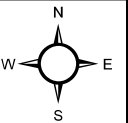




- Soil Sample Location
- Spill Origin

0 0.015 0.03 0.06 Miles
1 inch = 168 feet



PROJECT NO:	009-0082	FEE114x SPILL RESPOSE CHEVRON USA, INC RIO BLANCO COUNTY, COLORADO		826 21-1/2 ROAD GRAND JUNCTION, CO 81505 TEL 970.263.7800 FAX 970.263.7456	FIGURE
DRAWN BY:	Brian Swedhin				1
DATE:	10/07/2011				

Table 1
FEE 114X Spill Response
Soil Data Summary

SAMPLE SUMMARY	
Location Description	FEE 114X Injection Line Spill
Sample Type	Soil

LABORATORY DATA SUMMARY									
Sample ID	FEE114X-SS1	FEE114X-SS1	FEE114X-SS2	FEE114X-SS2	FEE114X-SS3	FEE114X-BG1	FEE114X-BG2	ALLOWABLE LIMITS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	9/20/2011	4/4/2012	9/20/2011	4/4/2012	9/20/2011	9/20/2011	9/20/2011		
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	<5.7	NT	<7.0	NT	25.4	NT	NT	500	mg/kg
TPH Diesel Range Organics	126	NT	72.9	NT	89.6	NT	NT		
BTEX									
Benzene	0.025	NT	<0.031	NT	<0.031	NT	NT	0.17	mg/kg
Toluene	<0.057	NT	<0.070	NT	<0.070	NT	NT	85	mg/kg
Ethylbenzene	<0.028	NT	<0.035	NT	<0.035	NT	NT	100	mg/kg
Xylene (total)	<0.11	NT	<0.14	NT	<0.14	NT	NT	175	mg/kg
Metals									
Arsenic	6.5	NT	6.4	NT	6.1	6.6	6.5	0.39	mg/kg
Barium	218	NT	187	NT	161	101	NT	15,000	mg/kg
Cadmium	<1.1	NT	<1.1	NT	<1.1	<1.0	NT	70	mg/kg
Chromium	11.6	NT	23.8	NT	11.3	8	NT	NA	mg/kg
Copper	16.5	NT	17.3	NT	14.9	14.8	NT	3,100	mg/kg
Lead	22.4	NT	18.3	NT	17.0	16.4	NT	400	mg/kg
Mercury	<0.11	NT	<0.12	NT	<0.13	<0.10	NT	23	mg/kg
Nickel	16.8	NT	14.0	NT	15.3	12	NT	1,600	mg/kg
Selenium	<5.3	NT	<5.7	NT	<5.7	<5.1	NT	390	mg/kg
Silver	<3.2	NT	<3.4	NT	<3.4	<3.1	NT	390	mg/kg
Zinc	83.4	NT	73.9	NT	70.8	59.1	NT	23,000	mg/kg
SAR Metals Analysis									
Calcium	648	8.78	379	2.72	44.9	67.4	NT	NA	mg/L
Magnesium	96.3	3.96	74.6	0.57	8.18	23.1	NT	NA	mg/L
Sodium	3080	16.41	2090	7.65	72.6	112	NT	NA	mg/L
Sodium Adsorption Ratio	29.8	6.50	25.7	5.96	2.61	3.00	NT	<12	
Polynuclear Aromatic Hydrocarbons									
Acenaphthene	<0.057	NT	<0.064	NT	<0.064	NT	NT	1,000	mg/kg
Anthracene	<0.065	NT	<0.072	NT	<0.072	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.093	NT	<0.10	NT	<0.10	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.13	NT	<0.14	NT	<0.14	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.13	NT	<0.15	NT	<0.15	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.079	NT	<0.088	NT	<0.088	NT	NT	2.2	mg/kg
Chrysene	<0.079	NT	<0.088	NT	<0.088	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.13	NT	<0.15	NT	<0.15	NT	NT	0.022	mg/kg
Fluoranthene	<0.072	NT	<0.080	NT	<0.080	NT	NT	1,000	mg/kg
Fluorene	<0.061	NT	<0.068	NT	<0.068	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.20	NT	<0.22	NT	<0.22	NT	NT	0.22	mg/kg
Napthalene	<0.068	NT	<0.076	NT	<0.076	NT	NT	23	mg/kg
Pyrene	<0.068	NT	<0.076	NT	<0.076	NT	NT	1,000	mg/kg
General Chemistry									
Chromium, Hexavalent	0.46	NT	0.51	NT	<0.47	<0.41	NT	23	mg/kg
Chromium, Trivalent	11.1	NT	23.3	NT	11	7.6	NT	120,000	mg/kg
Redox Potential Vs H2	397	NT	412	NT	381	333	NT	NA	mv
Solids, Percent	92.9	NT	83.3	NT	83	96	NT	NA	%
Specific Conductivity	17.3	2.14	12.1	1.16	0.598	0.685	NT	<4 or 2 x the background	mmhos/cm
pH	8.13	NT	8.20	NT	8.83	9.36	NT	6-9	su

mg/kg - milligrams per kilogram
J - indicates an estimated value
NT - parameter was not tested
mmhos/cm - millihos 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



10/07/11

Technical Report for

Olsson Associates

FEE 114X Spill(009-0082_201_201004)

Accutest Job Number: D27995

Sampling Dates: 09/20/11 - 09/21/11

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: 95



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.


Brad Madadian
Laboratory Director

Client Service contact: 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: D27995

FEE 114X Spill(009-0082_201_201004)

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D27995-1	09/20/11	09:10 TPD	09/24/11	SO	Soil	FEE114X-SS1
D27995-1A	09/20/11	09:10 TPD	09/24/11	SO	Soil	FEE114X-SS1
D27995-2	09/20/11	09:20 TPD	09/24/11	SO	Soil	FEE114X-BG1
D27995-2A	09/20/11	09:20 TPD	09/24/11	SO	Soil	FEE114X-BG1
D27995-3	09/21/11	13:45 TPD	09/24/11	SO	Soil	FEE114X-SS2
D27995-3A	09/21/11	13:45 TPD	09/24/11	SO	Soil	FEE114X-SS2
D27995-4	09/21/11	13:55 TPD	09/24/11	SO	Soil	FEE114X-BG2
D27995-5	09/21/11	14:15 TPD	09/24/11	SO	Soil	FEE114X-SS3
D27995-5A	09/21/11	14:15 TPD	09/24/11	SO	Soil	FEE114X-SS3

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Olsson Associates

Job No D27995

Site: FEE 114X Spill(009-0082_201_201004)

Report Dat 10/7/2011 9:15:21 AM

On 09/24/2011, 5 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D27995 was assigned to the project. The lab sample IDs, client sample IDs, 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

Matrix SO	Batch ID: V5V1053
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28007-1MS, D28007-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP4540
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D27911-1RMS, D27911-1RMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike duplicate (MSD) recovery(s) of Indeno(1,2,3-cd)pyrene are outside control limits. Variability of recovery may be due to sample matrix/homogeneity.
- The RPD(s) for the MS and MSD recoveries of Indeno(1,2,3-cd)pyrene, Naphthalene are outside control limits for sample OP4540-MSD. Variability of recovery may be due to sample matrix/homogeneity.
- D27995-1, D27995-3, D27995-5: Elevated RL due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB751
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D28000-1MS, D28000-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP4541
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D27977-1MS, D27977-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP5869

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27994-1MS, D27994-1MSD 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: MP5864

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27982-1MS, D27982-1MSD, D27982-1SDL were used as the QC samples for the metals analysis.
- The matrix spike duplicate (MSD) recovery(s) of Zinc are outside control limits. Probable cause due to matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Selenium are outside control limits for sample MP5864-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- The serial dilution RPD(s) for Nickel, Zinc are outside control limits for sample MP5864-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO

Batch ID: MP5865

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27982-1MS, D27982-1MSD, D27982-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Arsenic are outside control limits for sample MP5865-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP5861

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27978-1MS, D27978-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN11733

- Sample(s) D27995-1DUP 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: GP5560

- 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 SM19 2540B M

Matrix SO

Batch ID: GN11760

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO	Batch ID: R10072
------------------	-------------------------

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

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: M:GP13591
------------------	----------------------------

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

Wet Chemistry By Method SW846 9045C

Matrix SO	Batch ID: GN11730
------------------	--------------------------

- The following samples were run outside of holding time for method SW846 9045C: D27995-1, D27995-2, D27995-3, D27995-5.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO	Batch ID: MP5869
------------------	-------------------------

- Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(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 DELIVERY GROUP CASE NARRATIVE

Client: Accutest Mountain States**Job No** D27995**Site:** CORCCOGJ: FEE 114X Spill(009-0082_201_201004)**Report Date** 10/6/2011 12:16:45 PM

4 Sample(s) were collected on between 09/20/2011 and 09/21/2011 and were received at Accutest on 09/24/2011 properly preserved, at 2.4 Deg. C and intact. These Samples received an Accutest job number of D27995. 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:** GP13591

- 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) D28126-5MS, D28126-5DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP13591-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(D27995).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	FEE114X-SS1	
Lab Sample ID:	D27995-1	Date Sampled: 09/20/11
Matrix:	SO - Soil	Date Received: 09/24/11
Method:	SW846 8260B	Percent Solids: 92.9
Project:	FEE 114X Spill(009-0082_201_201004)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V17730.D	1	09/27/11	DC	n/a	n/a	V5V1053
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.09 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	57	25	ug/kg	
108-88-3	Toluene	ND	110	57	ug/kg	
100-41-4	Ethylbenzene	ND	110	28	ug/kg	
1330-20-7	Xylene (total)	ND	230	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	92%		61-130%
460-00-4	4-Bromofluorobenzene	88%		53-131%
17060-07-0	1,2-Dichloroethane-D4	102%		62-130%

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:	FEE114X-SS1	Date Sampled:	09/20/11
Lab Sample ID:	D27995-1	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	92.9
Method:	SW846 8270C BY SIM SW846 3546		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G06251.D	10	09/27/11	TMB	09/26/11	OP4540	E3G227
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	72	57	ug/kg	
120-12-7	Anthracene	ND	72	65	ug/kg	
56-55-3	Benzo(a)anthracene	ND	180	93	ug/kg	
50-32-8	Benzo(a)pyrene	ND	180	130	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	180	130	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	180	79	ug/kg	
218-01-9	Chrysene	ND	180	79	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	180	130	ug/kg	
206-44-0	Fluoranthene	ND	72	72	ug/kg	
86-73-7	Fluorene	ND	72	61	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	220	200	ug/kg	
91-20-3	Naphthalene	ND	72	68	ug/kg	
129-00-0	Pyrene	ND	72	68	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	83%		10-145%
321-60-8	2-Fluorobiphenyl	71%		10-130%
1718-51-0	Terphenyl-d14	78%		22-130%

(a) Elevated RL 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:	FEE114X-SS1	Date Sampled:	09/20/11
Lab Sample ID:	D27995-1	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	92.9
Method:	SW846 8015B		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13202.D	1	09/26/11	SK	n/a	n/a	GGB751
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	11	5.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	74%		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: FEE114X-SS1**Lab Sample ID:** D27995-1**Matrix:** SO - Soil**Method:** SW846-8015B SW846 3546**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/20/11**Date Received:** 09/24/11**Percent Solids:** 92.9

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD10295.D	1	09/26/11	KV	09/26/11	OP4541	GFD484
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)	126	14	9.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	72%		61-142%		

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: FEE114X-SS1

Lab Sample ID: D27995-1

Matrix: SO - Soil

Date Sampled: 09/20/11

Date Received: 09/24/11

Percent Solids: 92.9

Project: FEE 114X Spill(009-0082_201_201004)

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Arsenic	6.5	0.43	mg/kg	5	09/27/11	09/29/11 JM	SW846 6020 ³	SW846 3050B ⁷
Barium	218	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Cadmium	< 1.1	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Chromium	11.6	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Copper	16.5	1.1	mg/kg	1	09/27/11	09/28/11 JM	SW846 6010B ⁴	SW846 3050B ⁶
Lead	22.4	5.3	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Mercury	< 0.11	0.11	mg/kg	1	09/27/11	09/27/11 MC	SW846 7471A ¹	SW846 7471A ⁵
Nickel	16.8	3.2	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Selenium	< 5.3	5.3	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Silver	< 3.2	3.2	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Zinc	83.4	3.2	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶

(1) Instrument QC Batch: MA1852

(2) Instrument QC Batch: MA1853

(3) Instrument QC Batch: MA1856

(4) Instrument QC Batch: MA1857

(5) Prep QC Batch: MP5861

(6) Prep QC Batch: MP5864

(7) Prep QC Batch: MP5865

RL = Reporting Limit

Report of Analysis

Client Sample ID: FEE114X-SS1**Lab Sample ID:** D27995-1**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/20/11**Date Received:** 09/24/11**Percent Solids:** 92.9**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.46	0.42	mg/kg	1	10/04/11 17:09	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	11.1	1.5	mg/kg	1	10/04/11 17:09	AMA	SW846 3060/7196A M
Redox Potential Vs H2	397		mv	1	09/26/11	JD	ASTM D1498-76M
Solids, Percent	92.9		%	1	09/28/11	SWT	SM19 2540B M
Specific Conductivity	17300	1.0	umhos/cm	1	09/28/11	JK	DEPT.OF AG, BOOK N9
pH	8.13		su	1	09/26/11 12:25	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: FEE114X-SS1**Lab Sample ID:** D27995-1A**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/20/11**Date Received:** 09/24/11**Percent Solids:** 92.9

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	648	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	96.3	1.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	3080	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1853

(2) Prep QC Batch: MP5869

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-SS1	Date Sampled:	09/20/11
Lab Sample ID:	D27995-1A	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	92.9
Project:	FEE 114X Spill(009-0082_201_201004)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	29.8		ratio	1	09/27/11 19:16	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: FEE114X-BG1

Lab Sample ID: D27995-2

Matrix: SO - Soil

Date Sampled: 09/20/11

Date Received: 09/24/11

Percent Solids: 96.0

Project: FEE 114X Spill(009-0082_201_201004)

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Arsenic	6.6	0.41	mg/kg	5	09/27/11	09/29/11 JM	SW846 6020 ³	SW846 3050B ⁷
Barium	101	1.0	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Cadmium	< 1.0	1.0	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Chromium	8.0	1.0	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Copper	14.8	1.0	mg/kg	1	09/27/11	09/28/11 JM	SW846 6010B ⁴	SW846 3050B ⁶
Lead	16.4	5.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Mercury	< 0.10	0.10	mg/kg	1	09/27/11	09/27/11 MC	SW846 7471A ¹	SW846 7471A ⁵
Nickel	12.0	3.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Selenium	< 5.1	5.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Silver	< 3.1	3.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Zinc	59.1	3.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶

(1) Instrument QC Batch: MA1852

(2) Instrument QC Batch: MA1853

(3) Instrument QC Batch: MA1856

(4) Instrument QC Batch: MA1857

(5) Prep QC Batch: MP5861

(6) Prep QC Batch: MP5864

(7) Prep QC Batch: MP5865

RL = Reporting Limit

Report of Analysis

Client Sample ID: FEE114X-BG1**Lab Sample ID:** D27995-2**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/20/11**Date Received:** 09/24/11**Percent Solids:** 96.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.41	0.41	mg/kg	1	10/04/11 17:09	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	7.6	1.4	mg/kg	1	10/04/11 17:09	AMA	SW846 3060/7196A M
Redox Potential Vs H2	333		mv	1	09/26/11	JD	ASTM D1498-76M
Solids, Percent	96		%	1	09/28/11	SWT	SM19 2540B M
Specific Conductivity	685	1.0	umhos/cm	1	09/28/11	JK	DEPT.OF AG, BOOK N9
pH	9.36		su	1	09/26/11 12:25	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: FEE114X-BG1**Lab Sample ID:** D27995-2A**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/20/11**Date Received:** 09/24/11**Percent Solids:** 96.0

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	67.4	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	23.1	1.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	112	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1853

(2) Prep QC Batch: MP5869

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-BG1	Date Sampled:	09/20/11
Lab Sample ID:	D27995-2A	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	96.0
Project:	FEE 114X Spill(009-0082_201_201004)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	3.00		ratio	1	09/27/11 19:26	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-SS2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-3	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.3
Method:	SW846 8260B		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V17731.D	1	09/27/11	DC	n/a	n/a	V5V1053
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	70	31	ug/kg	
108-88-3	Toluene	ND	140	70	ug/kg	
100-41-4	Ethylbenzene	ND	140	35	ug/kg	
1330-20-7	Xylene (total)	ND	280	140	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	95%		61-130%
460-00-4	4-Bromofluorobenzene	89%		53-131%
17060-07-0	1,2-Dichloroethane-D4	103%		62-130%

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:	FEE114X-SS2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-3	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.3
Method:	SW846 8270C BY SIM SW846 3546		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G06252.D	10	09/27/11	TMB	09/26/11	OP4540	E3G227
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	80	64	ug/kg	
120-12-7	Anthracene	ND	80	72	ug/kg	
56-55-3	Benzo(a)anthracene	ND	200	100	ug/kg	
50-32-8	Benzo(a)pyrene	ND	200	140	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	200	150	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	200	88	ug/kg	
218-01-9	Chrysene	ND	200	88	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	200	150	ug/kg	
206-44-0	Fluoranthene	ND	80	80	ug/kg	
86-73-7	Fluorene	ND	80	68	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	240	220	ug/kg	
91-20-3	Naphthalene	ND	80	76	ug/kg	
129-00-0	Pyrene	ND	80	76	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	86%		10-145%
321-60-8	2-Fluorobiphenyl	74%		10-130%
1718-51-0	Terphenyl-d14	77%		22-130%

(a) Elevated RL 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:	FEE114X-SS2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-3	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.3
Method:	SW846 8015B		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13203.D	1	09/26/11	SK	n/a	n/a	GGB751
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	7.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	77%		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:	FEE114X-SS2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-3	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.3
Method:	SW846-8015B SW846 3546		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD10297.D	1	09/26/11	KV	09/26/11	OP4541	GFD484
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)	72.9	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	69%		61-142%		

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: FEE114X-SS2

Lab Sample ID: D27995-3

Matrix: SO - Soil

Date Sampled: 09/21/11

Date Received: 09/24/11

Percent Solids: 83.3

Project: FEE 114X Spill(009-0082_201_201004)

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Arsenic	6.4	0.46	mg/kg	5	09/27/11	09/29/11 JM	SW846 6020 ³	SW846 3050B ⁷
Barium	187	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Cadmium	< 1.1	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Chromium	23.8	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Copper	17.3	1.1	mg/kg	1	09/27/11	09/28/11 JM	SW846 6010B ⁴	SW846 3050B ⁶
Lead	18.3	5.7	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Mercury	< 0.12	0.12	mg/kg	1	09/27/11	09/27/11 MC	SW846 7471A ¹	SW846 7471A ⁵
Nickel	14.0	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Selenium	< 5.7	5.7	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Silver	< 3.4	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Zinc	73.9	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶

(1) Instrument QC Batch: MA1852

(2) Instrument QC Batch: MA1853

(3) Instrument QC Batch: MA1856

(4) Instrument QC Batch: MA1857

(5) Prep QC Batch: MP5861

(6) Prep QC Batch: MP5864

(7) Prep QC Batch: MP5865

RL = Reporting Limit

Report of Analysis

Client Sample ID: FEE114X-SS2**Lab Sample ID:** D27995-3**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/21/11**Date Received:** 09/24/11**Percent Solids:** 83.3**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.51	0.47	mg/kg	1	10/04/11 17:20	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	23.3	1.6	mg/kg	1	10/04/11 17:20	AMA	SW846 3060/7196A M
Redox Potential Vs H2	412		mv	1	09/26/11	JD	ASTM D1498-76M
Solids, Percent	83.3		%	1	09/28/11	SWT	SM19 2540B M
Specific Conductivity	12100	1.0	umhos/cm	1	09/28/11	JK	DEPT.OF AG, BOOK N9
pH	8.20		su	1	09/26/11 12:25	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: FEE114X-SS2**Lab Sample ID:** D27995-3A**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/21/11**Date Received:** 09/24/11**Percent Solids:** 83.3

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	379	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	74.6	1.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	2090	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1853

(2) Prep QC Batch: MP5869

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-SS2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-3A	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.3
Project:	FEE 114X Spill(009-0082_201_201004)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	25.7		ratio	1	09/27/11 19:32	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-BG2	Date Sampled:	09/21/11
Lab Sample ID:	D27995-4	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	95.1
Project:	FEE 114X Spill(009-0082_201_201004)		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.5	0.42	mg/kg	5	09/27/11	09/29/11 JM	SW846 6020 ¹	SW846 3050B ²

(1) Instrument QC Batch: MA1856
(2) Prep QC Batch: MP5865

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-SS3	Date Sampled:	09/21/11
Lab Sample ID:	D27995-5	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.0
Method:	SW846 8260B		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V17732.D	1	09/27/11	DC	n/a	n/a	V5V1053
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	70	31	ug/kg	
108-88-3	Toluene	ND	140	70	ug/kg	
100-41-4	Ethylbenzene	ND	140	35	ug/kg	
1330-20-7	Xylene (total)	ND	280	140	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	98%		61-130%
460-00-4	4-Bromofluorobenzene	96%		53-131%
17060-07-0	1,2-Dichloroethane-D4	111%		62-130%

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:	FEE114X-SS3	Date Sampled:	09/21/11
Lab Sample ID:	D27995-5	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.0
Method:	SW846 8270C BY SIM SW846 3546		
Project:	FEE 114X Spill(009-0082_201_201004)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G06253.D	10	09/27/11	TMB	09/26/11	OP4540	E3G227
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	80	64	ug/kg	
120-12-7	Anthracene	ND	80	72	ug/kg	
56-55-3	Benzo(a)anthracene	ND	200	100	ug/kg	
50-32-8	Benzo(a)pyrene	ND	200	140	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	200	150	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	200	88	ug/kg	
218-01-9	Chrysene	ND	200	88	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	200	150	ug/kg	
206-44-0	Fluoranthene	ND	80	80	ug/kg	
86-73-7	Fluorene	ND	80	68	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	240	220	ug/kg	
91-20-3	Naphthalene	ND	80	76	ug/kg	
129-00-0	Pyrene	ND	80	76	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	89%		10-145%
321-60-8	2-Fluorobiphenyl	71%		10-130%
1718-51-0	Terphenyl-d14	83%		22-130%

(a) Elevated RL 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:	FEE114X-SS3	
Lab Sample ID:	D27995-5	Date Sampled: 09/21/11
Matrix:	SO - Soil	Date Received: 09/24/11
Method:	SW846 8015B	Percent Solids: 83.0
Project:	FEE 114X Spill(009-0082_201_201004)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13204.D	1	09/26/11	SK	n/a	n/a	GGB751
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	7.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	80%		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:	FEE114X-SS3	
Lab Sample ID:	D27995-5	Date Sampled: 09/21/11
Matrix:	SO - Soil	Date Received: 09/24/11
Method:	SW846-8015B SW846 3546	Percent Solids: 83.0
Project:	FEE 114X Spill(009-0082_201_201004)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD10298.D	1	09/26/11	KV	09/26/11	OP4541	GFD484
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)	89.6	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	71%		61-142%		

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: FEE114X-SS3

Lab Sample ID: D27995-5

Matrix: SO - Soil

Date Sampled: 09/21/11

Date Received: 09/24/11

Percent Solids: 83.0

Project: FEE 114X Spill(009-0082_201_201004)

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Arsenic	6.1	0.46	mg/kg	5	09/27/11	09/29/11 JM	SW846 6020 ³	SW846 3050B ⁷
Barium	161	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Cadmium	< 1.1	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Chromium	11.3	1.1	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Copper	14.9	1.1	mg/kg	1	09/27/11	09/28/11 JM	SW846 6010B ⁴	SW846 3050B ⁶
Lead	17.0	5.7	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Mercury	< 0.13	0.13	mg/kg	1	09/27/11	09/27/11 MC	SW846 7471A ¹	SW846 7471A ⁵
Nickel	15.3	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Selenium	< 5.7	5.7	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Silver	< 3.4	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶
Zinc	70.8	3.4	mg/kg	1	09/27/11	09/27/11 JB	SW846 6010B ²	SW846 3050B ⁶

(1) Instrument QC Batch: MA1852

(2) Instrument QC Batch: MA1853

(3) Instrument QC Batch: MA1856

(4) Instrument QC Batch: MA1857

(5) Prep QC Batch: MP5861

(6) Prep QC Batch: MP5864

(7) Prep QC Batch: MP5865

RL = Reporting Limit

Report of Analysis

Client Sample ID: FEE114X-SS3**Lab Sample ID:** D27995-5**Matrix:** SO - Soil**Project:** FEE 114X Spill(009-0082_201_201004)**Date Sampled:** 09/21/11**Date Received:** 09/24/11**Percent Solids:** 83.0**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 0.47	0.47	mg/kg	1	10/04/11 17:20	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	11.0	1.6	mg/kg	1	10/04/11 17:20	AMA	SW846 3060/7196A M
Redox Potential Vs H2	381		mv	1	09/26/11	JD	ASTM D1498-76M
Solids, Percent	83		%	1	09/28/11	SWT	SM19 2540B M
Specific Conductivity	598	1.0	umhos/cm	1	09/28/11	JK	DEPT.OF AG, BOOK N9
pH	8.83		su	1	09/26/11 12:25	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:	FEE114X-SS3	Date Sampled:	09/21/11
Lab Sample ID:	D27995-5A	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.0
Project:	FEE 114X Spill(009-0082_201_201004)		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	44.9	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	8.18	1.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	72.6	2.0	mg/l	1	09/27/11	09/27/11 JB	SW846 6010B ¹	EPA 200.7 ²

- (1) Instrument QC Batch: MA1853
(2) Prep QC Batch: MP5869

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FEE114X-SS3	Date Sampled:	09/21/11
Lab Sample ID:	D27995-5A	Date Received:	09/24/11
Matrix:	SO - Soil	Percent Solids:	83.0
Project:	FEE 114X Spill(009-0082_201_201004)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	2.61		ratio	1	09/27/11 19:42	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

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 BS8/2010-41	Accutest Job # D27995

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes								
Company Name Olsson Associates		Project Name / No. FEE 114X Spill (009-0082_201_201004)														DW - Drinking Water GW - Ground Water WW - Wastewater SO - Soil SL - Sludge OI - Oil LIQ - Liquid SOL - Other Solid								
Project Contact Tim Dobransky E-Mail: tdobransky@oacconsulting.com		Bill to Olsson Associates Invoice Attn: Tim Dobransky																						
Address 826 21 1/2 Road		Address 826 21 1/2 Road																						
City Grand Junction	State CO	Zip 81505	City Grand Junction	State CO	Zip 81505																			
Phone No. 970-263-7800		Fax No. 970-263-7800																						
Samplers Name TPD		Client Purchase Order #																						
Accutest Sample #	Field ID / Point of Collection	Date	Time	Matrix	# of bottles	IC	NO3	NO2	HPO4	SiO4	SO4	NaHCO3	MEQ	NONE	TPH (GRO)	TPH (DRO)	BTEX	PAH (See List 1)	Electrical Conductivity	Sodium Adsorption Ratio	pH	Metals (See List 2)	Arsenic Only	LAB USE ONLY
	FEE114X-SS1	9/20/2011	910	SO	2										X	X	X	X	X	X	X	X		01
	FEE114X-BG1	9/20/2011	920	SO	2										X				X	X	X	X		02
	FEE114X-SS2	9/21/2011	1345	SO	2										X	X	X	X	X	X	X	X		03
	FEE114X-BG2	9/21/2011	1355	SO	1										X							X		04
	FEE114X-SS3	9/21/2011	1415	SO	2										X	X	X	X	X	X	X	X		05
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks																				
<input checked="" type="checkbox"/> 10 Day STANDARD <input type="checkbox"/> 7 Day (per contract) <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		Approved By/ Date:		<input type="checkbox"/> Commercial "A" <input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Data Package		<input type="checkbox"/> TRRP-13 <input type="checkbox"/> EDD Format <input type="checkbox"/> Other		AMS FEDEX Account Number - 467721860 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																
Real time analytical data available via Lablink		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY		List 2 - As, Ba, Cd, Cr3, Cr6, Cu, Pb, Hg, Ni, Se, Ag, Zn																				
Relinquished by:	Date/Time: 9/23/11 1700	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2	Relinquished By: 4	Date Time:	Received By:	Date Time: 9-24-11 905	Custody Seal # FedEx	On Ice <input checked="" type="checkbox"/>	Cooler Temp. 4.0												
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4																			
Relinquished by: 5	Date Time:	Received By: 5																						

D27995: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D27995

Client: OLSSON

Immediate Client Services Action Required: No

Date / Time Received: 9/24/2011 9:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: FEE 114X SPILL

Airbill #'s: FEDEX

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
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"/>

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

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
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"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
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"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
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

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
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

GC/MS Volatiles

5

QC Data Summaries

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: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1053-MB	5V17716.D	1	09/27/11	DC	n/a	n/a	V5V1053

The QC reported here applies to the following samples:

Method: SW846 8260B

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	106% 61-130%
460-00-4	4-Bromofluorobenzene	91% 53-131%
17060-07-0	1,2-Dichloroethane-D4	115% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1053-BS	5V17717.D	1	09/27/11	DC	n/a	n/a	V5V1053

The QC reported here applies to the following samples:

Method: SW846 8260B

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	49.2	98	70-130
100-41-4	Ethylbenzene	50	47.6	95	70-130
108-88-3	Toluene	50	49.0	98	70-130
1330-20-7	Xylene (total)	150	147	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	107%	61-130%
460-00-4	4-Bromofluorobenzene	102%	53-131%
17060-07-0	1,2-Dichloroethane-D4	112%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28007-1MS	5V17719.D	1	09/27/11	DC	n/a	n/a	V5V1053
D28007-1MSD	5V17720.D	1	09/27/11	DC	n/a	n/a	V5V1053
D28007-1	5V17718.D	1	09/27/11	DC	n/a	n/a	V5V1053

The QC reported here applies to the following samples:

Method: SW846 8260B

D27995-1, D27995-3, D27995-5

CAS No.	Compound	D28007-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3730	3640	97	3750	100	3	70-134/30
100-41-4	Ethylbenzene	ND		3730	3480	93	3580	96	3	70-137/30
108-88-3	Toluene	ND		3730	3450	92	3570	96	3	70-130/30
1330-20-7	Xylene (total)	ND		11200	11000	98	11300	101	3	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D28007-1	Limits
2037-26-5	Toluene-D8	102%	103%	104%	61-130%
460-00-4	4-Bromofluorobenzene	110%	108%	99%	53-131%
17060-07-0	1,2-Dichloroethane-D4	114%	109%	113%	62-130%

GC/MS Semi-volatiles

QC Data Summaries

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: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4540-MB	3G06236.D	1	09/27/11	TMB	09/26/11	OP4540	E3G227

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
120-12-7	Anthracene	ND	6.7	6.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	17	8.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	17	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	17	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	17	7.3	ug/kg	
218-01-9	Chrysene	ND	17	7.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	17	12	ug/kg	
206-44-0	Fluoranthene	ND	6.7	6.7	ug/kg	
86-73-7	Fluorene	ND	6.7	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	20	18	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	91% 10-145%
321-60-8	2-Fluorobiphenyl	95% 10-130%
1718-51-0	Terphenyl-d14	117% 22-130%

Blank Spike Summary

Page 1 of 1

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4540-BS	3G06237.D	1	09/27/11	TMB	09/26/11	OP4540	E3G227

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	72.0	86	34-130
120-12-7	Anthracene	83.3	79.9	96	35-130
56-55-3	Benzo(a)anthracene	83.3	78.6	94	36-130
50-32-8	Benzo(a)pyrene	83.3	73.1	88	36-130
205-99-2	Benzo(b)fluoranthene	83.3	74.8	90	35-130
207-08-9	Benzo(k)fluoranthene	83.3	78.6	94	37-130
218-01-9	Chrysene	83.3	76.9	92	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	81.2	97	32-130
206-44-0	Fluoranthene	83.3	76.4	92	38-130
86-73-7	Fluorene	83.3	74.0	89	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	80.8	97	28-130
91-20-3	Naphthalene	83.3	73.1	88	35-130
129-00-0	Pyrene	83.3	77.4	93	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	97%	10-145%
321-60-8	2-Fluorobiphenyl	95%	10-130%
1718-51-0	Terphenyl-d14	105%	22-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4540-MS	3G06239.D	5	09/27/11	TMB	09/26/11	OP4540	E3G227
OP4540-MSD	3G06240.D	5	09/27/11	TMB	09/26/11	OP4540	E3G227
D27911-1R	3G06238.D	5	09/27/11	TMB	09/26/11	OP4540	E3G227

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D27995-1, D27995-3, D27995-5

CAS No.	Compound	D27911-1R ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	75.9	93	164	95	183	115	11	10-155/30
120-12-7	Anthracene	ND	93	108	116	110	118	2	10-155/30
56-55-3	Benzo(a)anthracene	ND	93	108	116	95.4	102	12	10-175/30
50-32-8	Benzo(a)pyrene	ND	93	100	108	89.8	96	11	10-164/30
205-99-2	Benzo(b)fluoranthene	ND	93	101	109	91.8	99	10	10-165/30
207-08-9	Benzo(k)fluoranthene	ND	93	92.7	100	80.9	87	14	10-178/30
218-01-9	Chrysene	ND	93	90.4	97	79.5	85	13	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND	93	99.6	107	85.7	92	15	10-144/30
206-44-0	Fluoranthene	ND	93	113	122	98.8	106	13	10-207/30
86-73-7	Fluorene	198	93	298	108	335	147	12	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	93	118	127	ND	0* a	200* b	10-180/30
91-20-3	Naphthalene	46.6	93	134	94	183	147	31* b	10-198/30
129-00-0	Pyrene	74.7	93	174	107	167	99	4	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D27911-1R	Limits
4165-60-0	Nitrobenzene-d5	101%	97%	78%	10-145%
321-60-8	2-Fluorobiphenyl	83%	73%	78%	10-130%
1718-51-0	Terphenyl-d14	95%	76%	83%	22-130%

(a) Outside control limits due to matrix interference. Refer to Blank Spike.

(b) Variability of recovery may be due to sample matrix/homogeneity.

GC Volatiles

QC Data Summaries

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: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB751-MB	GB13193.D	1	09/26/11	SK	n/a	n/a	GGB751

The QC reported here applies to the following samples:

Method: SW846 8015B

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	79% 60-140%

Blank Spike Summary

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB751-BS	GB13194.D	1	09/26/11	SK	n/a	n/a	GGB751

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

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	115	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	90%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28000-1MS	GB13196.D	1	09/26/11	SK	n/a	n/a	GGB751
D28000-1MSD	GB13197.D	1	09/26/11	SK	n/a	n/a	GGB751
D28000-1	GB13195.D	1	09/26/11	SK	n/a	n/a	GGB751

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

D27995-1, D27995-3, D27995-5

CAS No.	Compound	D28000-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		119	128	107	129	108	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D28000-1	Limits
120-82-1	1,2,4-Trichlorobenzene	91%	93%	80%	60-140%

GC Semi-volatiles

QC Data Summaries

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: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4541-MB	FD10277.D	1	09/26/11	KV	09/26/11	OP4541	GFD483

The QC reported here applies to the following samples:

Method: SW846-8015B

D27995-1, D27995-3, D27995-5

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	88% 61-142%

8.1.1

8

Blank Spike Summary

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4541-BS	FD10278.D	1	09/26/11	KV	09/26/11	OP4541	GFD483

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

D27995-1, D27995-3, D27995-5

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	546	82	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	88%	61-142%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D27995
Account: CORCCOGJ Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4541-MS	FD10279.D	1	09/26/11	KV	09/26/11	OP4541	GFD483
OP4541-MSD	FD10280.D	1	09/26/11	KV	09/26/11	OP4541	GFD483
D27977-1	FD10281.D	1	09/26/11	KV	09/26/11	OP4541	GFD483

The QC reported here applies to the following samples:

Method: SW846-8015B

D27995-1, D27995-3, D27995-5

CAS No.	Compound	D27977-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	334		738	741	55	721	52	3	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D27977-1	Limits
84-15-1	o-Terphenyl	66%	65%	65%	61-142%

8.3.1
8

Metals Analysis

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: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5861
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 09/27/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	-0.0029	<0.10

Associated samples MP5861: D27995-1, D27995-2, D27995-3, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5861
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27978-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.0091	0.42	0.449	91.5	85-115
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Associated samples MP5861: D27995-1, D27995-2, D27995-3, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5861
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27978-1 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0091 0.44	0.478	90.1	4.7	20

Associated samples MP5861: D27995-1, D27995-2, D27995-3, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5861
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 09/27/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.37	0.4	92.5	80-120
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Associated samples MP5861: D27995-1, D27995-2, D27995-3, D27995-5

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: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 09/27/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.080	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.0	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.010	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	0.030	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	0.12	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	0.020	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	-0.18	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	-0.050	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.34	<3.0

Associated samples MP5864: D27995-1, D27995-2, D27995-3, D27995-5

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27982-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	4600	5980	272	709.5(a)	75-125
Beryllium					
Boron					
Cadmium	0.0	57.4	68	84.4	75-125
Calcium					
Chromium	22.7	80.3	68	84.7	75-125
Cobalt					
Copper	19.2	81.6	68	91.8	75-125
Iron					
Lead	22.1	134	136	82.3	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	14.3	68.4	68	79.6	75-125
Phosphorus					
Potassium					
Selenium	2.8	164	136	119.2	75-125
Silicon					
Silver	0.0	24.5	27.2	90.1	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	43.0	95.3	68	76.9	75-125

Associated samples MP5864: D27995-1, D27995-2, D27995-3, D27995-5

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
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 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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27982-1 Original	MSD	Spikelet MPICPAL % Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic	anr				
Barium	4600	6410	272	867.6(a)	12.9
Beryllium					
Boron					
Cadmium	0.0	57.2	68	84.1	0.3
Calcium					
Chromium	22.7	79.3	68	83.2	1.3
Cobalt					
Copper	19.2	82.7	68	93.4	1.3
Iron					
Lead	22.1	130	136	79.3	3.0
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	14.3	67.5	68	78.2	1.3
Phosphorus					
Potassium					
Selenium	2.8	163	136	118.5	0.6
Silicon					
Silver	0.0	24.4	27.2	89.7	0.4
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	43.0	93.8	68	74.7N(b)	1.6

Associated samples MP5864: D27995-1, D27995-2, D27995-3, D27995-5

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
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 amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- (b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27995

Account: CORCCOGJ - Olsson Associates

Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864

Methods: SW846 6010B

Matrix Type: SOLID

Units: mg/kg

Prep Date: 09/27/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	17.6	20	88.0	80-120
Beryllium				
Boron				
Cadmium	44.0	50	88.0	80-120
Calcium				
Chromium	44.4	50	88.8	80-120
Cobalt				
Copper	45.7	50	91.4	80-120
Iron				
Lead	88.4	100	88.4	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	43.2	50	86.4	80-120
Phosphorus				
Potassium				
Selenium	85.3	100	85.3	80-120
Silicon				
Silver	18.5	20	92.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	43.7	50	87.4	80-120

Associated samples MP5864: D27995-1, D27995-2, D27995-3, D27995-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/27/11

Metal	D27982-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	29600	33500	8.1	0-10
Beryllium				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	173	186	7.0	0-10
Cobalt				
Copper	140	145	1.3	0-10
Iron				
Lead	169	174	3.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	109	122	11.2*(a)	0-10
Phosphorus				
Potassium				
Selenium	16.3	0.00	100.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	329	386	17.3*(a)	0-10

Associated samples MP5864: D27995-1, D27995-2, D27995-3, D27995-5

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5864
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: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5865
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 09/27/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.023	<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 MP5865: D27995-1, D27995-2, D27995-3, D27995-4, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5865
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27982-1 Original MS	Spikelot MPICPAL % Rec	QC Limits
Aluminum			
Antimony	anr		
Arsenic	4.9	138	136
Barium	anr		
Beryllium			
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper			
Iron			
Lead	anr		
Magnesium			
Manganese			
Molybdenum	anr		
Nickel			
Phosphorus			
Potassium			
Selenium	anr		
Silver	anr		
Sodium			
Strontium			
Thallium	anr		
Tin			
Titanium			
Uranium			
Vanadium			
Zinc			

Associated samples MP5865: D27995-1, D27995-2, D27995-3, D27995-4, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5865
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 09/27/11

Metal	D27982-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	4.9	142	136	100.8	2.9	20
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper						
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum	anr					
Nickel						
Phosphorus						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5865: D27995-1, D27995-2, D27995-3, D27995-4, D27995-5

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: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5865
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 09/27/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	97.4	100	97.4	80-120
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum	anr			
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5865: D27995-1, D27995-2, D27995-3, D27995-4, D27995-5

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5865
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 09/27/11

Metal	D27982-1	QC
	Original SDL 5:25 %DIF	Limits
Aluminum		
Antimony	anr	
Arsenic	37.4 43.0 14.9*(a)	0-10
Barium	anr	
Beryllium		
Boron		
Cadmium	anr	
Calcium		
Chromium	anr	
Cobalt		
Copper		
Iron		
Lead	anr	
Magnesium		
Manganese		
Molybdenum	anr	
Nickel		
Phosphorus		
Potassium		
Selenium	anr	
Silver	anr	
Sodium		
Strontium		
Thallium	anr	
Tin		
Titanium		
Uranium		
Vanadium		
Zinc		

Associated samples MP5865: D27995-1, D27995-2, D27995-3, D27995-4, D27995-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
Matrix Type: AQUEOUS

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

Prep Date: 09/27/11

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	130	<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	11.5	<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	297	<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 MP5869: D27995-1A, D27995-2A, D27995-3A, D27995-5A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
 Matrix Type: AQUEOUS

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

Prep Date: 09/27/11

Metal	D27994-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	882000	1030000	125000	118.4	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	80000	208000	125000	102.4	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	1970000	2160000	125000	152.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5869: D27995-1A, D27995-2A, D27995-3A, D27995-5A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
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.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
 Matrix Type: AQUEOUS

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

Prep Date: 09/27/11

Metal	D27994-1 Original	MSD	SpikeLot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	882000	1030000	125000	118.4	0.0	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	80000	204000	125000	99.2	1.9	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	1970000	2140000	125000	136.0(a)	0.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5869: D27995-1A, D27995-2A, D27995-3A, D27995-5A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27995
 Account: CORCCOGJ - Olsson Associates
 Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
 Matrix Type: AQUEOUS

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

Prep Date: 09/27/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	135000	125000	108.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	124000	125000	99.2	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	125000	125000	100.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5869: D27995-1A, D27995-2A, D27995-3A, D27995-5A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

QC Batch ID: MP5869
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
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: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP5560/GN11765	1.0	<1.0	umhos/cm	9980	9580	96.0	90-110%
pH	GN11730			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:

Batch GN11730: D27995-1, D27995-2, D27995-3, D27995-5

Batch GP5560: D27995-1, D27995-2, D27995-3, D27995-5

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27995
Account: CORCCOGJ - Olsson Associates
Project: FEE 114X Spill(009-0082_201_201004)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN11733	D27995-1	mv	397	395	0.5	0-20%

Associated Samples:

Batch GN11733: D27995-1, D27995-2, D27995-3, D27995-5

(*) 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

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D27995

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 9/27/2011

Delivery Method:

Client Service Action Required at Login: No

Project: SUB

No. Coolers: 1

Airbill #'s:

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: D27995
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: FEE 114X Spill(009-0082_201_201004)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13591/GN36384	0.40	0.0	mg/kg	40	40.0	100.0	80-120%
Chromium, Hexavalent	GP13591/GN36384			mg/kg	1170	1150	98.3	80-120%

Associated Samples:

Batch GP13591: D27995-1, D27995-2, D27995-3, D27995-5

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27995
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: FEE 114X Spill(009-0082_201_201004)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13591/GN36384	D28126-5	mg/kg	0.28	0.48	52.6(a)	0-20%

Associated Samples:

Batch GP13591: D27995-1, D27995-2, D27995-3, D27995-5

(*) Outside of QC limits

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

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27995
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: FEE 114X Spill(009-0082_201_201004)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13591/GN36384	D28126-5	mg/kg	0.28	48.3	37.6	77.3	75-125%
Chromium, Hexavalent	GP13591/GN36384	D28126-5	mg/kg	0.28	910	1040	114.2	75-125%

Associated Samples:

Batch GP13591: D27995-1, D27995-2, D27995-3, D27995-5

(*) Outside of QC limits

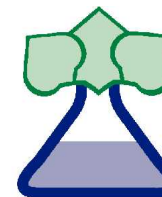
(N) Matrix Spike Rec. outside of QC limits

Olsen's Agricultural Laboratory, Inc.

210 East 1st / PO Box 370 / McCook, Nebraska 69001

Office: 308-345-3670 / FAX: 308-345-7880

www.olsenlab.com



95028

ALS LABORATORY GROUP

225 COMMERCE DRIVE

FT COLLINS CO 80524

NAME : FEE 114X

DATE RECEIVED: 04/10/2012

DATE REPORTED: 04/13/2012

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		LIME REC T/A 60% ECCE		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS				
				1 : 1 Soil	Buffer Woodruff	Legume	Non Legume				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm
1034853	FEE 114X SS1		0-8	8.3				H	2.14								
1034854	FEE 114X SS2		0-8	8.3				H	1.16								

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION					
		K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na
1034853										1.4							
1034854										1.5							

LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A		
1034853	8.78	3.96	16.41	6.50	8	0.5										
1034854	2.72	0.57	7.65	5.96	8	0.7										

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1034853	FEE 114X SS1														
1034854	FEE 114X SS2														

Analysis By: Olsen's Ag. Lab

Recommendations By: Olsen's Ag. Lab



April 25, 2012

Mr. Tim Dobransky
Olsson Associates
826 21 1/2 Road
Grand Junction, CO 81505

Re: ALS Workorder: 12-04-071
Project Name: 9.0082.202.202004
Project Number: FEE 114X Spill Followup

Dear Mr. Dobransky:

Two soil samples were received from Olsson Associates on April 6, 2012. The samples were subcontracted to Olsen's Agricultural Lab for the following analysis:

SAR, EC, pH

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Jeff Kujawa
Project Manager

JRK/arw
Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

Accreditation Body	License or Certification Number
Washington	C1280
Utah	CO00078
Arizona	AZ0742
Alaska	UST-086
Alaska	CO00078
Florida	E87914
Missouri	175
North Dakota	R-057
New Jersey	CO003
Nevada	CO000782008A
California	06251CA
Kansas	E-10381
Maryland	285
Pennsylvania	68-03116
Texas	T104704241-09-1
Colorado	CO00078
Connecticut	PH-0232
Idaho	CO00078
Tennessee	2976
Kentucky	90137
L-A-B (DoD ELAP/ISO 17025)	L2257

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1204071

Client Name: Olsson Associates

Client Project Name: 9.0082.202.202004

Client Project Number: FEE 114X Spill Followup

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
FEE 114X-SS1	1204071-1		SOIL	04-Apr-12	14:05
FEE 114X-SS2	1204071-2		SOIL	04-Apr-12	14:20



Chain of Custody Form

Page 1 of 1

COC ID: 123456

Environmental

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

Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order				Project Name				A TPH (GRO & DRO)											
Work Order				Project Number				B BTEX											
Company Name				Bill To Company				C PAH (See Attached List)											
Send Report To				Invoice Attn:				D Electrical Conductivity											
Address				Address				E Sodium Adsorption Ratio											
City/State/Zip				City/State/Zip				F pH											
Phone				Phone				G Metals (See Attached List)											
Fax				Fax				H Arsenic Only											
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	FEE 114X-SS1	04/04/12	1405	Soil	NA	1				X	X								
2	FEE 114X-SS2	04/04/12	1420	Soil	NA	1				X	X								
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Results Due Date:	
Tim Dobransky		FedEx		<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
Relinquished by:	Date: 4/5/12	Time: 1700	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter			
Relinquished by:	Date: 4/5/12	Time: 1005	Received by (Laboratory):	QC Package: (Check Box Below)			
Logged by (Laboratory):	Date: 4/5/12	Time: 1005	Received by (Laboratory):	Level II: Standard QC			
Preservative Key: 1-POL 2-HNO3 3-H2O2 4-H2O2 5-H2O2 6-H2O2 7-H2O2 8-H2O2 9-H2O2	Level III: Std QC + Raw Data						
	Level IV: SW846 CLP-Like						
	Other:						

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

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CONDITION OF SAMPLE UPON RECEIPT FORM

Client: O/sson Assoc
Project Manager: JKWorkorder No: 1204071
Initials: JK Date: 4-6-12

1. Does this project require any special handling in addition to standard Paragon procedures?		YES	NO	
2. Are custody seals on shipping containers intact?	NONE	YES	NO	
3. Are Custody seals on sample containers intact?	NONE	YES	NO	
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO	
5. Are the COC and bottle labels complete and legible?		YES	NO	
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO	
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO	
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	NO	
9. Are all aqueous non-preserved samples pH 4-9?	N/A	YES	NO	
10. Is there sufficient sample for the requested analyses?		YES	NO	
11. Were all samples placed in the proper containers for the requested analyses?		YES	NO	
12. Are all samples within holding times for the requested analyses?		YES	NO	
13. Were all sample containers received intact ? (not broken or leaking, etc.)		YES	NO	
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	YES	NO	
15. Do perchlorate LCMS-MS samples have headspace? (at least 1/3 of container required)	N/A	YES	NO	
16. Were samples checked for and free from the presence of residual chlorine ? (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	N/A	YES	NO	
17. Were the samples shipped on ice ?		YES	NO	
18. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: <u>#2</u> <u>#4</u>	RAD ONLY	YES	NO
Cooler #: <u>1</u>				
Temperature (°C): <u>5.5</u>				
No. of custody seals on cooler: <u>1</u>				
External µR/hr reading: <u>2.4</u>				
Background µR/hr reading: <u>11</u>				
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)				

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

should have been un 2910 -

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: JK 4-6-12

*IR Gun #2: Oakton. SN 29922500201-0066

*IR Gun #4: Oakton. SN 2372220101-0002

ORIGIN ID: GJTA (970) 270-2986
TIM DOBRANSKY
OLSSON ASSOCIATES, INC.
826 21 ROAD

GRAND JUNCTION, CO 81505
UNITED STATES US

SHIP DATE: 05APR12
ACTWGT: 40.0 LB MAN
CAD: 390082/CAFE2511

BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL
225 COMMERCE DRIVE

FORT COLLINS CO 80524

(970) 490-1511

PO: 9.0082.202.202000



FedEx
Express



J111131106660125

TRK#
0201

9660 0452 3443

FRI - 06 APR A2
PRIORITY OVERNIGHT

72 FTCA

80524

CO-US DEN



3443
436
A