20	1991	0	63.3	40-105	0				
Pyrene	1974	20	1991	149.6	91.6	45-125	0				
Surr: 2-Fluorobiphenyl	3148	0	4978	0	63.2	12-100	0				
Surr: 4-Terphenyl-d14	4605	0	4978	0	92.5	25-137	0				
Surr: Nitrobenzene-d5	2699	0	4978	0	54.2	37-107	0				

MSD				Sample ID: 14061172-02A MSD			Units: µg/Kg		Analysis Date: 6/26/2014 01:21 PM		
Client ID:			Run ID: SVMS8_140626A			SeqNo: 2825756		Prep Date: 6/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1515	20	1972	0	76.8	45-110	1541	1.7	30		
Anthracene	1910	20	1972	19.94	95.8	55-105	1899	0.57	30		
Benzo(a)anthracene	1744	20	1972	183.4	79.1	50-110	1740	0.204	30		
Benzo(a)pyrene	2007	20	1972	239.3	89.7	50-110	2012	0.251	30		
Benzo(b)fluoranthene	1845	20	1972	193.4	83.8	45-115	1838	0.408	30		
Benzo(k)fluoranthene	1605	20	1972	96.71	76.5	45-115	1626	1.3	30		
Chrysene	1679	20	1972	107.7	79.7	55-110	1698	1.11	30		
Dibenzo(a,h)anthracene	1731	20	1972	76.77	83.9	40-125	1699	1.9	30		
Fluoranthene	1849	20	1972	180.5	84.6	55-115	1932	4.34	30		
Fluorene	1734	20	1972	0	87.9	50-110	1768	1.95	30		
Indeno(1,2,3-cd)pyrene	2081	20	1972	196.4	95.6	40-120	2091	0.468	30		
Naphthalene	1251	20	1972	0	63.4	40-105	1261	0.833	30		
Pyrene	2006	20	1972	149.6	94.2	45-125	1974	1.6	30		
Surr: 2-Fluorobiphenyl	3151	0	4929	0	63.9	12-100	3148	0.0788	40		
Surr: 4-Terphenyl-d14	4685	0	4929	0	95	25-137	4605	1.72	40		
Surr: Nitrobenzene-d5	2688	0	4929	0	54.5	37-107	2699	0.402	40		

The following samples were analyzed in this batch:

14061125-01A	14061125-03A	14061125-05A
14061125-07A		

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59946**      Instrument ID **VMS6**      Method: **SW8260B**

MBLK				Sample ID: MBLK-59946-59946				Units: µg/Kg			Analysis Date: 6/23/2014 01:10 PM			
Client ID:				Run ID: VMS6_140623A				SeqNo: 2821074			Prep Date: 6/23/2014		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	958.5	0	1000	0	95.8	70-130		0						
Surr: 4-Bromofluorobenzene	974.5	0	1000	0	97.4	70-130		0						
Surr: Dibromofluoromethane	931.5	0	1000	0	93.2	70-130		0						
Surr: Toluene-d8	1015	0	1000	0	102	70-130		0						

LCS				Sample ID: LCS-59946-59946			Units: µg/Kg		Analysis Date: 6/23/2014 11:51 AM		
Client ID:			Run ID: VMS6_140623A			SeqNo: 2821072		Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	925	30	1000	0	92.5	75-125	0				
Ethylbenzene	946.5	30	1000	0	94.6	75-125	0				
m,p-Xylene	1888	60	2000	0	94.4	80-125	0				
o-Xylene	924	30	1000	0	92.4	75-125	0				
Toluene	935	30	1000	0	93.5	70-125	0				
Xylenes, Total	2812	90	3000	0	93.7	75-125	0				
Surr: 1,2-Dichloroethane-d4	941.5	0	1000	0	94.2	70-130	0				
Surr: 4-Bromofluorobenzene	988	0	1000	0	98.8	70-130	0				
Surr: Dibromofluoromethane	993.5	0	1000	0	99.4	70-130	0				
Surr: Toluene-d8	1006	0	1000	0	101	70-130	0				

MS				Sample ID: 14061119-02A MS			Units: µg/Kg		Analysis Date: 6/26/2014 09:56 AM		
Client ID:			Run ID: VMS5_140625B			SeqNo: 2825586		Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	901	30	1000	0	90.1	75-125	0				
Ethylbenzene	919.5	30	1000	0	92	75-125	0				
m,p-Xylene	1822	60	2000	0	91.1	80-125	0				
o-Xylene	898.5	30	1000	0	89.8	75-125	0				
Toluene	947	30	1000	0	94.7	70-125	0				
Xylenes, Total	2720	90	3000	0	90.7	75-125	0				
Surr: 1,2-Dichloroethane-d4	1003	0	1000	0	100	70-130	0				
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	984.5	0	1000	0	98.4	70-130	0				
Surr: Toluene-d8	1022	0	1000	0	102	70-130	0				

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59946**      Instrument ID **VMS6**      Method: **SW8260B**

MSD				Sample ID: 14061119-02A MSD			Units: µg/Kg		Analysis Date: 6/26/2014 10:22 AM	
Client ID:				Run ID: VMS5_140625B			SeqNo: 2825587		Prep Date: 6/23/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	871	30	1000	0	87.1	75-125	901	3.39	30	
Ethylbenzene	909	30	1000	0	90.9	75-125	919.5	1.15	30	
m,p-Xylene	1830	60	2000	0	91.5	80-125	1822	0.466	30	
o-Xylene	901.5	30	1000	0	90.2	75-125	898.5	0.333	30	
Toluene	926.5	30	1000	0	92.6	70-125	947	2.19	30	
Xylenes, Total	2732	90	3000	0	91	75-125	2720	0.422	30	
Surr: 1,2-Dichloroethane-d4	1013	0	1000	0	101	70-130	1003	0.992	30	
Surr: 4-Bromofluorobenzene	1025	0	1000	0	102	70-130	1012	1.28	30	
Surr: Dibromofluoromethane	993.5	0	1000	0	99.4	70-130	984.5	0.91	30	
Surr: Toluene-d8	1016	0	1000	0	102	70-130	1022	0.491	30	

The following samples were analyzed in this batch:

14061125-01A	14061125-03A	14061125-05A
14061125-07A		

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59952** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>14061125-07B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>6/27/2014 12:00 PM</b>		
Client ID: <b>KFB1-SS4</b>		Run ID: <b>WETCHEM_140627G</b>				SeqNo: <b>2827369</b>		Prep Date: <b>6/26/2014</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	1.674	0.050	0	0	0		1.621	3.22	50	

The following samples were analyzed in this batch:

14061125-01B	14061125-02B	14061125-03B
14061125-05B	14061125-07B	

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

**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **59978**      Instrument ID **WETCHEM**      Method: **SW9045D**

LCS		Sample ID: LCS-59978-59978					Units: s.u.		Analysis Date: 6/23/2014 04:06 PM		
Client ID:			Run ID: WETCHEM_140623M				SeqNo: 2820414		Prep Date: 6/23/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH      3.95      0      4      0      98.8      90-110      0

DUP		Sample ID: 14061008-01A DUP					Units: s.u.		Analysis Date: 6/23/2014 04:06 PM		
Client ID:		Run ID: WETCHEM_140623M			SeqNo: 2820416		Prep Date: 6/23/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH      8.18      0      0      0      0      0-0      8.17      0.122      20

DUP				Sample ID: 14061088-01A DUP				Units: s.u.			Analysis Date: 6/23/2014 04:06 PM			
Client ID:				Run ID: WETCHEM_140623M				SeqNo: 2820429			Prep Date: 6/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH      7.05      0      0      0      0      0-0      7.08      0.425      20

The following samples were analyzed in this batch:

14061125-01A	14061125-02A	14061125-03A
14061125-05A	14061125-07A	

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

Client: Olsson Associates  
 Work Order: 14061125  
 Project: Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **60010** Instrument ID **WETCHEM** Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-60010-60010</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 04:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140624R</b>				SeqNo: <b>2822687</b>		Prep Date: <b>6/24/2014</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-60010-60010</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 04:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140624R</b>				SeqNo: <b>2822688</b>		Prep Date: <b>6/24/2014</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 1.795 0.49 1.969 0 91.2 80-120 0

<b>MS</b>		Sample ID: <b>14061032-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 04:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140624R</b>				SeqNo: <b>2822690</b>		Prep Date: <b>6/24/2014</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 1.879 0.49 1.953 0.3755 77 75-125 0

<b>MS</b>		Sample ID: <b>14061032-01B MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 04:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140624R</b>				SeqNo: <b>2822692</b>		Prep Date: <b>6/24/2014</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 1271 49 1412 0.3755 90 75-125 0

<b>MSD</b>		Sample ID: <b>14061032-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/24/2014 04:45 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140624R</b>				SeqNo: <b>2822691</b>		Prep Date: <b>6/24/2014</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 1.926 0.49 1.953 0.3755 79.4 75-125 1.879 2.46 20

The following samples were analyzed in this batch:

14061125-01A	14061125-02A	14061125-03A
14061125-05A	14061125-07A	

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



**Client:** Olsson Associates  
**Work Order:** 14061125  
**Project:** Chevron Kitty Fairfield Spill 6.17.14

## QC BATCH REPORT

Batch ID: **R143225**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R143225</b>				Units: % of sample		Analysis Date: <b>6/23/2014 10:10 AM</b>		
Client ID:		Run ID: <b>MOIST_140623A</b>				SeqNo: <b>2821516</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-R143225</b>				Units: % of sample		Analysis Date: <b>6/23/2014 10:10 AM</b>		
Client ID:		Run ID: <b>MOIST_140623A</b>				SeqNo: <b>2821514</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>14061125-02A DUP</b>				Units: % of sample		Analysis Date: <b>6/23/2014 10:10 AM</b>		
Client ID: <b>KFB1-BG1</b>		Run ID: <b>MOIST_140623A</b>				SeqNo: <b>2821481</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      3.73      0.050      0      0      0      0-0      3.66      1.89      20

<b>DUP</b>		Sample ID: <b>14061125-07A DUP</b>				Units: % of sample		Analysis Date: <b>6/23/2014 10:10 AM</b>		
Client ID: <b>KFB1-SS4</b>		Run ID: <b>MOIST_140623A</b>				SeqNo: <b>2821501</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      15.37      0.050      0      0      0      0-0      16.61      7.75      20

The following samples were analyzed in this batch:

14061125-01A	14061125-02A	14061125-03A
14061125-04A	14061125-05A	14061125-06A
14061125-07A		

**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           |

[illegible]

**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: **20-Jun-14 00:00**

Work Order: **14061125**

Received by: **KRW**

Checklist completed by <u>Joseph Ribar</u>	20-Jun-14	Reviewed by: <u>Ann Preston</u>	23-Jun-14
eSignature	Date	eSignature	Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input 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>4.6 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>6/20/2014 4:50:37 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:			

Login Notes:

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Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

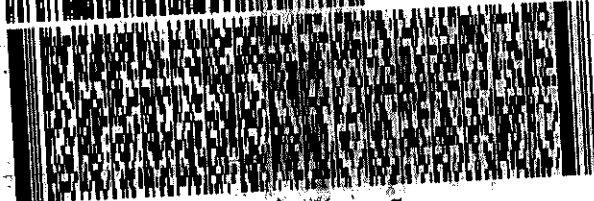
CorrectiveAction:

GRAND JUNCTION, CO 81506  
UNITED STATES US

**BILL BENDER**

HOLLAND MI 49424

PO: 013.3287.100.100004



**FedEx**  
Express



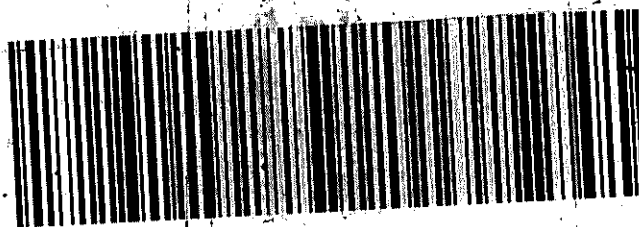
TRK# 5632 6808 5341  
0201

FRI - 20 JUN-10:30A  
PRIORITY OVERNIGHT

XX GRRA

49424  
MI-US GRR

15-118-134 NRIT 06-07 ::





27-Oct-2017

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

Re: **Kitty Fairfield Spill Resample**

Work Order: **17101035**

Dear Tim,

ALS Environmental received 3 samples on 14-Oct-2017 10:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 9.

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

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

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**Client:** Olsson Associates  
**Project:** Kitty Fairfield Spill Resample  
**Work Order:** 17101035

## Work Order Sample Summary

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<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>
17101035-01	KFB1-SS1	Soil		10/12/2017 14:25	10/16/2017 10:00	<input type="checkbox"/>
17101035-02	KFB1-SS2	Soil		10/12/2017 14:30	10/16/2017 10:00	<input type="checkbox"/>
17101035-03	KFB1-SS3	Soil		10/12/2017 14:30	10/16/2017 10:00	<input type="checkbox"/>

**Client:** Olsson Associates  
**Project:** Kitty Fairfield Spill Resample  
**WorkOrder:** 17101035

## **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>
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

**ALS Group, USA****Date:** 27-Oct-17

**Client:** Olsson Associates  
**Project:** Kitty Fairfield Spill Resample  
**Sample ID:** KFB1-SS1  
**Collection Date:** 10/12/2017 02:25 PM

**Work Order:** 17101035  
**Lab ID:** 17101035-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>RH</b>
Sodium Adsorption Ratio	6.9		0.010	0.010	none	1	10/18/2017
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020A</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JF</b>
Calcium	74		0.86	5.0	mg/L	10	10/18/2017 19:16
Magnesium	25		0.068	2.0	mg/L	10	10/18/2017 19:16
Sodium	270		0.34	2.0	mg/L	10	10/18/2017 19:16
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	2.0		0.028	0.25	mmhos/cm @25°	50	10/19/2017 10:00

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



**ALS Group, USA****Date:** 27-Oct-17

**Client:** Olsson Associates  
**Project:** Kitty Fairfield Spill Resample  
**Sample ID:** KFB1-SS2  
**Collection Date:** 10/12/2017 02:30 PM

**Work Order:** 17101035  
**Lab ID:** 17101035-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>RH</b>
Sodium Adsorption Ratio	0.54		0.010	0.010	none	1	10/18/2017
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020A</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JF</b>
Calcium	85		0.86	5.0	mg/L	10	10/18/2017 19:17
Magnesium	20		0.068	2.0	mg/L	10	10/18/2017 19:17
Sodium	21		0.34	2.0	mg/L	10	10/18/2017 19:17
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	0.74		0.028	0.25	mmhos/cm @25°	50	10/19/2017 10:00

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

**ALS Group, USA****Date:** 27-Oct-17

**Client:** Olsson Associates  
**Project:** Kitty Fairfield Spill Resample  
**Sample ID:** KFB1-SS3  
**Collection Date:** 10/12/2017 02:30 PM

**Work Order:** 17101035  
**Lab ID:** 17101035-03  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>RH</b>
Sodium Adsorption Ratio	0.71		0.010	0.010	none	1	10/18/2017
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020A</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JF</b>
Calcium	76		0.86	5.0	mg/L	10	10/18/2017 19:19
Magnesium	19		0.068	2.0	mg/L	10	10/18/2017 19:19
Sodium	27		0.34	2.0	mg/L	10	10/18/2017 19:19
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 10/18/17		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	0.72		0.028	0.25	mmhos/cm @25°	50	10/19/2017 10:00

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

# ALS Group, USA

Date: 27-Oct-17

**Client:** Olsson Associates  
**Work Order:** 17101035  
**Project:** Kitty Fairfield Spill Resample

## QC BATCH REPORT

Batch ID: **109213** Instrument ID **SAR** Method: **USDA H60 Metho**

<b>DUP</b>	Sample ID: <b>17101034-01ADUP</b>					Units: <b>none</b>	Analysis Date: <b>10/18/2017</b>			
Client ID:	Run ID: <b>SAR_171018A</b>				SeqNo: <b>4710565</b>		Prep Date: <b>10/18/2017</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	0.1694	0.010	0	0	0		0.183	7.71	50	

The following samples were analyzed in this batch:

17101035-01A	17101035-02A	17101035-03A
--------------	--------------	--------------

Batch ID: **109213** Instrument ID **ICPMS3** Method: **SW6020A**

<b>DUP</b>	Sample ID: <b>17101034-01ADUP</b>					Units: <b>mg/L</b>	Analysis Date: <b>10/18/2017 07:11 PM</b>			
Client ID:	Run ID: <b>ICPMS3_171018A</b>				SeqNo: <b>4708883</b>		Prep Date: <b>10/18/2017</b>		DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	191.7	5.0	0	0	0	0-0	185.7	3.18		
Magnesium	15.68	2.0	0	0	0	0-0	16.23	3.44		
Sodium	9.074	2.0	0	0	0	0-0	9.686	6.52		

The following samples were analyzed in this batch:

17101035-01A	17101035-02A	17101035-03A
--------------	--------------	--------------

Batch ID: **109213** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>	Sample ID: <b>17101034-01A DUP</b>					Units: <b>mmhos/cm @25°</b>	Analysis Date: <b>10/19/2017 10:00 A</b>			
Client ID:	Run ID: <b>WETCHEM_171019C</b>				SeqNo: <b>4709444</b>		Prep Date: <b>10/18/2017</b>		DF: <b>50</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.54	0.25	0	0	0		1.47	4.65	50	

The following samples were analyzed in this batch:

17101035-01A	17101035-02A	17101035-03A
--------------	--------------	--------------

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



# Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH  
+1 513 733 8336

☐ Everett, WA  
+1 425 366 2660

☐ Fort Collins, CO  
+1 970 498 1811

☒ Holland, MI  
+1 616 399 8078

☐ Houston, TX  
+1 281 536 8666

☐ Middletown, PA  
+1 717 844 5841

☐ Salt Lake City, UT  
+1 801 266 7798

☐ Spring City, PA  
+1 610 948 4963

☐ York, PA  
+1 717 856 5286

ALS Project Manager:

Work Order #:

17101635

Customer Information		Project Information		Parameter/Method Request for Analysis															
Purchase Order		Project Name	Kitty Fairfield Spill Resample	A TPH (GRO & DRO)															
Work Order		Project Number	013.3287.400.400004	B BTEX															
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C PAH (See Attached List) CO Table 910															
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky	D Electrical Conductivity															
Address	780 Horizon Drive, Ste. 102	Address	780 Horizon Drive, Ste. 102	E Sodium Adsorption Ratio															
				F pH															
City/State/Zip	Grand Junction, CO 81508	City/State/Zip	Grand Junction, CO 81508	G Metals (See Attached List) CO Table 910															
Phone	970.263.7800	Phone	970.263.7800	H Arsenic Only															
Fax	970.263.7456	Fax	970.263.7456	I															
e-Mail Address	tdobransky@olssonassociates.com	e-Mail Address	tdobransky@olssonassociates.com	J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	KFB1-SS1	10/12/17	1425	Soil	8	1				X	X								
2	KFB1-SS2	10/12/17	1430	Soil	8	1				X	X								
3	KFB1-SS3	10/12/17	1430	Soil	8	1				X	X								
4																			
5																			
6																			
7																			

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: 10/13/17	Time: 1212	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schiatter			
Relinquished by:	Date: 10-13-17	Time: 1830	Received by (Laboratory):	Cooler Temp:	QC Package: (Check Box Below)		
Logged by (Laboratory):	Date: 10/16/17	Time: 1240	Checked by (Laboratory):	40°C	<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 9-5036				SRL			

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: **14-Oct-17 10:00**

Work Order: **17101035**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

16-Oct-17  
Date

Reviewed by: Chad Whelton  
eSignature

16-Oct-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>4.8/4.8 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/16/2017 12:41:19 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: