

#### Legend

● Spill Origin ● Soil Sample Location ~ Spill Path

0 500 1,000  
Ft  
1 inch = 502 ft



Project No: 018-065

Map By: NDB

Date: 5/13/2020

Fee 113X Spill  
Chevron USA, Inc.  
Rio Blanco County, Colorado  
SE/4 SE/4 Sec 20 T2S R102W  
NE/4 NE/4 Sec 29 T2S R102W



330 Grand Avenue, Unit C  
Grand Junction, CO 81501  
970-549-1015

Figure

1



Table 1  
FEE 113X Spill Response  
Soil Data Summary

SAMPLE SUMMARY	
Location Description	FEE 113X Spill
Sample Type	Soil

LABORATORY DATA SUMMARY																
Sample ID	FEE113X-SS1	FEE113X-SS1	FEE113X-SS1	FEE113X-SS1	FEE113X-UGSS	FEE113X-UGSS	FEE113X-SS2	FEE113X-SS2	FEE113X-SS3	FEE113X-SS4	FEE113X-SS5	FEE113X-SS6	FEE113X-BG1	FEE113X-DGSS	ALLOWABLE LIMITS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	2/27/2011	3/1/2011	5/4/2011	10/18/2018	3/1/2011	10/18/2018	3/1/2011	10/18/2018	4/8/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	3/1/2011		
Analytical Parameters																
TPH																
TPH Gasoline Range Organics	<21	<16	NT	NT	<18	NT	<14	NT	<3.1	45	<2.9	<3.2	NT	<16	500	mg/kg
TPH Diesel Range Organics	19.7 J	<11	NT	NT	<12	NT	<10	NT	16	20	1700	13	NT	42.1		
BTEX																
Benzene	<0.032	<0.024	NT	NT	<0.026	NT	<0.021	NT	<0.0076	<0.0091	<0.0071	<0.0056	NT	<0.024	0.17	mg/kg
Toluene	<0.11	<0.081	NT	NT	<0.088	NT	<0.070	NT	<0.012	<0.015	<0.011	<0.0089	NT	<0.080	85	mg/kg
Ethylbenzene	<0.043	34.5 J	NT	NT	<0.035	NT	<0.028	NT	<0.0093	<0.011	<0.0088	<0.0069	NT	<0.032	100	mg/kg
m,p-Xylene	<0.075	<0.057	NT	NT	<0.062	NT	<0.049	NT	<0.059	<0.071	<0.056	<0.044	NT	<0.056	175	mg/kg
o-Xylene	<0.075	<0.057	NT	NT	<0.062	NT	<0.049	NT	<0.017	<0.021	<0.016	<0.013	NT	<0.056	175	mg/kg
Metals																
Arsenic	5.5	4.9	NT	NT	5.1	NT	5.1	NT	6.5	6.6	5.2	6.8	5.9	4.2	0.39	mg/kg
Barium	171	124	NT	NT	94.2	NT	127	NT	180	180	160	210	130	92.2	15,000	mg/kg
Cadmium	<1.2	<1.3	NT	NT	<1.3	NT	<1.1	NT	0.3	0.33	0.12 J	0.21	0.25	<0.93	70	mg/kg
Chromium	8.5	7.3	NT	NT	10.2	NT	5.9	NT	10	11	6.8	11	15	7.6	NA	mg/kg
Copper	10.4	10.2	NT	NT	13.1	NT	7.1	NT	15	15	8.2	14	13	8.8	3,100	mg/kg
Lead	14.2	16.4	NT	NT	15.9	NT	8.6	NT	20	20	13	21	19	10.4	400	mg/kg
Mercury	<0.14	<0.13	NT	NT	<0.13	NT	<0.11	NT	0.020 J	0.04	0.016 J	0.018 J	0.017 J	<0.11	23	mg/kg
Nickel	11.7	10.8	NT	NT	13.8	NT	8.4	NT	17	17	11	16	17	10.4	1,600	mg/kg
Selenium	<6.1	<6.6	NT	NT	<6.4	NT	<5.7	NT	1.0	1.2	0.65	1.1	0.81	<4.7	390	mg/kg
Silver	<3.7	<3.9	NT	NT	<3.9	NT	<3.4	NT	0.082 J	0.096 J	<0.051	0.089 J	0.10 J	<2.8	390	mg/kg
Zinc	49.9	47.8	NT	NT	58.6	NT	34.8	NT	77	79	49	71	67	42	23,000	mg/kg
SAR Metals Analysis																
Calcium	898	335	501	130	333	160	543	NT	40	80	34	27	72	229	NA	mg/L
Magnesium	579	280	440	14	299	15	255	NT	4.5	11	7.4	6.7	16	58	NA	mg/L
Sodium	4990	1890	2590	55	1750	74	1130	NT	250	140	190	220	32	219	NA	mg/L
Sodium Adsorption Ratio	31.9	18.4	20.4	1.2	16.8	1.5	10	NT	10	3.8	7.6	9.9	0.89	3.35	<12	
Polynuclear Aromatic Hydrocarbons																
Acenaphthene	<0.049	<0.041	NT	<0.023	<0.017	NT	<0.037	<0.023	<0.00091	<0.0010	0.00093	<0.00096	NT	<0.041	1,000	mg/kg
Anthracene	<0.034	<0.028	NT	<0.013	<0.012	NT	<0.026	<0.013	<0.0019	<0.0018	<0.0016	<0.0017	NT	<0.028	1,000	mg/kg
Benzo(a)anthracene	<0.051	<0.043	NT	<0.012	<0.018	NT	<0.039	<0.012	<0.0013	0.012	<0.0020	<0.0020	NT	<0.043	0.22	mg/kg
Benzo(a)pyrene	<0.033	<0.027	NT	<0.019	<0.012	NT	<0.025	<0.020	<0.0011	0.0055	0.10	<0.0014	NT	<0.027	0.022	mg/kg
Benzo(b)fluoranthene	<0.038	<0.032	NT	<0.015	<0.013	NT	<0.029	<0.015	<0.0014	0.0066	<0.0011	<0.0012	NT	<0.032	0.22	mg/kg
Benzo(k)fluoranthene	<0.033	<0.027	NT	<0.016	<0.012	NT	<0.025	<0.017	<0.0011	<0.0015	<0.0014	<0.0015	NT	<0.027	2.2	mg/kg
Chrysene	<0.026	<0.022	NT	<0.017	<0.009	NT	<0.020	<0.017	<0.00096	0.0056	0.10	<0.0010	NT	<0.022	22	mg/kg
Dibenzo(a,h)anthracene	<0.039	<0.032	NT	<0.030	<0.014	NT	<0.030	<0.031	<0.0011	<0.0012	<0.0011	<0.0012	NT	<0.032	0.022	mg/kg
Fluoranthene	<0.032	<0.027	NT	<0.028	<0.011	NT	<0.025	<0.029	<0.00086	0.015	<0.00088	<0.00091	NT	<0.027	1,000	mg/kg
Fluorene	<0.051	<0.043	NT	<0.014	<0.018	NT	<0.039	<0.014	<0.0015	<0.0017	<0.0016	<0.0016	NT	<0.043	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.034	<0.029	NT	<0.037	<0.012	NT	<0.026	<0.038	<0.0017	0.0034 J	<0.0017	<0.0018	NT	<0.029	0.22	mg/kg
Napthalene	<0.058	<0.048	NT	<0.017	<0.020	NT	<0.044	<0.018	<0.0020	<0.0023	<0.0021	<0.0022	NT	<0.048	23	mg/kg
Pyrene	<0.035	<0.029	NT	<0.021	<0.012	NT	<0.027	<0.022	<0.00077	0.0097	<0.00079	<0.00082	NT	<0.029	1,000	mg/kg
General Chemistry																
Chromium, Hexavalent	<0.61	<0.52	NT	NT	0.82	NT	<0.47	NT	<0.99	<1.1	<0.98	<0.99	<0.98	<0.50	23	mg/kg
Chromium, Trivalent	8	6.9	NT	NT	9.4	NT	5.5	NT	10	11	6.8	11	15	7.3	120,000	mg/kg
Specific Conductivity	28.6	12.5	NT	1.1	10.2	1.2	9.1	NT	1.3	1.1	0.93	1.2	0.58	2.3	<4 or 2 x the background	mmhos/cm
pH	8.12	8.74	NT	NT	8.76	NT	8.72	NT	8.74	7.7	9.02	8.93	7.92	8.73	6-9	su

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

Over allowable limit but under BACKGROUND level.  
Over allowable limit and not within BACKGROUND level.  
Over allowable limit

**Table 2**  
**FEE 113X Spill Response**  
**Surface Water Data Summary**

SAMPLE SUMMARY						
Location Description	FEE 113X Spill					
Sample Type	Water					

LABORATORY DATA SUMMARY						
Sample ID	FEE113X-WS1	FEE113X-WS2	FEE113X-UGWS	FEE113X-WS1&2	ALLOWABLE LIMITS	UNITS
Sample Date	2/27/2011	2/27/2011	3/1/2011	3/1/2011		
Analytical Parameters						
Aromatics						
Benzene	NT	<0.30	<0.30	<0.30	5	µg/L
Toluene	NT	<1.0	<1.0	<1.0	560-1,000	µg/L
Ethylbenzene	NT	<0.30	<0.30	<0.30	700	µg/L
m,p-Xylene	NT	<0.60	<0.60	<0.60	1,400-10,000	µg/L
o-Xylene	NT	<0.60	<0.60	<0.60		µg/L
Metals						
Sodium	7210	NT	216	194	NA	mg/L
General Chemistry						
Chloride	13400	NT	291	257	<1.25 x background	mg/L
HEM Oil and Grease	NT	NT	<4.8	<4.8	NA	mg/L
Sulfate	632	NT	337	245	<1.25 x background	mg/L

ug/L - micrograms per liter  
mg/L - milligrams per liter  
NA - not applicable  
NT - parameter was not tested



03/14/11

## Technical Report for

**Olsson Associates**

**009-0082\_201\_201004, Grand Junction, CO**

**FEE 113X Spill**

**Accutest Job Number: D21371**

**Sampling Date: 02/27/11**

### Report to:

**Olsson Associates  
826 21 1/2 Road  
Grand Junction, CO 81505  
tdobransky@oaconsulting.com**

**ATTN: Tim Dobransky**

**Total number of pages in report: 90**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

**John Hamilton  
Laboratory Director**

**Client Service contact: Amanda Kissell 303-425-6021**

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D21371

009-0082\_201\_201004, Grand Junction, CO  
Project No: FEE 113X Spill

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D21371-1	02/27/11	13:20	03/01/11	SO	Soil	FEE 113X-SS1
D21371-1A	02/27/11	13:20	03/01/11	SO	Soil	FEE 113X-SS1
D21371-2	02/27/11	08:45	03/01/11	AQ	Water	FEE 113X-WS1
D21371-3	02/27/11	13:50	03/01/11	AQ	Water	FEE 113X-WS2

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Olsson Associates

**Job No** D21371

**Site:** 009-0082\_201\_201004, Grand Junction, CO

**Report Dat** 3/14/2011 9:34:57 AM

On 03/01/2011, three (3) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 2.2°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D21371 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> AQ	<b>Batch ID:</b> V5V807
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21462-5MS and D21462-5MSD were used as the QC samples indicated.

<b>Matrix</b> SO	<b>Batch ID:</b> V5V800
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Samples D21350-3MS and D21350-3MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP3242
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21463-1MS and D21463-1MSD were used as the QC samples indicated.
- Sample D21371-1: Sample dilution was required due to matrix interference.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGA572
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21350-33MS and D21350-33MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP3223
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Samples D21350-31MS and D21350-31MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The matrix spike (MS) recovery of TPH-DRO (C10-C28) is outside control limits. The spike recovery indicates possible matrix interference and/or sample nonhomogeneity. Refer to the lab control or spike blank for recovery information.

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP4125

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21376-1MSD and D21376-1MS were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Sodium are outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.

**Matrix** AQ

**Batch ID:** MP4169

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21569-8AMS and D21569-8AMSD were used as the QC samples for the metals analysis.

**Matrix** SO

**Batch ID:** MP4141

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21329-1MS, D21329-1MSD, and D21329-1SDL were used as the QC samples for the metals analysis.
- The matrix spike and matrix spike duplicate (MS) recoveries of Barium and the MSD recoveries of Selenium and Zinc are outside control limits. The spike recovery indicates possible matrix interference. Refer to the lab control or spike blank for recovery information.
- The RPD for the MS and MSD recoveries of Zinc are outside control limits for sample MP4141-S2. The high RPD is due to possible sample nonhomogeneity.
- The serial dilution RPDs for Barium, Cadmium, Lead, Nickel, Selenium, and Zinc are outside control limits for sample MP4141-SD1. The percent differences are acceptable for Cadmium and Selenium due to low initial sample concentration (< 50 times IDL).
- MP4141-SD1 for Barium, Lead, Nickel, and Zinc: Serial dilution indicates possible matrix interference.

## Metals By Method SW846 6020

**Matrix** SO

**Batch ID:** MP4142

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21329-1MS, D21329-1MSD, and D21329-1SDL were used as the QC samples for the metals analysis.

## Metals By Method SW846 7471A

**Matrix** SO

**Batch ID:** MP4144

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21292-1MS and D21292-1MSD were used as the QC samples for the Mercury analysis.

## Wet Chemistry By Method ASTM D1498-76M

**Matrix** SO

**Batch ID:** GN8508

- Sample D21371-1DUP was used as the QC sample for the Redox Potential Vs H2 analysis.

## Wet Chemistry By Method EPA 300/SW846 9056

**Matrix** AQ

**Batch ID:** GP3928

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21470-2MS and D21470-2MSD were used as the QC samples for the anion analysis.



### Wet Chemistry By Method LADNR29B

**Matrix** SO

**Batch ID:** MP4169

- Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN8507

- The data for SM19 2540B M meets quality control requirements.

### Wet Chemistry By Method SW846 3060/7196A M

**Matrix** SO

**Batch ID:** R6517

- The data for SW846 3060/7196A M meets quality control requirements.
- Trivalent Chromium: Calculated as: (Chromium) - (Hexavalent Chromium)

### Wet Chemistry By Method SW846 3060A/7196A

**Matrix** SO

**Batch ID:** M:GP12685

- The data for SW846 3060A/7196A meets quality control requirements.
- Hexavalent Chromium: Analysis performed at Accutest Laboratories, Marlborough, MA.

### Wet Chemistry By Method SW846 9045C

**Matrix** SO

**Batch ID:** GN8474

- The following sample was run outside of holding time for method SW846 9045C: D21371-1.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Accutest Mountain States

**Job No** D21371

**Site:** CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

**Report Date** 3/8/2011 11:54:02 AM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 02/27/2011 and were received at Accutest on 03/01/2011 properly preserved, at 3.9 Deg. C and intact. These Samples received an Accutest job number of D21371. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Wet Chemistry By Method SW846 3060A/7196A

**Matrix** SO

**Batch ID:** GP12685

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21334-1MS, D21334-1DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP12685-D1. RPD acceptable due to low duplicate and sample concentrations.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D21371).

## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1	<b>Date Sampled:</b>	02/27/11
<b>Lab Sample ID:</b>	D21371-1	<b>Date Received:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	63.5
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13520.D	1	03/01/11	DC	n/a	n/a	V5V800
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	110	32	ug/kg	
108-88-3	Toluene	ND	210	110	ug/kg	
100-41-4	Ethylbenzene	ND	210	43	ug/kg	
	m,p-Xylene	ND	430	75	ug/kg	
95-47-6	o-Xylene	ND	210	75	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%
17060-07-0	1,2-Dichloroethane-D4	107%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1		
<b>Lab Sample ID:</b>	D21371-1	<b>Date Sampled:</b>	02/27/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/01/11
<b>Method:</b>	SW846 8270C BY SIM SW846 3540C	<b>Percent Solids:</b>	63.5
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	3G03082.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	52	49	ug/kg	
208-96-8	Acenaphthylene	ND	260	54	ug/kg	
120-12-7	Anthracene	ND	52	34	ug/kg	
56-55-3	Benzo(a)anthracene	ND	52	51	ug/kg	
50-32-8	Benzo(a)pyrene	ND	52	33	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	52	38	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	52	33	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	52	33	ug/kg	
218-01-9	Chrysene	ND	52	26	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	52	39	ug/kg	
206-44-0	Fluoranthene	ND	52	32	ug/kg	
86-73-7	Fluorene	ND	52	51	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	52	34	ug/kg	
90-12-0	1-Methylnaphthalene	ND	52	46	ug/kg	
91-57-6	2-Methylnaphthalene	ND	260	80	ug/kg	
91-20-3	Naphthalene	ND	260	58	ug/kg	
85-01-8	Phenanthrene	ND	52	42	ug/kg	
129-00-0	Pyrene	ND	52	35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		10-193%
321-60-8	2-Fluorobiphenyl	48%		20-138%
1718-51-0	Terphenyl-d14	45%		17-174%

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21371-1**Date Sampled:** 02/27/11**Matrix:** SO - Soil**Date Received:** 03/01/11**Method:** SW846 8015B**Percent Solids:** 63.5**Project:** 009-0082\_201\_201004, Grand Junction, CO

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0503.D	1	03/02/11	BR	n/a	n/a	GGA572
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	21	21	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21371-1**Date Sampled:** 02/27/11**Matrix:** SO - Soil**Date Received:** 03/01/11**Method:** SW846-8015B SW846 3550B**Percent Solids:** 63.5**Project:** 009-0082\_201\_201004, Grand Junction, CO

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD5456.D	1	03/02/11	JB	03/01/11	OP3223	GFD240
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	19.7	21	14	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		63-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21371-1**Matrix:** SO - Soil**Date Sampled:** 02/27/11**Date Received:** 03/01/11**Percent Solids:** 63.5**Project:** 009-0082\_201\_201004, Grand Junction, CO**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.5	0.49	mg/kg	5	03/03/11	03/04/11 GJ	SW846 6020 <sup>2</sup>	SW846 3050B <sup>6</sup>
Barium	171	1.2	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.2	1.2	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Chromium	8.5	1.2	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Copper	10.4	1.2	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Lead	14.2	6.1	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.14	0.14	mg/kg	1	03/04/11	03/04/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>7</sup>
Nickel	11.7	3.7	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Selenium	< 6.1	6.1	mg/kg	1	03/03/11	03/07/11 JB	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.7	3.7	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Zinc	49.9	3.7	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1361

(2) Instrument QC Batch: MA1362

(3) Instrument QC Batch: MA1363

(4) Instrument QC Batch: MA1364

(5) Prep QC Batch: MP4141

(6) Prep QC Batch: MP4142

(7) Prep QC Batch: MP4144

RL = Reporting Limit



## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21371-1**Matrix:** SO - Soil**Date Sampled:** 02/27/11**Date Received:** 03/01/11**Percent Solids:** 63.5**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 0.61	0.61	mg/kg	1	03/07/11 15:05	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	8.0	1.8	mg/kg	1	03/07/11 15:05	AMA	SW846 3060/7196A M
Redox Potential Vs H2	332		mv	1	03/02/11	CJ	ASTM D1498-76M
Solids, Percent	63.5		%	1	03/02/11	JK	SM19 2540B M
Specific Conductivity	28600	1.0	umhos/cm	1	03/09/11	CJ	DEPT.OF AG, BOOK N9
pH	8.12		su	1	03/01/11 10:30	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21371-1A**Matrix:** SO - Soil**Date Sampled:** 02/27/11**Date Received:** 03/01/11**Percent Solids:** 63.5**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	898	2.0	mg/l	1	03/09/11	03/09/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Magnesium	579	1.0	mg/l	1	03/09/11	03/09/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Sodium <sup>a</sup>	4990	2.0	mg/l	1	03/09/11	03/09/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>

(1) Instrument QC Batch: MA1372

(2) Prep QC Batch: MP4169

(a) not over LR

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1	<b>Date Sampled:</b>	02/27/11
<b>Lab Sample ID:</b>	D21371-1A	<b>Date Received:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	63.5
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	31.9		ratio	1	03/09/11 16:27	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS1	<b>Date Sampled:</b>	02/27/11
<b>Lab Sample ID:</b>	D21371-2	<b>Date Received:</b>	03/01/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Sodium	7210000	8000	ug/l	20	03/02/11	03/03/11 JM	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA1360  
(2) Prep QC Batch: MP4125

RL = Reporting Limit



Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS1	<b>Date Sampled:</b>	02/27/11
<b>Lab Sample ID:</b>	D21371-2	<b>Date Received:</b>	03/01/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	13400	250	mg/l	500	03/07/11 14:07	CB	EPA 300/SW846 9056
Sulfate	632	250	mg/l	500	03/07/11 14:07	CB	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS2	<b>Date Sampled:</b>	02/27/11
<b>Lab Sample ID:</b>	D21371-3	<b>Date Received:</b>	03/01/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13639.D	1	03/05/11	DC	n/a	n/a	V5V807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
	m,p-Xylene	ND	4.0	0.60	ug/l	
95-47-6	o-Xylene	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	121%		63-130%
2037-26-5	Toluene-D8	104%		68-130%
460-00-4	4-Bromofluorobenzene	97%		61-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



# CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033; 303-425-6021; 303-425-6854

FED-EX Tracking #	Bottle Order Control #
Accutest Quote BS9/2010-41	Accutest Job # <b>D21371</b>

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes									
Company Name <b>Olsson Associates</b>		Project Name / No. <b>FEE 113X Spill (009-0082 201 201004)</b>														DW - Drinking Water									
Project Contact <b>Tim Dobransky</b>		Bill to <b>Olsson Associates</b>														GW - Wastewater									
E-Mail <b>tdobransky@oacconsulting.com</b>		Invoice Attn. <b>Tim Dobransky</b>														SO - Soil									
Address <b>826 21 1/2 Road</b>		Address <b>826 21 1/2 Road</b>														SL - Sludge									
City <b>Grand Junction</b>		City <b>Grand Junction</b>														OI - Oil									
State <b>CO</b>		State <b>CO</b>														LIQ - Liquid									
Zip <b>81505</b>		Zip <b>81505</b>														SOL - Other Solid									
Phone No. <b>970-263-7800</b>		Phone No. <b>970-263-7800</b>																							
Fax No.		Fax No.																							
Samplers's Name		Client Purchase Order #																							
Accutest Sample #	Field ID / Point of Collection	Collection		# of bottles	Number of preserved bottles										TPH (GRO)	TPH (DFO)	BTEX	PAH (See List 1)	Electrical Conductivity	Sodium Adsorption Ratio	pH	Metals (See List 2)	Anion	Sodium	LAB USE ONLY
		Date	Time		Matrix	ML	Nich	HMS	HDS	HS	HS	HS	HS	HS											
	FEE 113X-SS1	2/27/2011	1320	SO	5																			01	
	FEE 113X-WS1	2/27/2011	845	WW	1																			02	
	FEE 113X-WS2	2/27/2011	1350	WW	3																			03	
Turnaround Time (Business days)		Approved By/ Date:		Data Deliverable Information		Comments / Remarks																			
<input checked="" type="checkbox"/> 10 Day STANDARD				<input type="checkbox"/> Commercial "A" <input type="checkbox"/> TRRP-13		<b>AMS FEDEX Account Number - 487721860</b> <b>List 1 - Acenaphthene, Anthracene, Benzo(A)anthracene, Benzo(B)fluoranthene, Benzo(K)fluoranthene, Benzo(A)pyrene, Chrysene, Dibenzo(A,H)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-C,D)pyrene, Naphthalene, Pyrene</b> <b>List 2 - As, Ba, Cd, Cr3, Cr6, Cu, Pb, Hg, Ni, Se, Ag, Zn</b>																			
<input type="checkbox"/> 7 Day (per contract)				<input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> EDD Format																					
<input type="checkbox"/> 4 Day RUSH				<input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Other																					
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> Full Data Package																					
<input type="checkbox"/> 2 Day EMERGENCY				Commercial "A" = Results Only																					
<input type="checkbox"/> 1 Day EMERGENCY				Commercial "B" = Results & Standard QC																					
<input type="checkbox"/> Other																									
Real time analytical data available via Lablink																									
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																									
Relinquished by:		Date/Time:		Received By:		Relinquished By:		Date/Time:		Received By:		Relinquished By:		Date/Time:		Received By:		Relinquished By:		Date/Time:		Received By:		Relinquished By:	
		2/28/11 17:00						3/1/11 08:43						3-1-11 8:50						3-1-11 8:50					
3				3		4				4		4				4		4				4		4	
5				5		Custody Seal #				On Ice		Cooler Temp.				2.2									

Fedex

D21371: Chain of Custody

Page 1 of 3

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21371

Client: Olsson

Immediate Client Services Action Required: Yes

Date / Time Received: 3/1/2011 8:45:00 AM

Delivery Method:

Project: FEE 113X Spill (009-0082\_201\_201004

No. Coolers:

Airbill #'s: FEDEX

## Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

## Quality Control Preservation

Y

N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## Comments

Assuming 8260 for BTEX. Assuming 6010 for Sodium on the water. Client has not listed his anions. Amanda has a call in.

## Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample rec'd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

## Sample Integrity - Instructions

Y

N

N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume rec'd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Accutest Job Number:** D21371

**CSR:** Amanda Kissell

**Response Date**

3/1/2011

**Response:** CHL and SO4 for anions as per Table 910 for Water. 6010 sufficient for NA on water matrix.  
8260 as per Table 910.

4.1  
4

Accutest Laboratories  
V:303.425.6021

4036 Youngfield Street  
F: 303.425.6854

Wheat Ridge, CO  
www.accutest.com

**D21371: Chain of Custody**  
**Page 3 of 3**

## GC/MS Volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



## Method Blank Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V800-MB1	5V13501.D	1	03/01/11	DC	n/a	n/a	V5V800

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	15	ug/kg	
100-41-4	Ethylbenzene	ND	100	20	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
	m,p-Xylene	ND	200	35	ug/kg	
95-47-6	o-Xylene	ND	100	35	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	96% 70-130%
460-00-4	4-Bromofluorobenzene	89% 70-130%
17060-07-0	1,2-Dichloroethane-D4	116% 70-130%

## Method Blank Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V807-MB1	5V13624.D	1	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
	m,p-Xylene	ND	4.0	0.60	ug/l	
95-47-6	o-Xylene	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	104% 63-130%
2037-26-5	Toluene-D8	103% 68-130%
460-00-4	4-Bromofluorobenzene	95% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V800-BS1	5V13502.D	1	03/01/11	DC	n/a	n/a	V5V800

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	54.6	109	68-130
100-41-4	Ethylbenzene	50	51.7	103	70-130
108-88-3	Toluene	50	47.4	95	70-130
	m,p-Xylene	50	47.6	95	53-130
95-47-6	o-Xylene	50	45.9	92	61-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	108%	70-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V807-BS1	5V13625.D	1	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	47.3	95	70-130
100-41-4	Ethylbenzene	50	51.2	102	70-130
108-88-3	Toluene	50	49.2	98	70-140
	m,p-Xylene	50	48.0	96	55-134
95-47-6	o-Xylene	50	48.5	97	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	106%	68-130%
460-00-4	4-Bromofluorobenzene	106%	61-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21350-3MS	5V13504.D	1	03/01/11	DC	n/a	n/a	V5V800
D21350-3MSD	5V13505.D	1	03/01/11	DC	n/a	n/a	V5V800
D21350-3	5V13503.D	1	03/01/11	DC	n/a	n/a	V5V800

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-1

CAS No.	Compound	D21350-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3210	3730	116	3820	119	2	55-140/30
100-41-4	Ethylbenzene	ND		3210	3440	107	3540	110	3	56-139/30
108-88-3	Toluene	ND		3210	3140	98	3230	101	3	57-144/30
	m,p-Xylene	ND		3210	3180	99	3310	103	4	47-130/30
95-47-6	o-Xylene	ND		3210	3070	96	3170	99	3	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21350-3	Limits
2037-26-5	Toluene-D8	92%	91%	90%	70-130%
460-00-4	4-Bromofluorobenzene	109%	109%	96%	70-130%
17060-07-0	1,2-Dichloroethane-D4	111%	106%	115%	70-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21462-5MS	5V13627.D	5	03/05/11	DC	n/a	n/a	V5V807
D21462-5MSD	5V13628.D	5	03/05/11	DC	n/a	n/a	V5V807
D21462-5	5V13626.D	5	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21371-3

CAS No.	Compound	D21462-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	145	250	381	94	388	97	2	59-132/30
100-41-4	Ethylbenzene	27.0	250	296	108	300	109	1	68-130/30
108-88-3	Toluene	24.0	250	276	101	278	102	1	56-142/30
	m,p-Xylene	10.7	J 250	267	103	269	103	1	36-146/30
95-47-6	o-Xylene	ND	250	255	102	260	104	2	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D21462-5	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	96%	97%	63-130%
2037-26-5	Toluene-D8	105%	104%	106%	68-130%
460-00-4	4-Bromofluorobenzene	106%	106%	97%	61-130%

## GC/MS Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-MB	3G03076.D	1	03/07/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21371-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	6.2	ug/kg	
208-96-8	Acenaphthylene	ND	33	6.9	ug/kg	
120-12-7	Anthracene	ND	6.7	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	6.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	4.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	4.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.2	ug/kg	
218-01-9	Chrysene	ND	6.7	3.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	4.9	ug/kg	
206-44-0	Fluoranthene	ND	6.7	4.1	ug/kg	
86-73-7	Fluorene	ND	6.7	6.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	4.4	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	5.9	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	10	ug/kg	
91-20-3	Naphthalene	ND	33	7.4	ug/kg	
85-01-8	Phenanthrene	ND	6.7	5.3	ug/kg	
129-00-0	Pyrene	ND	6.7	4.5	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	44% 10-193%
321-60-8	2-Fluorobiphenyl	44% 20-138%
1718-51-0	Terphenyl-d14	63% 17-174%



## Blank Spike Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-BS	3G03077.D	1	03/07/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21371-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	51.2	61	40-136
208-96-8	Acenaphthylene	83.3	51.0	61	42-139
120-12-7	Anthracene	83.3	56.9	68	40-141
56-55-3	Benzo(a)anthracene	83.3	56.2	67	38-143
50-32-8	Benzo(a)pyrene	83.3	53.6	64	39-145
205-99-2	Benzo(b)fluoranthene	83.3	54.7	66	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	59.7	72	35-136
207-08-9	Benzo(k)fluoranthene	83.3	56.3	68	38-147
218-01-9	Chrysene	83.3	56.9	68	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	58.5	70	35-139
206-44-0	Fluoranthene	83.3	57.6	69	34-132
86-73-7	Fluorene	83.3	52.9	63	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	63.1	76	31-144
90-12-0	1-Methylnaphthalene	83.3	49.9	60	36-130
91-57-6	2-Methylnaphthalene	83.3	48.2	58	40-131
91-20-3	Naphthalene	83.3	50.8	61	36-130
85-01-8	Phenanthrene	83.3	55.6	67	40-135
129-00-0	Pyrene	83.3	55.0	66	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	52%	10-193%
321-60-8	2-Fluorobiphenyl	51%	20-138%
1718-51-0	Terphenyl-d14	56%	17-174%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-MS	3G03079.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
OP3242-MSD	3G03080.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
D21463-1	3G03078.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21371-1

CAS No.	Compound	D21463-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		123	94.4	77	76.0	62	22	20-151/30
208-96-8	Acenaphthylene	ND		123	98.5	80	80.5	66	20	23-156/30
120-12-7	Anthracene	ND		123	97.1	79	82.4	67	16	25-149/30
56-55-3	Benzo(a)anthracene	ND		123	102	83	83.5	68	20	22-157/30
50-32-8	Benzo(a)pyrene	ND		123	102	83	80.4	66	24	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		123	101	82	84.2	69	18	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		123	89.8	73	72.5	59	21	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		123	102	83	79.4	65	25	17-161/30
218-01-9	Chrysene	75.2		123	177	83	187	91	5	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		123	104	85	93.7	76	10	21-154/30
206-44-0	Fluoranthene	ND		123	111	90	102	83	8	16-140/30
86-73-7	Fluorene	ND		123	109	89	108	88	1	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		123	117	95	109	89	7	21-159/30
90-12-0	1-Methylnaphthalene	ND		123	122	99	124	101	2	10-148/30
91-57-6	2-Methylnaphthalene	112		123	199	71	254	116	24	10-181/30
91-20-3	Naphthalene	59.0		123	129	57	137	64	6	10-176/30
85-01-8	Phenanthrene	45.8		123	129	68	135	73	5	22-152/30
129-00-0	Pyrene	ND		123	107	87	89.5	73	18	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D21463-1	Limits
4165-60-0	Nitrobenzene-d5	60%	51%	61%	10-193%
321-60-8	2-Fluorobiphenyl	60%	50%	63%	20-138%
1718-51-0	Terphenyl-d14	62%	48%	66%	17-174%

## GC Volatiles

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA572-MB	GA0496.D	1	03/02/11	BR	n/a	n/a	GGA572

The QC reported here applies to the following samples:

Method: SW846 8015B

D21371-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	10	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	99% 60-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA572-BS	GA0497.D	1	03/02/11	BR	n/a	n/a	GGA572

The QC reported here applies to the following samples:

Method: SW846 8015B

D21371-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	102	93	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	108%	60-140%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D21371  
Account: CORCCOGJ Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21350-33MS	GA0499.D	1	03/02/11	BR	n/a	n/a	GGA572
D21350-33MSD	GA0500.D	1	03/02/11	BR	n/a	n/a	GGA572
D21350-33	GA0498.D	1	03/02/11	BR	n/a	n/a	GGA572

The QC reported here applies to the following samples: Method: SW846 8015B

D21371-1

CAS No.	Compound	D21350-33 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	140	127	91	125	89	2	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21350-33	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	102%	99%	60-140%

7.3.1  
7

## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3223-MB	FD5447.D	1	03/02/11	JB	03/01/11	OP3223	GFD240

The QC reported here applies to the following samples:

Method: SW846-8015B

D21371-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	97% 63-130%

8.1.1

8



## Blank Spike Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3223-BS	FD5448.D	1	03/02/11	JB	03/01/11	OP3223	GFD240

The QC reported here applies to the following samples:

Method: SW846-8015B

D21371-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	480	72	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	63-130%

8.2.1

8

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21371  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3223-MS	FD5449.D	1	03/02/11	JB	03/01/11	OP3223	GFD240
OP3223-MSD	FD5450.D	1	03/02/11	JB	03/01/11	OP3223	GFD240
D21350-31	FD5451.D	1	03/02/11	JB	03/01/11	OP3223	GFD240

The QC reported here applies to the following samples:

Method: SW846-8015B

D21371-1

CAS No.	Compound	D21350-31 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	32.9		753	529	66* a	652	82	21	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21350-31	Limits
84-15-1	o-Terphenyl	84%	99%	101%	63-130%

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 03/02/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	49		
Antimony	30	1.7	13		
Arsenic	25	2.8	6.5		
Barium	10	.14	2.4		
Beryllium	10	1.4	4.4		
Boron	50	3.5	19		
Cadmium	10	.22	1.2		
Calcium	400	17	9.2		
Chromium	10	.27	1.6		
Cobalt	5.0	.48	.3		
Copper	5.0	1.6	2.7		
Iron	70	7.7	10		
Lead	50	1.3	3.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	12		
Manganese	5.0	.21	.7		
Molybdenum	10	.41	1.2		
Nickel	30	.38	.6		
Phosphorus	100	15	54		
Potassium	1000	380	540		
Selenium	50	2.8	7.2		
Silicon	50	12	20		
Silver	30	.98	.3		
Sodium	400	230	23	-100	<400
Strontium	5.0	.091	3.4		
Thallium	10	3.1	2.1		
Tin	50	14	4.4		
Titanium	10	.098	.7		
Uranium	50	2.2	3.9		
Vanadium	10	.27	.3		
Zinc	30	.76	1.7		

Associated samples MP4125: D21371-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.1.1

9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/02/11

Metal	D21376-1 Original MS	Spikelot MPICPAL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	372000	385000	25000	44.0 (a) 75-125
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4125: D21371-2

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/02/11

Metal	D21376-1 Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	372000	387000	25000	52.0 (a)
Strontium				0.5
Thallium				20
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4125: D21371-2

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested  
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125

Methods: SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

03/02/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	25800	25000	103.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4125: D21371-2

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4125

Methods: SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.1.3

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BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 03/03/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	2		
Antimony	3.0	.17	.5		
Arsenic	2.5	.28	.72		
Barium	1.0	.014	.05	0.79	<1.0
Beryllium	1.0	.14	.21		
Boron	5.0	.35	.91		
Cadmium	1.0	.022	.12	0.010	<1.0
Calcium	40	1.7	2.7		
Chromium	1.0	.027	.18	0.33	<1.0
Cobalt	0.50	.048	.058		
Copper	0.50	.16	.38	0.65	<1.0
Iron	7.0	.77	.91		
Lead	5.0	.13	.24	0.39	<5.0
Lithium	0.20	.076	.09		
Magnesium	20	.58	.93		
Manganese	0.50	.021	.028		
Molybdenum	1.0	.041	.16		
Nickel	3.0	.038	.075	0.13	<3.0
Phosphorus	10	1.5	3.5		
Potassium	200	38	130		
Selenium	5.0	.28	.54	-0.030	<5.0
Silicon	5.0	1.2	.68		
Silver	3.0	.098	.068	0.0	<3.0
Sodium	40	23	6.3		
Strontium	5.0	.0091	.02		
Thallium	1.0	.31	.21		
Tin	5.0	1.4	.56		
Titanium	1.0	.0098	.041		
Uranium	5.0	.22	.53		
Vanadium	1.0	.027	.034		
Zinc	3.0	.076	.49	0.15	<3.0

Associated samples MP4141: D21371-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original MS		Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	255	418	239	68.1N(a)	75-125
Beryllium					
Boron					
Cadmium	0.25	52.3	59.8	87.0	75-125
Calcium					
Chromium	9.5	61.7	59.8	87.3	75-125
Cobalt					
Copper	10.8	64.1	59.8	89.1	75-125
Iron					
Lead	10.1	111	120	84.4	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	12.0	61.4	59.8	82.6	75-125
Phosphorus					
Potassium					
Selenium	0.50	90.8	120	75.5	75-125
Silicon					
Silver	0.0	20.7	23.9	86.5	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	42.2	89.4	59.8	78.9	75-125

Associated samples MP4141: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	255	370	232	49.5N(a)	12.2	20
Beryllium						
Boron						
Cadmium	0.25	49.2	58.1	84.3	6.1	20
Calcium						
Chromium	9.5	59.4	58.1	85.9	3.8	20
Cobalt						
Copper	10.8	61.3	58.1	87.0	4.5	20
Iron						
Lead	10.1	105	116	81.7	5.6	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	12.0	59.1	58.1	81.1	3.8	20
Phosphorus						
Potassium						
Selenium	0.50	86.1	116	73.7N(b)	5.3	20
Silicon						
Silver	0.0	19.7	23.2	84.8	5.0	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	42.2	116	58.1	127.1N(b)	25.9 (c)	20

Associated samples MP4141: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference.
- (b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- (c) High RPD due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 03/03/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	177	200	88.5	80-120
Beryllium				
Boron				
Cadmium	48.4	50	96.8	80-120
Calcium				
Chromium	49.8	50	99.6	80-120
Cobalt				
Copper	47.4	50	94.8	80-120
Iron				
Lead	96.1	100	96.1	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	48.7	50	97.4	80-120
Phosphorus				
Potassium				
Selenium	91.6	100	91.6	80-120
Silicon				
Silver	19.1	20	95.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.1	50	94.2	80-120

Associated samples MP4141: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/03/11

Metal	D21329-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	2280	2570	12.9*(a)	0-10
Beryllium				
Boron				
Cadmium	2.20	0.00	100.0(b)	0-10
Calcium				
Chromium	85.4	93.5	9.5	0-10
Cobalt				
Copper	96.6	94.0	2.7	0-10
Iron				
Lead	90.1	78.5	12.9*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	108	124	14.9*(a)	0-10
Phosphorus				
Potassium				
Selenium	7.20	27.0	500.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	378	461	21.9*(a)	0-10

Associated samples MP4141: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (anr) Analyte not requested  
(a) Serial dilution indicates possible matrix interference.  
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 03/03/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.048	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP4142: D21371-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	3.2	111	120	90.1	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4142: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	3.2	105	116	87.7	5.6	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP4142: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	94.4	100	94.4	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4142: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: ug/l

Prep Date: 03/03/11

Metal	D21329-1 Original SDL 5:25 %DIF			QC Limits
Aluminum				
Antimony				
Arsenic	33.3	25.9	8.6	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4142: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 03/04/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	0.00079	<0.10

Associated samples MP4144: D21371-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	D21292-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.088	0.51	0.468	90.2	85-115
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Associated samples MP4144: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	D21292-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.088	0.51	0.477	88.5	0.0	20

Associated samples MP4144: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.33	0.4	82.5	80-120

Associated samples MP4144: D21371-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date: 03/09/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	35	250		
Antimony	150	8.5	65		
Arsenic	130	14	33		
Barium	50	.7	12		
Beryllium	50	7	22		
Boron	250	18	93		
Cadmium	50	1.1	6		
Calcium	2000	85	46	-1.5	<2000
Chromium	50	1.4	8		
Cobalt	25	2.4	1.5		
Copper	25	8	14		
Iron	350	39	50		
Lead	250	6.5	16		
Lithium	10	3.8	8		
Magnesium	1000	29	62	-44	<1000
Manganese	25	1.1	3.5		
Molybdenum	50	2.1	6		
Nickel	150	1.9	3		
Phosphorus	500	75	270		
Potassium	5000	1900	2700		
Selenium	250	14	36		
Silicon	250	60	100		
Silver	150	4.9	1.5		
Sodium	2000	1200	110	-440	<2000
Strontium	25	.46	17		
Thallium	50	16	11		
Tin	250	70	22		
Titanium	50	.49	3.5		
Uranium	250	11	20		
Vanadium	50	1.4	1.5		
Zinc	150	3.8	8.5		

Associated samples MP4169: D21371-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.5.1

9



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
 Units: ug/l

Prep Date: 03/09/11

Metal	D21569-8A Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	28300	161000	125000	106.2	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	6970	136000	125000	103.2	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	136000	256000	125000	96.0	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4169: D21371-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
 Units: ug/l

Prep Date: 03/09/11

Metal	D21569-8A Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	28300	160000	125000	105.4
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	6970	136000	125000	103.2
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	136000	252000	125000	92.8
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4169: D21371-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169

Methods: LADNR29B, SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date: 03/09/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	138000	125000	110.4	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	132000	125000	105.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	131000	125000	104.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4169: D21371-1A

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

9.5.3

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4169  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.5.3

9

## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP3928/GN8574	0.50	0.15	mg/l	20	18.7	93.5	90-110%
Specific Conductivity	GP3948/GN8608			umhos/cm	9985	10100	101.0	90-110%
Sulfate	GP3928/GN8574			mg/l	30	29.4	98.0	90-110%
pH	GN8474			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:  
Batch GN8474: D21371-1  
Batch GP3928: D21371-2  
Batch GP3948: D21371-1  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN8508	D21371-1	mv	332	349	1.2	0-20%

Associated Samples:  
Batch GN8508: D21371-1  
(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP3928/GN8574	D21470-2	mg/l	291	100	408	117.0	80-120%
Sulfate	GP3928/GN8574	D21470-2	mg/l	337	100	449	112.0	80-120%

Associated Samples:

Batch GP3928: D21371-2

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.3  
10

MATRIX SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP3928/GN8574	D21470-2	mg/l	291	100	405	0.7	20%
Sulfate	GP3928/GN8574	D21470-2	mg/l	337	100	449	0.0	20%

Associated Samples:  
Batch GP3928: D21371-2  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits

## Misc. Forms

### Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

---

Includes the following where applicable:

- Chain of Custody



4036 Youngfield St., Wheat Ridge, CO 80033  
303-425-6021 FAX: 303-425-6854

<b>Analytical Information</b>	
-------------------------------	--

[illegible]

**Accutest Labs of New England, Inc.**

## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21371

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 3/3/2011

Delivery Method:

Client Service Action Required at Login: No

Project: N/A

No. Coolers: 1

Airbill #'s: N/A

### Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

### Quality Control Preservation

Y or N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

### Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

### Sample Integrity - Instructions

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

## General Chemistry

### QC Data Summaries

(Accutest Labs of New England, Inc.)

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12685/GN34280	0.40	0.0	mg/kg	12	10.2	85.0	80-120%
Chromium, Hexavalent	GP12685/GN34280			mg/kg	1080	974	90.2	80-120%

Associated Samples:  
Batch GP12685: D21371-1  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	0.60	33.0(a)	0-20%

Associated Samples:

Batch GP12685: D21371-1

(\*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21371  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	13	12.6	93.3	75-125%
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	1280	1280	99.8	75-125%

Associated Samples:  
Batch GP12685: D21371-1  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits



03/16/11

## Technical Report for

Olsson Associates

009-0082\_201\_201004, Grand Junction, CO

FEE 113X

Accutest Job Number: D21470

Sampling Date: 03/01/11

### Report to:

Olsson Associates  
826 21 1/2 Road  
Grand Junction, CO 81505  
tdobransky@oaconsulting.com

ATTN: Tim Dobransky

Total number of pages in report: **119**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

John Hamilton  
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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## Sample Summary

Olsson Associates

Job No: D21470

009-0082\_201\_201004, Grand Junction, CO

Project No: FEE 113X

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D21470-1	03/01/11	14:00 TD	03/03/11	SO	Soil	FEE 113X-SS1
D21470-1A	03/01/11	14:00 TD	03/03/11	SO	Soil	FEE 113X-SS1
D21470-2	03/01/11	14:10 TD	03/03/11	AQ	Water	FEE 113X-UGWS
D21470-3	03/01/11	14:20 TD	03/03/11	SO	Soil	FEE 113X-UGSS
D21470-3A	03/01/11	14:20 TD	03/03/11	SO	Soil	FEE 113X-UGSS
D21470-4	03/01/11	14:55 TD	03/03/11	AQ	Water	FEE 113X-WS1&2
D21470-5	03/01/11	15:00 TD	03/03/11	SO	Soil	FEE 113X-SS2
D21470-5A	03/01/11	15:00 TD	03/03/11	SO	Soil	FEE 113X-SS2
D21470-6	03/01/11	15:15 TD	03/03/11	SO	Soil	FEE 113X-DGSS
D21470-6A	03/01/11	15:15 TD	03/03/11	SO	Soil	FEE 113X-DGSS

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Olsson Associates

**Job No** D21470

**Site:** 009-0082\_201\_201004, Grand Junction, CO

**Report Date** 3/15/2011 4:45:14 PM

On 03/03/2011, 6 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D21470 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> AQ	<b>Batch ID:</b> V5V807
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21462-5MS, D21462-5MSD were used as the QC samples indicated.
- Sample(s) D21470-2 have surrogates outside control limits. Probable cause due to matrix interference. Outside control limits but does not affect the reported compounds.

<b>Matrix</b> SO	<b>Batch ID:</b> V5V814
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21579-2MS, D21579-2MSD were used as the QC samples indicated.
- Sample(s) D21470-2 have surrogates outside control limits. Probable cause due to matrix interference.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP3242
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D21463-1MS, D21463-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D21470-1, D21470-3, D21470-5, and D21470-6 : Dilution required due to matrix interference.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGA576
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D21463-1MS, D21463-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP3247
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21516-1MS, D21516-1MSD were used as the QC samples indicated.

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP4146

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21472-1FMSD, D21472-1FMS were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike recovery indicates possible matrix interference.

**Matrix** AQ

**Batch ID:** MP4152

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21482-2AMS, D21482-2AMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

**Matrix** SO

**Batch ID:** MP4141

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21329-1MS, D21329-1MSD, D21329-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike recovery indicates possible matrix interference.
- The matrix spike duplicate (MSD) recovery(s) of Barium, Selenium, Zinc are outside control limits. Probable cause due to matrix interference.
- The RPD(s) for the MS and MSD recoveries of Zinc are outside control limits for sample MP4141-S2. High RPD due to possible sample nonhomogeneity.
- The serial dilution RPD(s) for Cadmium, Selenium, Barium, Lead, Nickel, Zinc are outside control limits for sample MP4141-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

## Metals By Method SW846 6020

**Matrix** SO

**Batch ID:** MP4142

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21329-1MS, D21329-1MSD, D21329-1SDL were used as the QC samples for the metals analysis.

## Metals By Method SW846 7471A

**Matrix** SO

**Batch ID:** MP4144

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21292-1MS, D21292-1MSD were used as the QC samples for the metals analysis.

## Wet Chemistry By Method ASTM D1498-76M

**Matrix** SO

**Batch ID:** GN8524

- Sample(s) D21463-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

## Wet Chemistry By Method DEPT.OF AG, BOOK N9

**Matrix** SO

**Batch ID:** GP3919

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.



### Wet Chemistry By Method EPA 1664A

**Matrix** AQ

**Batch ID:** GP3966

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

### Wet Chemistry By Method EPA 300/SW846 9056

**Matrix** AQ

**Batch ID:** GP3928

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21470-2MS, D21470-2MSD were used as the QC samples for the Chloride, Sulfate, Chloride analysis.

### Wet Chemistry By Method LADNR29B

**Matrix** SO

**Batch ID:** MP4152

- All samples for Sodium Adsorption Ratio: Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN8522

- The data for SM19 2540B M meets quality control requirements.

### Wet Chemistry By Method SW846 3060/7196A M

**Matrix** SO

**Batch ID:** R6508

- The data for SW846 3060/7196A M meets quality control requirements.
- D21470-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

**Matrix** SO

**Batch ID:** R6509

- The data for SW846 3060/7196A M meets quality control requirements.
- D21470-3 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

**Matrix** SO

**Batch ID:** R6510

- The data for SW846 3060/7196A M meets quality control requirements.
- D21470-5 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

**Matrix** SO

**Batch ID:** R6511

- The data for SW846 3060/7196A M meets quality control requirements.
- D21470-6 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

### Wet Chemistry By Method SW846 3060A/7196A

**Matrix** SO

**Batch ID:** M:GP12685

- The data for SW846 3060A/7196A meets quality control requirements.
- Samples for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

### Wet Chemistry By Method SW846 9045C

**Matrix** SO

**Batch ID:** GN8517

- The following samples were run outside of holding time for method SW846 9045C: D21470-1, D21470-3, D21470-5, D21470-6

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Accutest Mountain States

**Job No** D21470

**Site:** CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

**Report Date** 3/8/2011 9:17:13 AM

4 Sample(s) were collected on 03/01/2011 and were received at Accutest on 03/03/2011 properly preserved, at 2.4 Deg. C and intact. These Samples received an Accutest job number of D21470. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Wet Chemistry By Method SW846 3060A/7196A

**Matrix:** SO

**Batch ID:** GP12685

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D21334-1MS, D21334-1DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP12685-D1. RPD acceptable due to low duplicate and sample concentrations.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D21470).

## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-1	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.2
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13768.D	1	03/10/11	DC	n/a	n/a	V5V814
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.01 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	81	24	ug/kg	
108-88-3	Toluene	ND	160	81	ug/kg	
100-41-4	Ethylbenzene	34.5	160	32	ug/kg	J
	m,p-Xylene	ND	320	57	ug/kg	
95-47-6	o-Xylene	ND	160	57	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1		
<b>Lab Sample ID:</b>	D21470-1	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8270C BY SIM SW846 3540C	<b>Percent Solids:</b>	76.2
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	3G03092.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	44	41	ug/kg	
208-96-8	Acenaphthylene	ND	220	45	ug/kg	
120-12-7	Anthracene	ND	44	28	ug/kg	
56-55-3	Benzo(a)anthracene	ND	44	43	ug/kg	
50-32-8	Benzo(a)pyrene	ND	44	27	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	44	32	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	44	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	44	27	ug/kg	
218-01-9	Chrysene	ND	44	22	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	44	32	ug/kg	
206-44-0	Fluoranthene	ND	44	27	ug/kg	
86-73-7	Fluorene	ND	44	43	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	44	29	ug/kg	
90-12-0	1-Methylnaphthalene	ND	44	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	220	66	ug/kg	
91-20-3	Naphthalene	ND	220	48	ug/kg	
85-01-8	Phenanthrene	ND	44	35	ug/kg	
129-00-0	Pyrene	ND	44	29	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-193%
321-60-8	2-Fluorobiphenyl	54%		20-138%
1718-51-0	Terphenyl-d14	49%		17-174%

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1		
<b>Lab Sample ID:</b>	D21470-1	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8015B	<b>Percent Solids:</b>	76.2
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0561.D	1	03/04/11	BR	n/a	n/a	GGA576
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	16	16	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21470-1**Date Sampled:** 03/01/11**Matrix:** SO - Soil**Date Received:** 03/03/11**Method:** SW846-8015B SW846 3550B**Percent Solids:** 76.2**Project:** 009-0082\_201\_201004, Grand Junction, CO

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE6153.D	1	03/04/11	JB	03/04/11	OP3247	GFE304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	17	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	102%		63-130%		

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21470-1**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 76.2**Project:** 009-0082\_201\_201004, Grand Junction, CO

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	4.9	0.52	mg/kg	5	03/03/11	03/04/11 GJ	SW846 6020 <sup>2</sup>	SW846 3050B <sup>6</sup>
Barium	124	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.3	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Chromium	7.3	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Copper	10.2	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Lead	16.4	6.6	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.13	0.13	mg/kg	1	03/04/11	03/04/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>7</sup>
Nickel	10.8	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Selenium	< 6.6	6.6	mg/kg	1	03/03/11	03/07/11 JB	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.9	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Zinc	47.8	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1361

(2) Instrument QC Batch: MA1362

(3) Instrument QC Batch: MA1363

(4) Instrument QC Batch: MA1364

(5) Prep QC Batch: MP4141

(6) Prep QC Batch: MP4142

(7) Prep QC Batch: MP4144

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21470-1**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 76.2**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 0.52	0.52	mg/kg	1	03/07/11 15:01	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	6.9	1.8	mg/kg	1	03/07/11 15:01	AMA	SW846 3060/7196A M
Redox Potential Vs H2	400		mv	1	03/03/11	JK	ASTM D1498-76M
Solids, Percent	76.2		%	1	03/03/11	SWT	SM19 2540B M
Specific Conductivity	12500	1.0	umhos/cm	1	03/07/11	JK	DEPT.OF AG, BOOK N9
pH	8.74		su	1	03/03/11 11:00	JK	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D21470-1A**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 76.2**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	335	2.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Magnesium	280	1.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Sodium	1890	2.0	mg/l	1	03/04/11	03/08/11 JM	SW846 6010B <sup>2</sup>	EPA 200.7 <sup>3</sup>

(1) Instrument QC Batch: MA1363

(2) Instrument QC Batch: MA1367

(3) Prep QC Batch: MP4152

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS1	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-1A	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.2
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	18.4		ratio	1	03/08/11 13:25	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGWS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-2	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13637.D	1	03/05/11	DC	n/a	n/a	V5V807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
	m,p-Xylene	ND	4.0	0.60	ug/l	
95-47-6	o-Xylene	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	143% <sup>a</sup>		63-130%
2037-26-5	Toluene-D8	107%		68-130%
460-00-4	4-Bromofluorobenzene	97%		61-130%

(a) Outside control limits but does not affect the reported compounds.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGWS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-2	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Sodium	216000	400	ug/l	1	03/04/11	03/07/11 JB	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA1364  
(2) Prep QC Batch: MP4146

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGWS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-2	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	291	5.0	mg/l	10	03/07/11 13:54	CB	EPA 300/SW846 9056
HEM Oil and Grease	< 4.8	4.8	mg/l	1	03/11/11	SWT	EPA 1664A
Sulfate	337	5.0	mg/l	10	03/07/11 13:54	CB	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGSS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-3	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	72.1
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13769.D	1	03/10/11	DC	n/a	n/a	V5V814
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.03 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	88	26	ug/kg	
108-88-3	Toluene	ND	180	88	ug/kg	
100-41-4	Ethylbenzene	ND	180	35	ug/kg	
	m,p-Xylene	ND	350	62	ug/kg	
95-47-6	o-Xylene	ND	180	62	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGSS		
<b>Lab Sample ID:</b>	D21470-3	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8270C BY SIM SW846 3540C	<b>Percent Solids:</b>	72.1
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	3G03093.D	2	03/08/11	TMB	03/03/11	OP3242	E3G111
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	18	17	ug/kg	
208-96-8	Acenaphthylene	ND	92	19	ug/kg	
120-12-7	Anthracene	ND	18	12	ug/kg	
56-55-3	Benzo(a)anthracene	ND	18	18	ug/kg	
50-32-8	Benzo(a)pyrene	ND	18	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	18	13	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	18	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	18	12	ug/kg	
218-01-9	Chrysene	ND	18	9.2	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	18	14	ug/kg	
206-44-0	Fluoranthene	ND	18	11	ug/kg	
86-73-7	Fluorene	ND	18	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	18	12	ug/kg	
90-12-0	1-Methylnaphthalene	ND	18	16	ug/kg	
91-57-6	2-Methylnaphthalene	ND	92	28	ug/kg	
91-20-3	Naphthalene	ND	92	20	ug/kg	
85-01-8	Phenanthrene	ND	18	15	ug/kg	
129-00-0	Pyrene	ND	18	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		10-193%
321-60-8	2-Fluorobiphenyl	53%		20-138%
1718-51-0	Terphenyl-d14	53%		17-174%

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGSS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-3	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	72.1
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0563.D	1	03/04/11	BR	n/a	n/a	GGA576
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	18	18	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGSS		
<b>Lab Sample ID:</b>	D21470-3	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846-8015B SW846 3550B	<b>Percent Solids:</b>	72.1
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE6154.D	1	03/05/11	JB	03/04/11	OP3247	GFE304
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	18	12	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	106%		63-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-UGSS**Lab Sample ID:** D21470-3**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 72.1**Project:** 009-0082\_201\_201004, Grand Junction, CO

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.1	0.51	mg/kg	5	03/03/11	03/04/11 GJ	SW846 6020 <sup>2</sup>	SW846 3050B <sup>6</sup>
Barium	94.2	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.3	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Chromium	10.2	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Copper	13.1	1.3	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Lead	15.9	6.4	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.13	0.13	mg/kg	1	03/04/11	03/04/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>7</sup>
Nickel	13.8	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Selenium	< 6.4	6.4	mg/kg	1	03/03/11	03/07/11 JB	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.9	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Zinc	58.6	3.9	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1361

(2) Instrument QC Batch: MA1362

(3) Instrument QC Batch: MA1363

(4) Instrument QC Batch: MA1364

(5) Prep QC Batch: MP4141

(6) Prep QC Batch: MP4142

(7) Prep QC Batch: MP4144

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-UGSS**Lab Sample ID:** D21470-3**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 72.1**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	0.82	0.55	mg/kg	1	03/07/11 15:05	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	9.4	1.9	mg/kg	1	03/07/11 15:05	AMA	SW846 3060/7196A M
Redox Potential Vs H2	401		mv	1	03/03/11	JK	ASTM D1498-76M
Solids, Percent	72.1		%	1	03/03/11	SWT	SM19 2540B M
Specific Conductivity	10200	1.0	umhos/cm	1	03/07/11	JK	DEPT.OF AG, BOOK N9
pH	8.76		su	1	03/03/11 11:00	JK	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-UGSS**Lab Sample ID:** D21470-3A**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 72.1**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	333	2.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Magnesium	299	1.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Sodium	1750	2.0	mg/l	1	03/04/11	03/08/11 JM	SW846 6010B <sup>2</sup>	EPA 200.7 <sup>3</sup>

(1) Instrument QC Batch: MA1363

(2) Instrument QC Batch: MA1367

(3) Prep QC Batch: MP4152

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-UGSS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-3A	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	72.1
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	16.8		ratio	1	03/08/11 13:35	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS1&2	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-4	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13638.D	1	03/05/11	DC	n/a	n/a	V5V807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
	m,p-Xylene	ND	4.0	0.60	ug/l	
95-47-6	o-Xylene	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	119%		63-130%
2037-26-5	Toluene-D8	104%		68-130%
460-00-4	4-Bromofluorobenzene	98%		61-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS1&2	
<b>Lab Sample ID:</b>	D21470-4	<b>Date Sampled:</b> 03/01/11
<b>Matrix:</b>	AQ - Water	<b>Date Received:</b> 03/03/11
		<b>Percent Solids:</b> n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Sodium	194000	400	ug/l	1	03/04/11	03/07/11 JB	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA1364  
(2) Prep QC Batch: MP4146

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-WS1&2	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-4	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	AQ - Water	<b>Percent Solids:</b>	n/a
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	257	2.5	mg/l	5	03/07/11 12:39	CB	EPA 300/SW846 9056
HEM Oil and Grease	< 4.8	4.8	mg/l	1	03/11/11	SWT	EPA 1664A
Sulfate	245	2.5	mg/l	5	03/07/11 12:39	CB	EPA 300/SW846 9056

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS2		
<b>Lab Sample ID:</b>	D21470-5	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8260B	<b>Percent Solids:</b>	83.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13770.D	1	03/10/11	DC	n/a	n/a	V5V814
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	70	21	ug/kg	
108-88-3	Toluene	ND	140	70	ug/kg	
100-41-4	Ethylbenzene	ND	140	28	ug/kg	
	m,p-Xylene	ND	280	49	ug/kg	
95-47-6	o-Xylene	ND	140	49	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	91%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	106%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS2		
<b>Lab Sample ID:</b>	D21470-5	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8270C BY SIM SW846 3540C	<b>Percent Solids:</b>	83.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	3G03094.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	37	ug/kg	
208-96-8	Acenaphthylene	ND	200	41	ug/kg	
120-12-7	Anthracene	ND	40	26	ug/kg	
56-55-3	Benzo(a)anthracene	ND	40	39	ug/kg	
50-32-8	Benzo(a)pyrene	ND	40	25	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	40	29	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	40	25	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	40	25	ug/kg	
218-01-9	Chrysene	ND	40	20	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	40	30	ug/kg	
206-44-0	Fluoranthene	ND	40	25	ug/kg	
86-73-7	Fluorene	ND	40	39	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	40	26	ug/kg	
90-12-0	1-Methylnaphthalene	ND	40	35	ug/kg	
91-57-6	2-Methylnaphthalene	ND	200	61	ug/kg	
91-20-3	Naphthalene	ND	200	44	ug/kg	
85-01-8	Phenanthrene	ND	40	32	ug/kg	
129-00-0	Pyrene	ND	40	27	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%		10-193%
321-60-8	2-Fluorobiphenyl	61%		20-138%
1718-51-0	Terphenyl-d14	61%		17-174%

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS2	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-5	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.4
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0564.D	1	03/04/11	BR	n/a	n/a	GGA576
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	14	14	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-SS2		
<b>Lab Sample ID:</b>	D21470-5	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846-8015B SW846 3550B	<b>Percent Solids:</b>	83.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE6155.D	1	03/05/11	JB	03/04/11	OP3247	GFE304
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	107%		63-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-SS2**Lab Sample ID:** D21470-5**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 83.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.1	0.45	mg/kg	5	03/03/11	03/04/11 GJ	SW846 6020 <sup>2</sup>	SW846 3050B <sup>6</sup>
Barium	127	1.1	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.1	1.1	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Chromium	5.9	1.1	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Copper	7.1	1.1	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Lead	8.6	5.7	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.11	0.11	mg/kg	1	03/04/11	03/04/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>7</sup>
Nickel	8.4	3.4	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Selenium	< 5.7	5.7	mg/kg	1	03/03/11	03/07/11 JB	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.4	3.4	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Zinc	34.8	3.4	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1361

(2) Instrument QC Batch: MA1362

(3) Instrument QC Batch: MA1363

(4) Instrument QC Batch: MA1364

(5) Prep QC Batch: MP4141

(6) Prep QC Batch: MP4142

(7) Prep QC Batch: MP4144

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS2**Lab Sample ID:** D21470-5**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 83.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 0.47	0.47	mg/kg	1	03/07/11 15:05	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	5.5	1.6	mg/kg	1	03/07/11 15:05	AMA	SW846 3060/7196A M
Redox Potential Vs H2	406		mv	1	03/03/11	JK	ASTM D1498-76M
Solids, Percent	83.4		%	1	03/03/11	SWT	SM19 2540B M
Specific Conductivity	9080	1.0	umhos/cm	1	03/07/11	JK	DEPT.OF AG, BOOK N9
pH	8.72		su	1	03/03/11 11:00	JK	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit



## Report of Analysis

**Client Sample ID:** FEE 113X-SS2**Lab Sample ID:** D21470-5A**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 83.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	543	2.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Magnesium	255	1.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Sodium	1130	2.0	mg/l	1	03/04/11	03/08/11 JM	SW846 6010B <sup>2</sup>	EPA 200.7 <sup>3</sup>

(1) Instrument QC Batch: MA1363

(2) Instrument QC Batch: MA1367

(3) Prep QC Batch: MP4152

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS2**Lab Sample ID:** D21470-5A**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 83.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	10.0		ratio	1	03/08/11 13:45	JM	LADNR29B

(a) Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$ 

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-DGSS		
<b>Lab Sample ID:</b>	D21470-6	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8260B	<b>Percent Solids:</b>	76.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13771.D	1	03/10/11	DC	n/a	n/a	V5V814
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.07 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	80	24	ug/kg	
108-88-3	Toluene	ND	160	80	ug/kg	
100-41-4	Ethylbenzene	ND	160	32	ug/kg	
	m,p-Xylene	ND	320	56	ug/kg	
95-47-6	o-Xylene	ND	160	56	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	105%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-DGSS		
<b>Lab Sample ID:</b>	D21470-6	<b>Date Sampled:</b>	03/01/11
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	03/03/11
<b>Method:</b>	SW846 8270C BY SIM SW846 3540C	<b>Percent Solids:</b>	76.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	3G03095.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	44	41	ug/kg	
208-96-8	Acenaphthylene	ND	220	45	ug/kg	
120-12-7	Anthracene	ND	44	28	ug/kg	
56-55-3	Benzo(a)anthracene	ND	44	43	ug/kg	
50-32-8	Benzo(a)pyrene	ND	44	27	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	44	32	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	44	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	44	27	ug/kg	
218-01-9	Chrysene	ND	44	22	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	44	32	ug/kg	
206-44-0	Fluoranthene	ND	44	27	ug/kg	
86-73-7	Fluorene	ND	44	43	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	44	29	ug/kg	
90-12-0	1-Methylnaphthalene	ND	44	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	220	66	ug/kg	
91-20-3	Naphthalene	ND	220	48	ug/kg	
85-01-8	Phenanthrene	ND	44	35	ug/kg	
129-00-0	Pyrene	ND	44	29	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	47%		10-193%
321-60-8	2-Fluorobiphenyl	47%		20-138%
1718-51-0	Terphenyl-d14	49%		17-174%

(a) Dilution required due to matrix interference.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-DGSS**Lab Sample ID:** D21470-6**Date Sampled:** 03/01/11**Matrix:** SO - Soil**Date Received:** 03/03/11**Method:** SW846 8015B**Percent Solids:** 76.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0565.D	1	03/04/11	BR	n/a	n/a	GGA576
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	16	16	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-DGSS**Lab Sample ID:** D21470-6**Date Sampled:** 03/01/11**Matrix:** SO - Soil**Date Received:** 03/03/11**Method:** SW846-8015B SW846 3550B**Percent Solids:** 76.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE6156.D	1	03/05/11	JB	03/04/11	OP3247	GFE304
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	42.1	17	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	107%		63-130%		

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** FEE 113X-DGSS**Lab Sample ID:** D21470-6**Date Sampled:** 03/01/11**Matrix:** SO - Soil**Date Received:** 03/03/11**Percent Solids:** 76.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	4.2	0.37	mg/kg	5	03/03/11	03/04/11 GJ	SW846 6020 <sup>2</sup>	SW846 3050B <sup>6</sup>
Barium	92.2	0.93	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 0.93	0.93	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Chromium	7.6	0.93	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Copper	8.8	0.94	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Lead	10.4	4.7	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.11	0.11	mg/kg	1	03/04/11	03/04/11 JY	SW846 7471A <sup>1</sup>	SW846 7471A <sup>7</sup>
Nickel	10.4	2.8	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Selenium	< 4.7	4.7	mg/kg	1	03/03/11	03/07/11 JB	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 2.8	2.8	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>
Zinc	42.0	2.8	mg/kg	1	03/03/11	03/04/11 JM	SW846 6010B <sup>3</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1361

(2) Instrument QC Batch: MA1362

(3) Instrument QC Batch: MA1363

(4) Instrument QC Batch: MA1364

(5) Prep QC Batch: MP4141

(6) Prep QC Batch: MP4142

(7) Prep QC Batch: MP4144

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-DGSS**Lab Sample ID:** D21470-6**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 76.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 0.50	0.50	mg/kg	1	03/07/11 15:05	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	7.3	1.4	mg/kg	1	03/07/11 15:05	AMA	SW846 3060/7196A M
Redox Potential Vs H2	404		mv	1	03/03/11	JK	ASTM D1498-76M
Solids, Percent	76.4		%	1	03/03/11	SWT	SM19 2540B M
Specific Conductivity	2290	1.0	umhos/cm	1	03/07/11	JK	DEPT.OF AG, BOOK N9
pH	8.73		su	1	03/03/11 11:00	JK	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit



## Report of Analysis

**Client Sample ID:** FEE 113X-DGSS**Lab Sample ID:** D21470-6A**Matrix:** SO - Soil**Date Sampled:** 03/01/11**Date Received:** 03/03/11**Percent Solids:** 76.4**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	229	2.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Magnesium	58.0	1.0	mg/l	1	03/04/11	03/05/11 JM	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>3</sup>
Sodium	219	2.0	mg/l	1	03/04/11	03/08/11 JM	SW846 6010B <sup>2</sup>	EPA 200.7 <sup>3</sup>

(1) Instrument QC Batch: MA1363

(2) Instrument QC Batch: MA1367

(3) Prep QC Batch: MP4152

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FEE 113X-DGSS	<b>Date Sampled:</b>	03/01/11
<b>Lab Sample ID:</b>	D21470-6A	<b>Date Received:</b>	03/03/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.4
<b>Project:</b>	009-0082_201_201004, Grand Junction, CO		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	3.35		ratio	1	03/08/11 14:08	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21470

Client: OLSSON

Immediate Client Services Action Required: No

Date / Time Received: 3/3/2011 8:45:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: FEE 113X SPILL(009-0082\_201\_201004)

Airbill #'s: FEDEX

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories  
V:(303) 425-6021

4036 Youngfield Street  
F: (303) 425-6854

Wheat Ridge, CO  
www.accutest.com

## GC/MS Volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V807-MB1	5V13624.D	1	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-2, D21470-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.30	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
	m,p-Xylene	ND	4.0	0.60	ug/l	
95-47-6	o-Xylene	ND	2.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	104% 63-130%
2037-26-5	Toluene-D8	103% 68-130%
460-00-4	4-Bromofluorobenzene	95% 61-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

## Method Blank Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V814-MB2	5V13757.D	1	03/09/11	DC	n/a	n/a	V5V814

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	15	ug/kg	
100-41-4	Ethylbenzene	ND	100	20	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
	m,p-Xylene	ND	200	35	ug/kg	
95-47-6	o-Xylene	ND	100	35	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	92% 70-130%
460-00-4	4-Bromofluorobenzene	88% 70-130%
17060-07-0	1,2-Dichloroethane-D4	113% 70-130%



## Blank Spike Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V807-BS1	5V13625.D	1	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-2, D21470-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	47.3	95	70-130
100-41-4	Ethylbenzene	50	51.2	102	70-130
108-88-3	Toluene	50	49.2	98	70-140
	m,p-Xylene	50	48.0	96	55-134
95-47-6	o-Xylene	50	48.5	97	55-134

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	63-130%
2037-26-5	Toluene-D8	106%	68-130%
460-00-4	4-Bromofluorobenzene	106%	61-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V814-BS2	5V13758.D	1	03/09/11	DC	n/a	n/a	V5V814

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	47.6	95	68-130
100-41-4	Ethylbenzene	50	48.9	98	70-130
108-88-3	Toluene	50	46.3	93	70-130
	m,p-Xylene	50	46.2	92	53-130
95-47-6	o-Xylene	50	45.7	91	61-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	91%	70-130%
460-00-4	4-Bromofluorobenzene	98%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	70-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21462-5MS	5V13627.D	5	03/05/11	DC	n/a	n/a	V5V807
D21462-5MSD	5V13628.D	5	03/05/11	DC	n/a	n/a	V5V807
D21462-5	5V13626.D	5	03/05/11	DC	n/a	n/a	V5V807

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-2, D21470-4

CAS No.	Compound	D21462-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
71-43-2	Benzene	145		250	381	94	388	97	2	59-132/30
100-41-4	Ethylbenzene	27.0		250	296	108	300	109	1	68-130/30
108-88-3	Toluene	24.0		250	276	101	278	102	1	56-142/30
	m,p-Xylene	10.7	J	250	267	103	269	103	1	36-146/30
95-47-6	o-Xylene	ND		250	255	102	260	104	2	36-146/30

CAS No.	Surrogate Recoveries	MS	MSD	D21462-5	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	96%	97%	63-130%
2037-26-5	Toluene-D8	105%	104%	106%	68-130%
460-00-4	4-Bromofluorobenzene	106%	106%	97%	61-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21579-2MS	5V13760.D	1	03/09/11	DC	n/a	n/a	V5V814
D21579-2MSD	5V13761.D	1	03/10/11	DC	n/a	n/a	V5V814
D21579-2	5V13759.D	1	03/09/11	DC	n/a	n/a	V5V814

The QC reported here applies to the following samples:

Method: SW846 8260B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	D21579-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3440	3590	104	3560	103	1	55-140/30
100-41-4	Ethylbenzene	ND		3440	3640	106	3580	104	2	56-139/30
108-88-3	Toluene	ND		3440	3380	98	3320	96	2	57-144/30
	m,p-Xylene	ND		3440	3410	99	3390	99	1	47-130/30
95-47-6	o-Xylene	ND		3440	3440	100	3350	97	3	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21579-2	Limits
2037-26-5	Toluene-D8	90%	91%	89%	70-130%
460-00-4	4-Bromofluorobenzene	104%	102%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	103%	104%	70-130%

## GC/MS Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-MB	3G03076.D	1	03/07/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	6.2	ug/kg	
208-96-8	Acenaphthylene	ND	33	6.9	ug/kg	
120-12-7	Anthracene	ND	6.7	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	6.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	4.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	4.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.2	ug/kg	
218-01-9	Chrysene	ND	6.7	3.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	4.9	ug/kg	
206-44-0	Fluoranthene	ND	6.7	4.1	ug/kg	
86-73-7	Fluorene	ND	6.7	6.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	4.4	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	5.9	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	10	ug/kg	
91-20-3	Naphthalene	ND	33	7.4	ug/kg	
85-01-8	Phenanthrene	ND	6.7	5.3	ug/kg	
129-00-0	Pyrene	ND	6.7	4.5	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	44% 10-193%
321-60-8	2-Fluorobiphenyl	44% 20-138%
1718-51-0	Terphenyl-d14	63% 17-174%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-BS	3G03077.D	1	03/07/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	51.2	61	40-136
208-96-8	Acenaphthylene	83.3	51.0	61	42-139
120-12-7	Anthracene	83.3	56.9	68	40-141
56-55-3	Benzo(a)anthracene	83.3	56.2	67	38-143
50-32-8	Benzo(a)pyrene	83.3	53.6	64	39-145
205-99-2	Benzo(b)fluoranthene	83.3	54.7	66	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	59.7	72	35-136
207-08-9	Benzo(k)fluoranthene	83.3	56.3	68	38-147
218-01-9	Chrysene	83.3	56.9	68	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	58.5	70	35-139
206-44-0	Fluoranthene	83.3	57.6	69	34-132
86-73-7	Fluorene	83.3	52.9	63	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	63.1	76	31-144
90-12-0	1-Methylnaphthalene	83.3	49.9	60	36-130
91-57-6	2-Methylnaphthalene	83.3	48.2	58	40-131
91-20-3	Naphthalene	83.3	50.8	61	36-130
85-01-8	Phenanthrene	83.3	55.6	67	40-135
129-00-0	Pyrene	83.3	55.0	66	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	52%	10-193%
321-60-8	2-Fluorobiphenyl	51%	20-138%
1718-51-0	Terphenyl-d14	56%	17-174%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3242-MS	3G03079.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
OP3242-MSD	3G03080.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111
D21463-1	3G03078.D	5	03/08/11	TMB	03/03/11	OP3242	E3G111

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	D21463-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		123	94.4	77	76.0	62	22	20-151/30
208-96-8	Acenaphthylene	ND		123	98.5	80	80.5	66	20	23-156/30
120-12-7	Anthracene	ND		123	97.1	79	82.4	67	16	25-149/30
56-55-3	Benzo(a)anthracene	ND		123	102	83	83.5	68	20	22-157/30
50-32-8	Benzo(a)pyrene	ND		123	102	83	80.4	66	24	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		123	101	82	84.2	69	18	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		123	89.8	73	72.5	59	21	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		123	102	83	79.4	65	25	17-161/30
218-01-9	Chrysene	75.2		123	177	83	187	91	5	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		123	104	85	93.7	76	10	21-154/30
206-44-0	Fluoranthene	ND		123	111	90	102	83	8	16-140/30
86-73-7	Fluorene	ND		123	109	89	108	88	1	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		123	117	95	109	89	7	21-159/30
90-12-0	1-Methylnaphthalene	ND		123	122	99	124	101	2	10-148/30
91-57-6	2-Methylnaphthalene	112		123	199	71	254	116	24	10-181/30
91-20-3	Naphthalene	59.0		123	129	57	137	64	6	10-176/30
85-01-8	Phenanthrene	45.8		123	129	68	135	73	5	22-152/30
129-00-0	Pyrene	ND		123	107	87	89.5	73	18	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D21463-1	Limits
4165-60-0	Nitrobenzene-d5	60%	51%	61%	10-193%
321-60-8	2-Fluorobiphenyl	60%	50%	63%	20-138%
1718-51-0	Terphenyl-d14	62%	48%	66%	17-174%



## GC Volatiles

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA576-MB	GA0550.D	1	03/03/11	BR	n/a	n/a	GGA576

The QC reported here applies to the following samples:

Method: SW846 8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	10	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	98% 60-140%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA576-BS	GA0551.D	1	03/03/11	BR	n/a	n/a	GGA576

The QC reported here applies to the following samples:

Method: SW846 8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	96.2	87	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D21470  
Account: CORCCOGJ Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21463-1MS	GA0553.D	1	03/03/11	BR	n/a	n/a	GGA576
D21463-1MSD	GA0554.D	1	03/04/11	BR	n/a	n/a	GGA576
D21463-1	GA0552.D	1	03/03/11	BR	n/a	n/a	GGA576

The QC reported here applies to the following samples: Method: SW846 8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	D21463-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	56.4		214	251	91	247	89	2	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21463-1	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	107%	104%	60-140%

## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D21470  
Account: CORCCOGJ Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3247-MB	FE6146.D	1	03/04/11	JB	03/04/11	OP3247	GFE304

The QC reported here applies to the following samples: Method: SW846-8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	113% 63-130%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D21470  
**Account:** CORCCOGJ Olsson Associates  
**Project:** 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3247-BS	FE6147.D	1	03/04/11	JB	03/04/11	OP3247	GFE304

The QC reported here applies to the following samples:

Method: SW846-8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	585	88	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	102%	63-130%

8.2.1

8

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D21470  
Account: CORCCOGJ Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3247-MS	FE6148.D	1	03/04/11	JB	03/04/11	OP3247	GFE304
OP3247-MSD	FE6149.D	1	03/04/11	JB	03/04/11	OP3247	GFE304
D21516-1	FE6150.D	1	03/04/11	JB	03/04/11	OP3247	GFE304

The QC reported here applies to the following samples: Method: SW846-8015B

D21470-1, D21470-3, D21470-5, D21470-6

CAS No.	Compound	D21516-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		854	770	90	755	88	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21516-1	Limits
84-15-1	o-Terphenyl	103%	98%	99%	63-130%



## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 03/03/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	2		
Antimony	3.0	.17	.5		
Arsenic	2.5	.28	.72		
Barium	1.0	.014	.05	0.79	<1.0
Beryllium	1.0	.14	.21		
Boron	5.0	.35	.91		
Cadmium	1.0	.022	.12	0.010	<1.0
Calcium	40	1.7	2.7		
Chromium	1.0	.027	.18	0.33	<1.0
Cobalt	0.50	.048	.058		
Copper	0.50	.16	.38	0.65	<1.0
Iron	7.0	.77	.91		
Lead	5.0	.13	.24	0.39	<5.0
Lithium	0.20	.076	.09		
Magnesium	20	.58	.93		
Manganese	0.50	.021	.028		
Molybdenum	1.0	.041	.16		
Nickel	3.0	.038	.075	0.13	<3.0
Phosphorus	10	1.5	3.5		
Potassium	200	38	130		
Selenium	5.0	.28	.54	-0.030	<5.0
Silicon	5.0	1.2	.68		
Silver	3.0	.098	.068	0.0	<3.0
Sodium	40	23	6.3		
Strontium	5.0	.0091	.02		
Thallium	1.0	.31	.21		
Tin	5.0	1.4	.56		
Titanium	1.0	.0098	.041		
Uranium	5.0	.22	.53		
Vanadium	1.0	.027	.034		
Zinc	3.0	.076	.49	0.15	<3.0

Associated samples MP4141: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	255	418	239	68.1N(a)	75-125
Beryllium					
Boron					
Cadmium	0.25	52.3	59.8	87.0	75-125
Calcium					
Chromium	9.5	61.7	59.8	87.3	75-125
Cobalt					
Copper	10.8	64.1	59.8	89.1	75-125
Iron					
Lead	10.1	111	120	84.4	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	12.0	61.4	59.8	82.6	75-125
Phosphorus					
Potassium					
Selenium	0.50	90.8	120	75.5	75-125
Silicon					
Silver	0.0	20.7	23.9	86.5	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	42.2	89.4	59.8	78.9	75-125

Associated samples MP4141: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	255	370	232	49.5N(a)	12.2	20
Beryllium						
Boron						
Cadmium	0.25	49.2	58.1	84.3	6.1	20
Calcium						
Chromium	9.5	59.4	58.1	85.9	3.8	20
Cobalt						
Copper	10.8	61.3	58.1	87.0	4.5	20
Iron						
Lead	10.1	105	116	81.7	5.6	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	12.0	59.1	58.1	81.1	3.8	20
Phosphorus						
Potassium						
Selenium	0.50	86.1	116	73.7N(b)	5.3	20
Silicon						
Silver	0.0	19.7	23.2	84.8	5.0	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	42.2	116	58.1	127.1N(b)	25.9 (c)	20

Associated samples MP4141: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference.
- (b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- (c) High RPD due to possible sample nonhomogeneity.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141

Methods: SW846 6010B

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/03/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	177	200	88.5	80-120
Beryllium				
Boron				
Cadmium	48.4	50	96.8	80-120
Calcium				
Chromium	49.8	50	99.6	80-120
Cobalt				
Copper	47.4	50	94.8	80-120
Iron				
Lead	96.1	100	96.1	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	48.7	50	97.4	80-120
Phosphorus				
Potassium				
Selenium	91.6	100	91.6	80-120
Silicon				
Silver	19.1	20	95.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.1	50	94.2	80-120

Associated samples MP4141: D21470-1, D21470-3, D21470-5, D21470-6

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/03/11

Metal	D21329-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	2280	2570	12.9*(a)	0-10
Beryllium				
Boron				
Cadmium	2.20	0.00	100.0(b)	0-10
Calcium				
Chromium	85.4	93.5	9.5	0-10
Cobalt				
Copper	96.6	94.0	2.7	0-10
Iron				
Lead	90.1	78.5	12.9*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	108	124	14.9*(a)	0-10
Phosphorus				
Potassium				
Selenium	7.20	27.0	500.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	378	461	21.9*(a)	0-10

Associated samples MP4141: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4141  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (anr) Analyte not requested  
(a) Serial dilution indicates possible matrix interference.  
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

9.1.4

9

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 03/03/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.048	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP4142: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	3.2	111	120	90.1	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4142: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	D21329-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	3.2	105	116	87.7	5.6	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP4142: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 03/03/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	94.4	100	94.4	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4142: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4142  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: ug/l

Prep Date: 03/03/11

Metal	D21329-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	33.3	25.9	8.6	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4142: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 03/04/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	0.00079	<0.10

Associated samples MP4144: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	D21292-1		Spikelot		QC
	Original	MS	HGWSR1	% Rec	Limits

Mercury 0.088 0.51 0.468 90.2 85-115

Associated samples MP4144: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	D21292-1 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
-------	--------------------------	--------------------	-------	------------	-------------

Mercury 0.088 0.51 0.477 88.5 0.0 20

Associated samples MP4144: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4144  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 03/04/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.33	0.4	82.5	80-120

Associated samples MP4144: D21470-1, D21470-3, D21470-5, D21470-6

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 03/04/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	7	49		
Antimony	30	1.7	13		
Arsenic	25	2.8	6.5		
Barium	10	.14	2.4		
Beryllium	10	1.4	4.4		
Boron	50	3.5	19		
Cadmium	10	.22	1.2		
Calcium	400	17	9.2		
Chromium	10	.27	1.6		
Cobalt	5.0	.48	.3		
Copper	10	1.6	2.7		
Iron	70	7.7	10		
Lead	50	1.3	3.2		
Lithium	2.0	.76	1.6		
Magnesium	200	5.8	12		
Manganese	5.0	.21	.7		
Molybdenum	10	.41	1.2		
Nickel	30	.38	.6		
Phosphorus	100	15	54		
Potassium	1000	380	540		
Selenium	50	2.8	7.2		
Silicon	50	12	20		
Silver	30	.98	.3		
Sodium	400	230	23	-58	<400
Strontium	5.0	.091	3.4		
Thallium	10	3.1	2.1		
Tin	50	14	4.4		
Titanium	10	.098	.7		
Uranium	50	2.2	3.9		
Vanadium	10	.27	.3		
Zinc	30	.76	1.7		

Associated samples MP4146: D21470-2, D21470-4

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.4.1

9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/04/11

Metal	D21472-1F Original MS	Spikelot MPICPALL % Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	89300 123000 25000	134.8N(a	75-125
Strontium	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Uranium	anr		
Vanadium	anr		
Zinc	anr		

Associated samples MP4146: D21470-2, D21470-4

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike recovery indicates possible matrix interference.



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 03/04/11

Metal	D21472-1F Original MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	anr				
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium	anr				
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	89300	123000	25000	134.8N(a 0.0	20
Strontium	anr				
Thallium	anr				
Tin	anr				
Titanium	anr				
Uranium	anr				
Vanadium	anr				
Zinc	anr				

Associated samples MP4146: D21470-2, D21470-4

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested  
(a) Spike recovery indicates possible matrix interference.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146

Methods: SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

03/04/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium	anr			
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26800	25000	107.2	80-120
Strontium	anr			
Thallium	anr			
Tin	anr			
Titanium	anr			
Uranium	anr			
Vanadium	anr			
Zinc	anr			

Associated samples MP4146: D21470-2, D21470-4

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4146  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.4.3

9

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date: 03/04/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	35	250		
Antimony	150	8.5	65		
Arsenic	130	14	33		
Barium	50	.7	12		
Beryllium	50	7	22		
Boron	250	18	93		
Cadmium	50	1.1	6		
Calcium	2000	85	46	25.0	<2000
Chromium	50	1.4	8		
Cobalt	25	2.4	1.5		
Copper	25	8	14		
Iron	350	39	50		
Lead	250	6.5	16		
Lithium	10	3.8	8		
Magnesium	1000	29	62	-24	<1000
Manganese	25	1.1	3.5		
Molybdenum	50	2.1	6		
Nickel	150	1.9	3		
Phosphorus	500	75	270		
Potassium	5000	1900	2700		
Selenium	250	14	36		
Silicon	250	60	100		
Silver	150	4.9	1.5		
Sodium	2000	1200	110	210	<2000
Strontium	25	.46	17		
Thallium	50	16	11		
Tin	250	70	22		
Titanium	50	.49	3.5		
Uranium	250	11	20		
Vanadium	50	1.4	1.5		
Zinc	150	3.8	8.5		

Associated samples MP4152: D21470-1A, D21470-3A, D21470-5A, D21470-6A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

9.5.1

9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
 Units: ug/l

Prep Date: 03/04/11

Metal	D21482-2A Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	86300	230000	125000	115.0	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	5040	138000	125000	106.4	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	1030000	1200000	125000	136.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4152: D21470-1A, D21470-3A, D21470-5A, D21470-6A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
 Units: ug/l

Prep Date: 03/04/11

Metal	D21482-2A Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	86300	231000	125000	115.8
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	5040	140000	125000	108.0
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	1030000	1200000	125000	136.0(a)
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4152: D21470-1A, D21470-3A, D21470-5A, D21470-6A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152

Methods: LADNR29B, SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date: 03/04/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	138000	125000	110.4	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	131000	125000	104.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	132000	125000	105.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4152: D21470-1A, D21470-3A, D21470-5A, D21470-6A

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4152  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP3928/GN8574	0.50	0.15	mg/l	20	18.7	93.5	90-110%
HEM Oil and Grease	GP3966/GN8639	5.0	0.0	mg/l	40	37.7	94.3	78-114%
Specific Conductivity	GP3919/GN8562	1.0	<1.0	umhos/cm	9985	10100	101.5	90-110%
Sulfate	GP3928/GN8574			mg/l	30	29.4	98.0	90-110%
pH	GN8517			su	8.00	8.00	100.0	99.3-100.7%
pH	GN8517			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:

Batch GN8517: D21470-1, D21470-3, D21470-5, D21470-6

Batch GP3919: D21470-1, D21470-3, D21470-5, D21470-6

Batch GP3928: D21470-2, D21470-4

Batch GP3966: D21470-2, D21470-4

(\*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP3966/GN8639	mg/l	40	38.5	2.1	20%

Associated Samples:

Batch GP3966: D21470-2, D21470-4  
(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN8524	D21463-1	mv	208	214	2.8	0-20%

Associated Samples:

Batch GN8524: D21470-1, D21470-3, D21470-5, D21470-6

(\*) Outside of QC limits



MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP3928/GN8574	D21470-2	mg/l	291	100	408	117.0	80-120%
Sulfate	GP3928/GN8574	D21470-2	mg/l	337	100	449	112.0	80-120%

Associated Samples:

Batch GP3928: D21470-2, D21470-4

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP3928/GN8574	D21470-2	mg/l	291	100	405	0.7	20%
Sulfate	GP3928/GN8574	D21470-2	mg/l	337	100	449	0.0	20%

Associated Samples:

Batch GP3928: D21470-2, D21470-4

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

## Misc. Forms

### Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

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Includes the following where applicable:

- Chain of Custody



## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21470

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 3/4/2011

Delivery Method:

Client Service Action Required at Login: No

Project: N/A

No. Coolers: 1

Airbill #'s: N/A

### Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

### Quality Control Preservation

Y or N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

### Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

### Sample Integrity - Instructions

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

## General Chemistry

### QC Data Summaries

(Accutest Labs of New England, Inc.)

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12685/GN34280	0.40	0.0	mg/kg	12	10.2	85.0	80-120%
Chromium, Hexavalent	GP12685/GN34280			mg/kg	1080	974	90.2	80-120%

Associated Samples:

Batch GP12685: D21470-1, D21470-3, D21470-5, D21470-6

(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	0.60	33.0(a)	0-20%

Associated Samples:

Batch GP12685: D21470-1, D21470-3, D21470-5, D21470-6

(\*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.



MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D21470  
Account: ALMS - Accutest Mountain States  
Project: CORCCOGJ: 009-0082\_201\_201004, Grand Junction, CO

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	13	12.6	93.3	75-125%
Chromium, Hexavalent	GP12685/GN34280	D21334-1	mg/kg	0.43	1280	1280	99.8	75-125%

Associated Samples:

Batch GP12685: D21470-1, D21470-3, D21470-5, D21470-6

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



05/23/11

## Technical Report for

Olsson Associates

009-0082\_201\_201004, Grand Junction, CO

FEE 113X Spill

Accutest Job Number: D23361

Sampling Date: 05/04/11

### Report to:

Olsson Associates  
826 21 1/2 Road  
Grand Junction, CO 81505  
tdobransky@oaconsulting.com

ATTN: Tim Dobransky

Total number of pages in report: **19**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

John Hamilton  
Laboratory Director

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D23361

009-0082\_201\_201004, Grand Junction, CO  
Project No: FEE 113X Spill

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D23361-1	05/04/11	16:40	TD	05/11/11	SO	Soil	FEE 113X-SS1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Olsson Associates

**Job No** D23361

**Site:** 009-0082\_201\_201004, Grand Junction, CO

**Report Dat** 5/23/2011 10:55:38 AM

On 05/11/2011, one (1) sample, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 5.1°C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D23361 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP4750

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D23361-1MS and D23361-1MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Magnesium is outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The matrix spike (MS) recoveries of Calcium and Sodium are outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.

### Wet Chemistry By Method USDA HANDBOOK 60

**Matrix** SO

**Batch ID:** MP4750

- Sodium Adsorption Ratio: Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

### Sample Results

### Report of Analysis

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D23361-1**Matrix:** SO - Soil**Date Sampled:** 05/04/11**Date Received:** 05/11/11**Percent Solids:** n/a**Project:** 009-0082\_201\_201004, Grand Junction, CO

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	501	2.0	mg/l	1	05/19/11	05/19/11 JB	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Magnesium	440	1.0	mg/l	1	05/19/11	05/19/11 JB	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Sodium	2590	2.0	mg/l	1	05/19/11	05/19/11 JB	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>

(1) Instrument QC Batch: MA1540

(2) Prep QC Batch: MP4750

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FEE 113X-SS1**Lab Sample ID:** D23361-1**Matrix:** SO - Soil**Date Sampled:** 05/04/11**Date Received:** 05/11/11**Percent Solids:** n/a**Project:** 009-0082\_201\_201004, Grand Junction, CO**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	20.4		ratio	1	05/19/11 15:21	JB	USDA HANDBOOK 60

(a) Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

---

RL = Reporting Limit



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



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## 4.1

Page 1 of 2

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D23361

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 5/11/2011 8:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: FEE 113X SPILL 009-0082-201-201004

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved property:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

## Metals Analysis

5

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D23361  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date: 05/19/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	62.0	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	12.0	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	-1000	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP4750: D23361-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D23361  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

5.1.1

5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23361  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 05/19/11

Metal	D23361-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	501000	575000	125000	59.2 (a)	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	440000	516000	125000	60.8N(b)	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	2590000	2450000	125000	-112.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4750: D23361-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23361  
Account: CORCCOGJ - Olsson Associates  
Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
Units: ug/l

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- (b) Spike recovery indicates possible matrix interference.

5.1.2

5



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23361  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 05/19/11

Metal	D23361-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	501000	634000	125000	106.4	9.8	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	440000	562000	125000	97.6	8.5	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	2590000	2700000	125000	88.0	9.7	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP4750: D23361-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D23361

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750

Methods: SW846 6010B, USDA HANDBOOK 60

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

5.1.2

5

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23361  
 Account: CORCCOGJ - Olsson Associates  
 Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750  
 Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60  
 Units: ug/l

Prep Date: 05/19/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	131000	125000	104.8	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	125000	125000	100.0	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	127000	125000	101.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4750: D23361-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D23361

Account: CORCCOGJ - Olsson Associates

Project: 009-0082\_201\_201004, Grand Junction, CO

QC Batch ID: MP4750

Methods: SW846 6010B, USDA HANDBOOK 60

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

5.1.3

5



05-Nov-2018

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

Re: **FEE 113X Spill**

Work Order: **18101402**

Dear Tim,

ALS Environmental received 4 samples on 20-Oct-2018 10:00 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 13.

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 998501

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

Environmental 

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

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** Entrada Consulting Group  
**Project:** FEE 113X Spill  
**Work Order:** 18101402

---

**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>
18101402-01	FEE113X-SS1	Soil		10/18/2018 08:40	10/20/2018 10:00	<input type="checkbox"/>
18101402-02	FEE113X-SS2	Soil		10/18/2018 08:50	10/20/2018 10:00	<input type="checkbox"/>
18101402-03	FEE113X-UGSS	Soil		10/18/2018 09:00	10/20/2018 10:00	<input type="checkbox"/>
18101402-04	FEE113X-DGSS	Soil		10/18/2018 09:15	10/20/2018 10:00	<input type="checkbox"/>

---

<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
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.

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

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

# ALS Group, USA

Date: 05-Nov-18

**Client:** Entrada Consulting Group  
**Project:** FEE 113X Spill  
**Sample ID:** FEE113X-SS1  
**Collection Date:** 10/18/2018 08:40 AM

**Work Order:** 18101402  
**Lab ID:** 18101402-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW846 6010C</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>ABL</b>
Calcium	130		0.15	5.0	mg/L	10	11/2/2018 06:26
Magnesium	14		0.13	2.0	mg/L	10	11/2/2018 06:26
Sodium	55		0.12	2.0	mg/L	10	11/2/2018 06:26
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>ABL</b>
Sodium Adsorption Ratio	1.2		0.010	0.010	none	1	11/1/2018
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method: <b>SW846 8270D</b>		Prep: SW3546 / 10/24/18		Analyst: <b>RM</b>
Acenaphthene	U		0.023	0.047	mg/Kg-dry	1	10/25/2018 14:44
Anthracene	U		0.013	0.047	mg/Kg-dry	1	10/25/2018 14:44
Benzo(a)anthracene	U		0.012	0.047	mg/Kg-dry	1	10/25/2018 14:44
Benzo(a)pyrene	U		0.019	0.047	mg/Kg-dry	1	10/25/2018 14:44
Benzo(b)fluoranthene	U		0.015	0.047	mg/Kg-dry	1	10/25/2018 14:44
Benzo(k)fluoranthene	U		0.016	0.047	mg/Kg-dry	1	10/25/2018 14:44
Chrysene	U		0.017	0.047	mg/Kg-dry	1	10/25/2018 14:44
Dibenzo(a,h)anthracene	U		0.030	0.047	mg/Kg-dry	1	10/25/2018 14:44
Fluoranthene	U		0.028	0.047	mg/Kg-dry	1	10/25/2018 14:44
Fluorene	U		0.014	0.047	mg/Kg-dry	1	10/25/2018 14:44
Indeno(1,2,3-cd)pyrene	U		0.037	0.047	mg/Kg-dry	1	10/25/2018 14:44
Naphthalene	U		0.017	0.047	mg/Kg-dry	1	10/25/2018 14:44
Pyrene	U		0.021	0.047	mg/Kg-dry	1	10/25/2018 14:44
Surr: 2-Fluorobiphenyl	104			20-140	%REC	1	10/25/2018 14:44
Surr: 4-Terphenyl-d14	91.0			22-172	%REC	1	10/25/2018 14:44
Surr: Nitrobenzene-d5	56.9			28-140	%REC	1	10/25/2018 14:44
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.1		0.011	0.10	mmhos/cm @25°	20	11/1/2018 20:00
<b>MOISTURE</b>							
			Method: <b>SW3550C</b>				
Moisture	14		0.025	0.050	% of sample	1	Analyst: <b>RBS</b> 10/23/2018 14:30

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



# ALS Group, USA

Date: 05-Nov-18

**Client:** Entrada Consulting Group  
**Project:** FEE 113X Spill  
**Sample ID:** FEE113X-SS2  
**Collection Date:** 10/18/2018 08:50 AM

**Work Order:** 18101402  
**Lab ID:** 18101402-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method: <b>SW846 8270D</b>		Prep: SW3546 / 10/24/18		Analyst: <b>RM</b>
Acenaphthene	U		0.023	0.049	mg/Kg-dry	1	10/25/2018 19:43
Anthracene	U		0.013	0.049	mg/Kg-dry	1	10/25/2018 19:43
Benzo(a)anthracene	U		0.012	0.049	mg/Kg-dry	1	10/25/2018 19:43
Benzo(a)pyrene	U		0.020	0.049	mg/Kg-dry	1	10/25/2018 19:43
Benzo(b)fluoranthene	U		0.015	0.049	mg/Kg-dry	1	10/25/2018 19:43
Benzo(k)fluoranthene	U		0.017	0.049	mg/Kg-dry	1	10/25/2018 19:43
Chrysene	U		0.017	0.049	mg/Kg-dry	1	10/25/2018 19:43
Dibenzo(a,h)anthracene	U		0.031	0.049	mg/Kg-dry	1	10/25/2018 19:43
Fluoranthene	U		0.029	0.049	mg/Kg-dry	1	10/25/2018 19:43
Fluorene	U		0.014	0.049	mg/Kg-dry	1	10/25/2018 19:43
Indeno(1,2,3-cd)pyrene	U		0.038	0.049	mg/Kg-dry	1	10/25/2018 19:43
Naphthalene	U		0.018	0.049	mg/Kg-dry	1	10/25/2018 19:43
Pyrene	U		0.022	0.049	mg/Kg-dry	1	10/25/2018 19:43
Surr: 2-Fluorobiphenyl	90.0			20-140	%REC	1	10/25/2018 19:43
Surr: 4-Terphenyl-d14	84.5			22-172	%REC	1	10/25/2018 19:43
Surr: Nitrobenzene-d5	47.1			28-140	%REC	1	10/25/2018 19:43
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.7		0.011	0.10	mmhos/cm @25°	20	11/1/2018 20:00
<b>MOISTURE</b>							
			Method: <b>SW3550C</b>				Analyst: <b>RBS</b>
Moisture	15		0.025	0.050	% of sample	1	10/23/2018 14:30

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

**ALS Group, USA**

Date: 05-Nov-18

**Client:** Entrada Consulting Group  
**Project:** FEE 113X Spill  
**Sample ID:** FEE113X-UGSS  
**Collection Date:** 10/18/2018 09:00 AM

**Work Order:** 18101402  
**Lab ID:** 18101402-03  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW846 6010C</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>ABL</b>
Calcium	160		0.15	5.0	mg/L	10	11/2/2018 06:39
Magnesium	15		0.13	2.0	mg/L	10	11/2/2018 06:39
Sodium	74		0.12	2.0	mg/L	10	11/2/2018 06:39
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>ABL</b>
Sodium Adsorption Ratio	1.5		0.010	0.010	none	1	11/1/2018
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 11/1/18		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.2		0.011	0.10	mmhos/cm @25°	20	11/1/2018 20:00
<b>MOISTURE</b>							
			Method: <b>SW3550C</b>				Analyst: <b>RBS</b>
Moisture	16		0.025	0.050	% of sample	1	10/23/2018 14:30

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

# ALS Group, USA

Date: 05-Nov-18

**Client:** Entrada Consulting Group  
**Project:** FEE 113X Spill  
**Sample ID:** FEE113X-DGSS  
**Collection Date:** 10/18/2018 09:15 AM

**Work Order:** 18101402  
**Lab ID:** 18101402-04  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW846 8270D</b>		Prep: SW3546 / 10/24/18		Analyst: <b>RM</b>
Acenaphthene	U		0.023	0.048	mg/Kg-dry	1	10/25/2018 19:58
Anthracene	U		0.013	0.048	mg/Kg-dry	1	10/25/2018 19:58
Benzo(a)anthracene	U		0.012	0.048	mg/Kg-dry	1	10/25/2018 19:58
Benzo(a)pyrene	U		0.020	0.048	mg/Kg-dry	1	10/25/2018 19:58
Benzo(b)fluoranthene	U		0.015	0.048	mg/Kg-dry	1	10/25/2018 19:58
Benzo(k)fluoranthene	U		0.017	0.048	mg/Kg-dry	1	10/25/2018 19:58
Chrysene	U		0.017	0.048	mg/Kg-dry	1	10/25/2018 19:58
Dibenzo(a,h)anthracene	U		0.031	0.048	mg/Kg-dry	1	10/25/2018 19:58
Fluoranthene	U		0.029	0.048	mg/Kg-dry	1	10/25/2018 19:58
Fluorene	U		0.014	0.048	mg/Kg-dry	1	10/25/2018 19:58
Indeno(1,2,3-cd)pyrene	U		0.038	0.048	mg/Kg-dry	1	10/25/2018 19:58
Naphthalene	U		0.018	0.048	mg/Kg-dry	1	10/25/2018 19:58
Pyrene	U		0.021	0.048	mg/Kg-dry	1	10/25/2018 19:58
Surr: 2-Fluorobiphenyl	94.7			20-140	%REC	1	10/25/2018 19:58
Surr: 4-Terphenyl-d14	64.4			22-172	%REC	1	10/25/2018 19:58
Surr: Nitrobenzene-d5	60.6			28-140	%REC	1	10/25/2018 19:58
<b>MOISTURE</b>			Method: <b>SW3550C</b>				Analyst: <b>RBS</b>
Moisture	16		0.025	0.050	% of sample	1	10/23/2018 14:30

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

**Client:** Entrada Consulting Group  
**Work Order:** 18101402  
**Project:** FEE 113X Spill

**QC BATCH REPORT**

Batch ID: **126739** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-126739-126739			Units: µg/Kg		Analysis Date: 10/25/2018 01:44 PM		
Client ID:			Run ID: SVMS6_181025A			SeqNo: 5347255		Prep Date: 10/24/2018		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	3476	0	3333	0	104	20-140		0			
Surr: 4-Terphenyl-d14	3812	0	3333	0	114	22-172		0			
Surr: Nitrobenzene-d5	2920	0	3333	0	87.6	28-140		0			

LCS				Sample ID: SLCSS1-126739-126739			Units: µg/Kg		Analysis Date: 10/25/2018 01:59 PM		
Client ID:			Run ID: SVMS6_181025A			SeqNo: 5347257		Prep Date: 10/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1143	42	1333	0	85.8	40-140	0				
Anthracene	1600	42	1333	0	120	40-140	0				
Benzo(a)anthracene	1246	42	1333	0	93.4	40-140	0				
Benzo(a)pyrene	1393	42	1333	0	104	40-140	0				
Benzo(b)fluoranthene	1217	42	1333	0	91.3	40-140	0				
Benzo(k)fluoranthene	1453	42	1333	0	109	40-140	0				
Chrysene	1371	42	1333	0	103	40-140	0				
Dibenzo(a,h)anthracene	1141	42	1333	0	85.6	40-140	0				
Fluoranthene	1613	42	1333	0	121	40-140	0				
Fluorene	1379	42	1333	0	103	40-140	0				
Indeno(1,2,3-cd)pyrene	1116	42	1333	0	83.7	40-140	0				
Naphthalene	1426	42	1333	0	107	40-140	0				
Pyrene	1414	42	1333	0	106	40-140	0				
Surr: 2-Fluorobiphenyl	3190	0	3333	0	95.7	20-140	0				
Surr: 4-Terphenyl-d14	3843	0	3333	0	115	22-172	0				
Surr: Nitrobenzene-d5	2347	0	3333	0	70.4	28-140	0				

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

Client: Entrada Consulting Group  
 Work Order: 18101402  
 Project: FEE 113X Spill

## QC BATCH REPORT

Batch ID: 126739 Instrument ID SVMS6 Method: SW846 8270D

MS				Sample ID: 18101406-01A MS			Units: µg/Kg		Analysis Date: 10/25/2018 02:14 PM		
Client ID:			Run ID: SVMS6_181025A			SeqNo: 5347259		Prep Date: 10/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1319	41	1312	0	101	40-140	0				
Anthracene	1770	41	1312	0	135	40-140	0				
Benzo(a)anthracene	1276	41	1312	0	97.3	40-140	0				
Benzo(a)pyrene	1249	41	1312	0	95.2	40-140	0				
Benzo(b)fluoranthene	1211	41	1312	0	92.3	40-140	0				
Benzo(k)fluoranthene	1289	41	1312	0	98.3	40-140	0				
Chrysene	1400	41	1312	0	107	40-140	0				
Dibenzo(a,h)anthracene	879.2	41	1312	0	67	40-140	0				
Fluoranthene	1769	41	1312	0	135	40-140	0				
Fluorene	1505	41	1312	0	115	40-140	0				
Indeno(1,2,3-cd)pyrene	908.8	41	1312	0	69.3	40-140	0				
Naphthalene	1601	41	1312	0	122	40-140	0				
Pyrene	1552	41	1312	0	118	40-140	0				
Surr: 2-Fluorobiphenyl	3611	0	3279	0	110	20-140	0				
Surr: 4-Terphenyl-d14	1597	0	3279	0	48.7	22-172	0				
Surr: Nitrobenzene-d5	2105	0	3279	0	64.2	28-140	0				

MSD				Sample ID: 18101406-01A MSD				Units: µg/Kg		Analysis Date: 10/25/2018 02:29 PM	
Client ID:			Run ID: SVMS6_181025A			SeqNo: 5347261		Prep Date: 10/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1253	42	1331	0	94.2	40-140	1319	5.07	30		
Anthracene	1818	42	1331	0	137	40-140	1770	2.68	30		
Benzo(a)anthracene	1230	42	1331	0	92.5	40-140	1276	3.63	30		
Benzo(a)pyrene	1174	42	1331	0	88.2	40-140	1249	6.22	30		
Benzo(b)fluoranthene	933.7	42	1331	0	70.2	40-140	1211	25.9	30		
Benzo(k)fluoranthene	1087	42	1331	0	81.7	40-140	1289	17	30		
Chrysene	1343	42	1331	0	101	40-140	1400	4.09	30		
Dibenzo(a,h)anthracene	956.1	42	1331	0	71.8	40-140	879.2	8.38	30		
Fluoranthene	1626	42	1331	0	122	40-140	1769	8.47	30		
Fluorene	1409	42	1331	0	106	40-140	1505	6.58	30		
Indeno(1,2,3-cd)pyrene	888.2	42	1331	0	66.7	40-140	908.8	2.29	30		
Naphthalene	1456	42	1331	0	109	40-140	1601	9.47	30		
Pyrene	1431	42	1331	0	108	40-140	1552	8.13	30		
Surr: 2-Fluorobiphenyl	3729	0	3327	0	112	20-140	3611	3.21	0		
Surr: 4-Terphenyl-d14	1878	0	3327	0	56.4	22-172	1597	16.1	0		
Surr: Nitrobenzene-d5	1602	0	3327	0	48.2	28-140	2105	27.1	0		

The following samples were analyzed in this batch:

18101402-01A	18101402-02A	18101402-04A
--------------	--------------	--------------

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

**Client:** Entrada Consulting Group  
**Work Order:** 18101402  
**Project:** FEE 113X Spill

## QC BATCH REPORT

Batch ID: **127235** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>18101412-05B DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>11/1/2018 08:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_181101T</b>			SeqNo: <b>5361405</b>		Prep Date: <b>11/1/2018</b>		DF: <b>20</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.944	0.10	0	0	0		3.068	4.13	50	

The following samples were analyzed in this batch:

18101402-01A	18101402-02A	18101402-03A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Entrada Consulting Group  
**Work Order:** 18101402  
**Project:** FEE 113X Spill

## QC BATCH REPORT

Batch ID: **R247616** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R247616</b>				Units: % of sample		Analysis Date: <b>10/23/2018 02:30 PM</b>		
Client ID:		Run ID: <b>MOIST_181023B</b>				SeqNo: <b>5341641</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 U 0.050

<b>LCS</b>		Sample ID: <b>LCS-R247616</b>				Units: % of sample		Analysis Date: <b>10/23/2018 02:30 PM</b>		
Client ID:		Run ID: <b>MOIST_181023B</b>				SeqNo: <b>5341640</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>18101421-21B DUP</b>				Units: % of sample		Analysis Date: <b>10/23/2018 02:30 PM</b>		
Client ID:		Run ID: <b>MOIST_181023B</b>				SeqNo: <b>5341627</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 5.47 0.050 0 0 0 0-0 5.75 4.99 10

<b>DUP</b>		Sample ID: <b>18101436-01A DUP</b>				Units: % of sample		Analysis Date: <b>10/23/2018 02:30 PM</b>		
Client ID:		Run ID: <b>MOIST_181023B</b>				SeqNo: <b>5341630</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 14.6 0.050 0 0 0 0-0 15.52 6.11 10

The following samples were analyzed in this batch:

18101402-01A	18101402-02A	18101402-03A
18101402-04A		


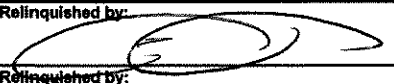
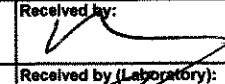

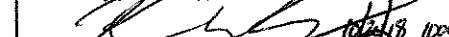

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



## Page 1 of 1

**COC ID: 123456**

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

<b>Environmental</b>			<b>ALS Project Manager:</b>			<b>Work Order #:</b>			18101402									
<b>Customer Information</b>			<b>Project Information</b>				<b>Parameter/Method Request for Analysis</b>											
Purchase Order			Project Name				A											
Work Order			Project Number				B											
Company Name			Bill To Company				C											
Send Report To			Invoice Attn.				D											
Address			Address				E											
City/State/Zip			City/State/Zip				F											
Phone			Phone				G											
Fax			Fax				H											
e-Mail Address			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	FEE113X-SS1	10/18/18	840	Soil	8	21			X	X	X							
2	FEE113X-SS2	10/18/18	850	Soil	8	21			X	X								
3	FEE113X-UGSS	10/18/18	900	Soil	8	21				X	X							
4	FEE113X-DGSS	10/18/18	915	Soil	8	1			X									
5						TD												
6																		
7																		
8																		
9																		
10																		
<b>Sampler(s): Please Print &amp; Sign</b> Dobransky 			<b>Shipment Method:</b> FedEx		<b>Required Turnaround Time:</b> <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 <input type="checkbox"/> Other _____				<b>Results Due Date:</b>									
<b>Relinquished by:</b> 		<b>Date:</b> 10/19/18	<b>Time:</b> 	<b>Received by:</b> 			<b>Notes:</b> Chevron Pricing Applies - Per Bruce Schiatter											
<b>Relinquished by:</b> 		<b>Date:</b> 10-19-18	<b>Time:</b> 1821	<b>Received by (Laboratory):</b> 			<b>Cooler Temp.</b> 5.2°C		<b>QC Package: (Check Box Below)</b>									
<b>Logged by (Laboratory):</b> KR		<b>Date:</b> 10/22/18	<b>Time:</b> 1125	<b>Checked by (Laboratory):</b> 			<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						
<b>Preservative Key:</b> 1-HCL    2-HNO3    3-H2SO4    4-NaOH    5-Na2S2O3    6-NaHSO4    7-Other    8-4 degrees C    9-5035												<b>Other:</b> _____						

**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: **ENTRADA**

Date/Time Received: **20-Oct-18 10:00**

Work Order: **18101402**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

22-Oct-18  
Date

Reviewed by: Chad Whelton  
eSignature

23-Oct-18  
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>5.2/5.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/22/2018 11:52:32 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:



20-Apr-2020

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

Re: **Fee 113X Spill**

Work Order: **20040810**

Dear Tim,

ALS Environmental received 5 samples on 11-Apr-2020 11:30 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 30.

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

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**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Work Order:** 20040810

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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>
20040810-01	FEE113X-SS3	Soil		4/8/2020 11:15	4/11/2020 11:30	<input type="checkbox"/>
20040810-02	FEE113X-SS4	Soil		4/8/2020 11:40	4/11/2020 11:30	<input type="checkbox"/>
20040810-03	FEE113X-SS5	Soil		4/8/2020 12:00	4/11/2020 11:30	<input type="checkbox"/>
20040810-04	FEE113X-SS6	Soil		4/8/2020 12:15	4/11/2020 11:30	<input type="checkbox"/>
20040810-05	FEE113X-BG1	Soil		4/8/2020 12:30	4/11/2020 11:30	<input type="checkbox"/>

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**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Work Order:** 20040810

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**Case Narrative**

Batch 154578, Method DRO\_8015\_S, Sample 20040810-03A: The DRO surrogate recovery is low due to matrix interference.

Batch 154578, Method DRO\_8015\_S, Sample 20040810-03A MS/MSD: The MS/MSD recovery was outside of the control limit for DRO; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required.

Batch 154579, Method CR6\_7196\_S, Sample 20040810-04A MS/MSD: The MS/MSD recovery was below the lower control limit hexavalent chromium. The corresponding result in the parent sample may be biased low.

Batch 154628, Method PNLVI\_8270\_S, Sample 20040810-03A: One or more PAH surrogate recoveries were below the lower control limits. The sample results may be biased low.

Batch 154628, Method PNLVI\_8270\_S, Sample 20040810-03A MS/MSD: The MS/MSD recoveries were below the lower control limits for multiple compounds per the QC report. The corresponding results in the parent sample may be biased low for these analytes.

Batch 154633, Method ICP\_6020\_S, Sample 20040810-05A MS/MSD: The MS/MSD recovery was above the upper control limit for chromium. The corresponding result in the parent sample may be biased high for this analyte.

Batch 154633, Method ICP\_6020\_S, Sample 20040810-05A MS/MSD: The MS/MSD recoveries were below the lower control limits for Copper, Nickel, and Silver. The corresponding results in the parent sample may be biased low for these analytes.

Batch 154633, Method ICP\_6020\_S, Sample 20040810-05A MS/MSD: The MS/MSD recovery was outside of the control limit for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

<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
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.

<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
°C	Degrees Celcius
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

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s.u.	Standard Units
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# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS3  
**Collection Date:** 4/8/2020 11:15 AM

**Work Order:** 20040810  
**Lab ID:** 20040810-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW3550 / 4/14/20		Analyst: <b>AK</b>
<b>DRO (C10-C28)</b>	<b>16</b>		<b>3.3</b>	<b>12</b>	<b>mg/Kg-dry</b>	1	4/14/2020 22:38
Surr: 4-Terphenyl-d14	81.4			33-111	%REC	1	4/14/2020 22:38
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW5035 / 4/15/20		Analyst: <b>AK</b>
<b>GRO (C6-C10)</b>	<b>U</b>		<b>3.1</b>	<b>7.4</b>	<b>mg/Kg</b>	1	4/16/2020 02:02
Surr: Toluene-d8	104			71-123	%REC	1	4/16/2020 02:02
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7471B</b>		Prep: SW7471 / 4/15/20		Analyst: <b>MAC</b>
<b>Mercury</b>	<b>0.020</b>	<b>J</b>	<b>0.015</b>	<b>0.023</b>	<b>mg/Kg-dry</b>	1	4/15/2020 14:31
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3050B / 4/15/20		Analyst: <b>STP</b>
<b>Arsenic</b>	<b>6.5</b>		<b>0.052</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Barium</b>	<b>180</b>		<b>4.0</b>	<b>4.3</b>	<b>mg/Kg-dry</b>	10	4/16/2020 14:50
<b>Cadmium</b>	<b>0.30</b>		<b>0.026</b>	<b>0.17</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Chromium</b>	<b>10</b>		<b>0.19</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Copper</b>	<b>15</b>		<b>0.43</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Lead</b>	<b>20</b>		<b>0.21</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Nickel</b>	<b>17</b>		<b>0.22</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Selenium</b>	<b>1.0</b>		<b>0.40</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Silver</b>	<b>0.082</b>	<b>J</b>	<b>0.057</b>	<b>0.43</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>Zinc</b>	<b>77</b>		<b>0.84</b>	<b>0.86</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:59
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020B</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Calcium</b>	<b>40</b>		<b>2.5</b>	<b>5.0</b>	<b>mg/L</b>	10	4/17/2020 23:14
<b>Magnesium</b>	<b>4.5</b>		<b>0.50</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:14
<b>Sodium</b>	<b>250</b>		<b>0.45</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:14
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Sodium Adsorption Ratio</b>	<b>10</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	4/17/2020
<b>POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)</b>							
			Method: <b>SW846 8270D</b>		Prep: SW3546 / 4/15/20		Analyst: <b>EEW</b>
<b>Acenaphthene</b>	<b>U</b>		<b>0.00091</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Anthracene</b>	<b>U</b>		<b>0.0016</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Benzo(a)anthracene</b>	<b>U</b>		<b>0.0019</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Benzo(a)pyrene</b>	<b>U</b>		<b>0.0013</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Benzo(b)fluoranthene</b>	<b>U</b>		<b>0.0011</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Benzo(k)fluoranthene</b>	<b>U</b>		<b>0.0014</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Chrysene</b>	<b>U</b>		<b>0.00096</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Dibenzo(a,h)anthracene</b>	<b>U</b>		<b>0.0011</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22
<b>Fluoranthene</b>	<b>U</b>		<b>0.00086</b>	<b>0.0047</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:22

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS3  
**Collection Date:** 4/8/2020 11:15 AM

**Work Order:** 20040810  
**Lab ID:** 20040810-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0015	0.0047	mg/Kg-dry	1	4/15/2020 20:22
Indeno(1,2,3-cd)pyrene	U		0.0017	0.0047	mg/Kg-dry	1	4/15/2020 20:22
Naphthalene	U		0.0020	0.0047	mg/Kg-dry	1	4/15/2020 20:22
Pyrene	U		0.00077	0.0047	mg/Kg-dry	1	4/15/2020 20:22
Surr: 2-Fluorobiphenyl	38.8			20-140	%REC	1	4/15/2020 20:22
Surr: 4-Terphenyl-d14	27.1			22-172	%REC	1	4/15/2020 20:22
Surr: Nitrobenzene-d5	28.5			28-140	%REC	1	4/15/2020 20:22
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260C</b>		Prep: SW5035 / 4/15/20		Analyst: <b>SJB</b>
Benzene	U		0.0076	0.044	mg/Kg-dry	1	4/16/2020 12:50
Ethylbenzene	U		0.0093	0.044	mg/Kg-dry	1	4/16/2020 12:50
m,p-Xylene	U		0.059	0.088	mg/Kg-dry	1	4/16/2020 12:50
o-Xylene	U		0.017	0.044	mg/Kg-dry	1	4/16/2020 12:50
Toluene	U		0.012	0.044	mg/Kg-dry	1	4/16/2020 12:50
Xylenes, Total	U		0.059	0.13	mg/Kg-dry	1	4/16/2020 12:50
Surr: 1,2-Dichloroethane-d4	98.7			70-130	%REC	1	4/16/2020 12:50
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	4/16/2020 12:50
Surr: Dibromofluoromethane	99.0			70-130	%REC	1	4/16/2020 12:50
Surr: Toluene-d8	93.3			70-130	%REC	1	4/16/2020 12:50
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>QTN</b>
Electrical Conductivity @ Saturation	1.3		0.011	0.10	mmhos/cm @25°	20	4/17/2020 16:28
<b>CHROMIUM, TRIVALENT</b>			Method: <b>CALCULATION</b>				Analyst: <b>JZB</b>
Chromium, Trivalent	10		1.0	1.2	mg/Kg-dry	1	4/17/2020 09:17
<b>CHROMIUM, HEXAVALENT</b>			Method: <b>SW7196A</b>		Prep: SW3060A / 4/15/20		Analyst: <b>KTP</b>
Chromium, Hexavalent	U		0.99	1.2	mg/Kg-dry	1	4/16/2020 11:20
<b>MOISTURE</b>			Method: <b>SW3550C</b>				Analyst: <b>KTP</b>
Moisture	15		0.10	0.10	% of sample	1	4/14/2020 08:56
<b>PH</b>			Method: <b>SW9045D</b>		Prep: EXTRACT / 4/13/20		Analyst: <b>QTN</b>
pH	8.74		0.10	0.100	s.u.	1	4/14/2020 13:05
Temperature	20.6		0.10	0.100	°C	1	4/14/2020 13:05

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



# ALS Group, USA

Date: 20-Apr-20

Client: Entrada Consulting Group  
Project: Fee 113X Spill  
Sample ID: FEE113X-SS4  
Collection Date: 4/8/2020 11:40 AM

Work Order: 20040810  
Lab ID: 20040810-02  
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method: SW8015D		Prep: SW3550 / 4/14/20		Analyst: <b>AK</b>
<b>DRO (C10-C28)</b>	<b>20</b>		<b>3.7</b>	<b>13</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/14/2020 23:18
Surr: 4-Terphenyl-d14	74.8			33-111	%REC	1	4/14/2020 23:18
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method: SW8015D		Prep: SW5035 / 4/15/20		Analyst: <b>AK</b>
<b>GRO (C6-C10)</b>	<b>45</b>		<b>3.7</b>	<b>8.9</b>	<b>mg/Kg</b>	<b>1</b>	4/16/2020 02:25
Surr: Toluene-d8	107			71-123	%REC	1	4/16/2020 02:25
<b>MERCURY BY CVAA</b>							
			Method: SW7471B		Prep: SW7471 / 4/15/20		Analyst: <b>MAC</b>
<b>Mercury</b>	<b>0.040</b>		<b>0.016</b>	<b>0.024</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 14:33
<b>METALS BY ICP-MS</b>							
			Method: SW6020B		Prep: SW3050B / 4/15/20		Analyst: <b>STP</b>
<b>Arsenic</b>	<b>6.6</b>		<b>0.051</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Barium</b>	<b>180</b>		<b>3.9</b>	<b>4.2</b>	<b>mg/Kg-dry</b>	<b>10</b>	4/16/2020 14:52
<b>Cadmium</b>	<b>0.33</b>		<b>0.025</b>	<b>0.17</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Chromium</b>	<b>11</b>		<b>0.19</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Copper</b>	<b>15</b>		<b>0.42</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Lead</b>	<b>20</b>		<b>0.20</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Nickel</b>	<b>17</b>		<b>0.22</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Selenium</b>	<b>1.2</b>		<b>0.39</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Silver</b>	<b>0.096</b>	J	<b>0.056</b>	<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>Zinc</b>	<b>79</b>		<b>0.83</b>	<b>0.84</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 21:01
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: SW6020B		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Calcium</b>	<b>80</b>		<b>2.5</b>	<b>5.0</b>	<b>mg/L</b>	<b>10</b>	4/17/2020 23:17
<b>Magnesium</b>	<b>11</b>		<b>0.50</b>	<b>2.0</b>	<b>mg/L</b>	<b>10</b>	4/17/2020 23:17
<b>Sodium</b>	<b>140</b>		<b>0.45</b>	<b>2.0</b>	<b>mg/L</b>	<b>10</b>	4/17/2020 23:17
<b>SODIUM ADSORPTION RATIO</b>							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Sodium Adsorption Ratio</b>	<b>3.8</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	<b>1</b>	4/17/2020
<b>POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)</b>							
			Method: SW846 8270D		Prep: SW3546 / 4/15/20		Analyst: <b>EEW</b>
<b>Acenaphthene</b>	<b>U</b>		<b>0.0010</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Anthracene</b>	<b>U</b>		<b>0.0018</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Benzo(a)anthracene</b>	<b>0.012</b>		<b>0.0022</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Benzo(a)pyrene</b>	<b>0.0055</b>		<b>0.0014</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Benzo(b)fluoranthene</b>	<b>0.0066</b>		<b>0.0013</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Benzo(k)fluoranthene</b>	<b>U</b>		<b>0.0015</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Chrysene</b>	<b>0.0056</b>		<b>0.0011</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Dibenzo(a,h)anthracene</b>	<b>U</b>		<b>0.0012</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38
<b>Fluoranthene</b>	<b>0.015</b>		<b>0.00097</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	<b>1</b>	4/15/2020 20:38

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS4  
**Collection Date:** 4/8/2020 11:40 AM

**Work Order:** 20040810  
**Lab ID:** 20040810-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0017	0.0052	mg/Kg-dry	1	4/15/2020 20:38
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.0034</b>	J	<b>0.0019</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:38
Naphthalene	U		0.0023	0.0052	mg/Kg-dry	1	4/15/2020 20:38
<b>Pyrene</b>	<b>0.0097</b>		<b>0.00087</b>	<b>0.0052</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:38
Surr: 2-Fluorobiphenyl	106			20-140	%REC	1	4/15/2020 20:38
Surr: 4-Terphenyl-d14	86.2			22-172	%REC	1	4/15/2020 20:38
Surr: Nitrobenzene-d5	86.8			28-140	%REC	1	4/15/2020 20:38
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260C</b>		Prep: SW5035 / 4/15/20		Analyst: <b>MF</b>
Benzene	U		0.0091	0.053	mg/Kg-dry	1	4/16/2020 02:14
Ethylbenzene	U		0.011	0.053	mg/Kg-dry	1	4/16/2020 02:14
m,p-Xylene	U		0.071	0.11	mg/Kg-dry	1	4/16/2020 02:14
o-Xylene	U		0.021	0.053	mg/Kg-dry	1	4/16/2020 02:14
Toluene	U		0.015	0.053	mg/Kg-dry	1	4/16/2020 02:14
Xylenes, Total	U		0.071	0.16	mg/Kg-dry	1	4/16/2020 02:14
Surr: 1,2-Dichloroethane-d4	97.1			70-130	%REC	1	4/16/2020 02:14
Surr: 4-Bromofluorobenzene	101			70-130	%REC	1	4/16/2020 02:14
Surr: Dibromofluoromethane	89.2			70-130	%REC	1	4/16/2020 02:14
Surr: Toluene-d8	100			70-130	%REC	1	4/16/2020 02:14
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>QTN</b>
Electrical Conductivity @ Saturation	1.1		0.011	0.10	mmhos/cm @25°	20	4/17/2020 16:28
<b>CHROMIUM, TRIVALENT</b>			Method: <b>CALCULATION</b>				Analyst: <b>JZB</b>
Chromium, Trivalent	11		1.1	1.3	mg/Kg-dry	1	4/17/2020 09:17
<b>CHROMIUM, HEXAVALENT</b>			Method: <b>SW7196A</b>		Prep: SW3060A / 4/15/20		Analyst: <b>KTP</b>
Chromium, Hexavalent	U		1.1	1.3	mg/Kg-dry	1	4/16/2020 11:20
<b>MOISTURE</b>			Method: <b>SW3550C</b>				Analyst: <b>KTP</b>
Moisture	24		0.10	0.10	% of sample	1	4/14/2020 08:56
<b>PH</b>			Method: <b>SW9045D</b>		Prep: EXTRACT / 4/13/20		Analyst: <b>QTN</b>
pH	7.70		0.10	0.100	s.u.	1	4/14/2020 13:05
Temperature	20.5		0.10	0.100	°C	1	4/14/2020 13:05

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS5  
**Collection Date:** 4/8/2020 12:00 PM

**Work Order:** 20040810  
**Lab ID:** 20040810-03  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW3550 / 4/14/20		Analyst: <b>AK</b>
<b>DRO (C10-C28)</b>	<b>1,700</b>		<b>64</b>	<b>220</b>	<b>mg/Kg-dry</b>	20	4/14/2020 20:42
Surr: 4-Terphenyl-d14	14.9	S		33-111	%REC	20	4/14/2020 20:42
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW5035 / 4/15/20		Analyst: <b>AK</b>
<b>GRO (C6-C10)</b>	U		2.9	7.0	mg/Kg	1	4/16/2020 02:48
Surr: Toluene-d8	102			71-123	%REC	1	4/16/2020 02:48
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7471B</b>		Prep: SW7471 / 4/15/20		Analyst: <b>MAC</b>
<b>Mercury</b>	<b>0.016</b>	J	<b>0.015</b>	<b>0.022</b>	<b>mg/Kg-dry</b>	1	4/15/2020 14:42
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3050B / 4/15/20		Analyst: <b>STP</b>
<b>Arsenic</b>	<b>5.2</b>		<b>0.047</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Barium</b>	<b>160</b>		<b>3.6</b>	<b>3.9</b>	<b>mg/Kg-dry</b>	10	4/16/2020 14:54
<b>Cadmium</b>	<b>0.12</b>	J	<b>0.023</b>	<b>0.16</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Chromium</b>	<b>6.8</b>		<b>0.17</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Copper</b>	<b>8.2</b>		<b>0.39</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Lead</b>	<b>13</b>		<b>0.19</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Nickel</b>	<b>11</b>		<b>0.20</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>Selenium</b>	<b>0.65</b>		<b>0.36</b>	<b>0.39</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
Silver	U		0.051	0.39	mg/Kg-dry	1	4/15/2020 21:03
<b>Zinc</b>	<b>49</b>		<b>0.76</b>	<b>0.78</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:03
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020B</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Calcium</b>	<b>34</b>		<b>2.5</b>	<b>5.0</b>	<b>mg/L</b>	10	4/17/2020 23:19
<b>Magnesium</b>	<b>7.4</b>		<b>0.50</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:19
<b>Sodium</b>	<b>190</b>		<b>0.45</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:19
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Sodium Adsorption Ratio</b>	<b>7.6</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	4/17/2020
<b>POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)</b>							
			Method: <b>SW846 8270D</b>		Prep: SW3546 / 4/15/20		Analyst: <b>EEW</b>
Acenaphthene	U		0.00093	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Anthracene	U		0.0016	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Benzo(a)anthracene	U		0.0020	0.0048	mg/Kg-dry	1	4/15/2020 17:01
<b>Benzo(a)pyrene</b>	<b>0.10</b>		<b>0.0013</b>	<b>0.0048</b>	<b>mg/Kg-dry</b>	1	4/15/2020 17:01
Benzo(b)fluoranthene	U		0.0011	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Benzo(k)fluoranthene	U		0.0014	0.0048	mg/Kg-dry	1	4/15/2020 17:01
<b>Chrysene</b>	<b>0.10</b>		<b>0.00099</b>	<b>0.0048</b>	<b>mg/Kg-dry</b>	1	4/15/2020 17:01
Dibenzo(a,h)anthracene	U		0.0011	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Fluoranthene	U		0.00088	0.0048	mg/Kg-dry	1	4/15/2020 17:01

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS5  
**Collection Date:** 4/8/2020 12:00 PM

**Work Order:** 20040810  
**Lab ID:** 20040810-03  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0016	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Indeno(1,2,3-cd)pyrene	U		0.0017	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Naphthalene	U		0.0021	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Pyrene	U		0.00079	0.0048	mg/Kg-dry	1	4/15/2020 17:01
Surr: 2-Fluorobiphenyl	30.5			20-140	%REC	1	4/15/2020 17:01
Surr: 4-Terphenyl-d14	21.9	S		22-172	%REC	1	4/15/2020 17:01
Surr: Nitrobenzene-d5	32.4			28-140	%REC	1	4/15/2020 17:01
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260C</b>		Prep: SW5035 / 4/15/20		Analyst: <b>MF</b>
Benzene	U		0.0071	0.042	mg/Kg-dry	1	4/16/2020 02:30
Ethylbenzene	U		0.0088	0.042	mg/Kg-dry	1	4/16/2020 02:30
m,p-Xylene	U		0.056	0.084	mg/Kg-dry	1	4/16/2020 02:30
o-Xylene	U		0.016	0.042	mg/Kg-dry	1	4/16/2020 02:30
Toluene	U		0.011	0.042	mg/Kg-dry	1	4/16/2020 02:30
Xylenes, Total	U		0.056	0.13	mg/Kg-dry	1	4/16/2020 02:30
Surr: 1,2-Dichloroethane-d4	98.8			70-130	%REC	1	4/16/2020 02:30
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	4/16/2020 02:30
Surr: Dibromofluoromethane	86.5			70-130	%REC	1	4/16/2020 02:30
Surr: Toluene-d8	102			70-130	%REC	1	4/16/2020 02:30
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>QTN</b>
Electrical Conductivity @ Saturation	0.93		0.011	0.10	mmhos/cm @25°	20	4/17/2020 16:28
<b>CHROMIUM, TRIVALENT</b>			Method: <b>CALCULATION</b>				Analyst: <b>JZB</b>
Chromium, Trivalent	6.8		1.0	1.2	mg/Kg-dry	1	4/17/2020 09:17
<b>CHROMIUM, HEXAVALENT</b>			Method: <b>SW7196A</b>		Prep: SW3060A / 4/15/20		Analyst: <b>KTP</b>
Chromium, Hexavalent	U		0.98	1.2	mg/Kg-dry	1	4/16/2020 11:20
<b>MOISTURE</b>			Method: <b>SW3550C</b>				Analyst: <b>KTP</b>
Moisture	15		0.10	0.10	% of sample	1	4/14/2020 08:56
<b>PH</b>			Method: <b>SW9045D</b>		Prep: EXTRACT / 4/13/20		Analyst: <b>QTN</b>
pH	9.02		0.10	0.100	s.u.	1	4/14/2020 13:05
Temperature	20.4		0.10	0.100	°C	1	4/14/2020 13:05

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS6  
**Collection Date:** 4/8/2020 12:15 PM

**Work Order:** 20040810  
**Lab ID:** 20040810-04  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW3550 / 4/14/20		Analyst: <b>AK</b>
<b>DRO (C10-C28)</b>	<b>13</b>		<b>3.4</b>	<b>12</b>	<b>mg/Kg-dry</b>	1	4/15/2020 01:54
Surr: 4-Terphenyl-d14	78.4			33-111	%REC	1	4/15/2020 01:54
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method: <b>SW8015D</b>		Prep: SW5035 / 4/15/20		Analyst: <b>AK</b>
<b>GRO (C6-C10)</b>	<b>U</b>		<b>3.2</b>	<b>7.6</b>	<b>mg/Kg</b>	1	4/16/2020 03:11
Surr: Toluene-d8	100			71-123	%REC	1	4/16/2020 03:11
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7471B</b>		Prep: SW7471 / 4/15/20		Analyst: <b>MAC</b>
<b>Mercury</b>	<b>0.018</b>	<b>J</b>	<b>0.014</b>	<b>0.020</b>	<b>mg/Kg-dry</b>	1	4/15/2020 14:44
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3050B / 4/15/20		Analyst: <b>STP</b>
<b>Arsenic</b>	<b>6.8</b>		<b>0.047</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Barium</b>	<b>210</b>		<b>3.6</b>	<b>4.0</b>	<b>mg/Kg-dry</b>	10	4/16/2020 14:56
<b>Cadmium</b>	<b>0.21</b>		<b>0.024</b>	<b>0.16</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Chromium</b>	<b>11</b>		<b>0.17</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Copper</b>	<b>14</b>		<b>0.40</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Lead</b>	<b>21</b>		<b>0.19</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Nickel</b>	<b>16</b>		<b>0.21</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Selenium</b>	<b>1.1</b>		<b>0.36</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Silver</b>	<b>0.089</b>	<b>J</b>	<b>0.052</b>	<b>0.40</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>Zinc</b>	<b>71</b>		<b>0.78</b>	<b>0.79</b>	<b>mg/Kg-dry</b>	1	4/15/2020 21:05
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method: <b>SW6020B</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Calcium</b>	<b>27</b>		<b>2.5</b>	<b>5.0</b>	<b>mg/L</b>	10	4/17/2020 23:21
<b>Magnesium</b>	<b>6.7</b>		<b>0.50</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:21
<b>Sodium</b>	<b>220</b>		<b>0.45</b>	<b>2.0</b>	<b>mg/L</b>	10	4/17/2020 23:21
<b>SODIUM ADSORPTION RATIO</b>							
			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>STP</b>
<b>Sodium Adsorption Ratio</b>	<b>9.9</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	4/17/2020
<b>POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)</b>							
			Method: <b>SW846 8270D</b>		Prep: SW3546 / 4/15/20		Analyst: <b>EEW</b>
<b>Acenaphthene</b>	<b>U</b>		<b>0.00096</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Anthracene</b>	<b>U</b>		<b>0.0017</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Benzo(a)anthracene</b>	<b>U</b>		<b>0.0020</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Benzo(a)pyrene</b>	<b>U</b>		<b>0.0014</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Benzo(b)fluoranthene</b>	<b>U</b>		<b>0.0012</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Benzo(k)fluoranthene</b>	<b>U</b>		<b>0.0015</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Chrysene</b>	<b>U</b>		<b>0.0010</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Dibenzo(a,h)anthracene</b>	<b>U</b>		<b>0.0012</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53
<b>Fluoranthene</b>	<b>U</b>		<b>0.00091</b>	<b>0.0050</b>	<b>mg/Kg-dry</b>	1	4/15/2020 20:53

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

# ALS Group, USA

Date: 20-Apr-20

**Client:** Entrada Consulting Group  
**Project:** Fee 113X Spill  
**Sample ID:** FEE113X-SS6  
**Collection Date:** 4/8/2020 12:15 PM

**Work Order:** 20040810  
**Lab ID:** 20040810-04  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0016	0.0050	mg/Kg-dry	1	4/15/2020 20:53
Indeno(1,2,3-cd)pyrene	U		0.0018	0.0050	mg/Kg-dry	1	4/15/2020 20:53
Naphthalene	U		0.0022	0.0050	mg/Kg-dry	1	4/15/2020 20:53
Pyrene	U		0.00082	0.0050	mg/Kg-dry	1	4/15/2020 20:53
Surr: 2-Fluorobiphenyl	104			20-140	%REC	1	4/15/2020 20:53
Surr: 4-Terphenyl-d14	82.2			22-172	%REC	1	4/15/2020 20:53
Surr: Nitrobenzene-d5	80.9			28-140	%REC	1	4/15/2020 20:53
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260C</b>		Prep: SW5035 / 4/15/20		Analyst: <b>MF</b>
Benzene	U		0.0056	0.033	mg/Kg-dry	1	4/16/2020 02:47
Ethylbenzene	U		0.0069	0.033	mg/Kg-dry	1	4/16/2020 02:47
m,p-Xylene	U		0.044	0.065	mg/Kg-dry	1	4/16/2020 02:47
o-Xylene	U		0.013	0.033	mg/Kg-dry	1	4/16/2020 02:47
Toluene	U		0.0089	0.033	mg/Kg-dry	1	4/16/2020 02:47
Xylenes, Total	U		0.044	0.098	mg/Kg-dry	1	4/16/2020 02:47
Surr: 1,2-Dichloroethane-d4	98.2			70-130	%REC	1	4/16/2020 02:47
Surr: 4-Bromofluorobenzene	99.1			70-130	%REC	1	4/16/2020 02:47
Surr: Dibromofluoromethane	88.0			70-130	%REC	1	4/16/2020 02:47
Surr: Toluene-d8	101			70-130	%REC	1	4/16/2020 02:47
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			Method: <b>USDA H60 METHOD 2</b>		Prep: USDA Method 20B / 4/17/20		Analyst: <b>QTN</b>
Electrical Conductivity @ Saturation	1.2		0.011	0.10	mmhos/cm @25°	20	4/17/2020 16:28
<b>CHROMIUM, TRIVALENT</b>			Method: <b>CALCULATION</b>				Analyst: <b>JZB</b>
Chromium, Trivalent	11		1.0	1.2	mg/Kg-dry	1	4/17/2020 09:17
<b>CHROMIUM, HEXAVALENT</b>			Method: <b>SW7196A</b>		Prep: SW3060A / 4/15/20		Analyst: <b>KTP</b>
Chromium, Hexavalent	U		0.99	1.2	mg/Kg-dry	1	4/16/2020 11:20
<b>MOISTURE</b>			Method: <b>SW3550C</b>				Analyst: <b>KTP</b>
Moisture	17		0.10	0.10	% of sample	1	4/15/2020 12:38
<b>PH</b>			Method: <b>SW9045D</b>		Prep: EXTRACT / 4/13/20		Analyst: <b>QTN</b>
pH	8.93		0.10	0.100	s.u.	1	4/14/2020 13:05
Temperature	20.5		0.10	0.100	°C	1	4/14/2020 13:05

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

# ALS Group, USA

Date: 20-Apr-20

Client: Entrada Consulting Group  
Project: Fee 113X Spill  
Sample ID: FEE113X-BG1  
Collection Date: 4/8/2020 12:30 PM

Work Order: 20040810  
Lab ID: 20040810-05  
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
Mercury	0.017	J	0.013	0.019	mg/Kg-dry	1	4/15/2020 14:46
<b>METALS BY ICP-MS</b>							
Arsenic	5.9		0.050	0.42	mg/Kg-dry	1	4/15/2020 21:07
Barium	130		3.9	4.2	mg/Kg-dry	10	4/16/2020 14:57
Boron	10		1.6	1.7	mg/Kg-dry	1	4/15/2020 21:07
Cadmium	0.25		0.025	0.17	mg/Kg-dry	1	4/15/2020 21:07
Chromium	15		0.18	0.42	mg/Kg-dry	1	4/15/2020 21:07
Copper	13		0.42	0.42	mg/Kg-dry	1	4/15/2020 21:07
Lead	19		0.20	0.42	mg/Kg-dry	1	4/15/2020 21:07
Nickel	17		0.22	0.42	mg/Kg-dry	1	4/15/2020 21:07
Selenium	0.81		0.39	0.42	mg/Kg-dry	1	4/15/2020 21:07
Silver	0.10	J	0.055	0.42	mg/Kg-dry	1	4/15/2020 21:07
Zinc	67		0.82	0.84	mg/Kg-dry	1	4/15/2020 21:07
<b>SOLUBLE CATIONS FOR SAR</b>							
Calcium	72		2.5	5.0	mg/L	10	4/17/2020 23:22
Magnesium	16		0.50	2.0	mg/L	10	4/17/2020 23:22
Sodium	32		0.45	2.0	mg/L	10	4/17/2020 23:22
<b>SODIUM ADSORPTION RATIO</b>							
Sodium Adsorption Ratio	0.89		0.010	0.010	none	1	4/17/2020
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
Electrical Conductivity @ Saturation	0.58		0.011	0.10	mmhos/cm @25°	20	4/17/2020 16:28
<b>CHROMIUM, TRIVALENT</b>							
Chromium, Trivalent	15		1.0	1.2	mg/Kg-dry	1	4/17/2020 09:17
<b>CHROMIUM, HEXAVALENT</b>							
Chromium, Hexavalent	U		0.98	1.2	mg/Kg-dry	1	4/16/2020 11:20
<b>MOISTURE</b>							
Moisture	16		0.10	0.10	% of sample	1	4/15/2020 12:38
<b>PH</b>							
pH	7.92		0.10	0.100	s.u.	1	4/14/2020 13:05
Temperature	20.4		0.10	0.100	°C	1	4/14/2020 13:05

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

**Client:** Entrada Consulting Group  
**Work Order:** 20040810  
**Project:** Fee 113X Spill

**QC BATCH REPORT**

Batch ID: **154578** Instrument ID **GC8** Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>DBLKS1-154578-154578</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/14/2020 05:27 PM</b>		
Client ID:		Run ID: <b>GC8_200414A</b>				SeqNo: <b>6356607</b>		Prep Date: <b>4/14/2020</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)	5.994	10								J
Surr: 4-Terphenyl-d14	2.743	0	3.33	0	82.4	33-111	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-154578-154578</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/14/2020 06:06 PM</b>		
Client ID:		Run ID: <b>GC8_200414A</b>				SeqNo: <b>6356608</b>		Prep Date: <b>4/14/2020</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)	348	10	333	0	105	80-121	0			
Surr: 4-Terphenyl-d14	2.247	0	3.33	0	67.5	33-111	0			

<b>MS</b>		Sample ID: <b>20040810-03A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/14/2020 06:45 PM</b>		
Client ID: <b>FEE113X-SS5</b>		Run ID: <b>GC8_200414A</b>				SeqNo: <b>6356609</b>		Prep Date: <b>4/14/2020</b>		DF: <b>20</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	1338	200	330.5	1418	-24.2	80-121	0			SO
Surr: 4-Terphenyl-d14	0.1165	0	3.305	0	3.52	33-111	0			S

<b>MSD</b>		Sample ID: <b>20040810-03A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/14/2020 07:24 PM</b>		
Client ID: <b>FEE113X-SS5</b>		Run ID: <b>GC8_200414A</b>				SeqNo: <b>6356610</b>		Prep Date: <b>4/14/2020</b>		DF: <b>20</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	2368	190	321	1418	296	80-121	1338	55.6	30	SRO
Surr: 4-Terphenyl-d14	0.7494	0	3.21	0	23.3	33-111	0.1165	146	30	SR

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A		



Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154625** Instrument ID **GC10** Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-154625-154625</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>4/16/2020 01:39 AM</b>		
Client ID:		Run ID: <b>GC10_200415B</b>				SeqNo: <b>6358018</b>		Prep Date: <b>4/15/2020</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)	U	5,000								
<i>Surr: Toluene-d8</i>	<i>5140</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>103</i>	<i>71-123</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-154625-154625</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>4/16/2020 05:05 AM</b>		
Client ID:		Run ID: <b>GC10_200415B</b>				SeqNo: <b>6358027</b>		Prep Date: <b>4/15/2020</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)	207600	5,000	250000	0	83	71-123	0			
<i>Surr: Toluene-d8</i>	<i>5682</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>114</i>	<i>71-123</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>20040810-01A MS</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>4/16/2020 04:19 AM</b>		
Client ID: <b>FEE113X-SS3</b>		Run ID: <b>GC10_200415B</b>				SeqNo: <b>6358025</b>		Prep Date: <b>4/15/2020</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)	410600	7,300	366300	0	112	71-123	0			
<i>Surr: Toluene-d8</i>	<i>7983</i>	<i>0</i>	<i>7325</i>	<i>0</i>	<i>109</i>	<i>71-123</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>20040810-01A MSD</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>4/16/2020 04:42 AM</b>		
Client ID: <b>FEE113X-SS3</b>		Run ID: <b>GC10_200415B</b>				SeqNo: <b>6358026</b>		Prep Date: <b>4/15/2020</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)	353400	7,400	370600	0	95.4	71-123	410600	15	30	
<i>Surr: Toluene-d8</i>	<i>8485</i>	<i>0</i>	<i>7411</i>	<i>0</i>	<i>114</i>	<i>71-123</i>	<i>7983</i>	<i>6.09</i>	<i>30</i>	

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A		

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154609** Instrument ID **HG4** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-154609-154609</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 02:23 PM</b>		
Client ID:		Run ID: <b>HG4_200415A</b>				SeqNo: <b>6356671</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.020

<b>LCS</b>		Sample ID: <b>LCS-154609-154609</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 02:25 PM</b>		
Client ID:		Run ID: <b>HG4_200415A</b>				SeqNo: <b>6356672</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1658 0.020 0.1665 0 99.6 80-120 0

<b>MS</b>		Sample ID: <b>20040811-02BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 02:52 PM</b>		
Client ID:		Run ID: <b>HG4_200415A</b>				SeqNo: <b>6356685</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1301 0.016 0.1313 0.01023 91.3 75-125 0

<b>MSD</b>		Sample ID: <b>20040811-02BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 02:54 PM</b>		
Client ID:		Run ID: <b>HG4_200415A</b>				SeqNo: <b>6356686</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1505 0.016 0.133 0.01023 105 75-125 0.1301 14.5 35

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A	20040810-05A	

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

**Client:** Entrada Consulting Group  
**Work Order:** 20040810  
**Project:** Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154633** Instrument ID **ICPMS3** Method: **SW6020B**

<b>MBLK</b>		Sample ID: <b>MBLK-154633-154633</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 08:53 PM</b>		
Client ID:		Run ID: <b>ICPMS3_200415B</b>				SeqNo: <b>6357503</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.23								
Barium	U	0.23								
Cadmium	U	0.091								
Chromium	U	0.23								
Copper	U	0.23								
Lead	U	0.23								
Nickel	U	0.23								
Selenium	U	0.23								
Silver	U	0.23								
Zinc	U	0.46								

<b>MBLK</b>		Sample ID: <b>MBLK-154633-154633</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 02:49 PM</b>		
Client ID:		Run ID: <b>ICPMS3_200416B</b>				SeqNo: <b>6358939</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	U	0.91								

<b>LCS</b>		Sample ID: <b>LCS-154633-154633</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 08:54 PM</b>		
Client ID:		Run ID: <b>ICPMS3_200415B</b>				SeqNo: <b>6357504</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.688	0.24	4.757	0	98.5	80-120	0			
Barium	4.776	0.24	4.757	0	100	80-120	0			
Boron	23.24	0.95	23.79	0	97.7	80-120	0			
Cadmium	4.771	0.095	4.757	0	100	80-120	0			
Chromium	4.916	0.24	4.757	0	103	80-120	0			
Copper	4.968	0.24	4.757	0	104	80-120	0			
Lead	4.747	0.24	4.757	0	99.8	80-120	0			
Nickel	4.776	0.24	4.757	0	100	80-120	0			
Selenium	4.787	0.24	4.757	0	101	80-120	0			
Silver	4.712	0.24	4.757	0	99	80-120	0			
Zinc	4.78	0.48	4.757	0	100	80-120	0			

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154633** Instrument ID **ICPMS3** Method: **SW6020B**

MS				Sample ID: <b>20040810-05AMS</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 09:09 PM</b>	
Client ID: <b>FEE113X-BG1</b>				Run ID: <b>ICPMS3_200415B</b>			SeqNo: <b>6357512</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.61	0.35	6.983	4.964	80.8	75-125	0			
Boron	42.24	1.4	34.92	8.405	96.9	75-125	0			
Cadmium	5.606	0.14	6.983	0.2105	77.3	75-125	0			
Chromium	22.23	0.35	6.983	12.41	141	75-125	0			S
Copper	15.83	0.35	6.983	10.97	69.6	75-125	0			S
Lead	22.87	0.35	6.983	15.97	98.8	75-125	0			
Nickel	19.17	0.35	6.983	14.25	70.5	75-125	0			S
Selenium	6.161	0.35	6.983	0.6808	78.5	75-125	0			
Silver	5.27	0.35	6.983	0.08701	74.2	75-125	0			S
Zinc	60.98	0.70	6.983	55.81	74.1	75-125	0			SO

MS				Sample ID: <b>20040810-05AMS</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 02:59 PM</b>	
Client ID: <b>FEE113X-BG1</b>				Run ID: <b>ICPMS3_200416B</b>			SeqNo: <b>6358945</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	125.9	3.5	6.983	112.5	192	75-125	0			SO

MSD				Sample ID: <b>20040810-05AMSD</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>4/15/2020 09:11 PM</b>	
Client ID: <b>FEE113X-BG1</b>				Run ID: <b>ICPMS3_200415B</b>			SeqNo: <b>6357513</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.49	0.35	6.983	4.964	79.2	75-125	10.61	1.11	20	
Boron	42.07	1.4	34.92	8.405	96.4	75-125	42.24	0.384	20	
Cadmium	5.553	0.14	6.983	0.2105	76.5	75-125	5.606	0.944	20	
Chromium	21.87	0.35	6.983	12.41	136	75-125	22.23	1.65	20	S
Copper	15.54	0.35	6.983	10.97	65.5	75-125	15.83	1.84	20	S
Lead	22.6	0.35	6.983	15.97	94.9	75-125	22.87	1.18	20	
Nickel	18.62	0.35	6.983	14.25	62.5	75-125	19.17	2.96	20	S
Selenium	6.086	0.35	6.983	0.6808	77.4	75-125	6.161	1.22	20	
Silver	5.172	0.35	6.983	0.08701	72.8	75-125	5.27	1.87	20	S
Zinc	59.7	0.70	6.983	55.81	55.8	75-125	60.98	2.12	20	SO

MSD				Sample ID: <b>20040810-05AMSD</b>			Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 03:01 PM</b>	
Client ID: <b>FEE113X-BG1</b>				Run ID: <b>ICPMS3_200416B</b>			SeqNo: <b>6358946</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	123.1	3.5	6.983	112.5	153	75-125	125.9	2.2	20	SO

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A	20040810-05A	

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

**Client:** Entrada Consulting Group  
**Work Order:** 20040810  
**Project:** Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154743** Instrument ID **ICPMS4** Method: **SW6020B**

<b>DUP</b>		Sample ID: <b>20040810-01BDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/17/2020 11:16 PM</b>		
Client ID: <b>FEE113X-SS3</b>		Run ID: <b>ICPMS4_200417A</b>				SeqNo: <b>6362662</b>		Prep Date: <b>4/17/2020</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	47.36	5.0	0	0	0	0-0	40.19	16.4		
Magnesium	5.169	2.0	0	0	0	0-0	4.452	14.9		
Sodium	286.1	2.0	0	0	0	0-0	252.9	12.3		

The following samples were analyzed in this batch:

20040810-01B	20040810-02B	20040810-03B
20040810-04B	20040810-05B	

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154628** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-154628-154628</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>4/15/2020 03:59 PM</b>		
Client ID:		Run ID: <b>SVMS6_200415A</b>				SeqNo: <b>6357968</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	4.2								
Anthracene	U	4.2								
Benzo(a)anthracene	U	4.2								
Benzo(a)pyrene	U	4.2								
Benzo(b)fluoranthene	U	4.2								
Benzo(k)fluoranthene	U	4.2								
Chrysene	U	4.2								
Dibenzo(a,h)anthracene	U	4.2								
Fluoranthene	U	4.2								
Fluorene	U	4.2								
Indeno(1,2,3-cd)pyrene	U	4.2								
Naphthalene	U	4.2								
Pyrene	U	4.2								
<i>Surr: 2-Fluorobiphenyl</i>	2513	0	3333	0	75.4	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	2959	0	3333	0	88.8	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2606	0	3333	0	78.2	28-140	0			

LCS		Sample ID: <b>SLCSS1-154628-154628</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>4/15/2020 04:14 PM</b>		
Client ID:		Run ID: <b>SVMS6_200415A</b>				SeqNo: <b>6357969</b>		Prep Date: <b>4/15/2020</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1048	4.2	1333	0	78.6	40-140	0			
Anthracene	1189	4.2	1333	0	89.2	40-140	0			
Benzo(a)anthracene	1109	4.2	1333	0	83.2	40-140	0			
Benzo(a)pyrene	1088	4.2	1333	0	81.6	40-140	0			
Benzo(b)fluoranthene	1037	4.2	1333	0	77.8	40-140	0			
Benzo(k)fluoranthene	1095	4.2	1333	0	82.2	40-140	0			
Chrysene	1126	4.2	1333	0	84.5	40-140	0			
Dibenzo(a,h)anthracene	1115	4.2	1333	0	83.6	40-140	0			
Fluoranthene	1265	4.2	1333	0	94.9	40-140	0			
Fluorene	1094	4.2	1333	0	82.1	40-140	0			
Indeno(1,2,3-cd)pyrene	1122	4.2	1333	0	84.2	40-140	0			
Naphthalene	1047	4.2	1333	0	78.6	40-140	0			
Pyrene	1097	4.2	1333	0	82.3	40-140	0			
<i>Surr: 2-Fluorobiphenyl</i>	990.3	0	3333	0	29.7	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	3093	0	3333	0	92.8	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2187	0	3333	0	65.6	28-140	0			

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154628** Instrument ID **SVMS6** Method: **SW846 8270D**

MS				Sample ID: <b>20040810-03A MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>4/15/2020 04:30 PM</b>	
Client ID: <b>FEE113X-SS5</b>				Run ID: <b>SVMS6_200415A</b>			SeqNo: <b>6357970</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	258.2	4.1	1302	0	19.8	40-140	0			S
Anthracene	270.8	4.1	1302	0	20.8	40-140	0			S
Benzo(a)anthracene	261.7	4.1	1302	0	20.1	40-140	0			S
Benzo(a)pyrene	273.5	4.1	1302	86.64	14.4	40-140	0			S
Benzo(b)fluoranthene	246.7	4.1	1302	0	18.9	40-140	0			S
Benzo(k)fluoranthene	261.3	4.1	1302	0	20.1	40-140	0			S
Chrysene	272.2	4.1	1302	85.07	14.4	40-140	0			S
Dibenzo(a,h)anthracene	259.8	4.1	1302	0	19.9	40-140	0			S
Fluoranthene	260.7	4.1	1302	0	20	40-140	0			S
Fluorene	267.6	4.1	1302	0	20.5	40-140	0			S
Indeno(1,2,3-cd)pyrene	251.4	4.1	1302	0	19.3	40-140	0			S
Naphthalene	286.2	4.1	1302	0	22	40-140	0			S
Pyrene	199.4	4.1	1302	0	15.3	40-140	0			S
Surr: 2-Fluorobiphenyl	826.3	0	3256	0	25.4	20-140	0			
Surr: 4-Terphenyl-d14	683	0	3256	0	21	22-172	0			S
Surr: Nitrobenzene-d5	825	0	3256	0	25.3	28-140	0			S

MSD				Sample ID: <b>20040810-03A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>4/15/2020 04:45 PM</b>	
Client ID: <b>FEE113X-SS5</b>				Run ID: <b>SVMS6_200415A</b>			SeqNo: <b>6357971</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	255.2	4.1	1317	0	19.4	40-140	258.2	1.15	30	S
Anthracene	263.9	4.1	1317	0	20	40-140	270.8	2.58	30	S
Benzo(a)anthracene	262.6	4.1	1317	0	19.9	40-140	261.7	0.331	30	S
Benzo(a)pyrene	254.3	4.1	1317	86.64	12.7	40-140	273.5	7.3	30	S
Benzo(b)fluoranthene	246.7	4.1	1317	0	18.7	40-140	246.7	0.015	30	S
Benzo(k)fluoranthene	252.4	4.1	1317	0	19.2	40-140	261.3	3.5	30	S
Chrysene	274.1	4.1	1317	85.07	14.4	40-140	272.2	0.673	30	S
Dibenzo(a,h)anthracene	248.4	4.1	1317	0	18.9	40-140	259.8	4.46	30	S
Fluoranthene	265.3	4.1	1317	0	20.2	40-140	260.7	1.76	30	S
Fluorene	258.8	4.1	1317	0	19.7	40-140	267.6	3.33	30	S
Indeno(1,2,3-cd)pyrene	327.8	4.1	1317	0	24.9	40-140	251.4	26.4	30	S
Naphthalene	285.8	4.1	1317	0	21.7	40-140	286.2	0.11	30	S
Pyrene	192.6	4.1	1317	0	14.6	40-140	199.4	3.45	30	S
Surr: 2-Fluorobiphenyl	907.5	0	3292	0	27.6	20-140	826.3	9.37	0	
Surr: 4-Terphenyl-d14	651.8	0	3292	0	19.8	22-172	683	4.67	0	S
Surr: Nitrobenzene-d5	875.3	0	3292	0	26.6	28-140	825	5.92	0	S

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A		

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

# QC BATCH REPORT

Batch ID: **154624** Instrument ID **VMS6** Method: **SW8260C**

MBLK				Sample ID: MBLK-154624-154624				Units: µg/Kg-dry			Analysis Date: 4/15/2020 05:37 PM		
Client ID:			Run ID: VMS6_200415A				SeqNo: 6357832			Prep Date: 4/15/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	U	30											
Ethylbenzene	U	30											
m,p-Xylene	U	60											
o-Xylene	U	30											
Toluene	U	30											
Xylenes, Total	U	90											
Surr: 1,2-Dichloroethane-d4	978.5	0	1000	0	97.8	70-130	0						
Surr: 4-Bromofluorobenzene	1023	0	1000	0	102	70-130	0						
Surr: Dibromofluoromethane	980.5	0	1000	0	98	70-130	0						
Surr: Toluene-d8	955.5	0	1000	0	95.6	70-130	0						

LCS				Sample ID: LCS-154624-154624			Units: µg/Kg-dry		Analysis Date: 4/15/2020 04:25 PM		
Client ID:			Run ID: VMS6_200415A			SeqNo: 6357831		Prep Date: 4/15/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1076	30	1000	0	108	75-125	0				
Ethylbenzene	930.5	30	1000	0	93	75-125	0				
m,p-Xylene	1838	60	2000	0	91.9	80-125	0				
o-Xylene	941	30	1000	0	94.1	75-125	0				
Toluene	944.5	30	1000	0	94.4	70-125	0				
Xylenes, Total	2780	90	3000	0	92.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	981.5	0	1000	0	98.2	70-130	0				
Surr: 4-Bromofluorobenzene	1015	0	1000	0	102	70-130	0				
Surr: Dibromofluoromethane	998.5	0	1000	0	99.8	70-130	0				
Surr: Toluene-d8	955	0	1000	0	95.5	70-130	0				

MS				Sample ID: 20040810-01A MS				Units: µg/Kg-dry		Analysis Date: 4/16/2020 01:14 AM	
Client ID: FEE113X-SS3			Run ID: VMS6_200415A			SeqNo: 6357834		Prep Date: 4/15/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1576	44	1465	0	108	75-125	0				
Ethylbenzene	1345	44	1465	0	91.8	75-125	0				
m,p-Xylene	2677	88	2930	0	91.4	80-125	0				
o-Xylene	1358	44	1465	0	92.7	75-125	0				
Toluene	1354	44	1465	0	92.5	70-125	0				
Xylenes, Total	4035	130	4395	0	91.8	75-125	0				
Surr: 1,2-Dichloroethane-d4	1487	0	1465	0	101	70-130	0				
Surr: 4-Bromofluorobenzene	1501	0	1465	0	102	70-130	0				
Surr: Dibromofluoromethane	1447	0	1465	0	98.8	70-130	0				
Surr: Toluene-d8	1378	0	1465	0	94.1	70-130	0				

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



Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154624** Instrument ID **VMS6** Method: **SW8260C**

MSD				Sample ID: <b>20040810-01A MSD</b>			Units: <b>µg/Kg-dry</b>		Analysis Date: <b>4/16/2020 01:38 AM</b>	
Client ID: <b>FEE113X-SS3</b>				Run ID: <b>VMS6_200415A</b>			SeqNo: <b>6357835</b>		Prep Date: <b>4/15/2020</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1690	44	1482	0	114	75-125	1576	6.99	30	
Ethylbenzene	1462	44	1482	0	98.6	75-125	1345	8.36	30	
m,p-Xylene	2897	89	2964	0	97.7	80-125	2677	7.91	30	
o-Xylene	1462	44	1482	0	98.6	75-125	1358	7.38	30	
Toluene	1471	44	1482	0	99.2	70-125	1354	8.26	30	
Xylenes, Total	4359	130	4447	0	98	75-125	4035	7.73	30	
Surr: 1,2-Dichloroethane-d4	1436	0	1482	0	96.8	70-130	1487	3.52	30	
Surr: 4-Bromofluorobenzene	1522	0	1482	0	103	70-130	1501	1.41	30	
Surr: Dibromofluoromethane	1458	0	1482	0	98.4	70-130	1447	0.758	30	
Surr: Toluene-d8	1331	0	1482	0	89.8	70-130	1378	3.46	30	

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A		

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

**Client:** Entrada Consulting Group  
**Work Order:** 20040810  
**Project:** Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154549** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-154549-154549				Units: s.u.		Analysis Date: 4/14/2020 01:05 PM		
Client ID:		Run ID: WETCHEM_200414E			SeqNo: 6354146		Prep Date: 4/13/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.05	0.10	4	0	101	90-110	0			

DUP				Sample ID: 20040599-08A DUP				Units: s.u.			Analysis Date: 4/14/2020 01:05 PM			
Client ID:				Run ID: WETCHEM_200414E				SeqNo: 6354148			Prep Date: 4/13/2020		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		6.51	0.10	0	0	0	0-0	6.47	0.616	20				
Temperature		20.5	0.10	0	0	0		20.3	0.98					

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A	20040810-05A	

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **154579** Instrument ID **WETCHEM** Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-154579-154579</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 11:20 AM</b>		
Client ID:		Run ID: <b>WETCHEM_200416C</b>				SeqNo: <b>6358073</b>		Prep Date: <b>4/15/2020</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 U 1.0

<b>LCS</b>		Sample ID: <b>LCS-154579-154579</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 11:20 AM</b>		
Client ID:		Run ID: <b>WETCHEM_200416C</b>				SeqNo: <b>6358074</b>		Prep Date: <b>4/15/2020</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 4.63 1.0 5 0 92.6 80-120 0

<b>MS</b>		Sample ID: <b>20040810-04A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 11:20 AM</b>		
Client ID: <b>FEE113X-SS6</b>		Run ID: <b>WETCHEM_200416C</b>				SeqNo: <b>6358080</b>		Prep Date: <b>4/15/2020</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 3.822 0.99 4.95 0.2913 71.3 75-125 0 S

<b>MS</b>		Sample ID: <b>20040810-04A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 11:20 AM</b>		
Client ID: <b>FEE113X-SS6</b>		Run ID: <b>WETCHEM_200416C</b>				SeqNo: <b>6358082</b>		Prep Date: <b>4/15/2020</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 803.9 98 1641 0.2913 49 75-125 0 S

<b>MSD</b>		Sample ID: <b>20040810-04A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>4/16/2020 11:20 AM</b>		
Client ID: <b>FEE113X-SS6</b>		Run ID: <b>WETCHEM_200416C</b>				SeqNo: <b>6358081</b>		Prep Date: <b>4/15/2020</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 4.412 0.98 4.902 0.2913 84.1 75-125 3.822 14.3 20

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
20040810-04A	20040810-05A	

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

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **R286599** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R286599</b>				Units: % of sample		Analysis Date: <b>4/14/2020 08:56 AM</b>		
Client ID:		Run ID: <b>MOIST_200414A</b>				SeqNo: <b>6355893</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 U 0.10

<b>LCS</b>		Sample ID: <b>LCS-R286599</b>				Units: % of sample		Analysis Date: <b>4/14/2020 08:56 AM</b>		
Client ID:		Run ID: <b>MOIST_200414A</b>				SeqNo: <b>6355892</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 99.99 0.10 100 0 100 98-102 0

<b>DUP</b>		Sample ID: <b>20040745-04B DUP</b>				Units: % of sample		Analysis Date: <b>4/14/2020 08:56 AM</b>		
Client ID:		Run ID: <b>MOIST_200414A</b>				SeqNo: <b>6355879</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 13.03 0.10 0 0 0 0-0 13.77 5.52 10

<b>DUP</b>		Sample ID: <b>20040745-06B DUP</b>				Units: % of sample		Analysis Date: <b>4/14/2020 08:56 AM</b>		
Client ID:		Run ID: <b>MOIST_200414A</b>				SeqNo: <b>6355882</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 12.82 0.10 0 0 0 0-0 13.15 2.54 10

The following samples were analyzed in this batch:

20040810-01A	20040810-02A	20040810-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Entrada Consulting Group  
 Work Order: 20040810  
 Project: Fee 113X Spill

## QC BATCH REPORT

Batch ID: **R286664** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R286664				Units: % of sample		Analysis Date: 4/15/2020 12:38 PM		
Client ID:		Run ID: MOIST_200415A				SeqNo: 6357783		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.10

LCS		Sample ID: LCS-R286664					Units: % of sample		Analysis Date: 4/15/2020 12:38 PM		
Client ID:			Run ID: MOIST_200415A			SeqNo: 6357782		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.10 100 0 100 98-102 0

DUP				Sample ID: 20040908-01B DUP				Units: % of sample			Analysis Date: 4/15/2020 12:38 PM				
Client ID:				Run ID: MOIST_200415A				SeqNo: 6357771			Prep Date:		DF: 1		
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit	
												RPD Ref Value		%RPD	
												RPD Limit		Qual	

Moisture 2.23 0.10 0 0 0 0-0 2.19 1.81 10

<b>DUP</b>				Sample ID: <b>20040909-06B DUP</b>				Units: % of sample			Analysis Date: <b>4/15/2020 12:38 PM</b>			
Client ID:				Run ID: <b>MOIST_200415A</b>				SeqNo: <b>6357778</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 1.43 0.10 0 0 0 0-0 1.37 4.29 10

The following samples were analyzed in this batch:

20040810-04A	20040810-05A
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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           |

<b>ALS Project Manager:</b>				<b>Work Order #:</b> <u>20040810</u>															
<b>Customer Information</b>				<b>Project Information</b>				<b>Parameter/Method Request for Analysis</b>											
Purchase Order				Project Name		Fee 113X Spill		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				E Sodium Adsorption Ratio											
City/State/Zip		Grand Junction, CO 81501		City/State/Zip				F pH											
Phone		970.270.2986		Phone				G Metals (See Attached List) CO Table 910											
Fax				Fax				H Arsenic Only											
e-Mail Address		tdobransky@entradainc.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	FEE113X-SS3	4/8/20	1115	Soil	8	2	X	X	X	X	X	X	X				
2	FEE113X-SS4	4/8/20	1140	Soil	8	2	X	X	X	X	X	X	X				
3	FEE113X-SS5	4/8/20	1200	Soil	8	2	X	X	X	X	X	X	X				
4	FEE113X-SS6	4/8/20	1215	Soil	8	2	X	X	X	X	X	X	X				
5	FEE113X-BG1	4/8/20	1230	Soil	8	2				X	X	X	X				
6																	
7																	
8																	
9																	
10																	

<b>Sampler(s): Please Print &amp; Sign</b> <i>Jason McQuitty</i>			<b>Shipment Method:</b> FedEx		<b>Required Turnaround Time:</b> <input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour			<b>Results Due Date:</b>		
<b>Relinquished by:</b> <i>McQuitty</i>		<b>Date:</b> 4/10/20	<b>Time:</b> 1100	<b>Received by:</b> <i>[Signature]</i>		<b>Notes:</b> <b>Chevron Pricing Applies - Per Bruce Schlatter</b>				
<b>Relinquished by:</b> <i>[Signature]</i>		<b>Date:</b> 4/10/20	<b>Time:</b> 1530	<b>Received by (Laboratory):</b> <i>[Signature]</i> 4/11/20 1130		<b>Cooler Temp.</b> x    Level II: Standard QC				
<b>Logged by (Laboratory):</b> DFS		<b>Date:</b> 4/13/20	<b>Time:</b> 1450	<b>Checked by (Laboratory):</b> <i>[Signature]</i>		<b>QC Package: (Check Box Below)</b> Level III: Std QC + Raw Data Level IV: SW846 CLP-Like				
<b>Preservative Key:</b> 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035										<b>Other:</b>

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: **ENTRADA**

Date/Time Received: **11-Apr-20 11:30**

Work Order: **20040810**

Received by: **DS**

Checklist completed by **Diane Shaw**

13-Apr-20

Reviewed by: **Chad Whelton**

14-Apr-20

eSignature

Date

eSignature

Date

Matrices: **Soil**

Carrier name: **FedEx**

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

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

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

Chain of custody present? Yes ☒ No ☐

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

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

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

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

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): **3.2/3.2 c** **SR2**

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: **4/13/2020 2:58:23 PM**

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

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

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: