

F:\Projects\013-3287(Chevron - Rangely Environmental)\2016\Spills\GIS\Spill Response Maps_mxd

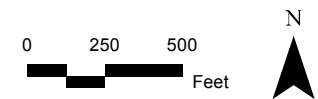


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Spill Origin
- Other Soil Sample Location
- Spill Area

DISCLAIMER : This Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended, nor does it replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Records office or the courts. In addition, the representations of locations in this GIS cannot be substituted for actual legal surveys.



Project Number: 018-065

Drawn By: TPD

Revision Date: 12/2/2016

**AC McLaughlin 44
Spill Response**
Chevron USA, Inc
Rio Blanco County, Colorado
NENW and NESE S14 T2N R103W



330 Grand Ave., Suite C
Grand Junction, CO 81501
P: 970.549.1015

Figure

1

Table 1
AC McLaughlin 44
Soil Data Summary

SAMPLE SUMMARY	
Location Description	AC McLaughlin 44 Spill
Sample Type	Soil

LABORATORY DATA SUMMARY									
Sample ID	ACM44-SS1	ACM44-SS1	ACM44-SS2	ACM44-SS2	ACM44-SS2	ACM44-SS3	ACM60X-BG1	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0"-6"		
Sample Date	11/9/2016	10/19/2017	11/9/2016	10/19/2017	4/1/2021	11/9/2016	8/25/2015		
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	<3.6	NT	<3.7	NT	NT	<3.8	NT	500	mg/kg
TPH Diesel Range Organics	54	NT	91	NT	NT	90	NT		
BTEX									
Benzene	<0.043	NT	<0.044	NT	NT	<0.045	NT	0.17	mg/kg
Toluene	<0.043	NT	<0.044	NT	NT	<0.045	NT	85	mg/kg
Ethylbenzene	<0.043	NT	<0.044	NT	NT	<0.045	NT	100	mg/kg
Total Xylene	<0.13	NT	<0.13	NT	NT	<0.14	NT	175	mg/kg
Metals									
Arsenic	8.1	NT	8.1	NT	NT	8.2	8.1	0.39	mg/kg
Barium	150	NT	140	NT	NT	150	110	15,000	mg/kg
Cadmium	<0.41	NT	<0.47	NT	NT	<0.42	<0.40	70	mg/kg
Chromium	12	NT	14	NT	NT	13	13	NA	mg/kg
Copper	14	NT	14	NT	NT	14	16	3,100	mg/kg
Lead	16	NT	18	NT	NT	16	14	400	mg/kg
Mercury	0.017	NT	0.040	NT	NT	<0.016	0.03	23	mg/kg
Nickel	18	NT	18	NT	NT	18	32	1,600	mg/kg
Selenium	<0.83	NT	<0.94	NT	NT	<0.84	<4.0	390	mg/kg
Silver	<0.41	NT	<0.47	NT	NT	<0.42	<0.40	390	mg/kg
Zinc	85	NT	79	NT	NT	78	58	23,000	mg/kg
SAR Metals Analysis									
Calcium	600	280	1600	61	90	1200	50	NA	mg/L
Magnesium	220	62	440	14	12	<2.0	11	NA	mg/L
Sodium	1500	210	12000	750	7.9	17	21	NA	mg/L
Sodium Adsorption Ratio	13	2.9	68	23	0.21	0.14	0.68	<12	ratio
Polynuclear Aromatic Hydrocarbons									
Acenaphthene	<0.079	<0.0032	<0.0081	<0.0038	NT	<0.0079	NT	1,000	mg/kg
Anthracene	<0.079	<0.0017	0.015	<0.0019	NT	<0.0079	NT	1,000	mg/kg
Benzo(a)anthracene	0.015	<0.0028	0.057	<0.0032	NT	<0.0079	NT	0.22	mg/kg
Benzo(a)pyrene	0.059	<0.0011	0.11	<0.0013	NT	<0.0079	NT	0.022	mg/kg
Benzo(b)fluoranthene	0.053	<0.0017	0.11	<0.0020	NT	<0.0079	NT	0.22	mg/kg
Benzo(k)fluoranthene	0.024	<0.0024	0.043	<0.0027	NT	<0.0079	NT	2.2	mg/kg
Chrysene	<0.079	<0.0017	0.062	<0.0020	NT	<0.0079	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.079	<0.0015	0.047	<0.0017	NT	<0.0079	NT	0.022	mg/kg
Fluoranthene	0.012	<0.0013	0.078	<0.0015	NT	<0.0079	NT	1,000	mg/kg
Fluorene	<0.079	<0.0015	<0.0081	<0.0017	NT	<0.0079	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	0.077	<0.0014	0.13	<0.0016	NT	<0.0079	NT	0.22	mg/kg
Napthalene	<0.079	<0.0085	<0.0081	<0.0099	NT	<0.0079	NT	23	mg/kg
Pyrene	0.014	<0.0017	0.076	<0.0019	NT	<0.0079	NT	1,000	mg/kg
General Chemistry									
Chromium, Hexavalent	<1.2	NT	<1.2	NT	NT	<1.2	<1.0	23	mg/kg
Chromium, Trivalent	12	NT	12	NT	NT	12	12	120,000	mg/kg
Specific Conductivity	17	3.6	86	4.8	0.6	3.9	0.50	<4 or 2 x the background	mmhos/cm
pH	7.8	NT	8.0	NT	NT	9.5	8.5	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



29-Nov-2016

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

Re: **AC McLaughlin 44 Spill**

Work Order: **1611924**

Dear Tim,

ALS Environmental received 4 samples on 12-Nov-2016 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 29.

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

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Work Order: 1611924

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>
1611924-01	ACM 44-SS1	Soil		11/9/2016 10:30	11/12/2016 10:00	<input type="checkbox"/>
1611924-02	ACM 44-SS2	Soil		11/9/2016 10:50	11/12/2016 10:00	<input type="checkbox"/>
1611924-03	ACM 44-BG1	Soil		11/9/2016 11:00	11/12/2016 10:00	<input type="checkbox"/>
1611924-04	ACM 44-SS3	Soil		11/9/2016 11:15	11/12/2016 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Work Order: 1611924

Case Narrative

Batch 94616, Method CR6_7196_S, Sample 1611924-03A MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

Batch 94709, Method ICP_6010_S, Sample 1611924-03A MS/MSD: The MS and MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high.

Batch 94709, Method ICP_6010_S, Sample 1611924-03A MS/MSD: The MS and/or MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
WorkOrder: 1611924

QUALIFIERS, ACRONYMS, UNITS

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

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

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS1
Collection Date: 11/9/2016 10:30 AM

Work Order: 1611924
Lab ID: 1611924-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 11/18/16	Analyst: IT
DRO (C10-C28)	54		5.9	mg/Kg-dry	1	11/19/2016 04:20 AM
<i>Surr: 4-Terphenyl-d14</i>	66.5		39-133	%REC	1	11/19/2016 04:20 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/16/16	Analyst: IT
GRO (C6-C10)	ND		3.6	mg/Kg-dry	1	11/16/2016 08:09 PM
<i>Surr: Toluene-d8</i>	97.9		50-150	%REC	1	11/16/2016 08:09 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/25/16	Analyst: LR
Mercury	0.017		0.017	mg/Kg-dry	1	11/25/2016 09:53 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/17/16	Analyst: RH
Arsenic	8.1		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Barium	150		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Cadmium	ND		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Chromium	12		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Copper	14		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Lead	16		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Nickel	18		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Selenium	ND		0.83	mg/Kg-dry	1	11/17/2016 06:01 PM
Silver	ND		0.41	mg/Kg-dry	1	11/17/2016 06:01 PM
Zinc	85		0.83	mg/Kg-dry	1	11/17/2016 06:01 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Calcium	600		5.0	mg/L	10	11/18/2016 03:14 PM
Magnesium	220		2.0	mg/L	10	11/18/2016 03:14 PM
Sodium	1,500		2.0	mg/L	10	11/18/2016 03:14 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Exchangeable Sodium Percentage	15		0.010	none	1	11/17/2016
Sodium Adsorption Ratio	13		0.010	none	1	11/17/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 11/18/16	Analyst: RS
Acenaphthene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Anthracene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Benzo(a)anthracene	0.015		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Benzo(a)pyrene	0.059		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Benzo(b)fluoranthene	0.053		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Benzo(k)fluoranthene	0.024		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Chrysene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Dibenzo(a,h)anthracene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS1
Collection Date: 11/9/2016 10:30 AM

Work Order: 1611924
Lab ID: 1611924-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	0.012		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Fluorene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Indeno(1,2,3-cd)pyrene	0.077		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Naphthalene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Pyrene	0.014		0.0079	mg/Kg-dry	1	11/19/2016 06:07 AM
Surr: 2-Fluorobiphenyl	90.3		12-100	%REC	1	11/19/2016 06:07 AM
Surr: 4-Terphenyl-d14	101		25-137	%REC	1	11/19/2016 06:07 AM
Surr: Nitrobenzene-d5	66.2		37-107	%REC	1	11/19/2016 06:07 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/16/16		Analyst: BG
Benzene	ND		0.043	mg/Kg-dry	1	11/20/2016 11:13 PM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	11/20/2016 11:13 PM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	11/20/2016 11:13 PM
o-Xylene	ND		0.043	mg/Kg-dry	1	11/20/2016 11:13 PM
Toluene	ND		0.043	mg/Kg-dry	1	11/20/2016 11:13 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	11/20/2016 11:13 PM
Surr: 1,2-Dichloroethane-d4	85.6		70-130	%REC	1	11/20/2016 11:13 PM
Surr: 4-Bromofluorobenzene	89.3		70-130	%REC	1	11/20/2016 11:13 PM
Surr: Dibromofluoromethane	94.2		70-130	%REC	1	11/20/2016 11:13 PM
Surr: Toluene-d8	96.5		70-130	%REC	1	11/20/2016 11:13 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/18/16		Analyst: ED
Electrical Conductivity @ Saturation	17		0.050	mmhos/cm @2	10	11/18/2016 03:10 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	12		0.61	mg/Kg-dry	1	11/21/2016 03:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/15/16		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/17/2016 10:30 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	18		0.050	% of sample	1	11/14/2016 05:20 PM
PH			SW9045D	Prep: EXTRACT / 11/14/16		Analyst: RZM
pH	7.8			s.u.	1	11/14/2016 04:05 PM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS2
Collection Date: 11/9/2016 10:50 AM

Work Order: 1611924
Lab ID: 1611924-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 11/18/16	Analyst: IT
DRO (C10-C28)	91		6.1	mg/Kg-dry	1	11/19/2016 04:50 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>60.2</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	11/19/2016 04:50 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/16/16	Analyst: IT
GRO (C6-C10)	ND		3.7	mg/Kg-dry	1	11/16/2016 08:34 PM
<i>Surr: Toluene-d8</i>	<i>100</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	11/16/2016 08:34 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/25/16	Analyst: LR
Mercury	0.040		0.016	mg/Kg-dry	1	11/25/2016 09:55 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/17/16	Analyst: RH
Arsenic	8.1		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Barium	140		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Cadmium	ND		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Chromium	12		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Copper	14		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Lead	18		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Nickel	18		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Selenium	ND		0.94	mg/Kg-dry	1	11/17/2016 06:07 PM
Silver	ND		0.47	mg/Kg-dry	1	11/17/2016 06:07 PM
Zinc	79		0.94	mg/Kg-dry	1	11/17/2016 06:07 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Calcium	1,600		5.0	mg/L	10	11/18/2016 03:20 PM
Magnesium	440		2.0	mg/L	10	11/18/2016 03:20 PM
Sodium	12,000		20	mg/L	100	11/21/2016 02:41 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Exchangeable Sodium Percentage	50		0.010	none	1	11/17/2016
Sodium Adsorption Ratio	68		0.010	none	1	11/17/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 11/18/16	Analyst: RS
Acenaphthene	ND		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Anthracene	0.015		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(a)anthracene	0.057		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(a)pyrene	0.11		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(b)fluoranthene	0.11		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(k)fluoranthene	0.043		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Chrysene	0.062		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Dibenzo(a,h)anthracene	0.047		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS2
Collection Date: 11/9/2016 10:50 AM

Work Order: 1611924
Lab ID: 1611924-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	0.078		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Fluorene	ND		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Indeno(1,2,3-cd)pyrene	0.13		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Naphthalene	ND		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Pyrene	0.076		0.0081	mg/Kg-dry	1	11/19/2016 06:30 AM
Surr: 2-Fluorobiphenyl	77.8		12-100	%REC	1	11/19/2016 06:30 AM
Surr: 4-Terphenyl-d14	88.9		25-137	%REC	1	11/19/2016 06:30 AM
Surr: Nitrobenzene-d5	58.1		37-107	%REC	1	11/19/2016 06:30 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/16/16		
Benzene	ND		0.044	mg/Kg-dry	1	11/20/2016 11:40 PM
Ethylbenzene	ND		0.044	mg/Kg-dry	1	11/20/2016 11:40 PM
m,p-Xylene	ND		0.088	mg/Kg-dry	1	11/20/2016 11:40 PM
o-Xylene	ND		0.044	mg/Kg-dry	1	11/20/2016 11:40 PM
Toluene	ND		0.044	mg/Kg-dry	1	11/20/2016 11:40 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	11/20/2016 11:40 PM
Surr: 1,2-Dichloroethane-d4	87.2		70-130	%REC	1	11/20/2016 11:40 PM
Surr: 4-Bromofluorobenzene	91.2		70-130	%REC	1	11/20/2016 11:40 PM
Surr: Dibromofluoromethane	91.6		70-130	%REC	1	11/20/2016 11:40 PM
Surr: Toluene-d8	99.6		70-130	%REC	1	11/20/2016 11:40 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/18/16		
Electrical Conductivity @ Saturation	86		0.050	mmhos/cm @2	10	11/18/2016 03:10 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: MB		
Chromium, Trivalent	12		0.62	mg/Kg-dry	1	11/21/2016 03:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/15/16		
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/17/2016 10:30 AM
MOISTURE			SW3550C	Analyst: EDL		
Moisture	19		0.050	% of sample	1	11/14/2016 06:51 PM
PH			SW9045D	Prep: EXTRACT / 11/14/16		
pH	8.0		s.u.		1	11/14/2016 04:05 PM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-BG1
Collection Date: 11/9/2016 11:00 AM

Work Order: 1611924
Lab ID: 1611924-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA						
Mercury	0.019		SW7471B 0.014	mg/Kg-dry	Prep: SW7471 / 11/25/16 1	Analyst: LR 11/25/2016 09:58 PM
METALS ANALYSIS BY ICP						
Arsenic	9.2		SW846 6010C 0.39	mg/Kg-dry	Prep: SW3050B / 11/17/16 1	Analyst: RH 11/17/2016 06:12 PM
Barium	140		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Cadmium	ND		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Chromium	11		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Copper	14		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Lead	15		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Nickel	18		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Selenium	ND		0.78	mg/Kg-dry	1	11/17/2016 06:12 PM
Silver	ND		0.39	mg/Kg-dry	1	11/17/2016 06:12 PM
Zinc	77		0.78	mg/Kg-dry	1	11/17/2016 06:12 PM
SOLUBLE CATIONS FOR SAR						
Calcium	380		SW846 6010C 5.0	mg/L	Prep: USDA Method 20B / 11/18/16 10	Analyst: RH 11/18/2016 03:25 PM
Magnesium	64		2.0	mg/L	10	11/18/2016 03:25 PM
Sodium	1,100		2.0	mg/L	10	11/18/2016 03:25 PM
SODIUM ADSORPTION RATIO						
Exchangeable Sodium Percentage	15		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 11/18/16 1	Analyst: RH 11/17/2016
Sodium Adsorption Ratio	13		0.010	none	1	11/17/2016
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	9.8		USDA H60 METHO 0.050	mmhos/cm @2	Prep: USDA Method 20B / 11/18/16 10	Analyst: ED 11/18/2016 03:10 PM
CHROMIUM, TRIVALENT						
Chromium, Trivalent	11		CALCULATION 0.54	mg/Kg-dry	1	Analyst: MB 11/21/2016 03:00 PM
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	ND		SW7196A 1.1	mg/Kg-dry	Prep: SW3060A / 11/15/16 1	Analyst: MB 11/17/2016 10:30 AM
MOISTURE						
Moisture	8.0		SW3550C 0.050	% of sample	1	Analyst: EDL 11/14/2016 06:51 PM
PH						
pH	8.1		SW9045D	s.u.	Prep: EXTRACT / 11/14/16 1	Analyst: RZM 11/14/2016 04:05 PM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS3
Collection Date: 11/9/2016 11:15 AM

Work Order: 1611924
Lab ID: 1611924-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 11/18/16	Analyst: IT
DRO (C10-C28)	90		5.9	mg/Kg-dry	1	11/19/2016 05:19 AM
Surr: 4-Terphenyl-d14	114		39-133	%REC	1	11/19/2016 05:19 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 11/16/16	Analyst: IT
GRO (C6-C10)	ND		3.8	mg/Kg-dry	1	11/16/2016 09:24 PM
Surr: Toluene-d8	93.6		50-150	%REC	1	11/16/2016 09:24 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 11/25/16	Analyst: LR
Mercury	ND		0.016	mg/Kg-dry	1	11/25/2016 10:00 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 11/17/16	Analyst: RH
Arsenic	8.2		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Barium	150		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Cadmium	ND		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Chromium	13		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Copper	14		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Lead	16		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Nickel	18		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Selenium	ND		0.84	mg/Kg-dry	1	11/17/2016 06:28 PM
Silver	ND		0.42	mg/Kg-dry	1	11/17/2016 06:28 PM
Zinc	78		0.84	mg/Kg-dry	1	11/17/2016 06:28 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Calcium	1,200		5.0	mg/L	10	11/18/2016 03:47 PM
Magnesium	ND		2.0	mg/L	10	11/18/2016 03:47 PM
Sodium	17		2.0	mg/L	10	11/18/2016 03:47 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 11/18/16	Analyst: RH
Exchangeable Sodium Percentage	ND		0.010	none	1	11/17/2016
Sodium Adsorption Ratio	0.14		0.010	none	1	11/17/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 11/18/16	Analyst: RS
Acenaphthene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Anthracene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(a)anthracene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(a)pyrene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(b)fluoranthene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Benzo(k)fluoranthene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Chrysene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Dibenzo(a,h)anthracene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM

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

ALS Group, USA

Date: 29-Nov-16

Client: Olsson Associates
Project: AC McLaughlin 44 Spill
Sample ID: ACM 44-SS3
Collection Date: 11/9/2016 11:15 AM

Work Order: 1611924
Lab ID: 1611924-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Fluorene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Indeno(1,2,3-cd)pyrene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Naphthalene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Pyrene	ND		0.0079	mg/Kg-dry	1	11/19/2016 06:30 AM
Surr: 2-Fluorobiphenyl	86.9		12-100	%REC	1	11/19/2016 06:30 AM
Surr: 4-Terphenyl-d14	97.7		25-137	%REC	1	11/19/2016 06:30 AM
Surr: Nitrobenzene-d5	63.6		37-107	%REC	1	11/19/2016 06:30 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 11/16/16		Analyst: BG
Benzene	ND		0.045	mg/Kg-dry	1	11/21/2016 12:06 PM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	11/21/2016 12:06 PM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	11/21/2016 12:06 PM
o-Xylene	ND		0.045	mg/Kg-dry	1	11/21/2016 12:06 PM
Toluene	ND		0.045	mg/Kg-dry	1	11/21/2016 12:06 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	11/21/2016 12:06 PM
Surr: 1,2-Dichloroethane-d4	88.2		70-130	%REC	1	11/21/2016 12:06 PM
Surr: 4-Bromofluorobenzene	88.8		70-130	%REC	1	11/21/2016 12:06 PM
Surr: Dibromofluoromethane	93.0		70-130	%REC	1	11/21/2016 12:06 PM
Surr: Toluene-d8	97.0		70-130	%REC	1	11/21/2016 12:06 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 11/18/16		Analyst: ED
Electrical Conductivity @ Saturation	3.9		0.050	mmhos/cm @2	10	11/18/2016 03:10 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	12		0.62	mg/Kg-dry	1	11/21/2016 03:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 11/15/16		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/17/2016 10:30 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	20		0.050	% of sample	1	11/14/2016 06:51 PM
PH			SW9045D	Prep: EXTRACT / 11/14/16		Analyst: RZM
pH	9.5		s.u.		1	11/14/2016 04:05 PM

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

Client: Olsson Associates

Work Order: 1611924

Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: 94766

Instrument ID GC8

Method: SW8015M

MBLK		Sample ID: DBLKS1-94766-94766				Units: mg/Kg		Analysis Date: 11/18/2016 07:59 PM		
Client ID:		Run ID: GC8_161118A				SeqNo: 4164678		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

ND

5.0

Surr: 4-Terphenyl-d14

2.464

0

3.33

0

74

39-133

0

LCS		Sample ID: DLCSS1-94766-94766				Units: mg/Kg		Analysis Date: 11/18/2016 08:28 PM		
Client ID:		Run ID: GC8_161118A				SeqNo: 4164679		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

258.9

5.0

333

0

77.7

61-109

0

Surr: 4-Terphenyl-d14

1.876

0

3.33

0

56.3

39-133

0

MS		Sample ID: 1611911-03A MS				Units: mg/Kg		Analysis Date: 11/18/2016 08:58 PM		
Client ID:		Run ID: GC8_161118A				SeqNo: 4164680		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

297

4.9

324.9

72.63

69.1

48-110

0

Surr: 4-Terphenyl-d14

1.86

0

3.249

0

57.2

39-133

0

MSD		Sample ID: 1611911-03A MSD				Units: mg/Kg		Analysis Date: 11/18/2016 09:27 PM		
Client ID:		Run ID: GC8_161118A				SeqNo: 4164681		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

284

4.9

324.1

72.63

65.2

48-110

297

4.47

30

Surr: 4-Terphenyl-d14

1.891

0

3.241

0

58.3

39-133

1.86

1.66

30

The following samples were analyzed in this batch:

1611924-01A

1611924-02A

1611924-04A

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94638** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-94638-94638				Units: µg/Kg-dry		Analysis Date: 11/16/2016 12:41 PM		
Client ID:		Run ID: GC9_161116A				SeqNo: 4158717		Prep Date: 11/16/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4462	0	5000	0	89.2	50-150	0			

LCS		Sample ID: LCS-94638-94638				Units: µg/Kg-dry		Analysis Date: 11/16/2016 12:16 PM		
Client ID:		Run ID: GC9_161116A				SeqNo: 4158716		Prep Date: 11/16/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	480200	2,500	500000	0	96	70-130	0			
Surr: Toluene-d8	4858	0	5000	0	97.2	50-150	0			

MS		Sample ID: 1611909-01A MS				Units: µg/Kg-dry		Analysis Date: 11/16/2016 03:35 PM		
Client ID:		Run ID: GC9_161116A				SeqNo: 4158724		Prep Date: 11/16/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	601100	2,800	561600	0	107	70-130	0			
Surr: Toluene-d8	6123	0	5616	0	109	50-150	0			

MSD		Sample ID: 1611909-01A MSD				Units: µg/Kg-dry		Analysis Date: 11/16/2016 04:00 PM		
Client ID:		Run ID: GC9_161116A				SeqNo: 4158725		Prep Date: 11/16/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	576800	2,800	561600	0	103	70-130	601100	4.13	30	
Surr: Toluene-d8	5811	0	5616	0	103	50-150	6123	5.23	30	

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-04A
-------------	-------------	-------------

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **95031** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-95031-95031				Units: mg/Kg		Analysis Date: 11/25/2016 08:40 PM			
Client ID:		Run ID: HG1_161125A				SeqNo: 4171878		Prep Date: 11/25/2016		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-95031-95031				Units: mg/Kg		Analysis Date: 11/25/2016 08:42 PM		
Client ID:		Run ID: HG1_161125A			SeqNo: 4171879		Prep Date: 11/25/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1792 0.020 0.1665 0 108 80-120 0

MS		Sample ID: 16111329-03BMS				Units: mg/Kg		Analysis Date: 11/25/2016 09:06 PM			
Client ID:			Run ID: HG1_161125A			SeqNo: 4171886		Prep Date: 11/25/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1109 0.012 0.1041 0.001312 105 75-125 0

MSD		Sample ID: 16111329-03BMSD				Units: mg/Kg		Analysis Date: 11/25/2016 09:09 PM		
Client ID:		Run ID: HG1_161125A			SeqNo: 4171887		Prep Date: 11/25/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1183 0.013 0.1046 0.001312 112 75-125 0.1109 6.44 35

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-03A
1611924-04A		

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: 94709 Instrument ID ICP2 Method: SW846 6010C

MBLK				Sample ID: MBLK-94709-94709			Units: mg/Kg		Analysis Date: 11/17/2016 04:34 PM		
Client ID:			Run ID: ICP2_161117A			SeqNo: 4160234		Prep Date: 11/17/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	ND	0.25									
Barium	ND	0.25									
Cadmium	ND	0.50									
Chromium	0.02024	0.25								J	
Copper	ND	0.50									
Lead	ND	0.25									
Nickel	ND	0.25									
Selenium	ND	0.50									
Silver	ND	0.25									
Zinc	0.04456	0.50								J	

LCS					Sample ID: LCS-94709-94709			Units: mg/Kg		Analysis Date: 11/17/2016 04:40 PM		
Client ID:			Run ID: ICP2_161117A			SeqNo: 4160235		Prep Date: 11/17/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	4.794	0.25	5	0	95.9	80-120	0					
Barium	4.878	0.25	5	0	97.6	80-120	0					
Cadmium	4.862	0.50	5	0	97.2	80-120	0					
Chromium	4.984	0.25	5	0	99.7	80-120	0					
Copper	4.901	0.50	5	0	98	80-120	0					
Lead	4.742	0.25	5	0	94.8	80-120	0					
Nickel	4.78	0.25	5	0	95.6	80-120	0					
Selenium	4.549	0.50	5	0	91	80-120	0					
Silver	4.633	0.25	5	0	92.7	80-120	0					
Zinc	4.774	0.50	5	0	95.5	80-120	0					

MS				Sample ID: 1611924-03AMS			Units: mg/Kg		Analysis Date: 11/17/2016 06:17 PM		
Client ID: ACM 44-BG1			Run ID: ICP2_161117A		SeqNo: 4160260		Prep Date: 11/17/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.76	0.36	7.194	8.447	102	75-125	0				
Barium	134.6	0.36	7.194	129.6	69.1	75-125	0			SO	
Cadmium	7.35	0.72	7.194	0.1309	100	75-125	0				
Chromium	19.61	0.36	7.194	10.13	132	75-125	0			S	
Copper	19.08	0.72	7.194	12.67	89.2	75-125	0				
Lead	19.88	0.36	7.194	14.16	79.5	75-125	0				
Nickel	22.91	0.36	7.194	16.67	86.7	75-125	0				
Selenium	7.347	0.72	7.194	0.3255	97.6	75-125	0				
Silver	6.7	0.36	7.194	-0.04133	93.7	75-125	0				
Zinc	76.63	0.72	7.194	70.54	84.7	75-125	0			O	

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94709** Instrument ID **ICP2** Method: **SW846 6010C**

MSD				Sample ID: 1611924-03AMSD			Units: mg/Kg		Analysis Date: 11/17/2016 06:23 PM	
Client ID: ACM 44-BG1			Run ID: ICP2_161117A			SeqNo: 4160261		Prep Date: 11/17/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.51	0.36	7.174	8.447	98.5	75-125	15.76	1.55	20	
Barium	142.5	0.36	7.174	129.6	180	75-125	134.6	5.74	20	SO
Cadmium	7.304	0.72	7.174	0.1309	100	75-125	7.35	0.629	20	
Chromium	19.77	0.36	7.174	10.13	134	75-125	19.61	0.829	20	S
Copper	19.14	0.72	7.174	12.67	90.2	75-125	19.08	0.284	20	
Lead	19.59	0.36	7.174	14.16	75.7	75-125	19.88	1.46	20	
Nickel	22.66	0.36	7.174	16.67	83.5	75-125	22.91	1.1	20	
Selenium	6.909	0.72	7.174	0.3255	91.8	75-125	7.347	6.14	20	
Silver	6.672	0.36	7.174	-0.04133	93.6	75-125	6.7	0.42	20	
Zinc	75.52	0.72	7.174	70.54	69.5	75-125	76.63	1.46	20	SO

The following samples were analyzed in this batch:

1611924-01A
1611924-04A

1611924-02A

1611924-03A

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94782** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1611911-02ADUP				Units: none		Analysis Date: 11/17/2016		
Client ID:		Run ID: SAR_161117A				SeqNo: 4161546		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Exchangeable Sodium Percentage	37.79	0.010	0	0	0		44.58	16.5	50	
Sodium Adsorption Ratio	42.05	0.010	0	0	0		55.39	27.4	50	

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-03A
1611924-04A		

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: 94765 Instrument ID SVMS5 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-94765-94765				Units: µg/Kg		Analysis Date: 11/18/2016 09:50 PM		
Client ID:		Run ID: SVMS5_161118A				SeqNo: 4162594		Prep Date: 11/18/2016		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	3421	0	3333	0	103	12-100	0			S
Surr: 4-Terphenyl-d14	3579	0	3333	0	107	25-137	0			
Surr: Nitrobenzene-d5	2579	0	3333	0	77.4	37-107	0			

LCS		Sample ID: SLCSS1-94765-94765				Units: µg/Kg		Analysis Date: 11/18/2016 10:13 PM		
Client ID:		Run ID: SVMS5_161118A				SeqNo: 4162595		Prep Date: 11/18/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1249	6.7	1333	0	93.7	45-110	0			
Anthracene	1257	6.7	1333	0	94.3	55-105	0			
Benzo(a)anthracene	1307	6.7	1333	0	98.1	50-110	0			
Benzo(a)pyrene	1181	6.7	1333	0	88.6	50-110	0			
Benzo(b)fluoranthene	1237	6.7	1333	0	92.8	45-115	0			
Benzo(k)fluoranthene	1258	6.7	1333	0	94.4	45-115	0			
Chrysene	1295	6.7	1333	0	97.2	55-110	0			
Dibenzo(a,h)anthracene	1181	6.7	1333	0	88.6	40-125	0			
Fluoranthene	1215	6.7	1333	0	91.2	55-115	0			
Fluorene	1272	6.7	1333	0	95.4	50-110	0			
Indeno(1,2,3-cd)pyrene	1140	6.7	1333	0	85.5	40-120	0			
Naphthalene	1103	6.7	1333	0	82.8	40-105	0			
Pyrene	1487	6.7	1333	0	112	45-125	0			
Surr: 2-Fluorobiphenyl	3357	0	3333	0	101	12-100	0			S
Surr: 4-Terphenyl-d14	3664	0	3333	0	110	25-137	0			
Surr: Nitrobenzene-d5	2748	0	3333	0	82.4	37-107	0			

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: 94765 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1611911-03A MS			Units: µg/Kg		Analysis Date: 11/19/2016 01:54 A		
Client ID:			Run ID: SVMS5_161118A			SeqNo: 4162598		Prep Date: 11/18/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1063	6.5	1292	0	82.3	45-110	0				
Anthracene	1097	6.5	1292	5.176	84.5	55-105	0				
Benzo(a)anthracene	1122	6.5	1292	18.12	85.4	50-110	0				
Benzo(a)pyrene	1031	6.5	1292	51.76	75.8	50-110	0				
Benzo(b)fluoranthene	1010	6.5	1292	49.17	74.4	45-115	0				
Benzo(k)fluoranthene	1049	6.5	1292	21.35	79.5	45-115	0				
Chrysene	1112	6.5	1292	14.23	85	55-110	0				
Dibenzo(a,h)anthracene	1152	6.5	1292	0	89.2	40-125	0				
Fluoranthene	1064	6.5	1292	21.35	80.7	55-115	0				
Fluorene	1102	6.5	1292	0	85.3	50-110	0				
Indeno(1,2,3-cd)pyrene	1101	6.5	1292	65.35	80.1	40-120	0				
Naphthalene	905.4	6.5	1292	0	70.1	40-105	0				
Pyrene	1236	6.5	1292	23.94	93.8	45-125	0				
Surr: 2-Fluorobiphenyl	2787	0	3231	0	86.2	12-100	0				
Surr: 4-Terphenyl-d14	3064	0	3231	0	94.8	25-137	0				
Surr: Nitrobenzene-d5	2299	0	3231	0	71.2	37-107	0				

MSD				Sample ID: 1611911-03A MSD				Units: µg/Kg		Analysis Date: 11/19/2016 02:17 A	
Client ID:			Run ID: SVMS5_161118A			SeqNo: 4162599		Prep Date: 11/18/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1061	6.5	1303	0	81.4	45-110	1063	0.169	30		
Anthracene	1089	6.5	1303	5.176	83.2	55-105	1097	0.674	30		
Benzo(a)anthracene	1117	6.5	1303	18.12	84.3	50-110	1122	0.406	30		
Benzo(a)pyrene	1033	6.5	1303	51.76	75.2	50-110	1031	0.115	30		
Benzo(b)fluoranthene	1036	6.5	1303	49.17	75.7	45-115	1010	2.52	30		
Benzo(k)fluoranthene	1009	6.5	1303	21.35	75.8	45-115	1049	3.86	30		
Chrysene	1118	6.5	1303	14.23	84.7	55-110	1112	0.52	30		
Dibenzo(a,h)anthracene	1113	6.5	1303	0	85.4	40-125	1152	3.43	30		
Fluoranthene	1041	6.5	1303	21.35	78.2	55-115	1064	2.21	30		
Fluorene	1124	6.5	1303	0	86.2	50-110	1102	1.98	30		
Indeno(1,2,3-cd)pyrene	1090	6.5	1303	65.35	78.6	40-120	1101	0.967	30		
Naphthalene	886.6	6.5	1303	0	68	40-105	905.4	2.1	30		
Pyrene	1242	6.5	1303	23.94	93.4	45-125	1236	0.451	30		
Surr: 2-Fluorobiphenyl	2774	0	3259	0	85.1	12-100	2787	0.461	40		
Surr: 4-Terphenyl-d14	3001	0	3259	0	92.1	25-137	3064	2.06	40		
Surr: Nitrobenzene-d5	2283	0	3259	0	70	37-107	2299	0.717	40		

The following samples were analyzed in this batch:

1611924-01A 1611924-02A 1611924-04A

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: 94650 Instrument ID VMS9 Method: SW8260B

MBLK Sample ID: MBLK-94650-94650				Units: µg/Kg-dry			Analysis Date: 11/16/2016 01:20 PM			
Client ID:		Run ID: VMS9_161116A		SeqNo: 4158488		Prep Date: 11/16/2016		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	1022	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	950	0	1000	0	95	70-130	0			
Surr: Dibromofluoromethane	929	0	1000	0	92.9	70-130	0			
Surr: Toluene-d8	1004	0	1000	0	100	70-130	0			

LCS Sample ID: LCS-94650-94650				Units: µg/Kg-dry			Analysis Date: 11/16/2016 12:06 PM			
Client ID:		Run ID: VMS9_161116A		SeqNo: 4158487		Prep Date: 11/16/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	987.5	30	1000	0	98.8	75-125	0			
Ethylbenzene	1008	30	1000	0	101	75-125	0			
m,p-Xylene	2090	60	2000	0	104	80-125	0			
o-Xylene	1016	30	1000	0	102	75-125	0			
Toluene	993	30	1000	0	99.3	70-125	0			
Xylenes, Total	3106	90	3000	0	104	75-125	0			
Surr: 1,2-Dichloroethane-d4	996	0	1000	0	99.6	70-130	0			
Surr: 4-Bromofluorobenzene	993.5	0	1000	0	99.4	70-130	0			
Surr: Dibromofluoromethane	993	0	1000	0	99.3	70-130	0			
Surr: Toluene-d8	1002	0	1000	0	100	70-130	0			

MS Sample ID: 1611924-04A MS				Units: µg/Kg-dry			Analysis Date: 11/21/2016 02:45 A			
Client ID: ACM 44-SS3		Run ID: VMS5_161120A		SeqNo: 4164708		Prep Date: 11/16/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1616	45	1500	0	108	75-125	0			
Ethylbenzene	1655	45	1500	0	110	75-125	0			
m,p-Xylene	3302	90	3000	0	110	80-125	0			
o-Xylene	1622	45	1500	0	108	75-125	0			
Toluene	1648	45	1500	0	110	70-125	0			
Xylenes, Total	4923	140	4500	0	109	75-125	0			
Surr: 1,2-Dichloroethane-d4	1270	0	1500	0	84.6	70-130	0			
Surr: 4-Bromofluorobenzene	1416	0	1500	0	94.4	70-130	0			
Surr: Dibromofluoromethane	1444	0	1500	0	96.2	70-130	0			
Surr: Toluene-d8	1485	0	1500	0	99	70-130	0			

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94650** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 1611924-04A MSD			Units: µg/Kg-dry		Analysis Date: 11/21/2016 03:11 A		
Client ID: ACM 44-SS3				Run ID: VMS5_161120A			SeqNo: 4164709		Prep Date: 11/16/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1635	45	1500	0	109	75-125	1616	1.15	30		
Ethylbenzene	1707	45	1500	0	114	75-125	1655	3.08	30		
m,p-Xylene	3384	90	3000	0	113	80-125	3302	2.47	30		
o-Xylene	1649	45	1500	0	110	75-125	1622	1.7	30		
Toluene	1696	45	1500	0	113	70-125	1648	2.92	30		
Xylenes, Total	5033	140	4500	0	112	75-125	4923	2.21	30		
Surr: 1,2-Dichloroethane-d4	1264	0	1500	0	84.2	70-130	1270	0.474	30		
Surr: 4-Bromofluorobenzene	1416	0	1500	0	94.4	70-130	1416	0	30		
Surr: Dibromofluoromethane	1426	0	1500	0	95.1	70-130	1444	1.2	30		
Surr: Toluene-d8	1506	0	1500	0	100	70-130	1485	1.4	30		

The following samples were analyzed in this batch:

1611924-01A 1611924-02A 1611924-04A

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94502** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-94502-94502				Units: s.u.			Analysis Date: 11/14/2016 04:05 PM			
Client ID:				Run ID: WETCHEM_161114N				SeqNo: 4151908		Prep Date: 11/14/2016			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: 1611728-01A DUP				Units: s.u.			Analysis Date: 11/14/2016 04:05 PM		
Client ID:				Run ID: WETCHEM_161114N				SeqNo: 4151915		Prep Date: 11/14/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH	7.7	0	0	0	0	0-0	7.73	0.389	20	
----	-----	---	---	---	---	-----	------	-------	----	--

DUP				Sample ID: 1611924-01A DUP				Units: s.u.			Analysis Date: 11/14/2016 04:05 PM			
Client ID: ACM 44-SS1				Run ID: WETCHEM_161114N				SeqNo: 4151927			Prep Date: 11/14/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH	7.67	0	0	0	0	0-0	7.75	1.04	20	
----	------	---	---	---	---	-----	------	------	----	--

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-03A
1611924-04A		

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

Client: Olsson Associates
 Work Order: 1611924
 Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94616** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-94616-94616				Units: mg/Kg		Analysis Date: 11/17/2016 10:30 A		
Client ID:		Run ID: WETCHEM_161117E				SeqNo: 4158686		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-94616-94616				Units: mg/Kg		Analysis Date: 11/17/2016 10:30 A		
Client ID:		Run ID: WETCHEM_161117E				SeqNo: 4158685		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.3 1.0 5 0 86 80-120 0

MS		Sample ID: 1611924-03A MS				Units: mg/Kg		Analysis Date: 11/17/2016 10:30 A		
Client ID: ACM 44-BG1		Run ID: WETCHEM_161117E				SeqNo: 4158680		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.42 1.0 5 0.0198 68 75-125 0 S

MS		Sample ID: 1611924-03A MSI				Units: mg/Kg		Analysis Date: 11/17/2016 10:30 A		
Client ID: ACM 44-BG1		Run ID: WETCHEM_161117E				SeqNo: 4158682		Prep Date: 11/15/2016		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3036 100 3170 0.0198 95.8 75-125 0

MSD		Sample ID: 1611924-03A MSD				Units: mg/Kg		Analysis Date: 11/17/2016 10:30 A		
Client ID: ACM 44-BG1		Run ID: WETCHEM_161117E				SeqNo: 4158681		Prep Date: 11/15/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.67 1.0 5 0.0198 73 75-125 3.42 7.05 20 S

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-03A
1611924-04A		

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **94782** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP				Sample ID: 1611911-02ADUP				Units: mmhos/cm @25°			Analysis Date: 11/18/2016 03:10 PM			
Client ID:				Run ID: WETCHEM_161118M				SeqNo: 4162058			Prep Date: 11/18/2016		DF: 10	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Electrical Conductivity @ Saturation		19.31	0.050	0	0	0		25.9	29.2	50				

DUP		Sample ID: 1611924-04A DUP				Units: mmhos/cm @25°		Analysis Date: 11/18/2016 03:10 PM		
Client ID: ACM 44-SS3			Run ID: WETCHEM_161118M		SeqNo: 4162070		Prep Date: 11/18/2016		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	3.7	0.050	0	0	0		3.87	4.49	50	

The following samples were analyzed in this batch:

1611924-01A	1611924-02A	1611924-03A
1611924-04A		

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **R200612** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R200612				Units: % of sample		Analysis Date: 11/14/2016 05:20 PM		
Client ID:		Run ID: MOIST_161114D				SeqNo: 4153195		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS				Sample ID: LCS-R200612				Units: % of sample			Analysis Date: 11/14/2016 05:20 PM		
Client ID:				Run ID: MOIST_161114D				SeqNo: 4153194		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: 1611924-01A DUP				Units: % of sample			Analysis Date: 11/14/2016 05:20 PM			
Client ID: ACM 44-SS1				Run ID: MOIST_161114D				SeqNo: 4153191			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 18.16 0.050 0 0 0 17.92 1.33 20

DUP				Sample ID: 1611936-01A DUP				Units: % of sample			Analysis Date: 11/14/2016 05:20 PM			
Client ID:				Run ID: MOIST_161114D				SeqNo: 4153193			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 19.9 0.050 0 0 0 19.93 0.151 20

The following samples were analyzed in this batch:

1611924-01A

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

Client: Olsson Associates
Work Order: 1611924
Project: AC McLaughlin 44 Spill

QC BATCH REPORT

Batch ID: **R200613** Instrument ID **MOIST** Method: **SW3550C**

MBLK				Sample ID: WBLKS-R200613				Units: % of sample			Analysis Date: 11/14/2016 06:51 PM			
Client ID:				Run ID: MOIST_161114E				SeqNo: 4153211			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Moisture	0.04	0.050								J				

LCS				Sample ID: LCS-R200613				Units: % of sample			Analysis Date: 11/14/2016 06:51 PM			
Client ID:				Run ID: MOIST_161114E				SeqNo: 4153210			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: 1611911-04A DUP				Units: % of sample			Analysis Date: 11/14/2016 06:51 PM			
Client ID:				Run ID: MOIST_161114E				SeqNo: 4153200			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Moisture	21.01	0.050	0	0	0		19.72	6.33	20					

DUP				Sample ID: 1611914-03A DUP				Units: % of sample			Analysis Date: 11/14/2016 06:51 PM			
Client ID:				Run ID: MOIST_161114E				SeqNo: 4153205			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Moisture	19.71	0.050	0	0	0		19.91	1.01	20					

The following samples were analyzed in this batch:

1611924-02A	1611924-03A	1611924-04A
-------------	-------------	-------------

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+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 3541

☐ 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	AC McLaughlin 44 Spill	A TPH (GRO & DRO)															
Work Order		Project Number	013.3287.300.300004	B BTEX															
Company Name	Olson Associates	Bill To Company	Olson 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 81508	City/State/Zip	Grand Junction, CO 81508	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@olsonconsulting.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	ACM 44-SS1	11/09/16	1030	Soil	8	2	X	X	X	X	X	X	X						
2	ACM 44-SS2	11/09/16	1050	Soil	8	2	X	X	X	X	X	X	X						
3	ACM 44-BG1	11/09/16	1100	Soil	8	2				X	X	X	X						
4	ACM 44-SS3	11/09/16	1115	Soil	8	2	X	X	X	X	X	X	X						
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			

Sampler(s): Please Print & Sign Jason McLarty		Shipment Method: FedEx		Required Turnaround Time: <input 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: 11/11/16	Time: 1000	Received by: <i>[Signature]</i>		Notes: Chevron Pricing Applies - Per Bruce Schlatter				
Requisitioned by: <i>[Signature]</i>		Date: 11/11/16	Time: 1720	Received by (Laboratory): <i>[Signature]</i>		QC Package: (Check Box Below)				
Logged by (Laboratory): <i>[Signature]</i>		Date: 11/14/16	Time: 1130	Checked by (Laboratory): <i>[Signature]</i>		Cooler Temp. 44°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		
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035						Other: _____				

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

Copyright 2011 by ALS Group

ORIGIN ID: RLA (816) 298-1033
 NICK MARTINEZ
 ALS ENVIRONMENTAL PARACHUTE
 PARACHUTE SERVICE CENTER
 127 EAST 1ST ST
 PARACHUTE, CO 81635
 UNITED STATES US

SHIP DATE: 11NOV18
 ACTWGT: 68.00 LB
 CAD: 2264840/NET3790
 DIMS: 14x26x15 IN

BILL SENDER

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

HOLLAND MI 49424

(816) 399-6070
 INV
 PO: PARACHUTE

REF 111116-3

DEPT:



FedEx
 Express



REL#
 3785346

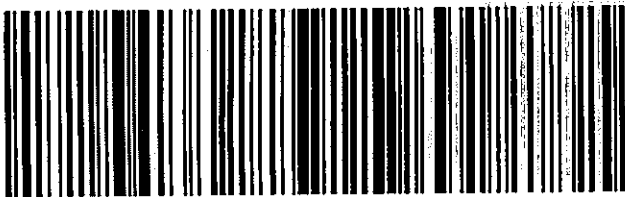
SATURDAY 12:00P
PRIORITY OVERNIGHT

2 of 3
 MP&# 0263 7776 9828 6511
 Mstr# 7776 9828 6257

0201

X0 HLMA

MI-US **49424**
GRR



544J3C36114EB

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 shipment. Use result in additional billing charges. Use of this system constitutes your agreement to the service will not be responsible for any claim in excess of \$100 per package. Information, unless you declare a higher value, pay an additional fee, or use the current FedEx Service Guide apply. Your right to of sales, income interest, profit, attorney's fees, costs, and other limited to the greater of \$100 or the authorized declared value extraordinary value is \$1,000. Jewelry, precious metals, rare claims must be filed within strict time limits; see current FedEx

very

DR

ping purposes is fraudulent and could
 vices Guide, available on fedex.com. FedEx
 image, delay, non-delivery, misdelivery or
 al loss and file a timely claim. Limitations
 including intrinsic value of the package, loss
 incidental consequential, or special is
 documented loss. Maximum for items of
 is listed in our Service Guide. Written

Seal Broken By:	
Date:	11/11/2016
CUSTODY SEAL	
Date:	11/11/2016
Name:	ALS Environmental

ALS Environmental
 3352 128th Avenue
 Holland, Michigan 48424
 Tel: +1 616 399 6070
 Fax: +1 616 399 6185

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **12-Nov-16 10:00**

Work Order: **1611924**

Received by: **DS**

Checklist completed by Diane Shaw 14-Nov-16
eSignature Date

Reviewed by: Chad Whelton 14-Nov-16
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>4.4/4.4 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>11/14/2016 11:36:55 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:



30-Oct-2017

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

Re: **ACM 44 Spill Resampling**

Work Order: **17101498**

Dear Tim,

ALS Environmental received 2 samples on 23-Oct-2017 09:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 13.

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

Sincerely,

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

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: ACM 44 Spill Resampling
Work Order: 17101498

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>
17101498-01	ACM44-SS1	Soil		10/19/2017 10:30	10/23/2017 09:00	<input type="checkbox"/>
17101498-02	ACM44-SS2	Soil		10/19/2017 10:40	10/23/2017 09:00	<input type="checkbox"/>

Client: Olsson Associates
Project: ACM 44 Spill Resampling
Work Order: 17101498

Case Narrative

Batch 109490, Method PNLVI_8270_S, Sample 17101498-01B: PAH surrogate recovery out due to matrix interference.

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

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

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

ALS Group, USA

Date: 30-Oct-17

Client: Olsson Associates
Project: ACM 44 Spill Resampling
Sample ID: ACM44-SS1
Collection Date: 10/19/2017 10:30 AM

Work Order: 17101498
Lab ID: 17101498-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/26/17		Analyst: RH
Sodium Adsorption Ratio	2.9		0.010	0.010	none	1	10/26/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/26/17		Analyst: JF
Calcium	280		0.86	5.0	mg/L	10	10/26/2017 14:10
Magnesium	62		0.068	2.0	mg/L	10	10/26/2017 14:10
Sodium	210		0.34	2.0	mg/L	10	10/26/2017 14:10
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/24/17		Analyst: RM
Acenaphthene	U		0.0032	0.045	mg/Kg-dry	1	10/24/2017 23:05
Anthracene	U		0.0017	0.045	mg/Kg-dry	1	10/24/2017 23:05
Benzo(a)anthracene	U		0.0028	0.045	mg/Kg-dry	1	10/24/2017 23:05
Benzo(a)pyrene	U		0.0011	0.045	mg/Kg-dry	1	10/24/2017 23:05
Benzo(b)fluoranthene	U		0.0017	0.045	mg/Kg-dry	1	10/24/2017 23:05
Benzo(k)fluoranthene	U		0.0024	0.045	mg/Kg-dry	1	10/24/2017 23:05
Chrysene	U		0.0017	0.045	mg/Kg-dry	1	10/24/2017 23:05
Dibenzo(a,h)anthracene	U		0.0015	0.045	mg/Kg-dry	1	10/24/2017 23:05
Fluoranthene	U		0.0013	0.045	mg/Kg-dry	1	10/24/2017 23:05
Fluorene	U		0.0015	0.045	mg/Kg-dry	1	10/24/2017 23:05
Indeno(1,2,3-cd)pyrene	U		0.0014	0.045	mg/Kg-dry	1	10/24/2017 23:05
Naphthalene	U		0.0085	0.045	mg/Kg-dry	1	10/24/2017 23:05
Pyrene	U		0.0017	0.045	mg/Kg-dry	1	10/24/2017 23:05
Surr: 2-Fluorobiphenyl	43.5			20-140	%REC	1	10/24/2017 23:05
Surr: 4-Terphenyl-d14	24.4			22-172	%REC	1	10/24/2017 23:05
Surr: Nitrobenzene-d5	23.4	S		28-140	%REC	1	10/24/2017 23:05
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/26/17		Analyst: JB
Electrical Conductivity @ Saturation	3.6		0.028	0.25	mmhos/cm @25°	50	10/26/2017 15:20
MOISTURE							
			Method: SW3550C				Analyst: MT
Moisture	8.2		0.025	0.050	% of sample	1	10/23/2017 16:29

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

ALS Group, USA

Date: 30-Oct-17

Client: Olsson Associates
Project: ACM 44 Spill Resampling
Sample ID: ACM44-SS2
Collection Date: 10/19/2017 10:40 AM

Work Order: 17101498
Lab ID: 17101498-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/26/17		Analyst: RH
Sodium Adsorption Ratio	23		0.010	0.010	none	1	10/26/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/26/17		Analyst: JF
Calcium	61		0.86	5.0	mg/L	10	10/26/2017 14:11
Magnesium	14		0.068	2.0	mg/L	10	10/26/2017 14:11
Sodium	750		0.34	2.0	mg/L	10	10/26/2017 14:11
SEMI-VOLATILE ORGANIC COMPOUNDS							
			Method: SW846 8270D		Prep: SW3546 / 10/24/17		Analyst: RM
Acenaphthene	U		0.0038	0.053	mg/Kg-dry	1	10/24/2017 23:19
Anthracene	U		0.0019	0.053	mg/Kg-dry	1	10/24/2017 23:19
Benzo(a)anthracene	U		0.0032	0.053	mg/Kg-dry	1	10/24/2017 23:19
Benzo(a)pyrene	U		0.0013	0.053	mg/Kg-dry	1	10/24/2017 23:19
Benzo(b)fluoranthene	U		0.0020	0.053	mg/Kg-dry	1	10/24/2017 23:19
Benzo(k)fluoranthene	U		0.0027	0.053	mg/Kg-dry	1	10/24/2017 23:19
Chrysene	U		0.0020	0.053	mg/Kg-dry	1	10/24/2017 23:19
Dibenzo(a,h)anthracene	U		0.0017	0.053	mg/Kg-dry	1	10/24/2017 23:19
Fluoranthene	U		0.0015	0.053	mg/Kg-dry	1	10/24/2017 23:19
Fluorene	U		0.0017	0.053	mg/Kg-dry	1	10/24/2017 23:19
Indeno(1,2,3-cd)pyrene	U		0.0016	0.053	mg/Kg-dry	1	10/24/2017 23:19
Naphthalene	U		0.0099	0.053	mg/Kg-dry	1	10/24/2017 23:19
Pyrene	U		0.0019	0.053	mg/Kg-dry	1	10/24/2017 23:19
Surr: 2-Fluorobiphenyl	91.4			20-140	%REC	1	10/24/2017 23:19
Surr: 4-Terphenyl-d14	105			22-172	%REC	1	10/24/2017 23:19
Surr: Nitrobenzene-d5	87.1			28-140	%REC	1	10/24/2017 23:19
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/26/17		Analyst: JB
Electrical Conductivity @ Saturation	4.8		0.028	0.25	mmhos/cm @25°	50	10/26/2017 15:20
MOISTURE							
			Method: SW3550C				Analyst: MT
Moisture	22		0.025	0.050	% of sample	1	10/23/2017 16:29

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

Client: Olsson Associates

Work Order: 17101498

Project: ACM 44 Spill Resampling

QC BATCH REPORT

Batch ID: 109602

Instrument ID SAR

Method: USDA H60 Metho

DUP		Sample ID: 17101365-01BDUP				Units: none		Analysis Date: 10/26/2017		
Client ID:		Run ID: SAR_171026A				SeqNo: 4725657		Prep Date: 10/26/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	4.929	0.010	0	0	0		5.417	9.43	50	

The following samples were analyzed in this batch:

17101498-01A	17101498-02A
--------------	--------------

Batch ID: 109602

Instrument ID ICPMS3

Method: SW6020A

DUP		Sample ID: 17101365-01BDUP				Units: mg/L		Analysis Date: 10/26/2017 01:46 PM		
Client ID:		Run ID: ICPMS3_171026A				SeqNo: 4724460		Prep Date: 10/26/2017		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	163.2	5.0	0	0	0	0-0	201.3	20.9		
Magnesium	16.46	2.0	0	0	0	0-0	19.9	18.9		
Sodium	247	2.0	0	0	0	0-0	301	19.7		

The following samples were analyzed in this batch:

17101498-01A	17101498-02A
--------------	--------------

Client: Olsson Associates
 Work Order: 17101498
 Project: ACM 44 Spill Resampling

QC BATCH REPORT

Batch ID: 109490 Instrument ID SVMS6 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-109490-109490				Units: µg/Kg		Analysis Date: 10/24/2017 04:43 PM		
Client ID:		Run ID: SVMS6_171024A				SeqNo: 4721335		Prep Date: 10/24/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	42								
Anthracene	U	42								
Benzo(a)anthracene	U	42								
Benzo(a)pyrene	U	42								
Benzo(b)fluoranthene	U	42								
Benzo(k)fluoranthene	U	42								
Chrysene	U	42								
Dibenzo(a,h)anthracene	U	42								
Fluoranthene	U	42								
Fluorene	U	42								
Indeno(1,2,3-cd)pyrene	U	42								
Naphthalene	U	42								
Pyrene	U	42								
Surr: 2-Fluorobiphenyl	3042	0	3333	0	91.3	20-140	0			
Surr: 4-Terphenyl-d14	3624	0	3333	0	109	22-172	0			
Surr: Nitrobenzene-d5	2775	0	3333	0	83.3	28-140	0			

LCS		Sample ID: SLCSS1-109490-109490				Units: µg/Kg		Analysis Date: 10/24/2017 04:57 PM		
Client ID:		Run ID: SVMS6_171024A				SeqNo: 4721336		Prep Date: 10/24/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1191	42	1333	0	89.4	40-140	0			
Anthracene	1241	42	1333	0	93.1	40-140	0			
Benzo(a)anthracene	1297	42	1333	0	97.3	40-140	0			
Benzo(a)pyrene	1388	42	1333	0	104	40-140	0			
Benzo(b)fluoranthene	1132	42	1333	0	84.9	40-140	0			
Benzo(k)fluoranthene	1365	42	1333	0	102	40-140	0			
Chrysene	1202	42	1333	0	90.2	40-140	0			
Dibenzo(a,h)anthracene	1544	42	1333	0	116	40-140	0			
Fluoranthene	1025	42	1333	0	76.9	40-140	0			
Fluorene	1300	42	1333	0	97.5	40-140	0			
Indeno(1,2,3-cd)pyrene	1524	42	1333	0	114	40-140	0			
Naphthalene	1200	42	1333	0	90	40-140	0			
Pyrene	1033	42	1333	0	77.5	40-140	0			
Surr: 2-Fluorobiphenyl	3100	0	3333	0	93	20-140	0			
Surr: 4-Terphenyl-d14	3365	0	3333	0	101	22-172	0			
Surr: Nitrobenzene-d5	2896	0	3333	0	86.9	28-140	0			

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

Client: Olsson Associates
 Work Order: 17101498
 Project: ACM 44 Spill Resampling

QC BATCH REPORT

Batch ID: 109490 Instrument ID SVMS6 Method: SW846 8270D

MS				Sample ID: 17101527-05A MS			Units: µg/Kg		Analysis Date: 10/24/2017 05:11 PM		
Client ID:			Run ID: SVMS6_171024A			SeqNo: 4721337		Prep Date: 10/24/2017		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	138.8	40	1285	0	10.8	40-140	0			S	
Anthracene	71.78	40	1285	0	5.59	40-140	0			S	
Benzo(a)anthracene	U	40	1285	0	0	40-140	0			S	
Benzo(a)pyrene	U	40	1285	0	0	40-140	0			S	
Benzo(b)fluoranthene	U	40	1285	0	0	40-140	0			S	
Benzo(k)fluoranthene	U	40	1285	0	0	40-140	0			S	
Chrysene	U	40	1285	0	0	40-140	0			S	
Dibenzo(a,h)anthracene	U	40	1285	0	0	40-140	0			S	
Fluoranthene	61.54	40	1285	0	4.79	40-140	0			S	
Fluorene	96.44	40	1285	0	7.51	40-140	0			S	
Indeno(1,2,3-cd)pyrene	U	40	1285	0	0	40-140	0			S	
Naphthalene	501.7	40	1285	0	39	40-140	0			S	
Pyrene	61.74	40	1285	0	4.8	40-140	0			S	
Surr: 2-Fluorobiphenyl	471.6	0	3213	0	14.7	20-140	0			S	
Surr: 4-Terphenyl-d14	231.3	0	3213	0	7.2	22-172	0			S	
Surr: Nitrobenzene-d5	222.3	0	3213	0	6.92	28-140	0			S	

MSD				Sample ID: 17101527-05A MSD			Units: µg/Kg		Analysis Date: 10/24/2017 05:25 PM		
Client ID:		Run ID: SVMS6_171024A			SeqNo: 4721338		Prep Date: 10/24/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	380.9	41	1318	0	28.9	40-140	138.8	93.2	30	SR	
Anthracene	135	41	1318	0	10.2	40-140	71.78	61.2	30	SR	
Benzo(a)anthracene	U	41	1318	0	0	40-140	0	0	30	S	
Benzo(a)pyrene	U	41	1318	0	0	40-140	0	0	30	S	
Benzo(b)fluoranthene	U	41	1318	0	0	40-140	0	0	30	S	
Benzo(k)fluoranthene	U	41	1318	0	0	40-140	0	0	30	S	
Chrysene	U	41	1318	0	0	40-140	0	0	30	S	
Dibenzo(a,h)anthracene	U	41	1318	0	0	40-140	0	0	30	S	
Fluoranthene	93.7	41	1318	0	7.11	40-140	61.54	41.4	30	SR	
Fluorene	293.3	41	1318	0	22.3	40-140	96.44	101	30	SR	
Indeno(1,2,3-cd)pyrene	U	41	1318	0	0	40-140	0	0	30	S	
Naphthalene	426	41	1318	0	32.3	40-140	501.7	16.3	30	S	
Pyrene	94.24	41	1318	0	7.15	40-140	61.74	41.7	30	SR	
Surr: 2-Fluorobiphenyl	1037	0	3294	0	31.5	20-140	471.6	75	0		
Surr: 4-Terphenyl-d14	469.6	0	3294	0	14.3	22-172	231.3	68	0	S	
Surr: Nitrobenzene-d5	539.6	0	3294	0	16.4	28-140	222.3	83.3	0	S	

The following samples were analyzed in this batch:

17101498-01B

17101498-02B

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

Client: Olsson Associates
Work Order: 17101498
Project: ACM 44 Spill Resampling

QC BATCH REPORT

Batch ID: **109602** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 17101365-01B DUP				Units: mmhos/cm @25°		Analysis Date: 10/26/2017 03:20 PM		
Client ID:		Run ID: WETCHEM_171026U			SeqNo: 4724029		Prep Date: 10/26/2017		DF: 50	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.25	0.25	0	0	0		2.77	20.7	50	

The following samples were analyzed in this batch:

17101498-01A	17101498-02A
--------------	--------------

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

Client: Olsson Associates
 Work Order: 17101498
 Project: ACM 44 Spill Resampling

QC BATCH REPORT

Batch ID: **R222911** Instrument ID **MOIST** Method: **SW3550C**

MBLK				Sample ID: WBLKS-R222911				Units: % of sample			Analysis Date: 10/23/2017 04:29 PM			
Client ID:				Run ID: MOIST_171023D				SeqNo: 4717277			Prep Date:		DF: 1	
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.050

LCS				Sample ID: LCS-R222911				Units: % of sample			Analysis Date: 10/23/2017 04:29 PM		
Client ID:				Run ID: MOIST_171023D				SeqNo: 4717276		Prep Date:		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.99 0.050 100 0 100 99.5-100.5 0

DUP				Sample ID: 17101495-04A DUP				Units: % of sample			Analysis Date: 10/23/2017 04:29 PM			
Client ID:				Run ID: MOIST_171023D				SeqNo: 4717255			Prep Date:		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 8.98 0.050 0 0 0 0-0 9 0.222 5

DUP				Sample ID: 17101499-06A DUP				Units: % of sample			Analysis Date: 10/23/2017 04:29 PM			
Client ID:				Run ID: MOIST_171023D				SeqNo: 4717267			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 27.41 0.050 0 0 0 0-0 27.86 1.63 5

The following samples were analyzed in this batch:

17101498-01A	17101498-01B	17101498-02A
17101498-02B		

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



Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5288

17101498

Customer Information			Project Information					Parameter/Method Request for Analysis												
Purchase Order			Project Name	ACM 44 Spill Resampling					A TPH (GRO & DRO)											
Work Order			Project Number	013.3287.400.400004					B BTEX											
Company Name	Olson Associates		Bill To Company	Olson 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@olsonassoc.com		e-Mail Address	tdobransky@olsonassoc.com					I DRO Only											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold			
1	ACM44-SS1	10/19/17	1030	Soil	8	2			X	X	X									
2	ACM44-SS2	10/19/17	1040	Soil	8	2			X	X	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:	Time:	Received by:		Notes: Chevron Pricing Applies - Per Bruce Schiatter				
Relinquished by:			Date: 10-23-17	Time: 0900	Received by (Laboratory):		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 <input type="checkbox"/> Other:				

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

Copyright 2011 by ALS Group

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **23-Oct-17 09:00**

Work Order: **17101498**

Received by: **NCF**

Checklist completed by Chad Whelton
eSignature

24-Oct-17
Date

Reviewed by: Chad Whelton
eSignature

24-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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>5.2/5.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/23/2017 12:58:13 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



09-Apr-2021

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

Re: **ACM 44 Spill Resampling**

Work Order: **21040268**

Dear Tim,

ALS Environmental received 1 sample on 03-Apr-2021 09:30 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 7.

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

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

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Entrada Consulting Group
Project: ACM 44 Spill Resampling
Work Order: 21040268**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>
21040268-01	ACM44-SS2	Soil		4/1/2021 08:50	4/3/2021 09:30	<input type="checkbox"/>

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

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

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

ALS Group, USA

Date: 09-Apr-21

Client: Entrada Consulting Group
Project: ACM 44 Spill Resampling
Sample ID: ACM44-SS2
Collection Date: 4/1/2021 08:50 AM

Work Order: 21040268
Lab ID: 21040268-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
SOLUBLE CATIONS FOR SAR			Method: SW6020B		Prep: USDA Method 20B / 4/8/21		Analyst: STP
Calcium	90		2.5	5.0	mg/L	10	4/8/2021 17:21
Magnesium	12		0.50	2.0	mg/L	10	4/8/2021 17:21
Sodium	7.9		1.8	2.0	mg/L	10	4/8/2021 17:21
SODIUM ADSORPTION RATIO			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 4/8/21		Analyst: STP
Sodium Adsorption Ratio	0.21		0.010	0.010	none	1	4/8/2021
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 4/8/21		Analyst: QTN
Electrical Conductivity @ Saturation	0.60		0.011	0.10	mmhos/cm @25°	20	4/8/2021 12:48

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

Client: Entrada Consulting Group
Work Order: 21040268
Project: ACM 44 Spill Resampling

QC BATCH REPORT

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

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

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

The following samples were analyzed in this batch: 21040268-01A

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

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

The following samples were analyzed in this batch: 21040268-01A



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	ACM 44 Spill Resampling				A TPH (GRO & DRO)												
Work Order		Project Number	018-065				B BTEX												
Company Name	Entrada Consulting Group	Bill To Company	Entrada Consulting Group				C PAH (See Attached List) CO Table 910												
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky				D Electrical Conductivity												
Address	330 Grand Ave, Ste C	Address	330 Grand Ave, Ste C				E Sodium Adsorption Ratio												
City/State/Zip	Grand Junction, CO 81501	City/State/Zip	Grand Junction, CO 81501				F pH												
Phone	970.270.2986	Phone	970.270.2986				G Metals (See Attached List) CO Table 910												
Fax		Fax					H Arsenic Only												
e-Mail Address	tdobransky@entradainc.com	e-Mail Address	tdobransky@entradainc.com				I DRO Only												
							J												
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	ACM44-SS2	04/01/21	0500	Soil	8	21				X	X								
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input checked="" type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:	Date:	Time:	Received by:	Notes: 3 Day Rush			
Relinquished by:	Date: 4-2-21	Time: 1830	Received by (Laboratory):	Cooler Temp. 12/4.2c			
Logged by (Laboratory):	Date: 4/5/21	Time: 0900	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 <input type="checkbox"/> Other:			

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

Copyright 2011 by ALS Group

Sample Receipt Checklist

Client Name: **ENTRADA**

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

Work Order: **21040268**

Received by: **DS**

Checklist completed by **Diane Shaw**

05-Apr-21

Reviewed by: **Chad Whelton**

05-Apr-21

eSignature

Date

eSignature

Date

Matrices: **Soil**

Carrier name: **FedEx**

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

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

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

Chain of custody present? Yes ☒ No ☐

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

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

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

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

Sample(s) received on ice? Yes ☒ No ☐

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

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **4/5/2021 9:07:46 AM**

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

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

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by: **-**

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: