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REM 9142
Received 10/7/2015
Document 2315680

October 7, 2015

Kris Neidel
Environmental Protection Specialist Northwest Area
Colorado Oil and Gas Conservation Commission
2578 Riverside Drive
Steamboat Springs, CO 80487

**Subject: Form 27 for Emergency Pit at the Rangely Collection Station #28
Rangely, Colorado**

Dear Mr. Neidel,

The attached Form 27 provides a summary of the closure activities performed by Chevron Environmental Management Company (CEMC) at the emergency pit at Collection Station #28 located in Rangely, Colorado. Based on the information provided in the attached Form 27, CEMC is requesting closure of the above referenced pit.

Please contact Jim Litz at 303.228.3088 should you have any questions regarding this document or require further information.

Sincerely yours,

James Litz, P.E.
Project Engineer
Jim.Litz@aecom.com

Attachments

COGCC Form 27 (including)

Figure 1	Rangely Collection Station Site Location Map
Figure 2	Rangely Collection Station #28, Confirmation Sample Locations
Table 1	Collection Station #28, Confirmation Sample Results
Attachment 1	Laboratory Analytical Reports

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 16700

Name of Operator: Chevron USA, Inc.

Address: 760 Horizon Drive

City: Grand Junction State: CO Zip: 81506

Contact Name and Telephone:

Marcelo Barberis

No: Cell: 832.693.1679 Office: 713.372.0289

Fax: NA

API Number: N/A

County: Rio Blanco

Facility Name: Emergency Pit - Rangely Weber Sand Unit 28

Facility Number: 117364

Well Name: N/A

Well Number: N/A

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESE 28 2N 102W Latitude: 40.111431 Longitude: -108.844311

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): emergency pressure relief from adjacent collection station

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Dry land farming

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: _____

Potential receptors (water wells within 1/4 mi, surface waters, etc.): No wells, Unnamed ephemeral stream 50 ft west of pit

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

Hydrocarbon impacts to approximately 5 feet below pit bottom

How Determined:

Comparison to similar remediated pit

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

The location of the CS28 Pit is shown on the attached Figure 1. Initial work at this location consisted of removal of the netting material and posts in order to access the pit. These materials were segregated and stockpiled for recycle and/or disposal. Excess liquids (approximately 40 barrels) were removed with a vacuum truck for recycling at the Chevron Operations Facility. All piping to the pits was disconnected at the Collection Station and removed from the pit to approximately 30-feet from the pit footprint. The piping was then transported to a stockpile area for recycling.

Describe how source is to be removed:

Impacted material was identified by field screening techniques including visual identification of staining, odors in the soil, and by use of a photoionization detector (PID). Based on screening, impacted soil was excavated from the pit, loaded on to trucks, and hauled to the Chevron-operated land farm for management. A total of 2,460 CY of impacted material from this pit was hauled to the land farm. No groundwater was encountered during the excavation of this pit. Discrete confirmation samples were collected from each of the four walls of the excavation and from the floor. Samples were collected based on guidance from rule 910.b(2)B which included collected samples from the area most suspected of having impacts based on field screening techniques. All sample locations from the pit walls and bottom were surveyed using a global positioning system (GPS) device. Table 1 listing the sample results and Figure 2 illustrating the sample locations in relation to the original pit location are attached to this form.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Excess liquids removed by vacuum truck were recycled at the Chevron-operated water treatment facility. Impacted soil was loaded and transported by truck to Chevron-operated landfarm in Rangely CO for management.



Page 2
REMEDIATION WORKPLAN (Cont.)

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: CS 28
Facility Name & No: 117364

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
No groundwater was encountered or impacted during remediation activities.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.
Following impacted soil excavation and confirmation that all soil sample results were below the COGCC allowable limits as listed in Table 910-1 of the COGCC Rules and Regulations, the excavation was backfilled and wheel compacted with clean imported soil. The attached Table 1 lists the results from all the samples. As shown, the initial sample results from the south wall exceeded the COGCC allowable limits. Further excavation was performed and the area was resampled. Following the additional excavation, soil in the south wall area was below the COGCC allowable limits. Samples were collected from the backfill material to ensure that at least 3 feet of clean import material was placed and compacted as a final backfill layer in the excavation. The area was graded to match existing contours and drainage at the plant. The area was reseeded to comply with COGCC 1004 rules including reseeding using the suggested BLM mix #8 seed mix.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☐ N If yes, describe:
All final confirmation sample results were below COGCC allowable limits except sodium adsorption ratio (SAR), specific conductivity (EC), and arsenic. SAR exceedances ranges from 29 to 74 and EC exceedances ranged from 4.3 to 28 mmhos/cm. Results from backfill samples ranged from 6.9 - 8.2 SAR which is below the COGCC allowable limits for SAR. All arsenic exceedances were within the same range of concentrations as the background sample collected outside of the pit area. COGCC provided approval to backfill the pit following discussions of the analytical results. These remediation actions and results of confirmations samples collected indicate that no further remedial action is required at the pit.
Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
Proposed waste disposition will be at the Chevron-operated Landfarm in Rangely, CO or a local disposal facility.

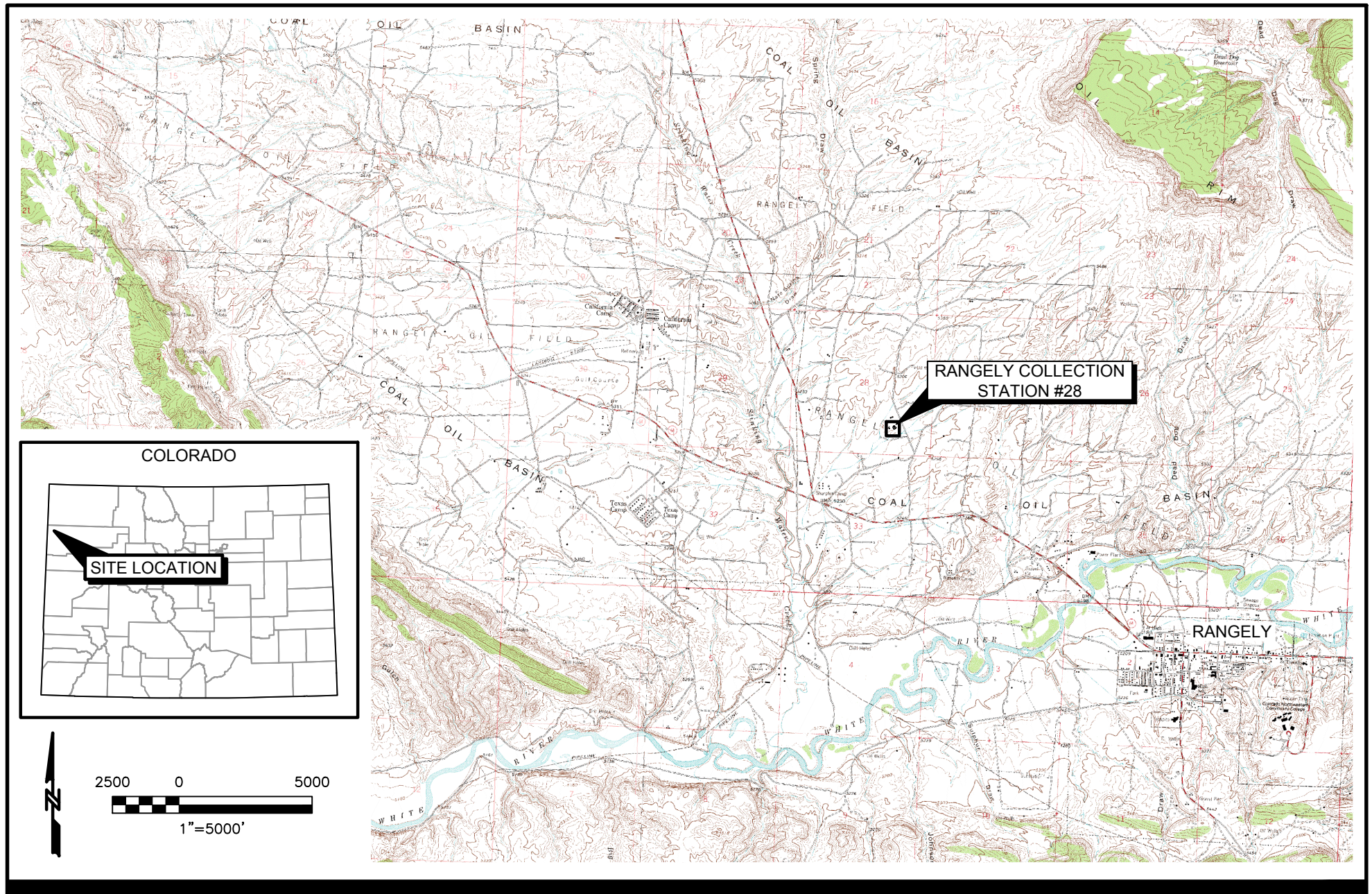
IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____	Date Site Investigation Completed: _____	Date Remediation Plan Submitted: _____
Remediation Start Date: <u>6/30/15</u>	Anticipated Completion Date: <u>10/30/15</u>	Actual Completion Date: <u>9/10/15</u>

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Marcelo Barberis Signed: [Signature]
Title: CHEVRON EMC PM Date: 10/07/15
OGCC Approved: [Signature] Title: EPS SMFF Date: 4/29/16

Based on review of information provided on Remediation number 9142 it appears that No Further Action is required at this time. Should conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards, further investigation and/or remediation activities may be required at the site. - Kris Neidel



Emergency Pit at CS#28, Rangely, Colorado
Chevron, Rangely, CO
Project No.: 60429936 Date: 08/10/15

RANGELY COLLECTION STATION
SITE LOCATION MAP

AECOM

Figure: 1

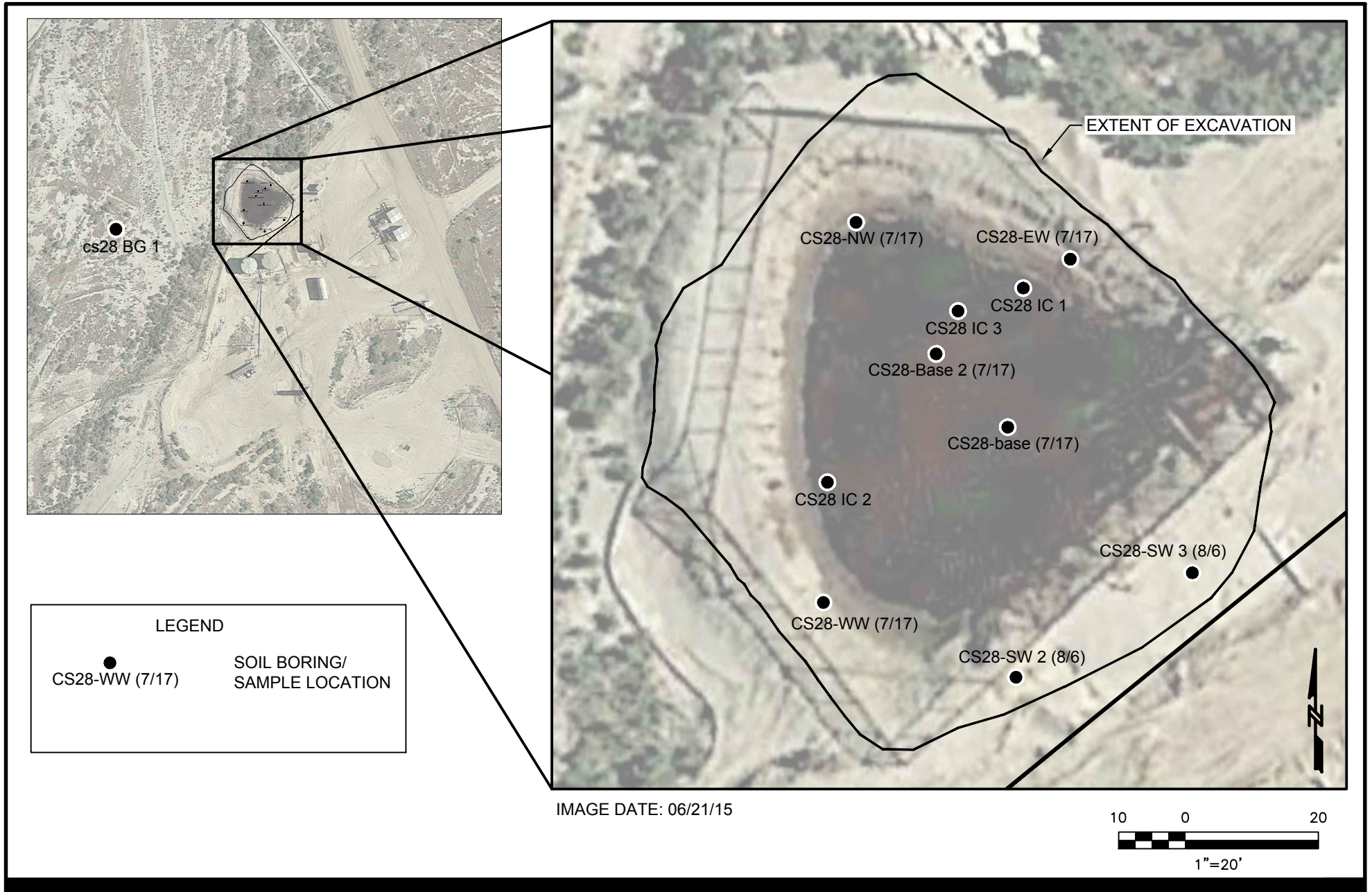


Table 1
Chevron Rangely Collection Stations
Collection Station #28 Confirmation Sample Results

		Sample ID Sample depth (ft bgs) SDG Sample Date	CS28-BASE-071715	CS28-BASE2-071715	CS28-BG1-090315	CS28-EW-071715	CS28-IC1-090315	CS28-IC2-090315	CS28-IC3-090315	CS28-NW-071715	CS28-SW-071715	CS28-SW2-080615	CS28-SW3-080615	CS28-WW-071715
			24	14	0 - 0.5	10.5	0 - 0.5	0 - 0.5	0.5 - 1	3	17	22	23	13
			15071023	15071023	1509370	15071023	1509370	1509370	1509370	15071023	15071023	1508365	1508365	15071023
			7/17/2015	7/17/2015	9/3/2015	7/17/2015	9/3/2015	9/3/2015	9/3/2015	7/17/2015	7/17/2015	8/6/2015	8/6/2015	7/17/2015
Analytical Parameters		Unit	COGCC Allowable Limits Table 910-1											
Organic Compounds														
TPH-Total		500 (comb)	297	19	26	490	12	30	42	20	14100	23	60	17
DRO (C10-C28)	mg/kg	*	67	19	26	490	12	30	42	20	4100	23	60	17
GRO (C6-C10)	mg/kg	*	230	ND (2.9)	ND (2.6)	ND (2.9)	ND (2.7)	ND (2.7)	ND (2.6)	ND (3.0)	10000	ND (3.0)	ND (2.9)	ND (2.9)
Benzene	mg/kg	0.17	0.1	ND (0.035)	ND (0.031)	ND (0.035)	ND (0.032)	ND (0.032)	ND (0.032)	ND (0.036)	6.6 J	ND (0.035)	ND (0.035)	ND (0.035)
Ethylbenzene	mg/kg	100	0.61	ND (0.035)	ND (0.031)	ND (0.035)	ND (0.032)	ND (0.032)	ND (0.032)	ND (0.036)	12 J	ND (0.035)	ND (0.035)	ND (0.035)
Toluene	mg/kg	85	ND (37)	ND (0.035)	ND (0.031)	ND (0.035)	ND (0.032)	ND (0.032)	ND (0.032)	ND (0.036)	ND (0.037)	ND (0.035)	ND (0.035)	ND (0.035)
Xylenes, Total	mg/kg	175	0.22	ND (0.110)	ND (0.093)	ND (0.11)	ND (0.096)	ND (0.097)	ND (0.095)	ND (110)	140 J	ND (0.11)	ND (0.10)	ND (0.11)
Acenaphthene	mg/kg	1000	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Anthracene	mg/kg	1000	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Benzo(a)anthracene	mg/kg	0.22	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	0.008	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Benzo(a)pyrene	mg/kg	0.022	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Benzo(b)fluoranthene	mg/kg	0.22	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Benzo(k)fluoranthene	mg/kg	2.2	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Chrysene	mg/kg	22	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Dibenzo(a,h)anthracene	mg/kg	0.022	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Fluoranthene	mg/kg	1000	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Fluorene	mg/kg	1000	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Indeno(1,2,3-cd)pyrene	mg/kg	0.22	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Naphthalene	mg/kg	23	0.13	ND (0.0077)	ND (0.0068)	0.02	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	2.4	ND (0.0078)	ND (0.0075)	ND (0.0078)
Pyrene	mg/kg	1000	ND (0.008)	ND (0.0077)	ND (0.0068)	ND (0.0077)	ND (0.0070)	ND (0.0070)	ND (0.0069)	ND (0.0078)	ND (0.080)	ND (0.0078)	ND (0.0075)	ND (0.0078)
Physical Properties														
Electrical Conductivity @ Saturation	mmhos/cm	<4	24	21	4.3	22	11	11	12	28	NA	22	18	24
pH	pH units	6 to 9	7.9 J	7.7 J	8.1 J	8.0 J	8.0 J	8.1 J	8.2 J	7.7 J	NA	7.7 J	8.2 J	7.9 J
Sodium Adsorption Ratio	none	<12	55	29	0.88	42	6.9	7.8	8.2	39	NA	74	52	52
Metals														
Arsenic	mg/kg	0.39	7.7	8.8	7.4	9.8	6.1	6.1	6.8	9.4	NA	10	8.8	9.3
Barium	mg/kg	15000	230	170	170	120	78	79	59	55	NA	210	280	150
Beryllium	mg/kg		0.55	0.49	0.53	0.42	0.41	0.42	0.41	0.4	NA	0.43	0.35	0.41
Cadmium	mg/kg	70	ND (0.42)	ND (0.43)	ND (0.41)	ND (0.38)	ND (0.39)	ND (0.42)	ND (0.43)	ND (0.41)	NA	ND (0.41)	ND (0.40)	ND (0.41)
Chromium, Hexavalent	mg/kg	23	ND (1.2)	ND (1.2)	ND (0.98)	ND (1.1) UJ-	ND (1.1)	ND (1.0)	ND (1.0)	ND (1.2)	NA	ND (1.1)	ND (1.0)	ND (1.1)
Chromium, Trivalent	mg/kg	120000	14	12	13	12	8.7	9.3	8.7	11	NA	11	9.7	11
Copper	mg/kg	3100	19	19	18	18	13	14	13	16	NA	18	13	16
Lead	mg/kg	400	14	14	12	13	9.5	10	11	12	NA	13	8.6	12
Mercury	mg/kg	23	0.057	0.02	0.056	0.019 J	0.048	0.048	0.046	0.022	NA	0.033	0.021	0.02
Nickel	mg/kg	1600	36	37	34	31	28	28	27	29	NA	35	34	32
Selenium	mg/kg	390	1.7	2.2	ND (1.6)	1.9	ND (1.6)	ND (4.2)	1.7	1.5	NA	2	1.7	2
Silver	mg/kg	390	ND (0.42)	ND (0.43)	ND (0.41)	ND (0.38)	ND (0.39)	ND (0.42)	ND (0.43)	ND (0.41)	NA	ND (0.41)	ND (0.40)	ND (0.41)
Zinc	mg/kg	23000	83	80	70	76	54	57	60	69	NA	78	63	70

Notes:
Shaded and bold concentrations exceed the COGCC Allowable Limits Table 910-1.
Green and bold concentrations have reporting limit that is equal to or greater than the COGCC Allowable Limits Table 910-1.
bgs - below ground surface
ft - feet
NA - Not analyzed
ND = not detected at identified practical quantitation limit. Quantitation limit shown in parentheses.
mg/kg - milligrams per kilogram

Qualifier Flags when applicable:
J/UJ (-) = estimated value, please reference data validation reports for details on applied data qualifiers

ATTACHMENT 1

LABORATORY ANALYTICAL REPORTS



16-Sep-2015

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

Re: **EMC CS28 PIT 07.17.15**

Work Order: **15071023**

Dear Tim,

ALS Environmental received 6 samples on 18-Jul-2015 for the analyses presented in the following report.

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

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

The total number of pages in this report is 43.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Chad Whelton

Les Arnold
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

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

Environmental The ALS logo, a stylized blue triangle with a yellow flame-like shape inside.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Work Order: 15071023

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>
15071023-01	CS28-BASE	Soil		7/17/2015 10:35	7/18/2015 10:00	<input type="checkbox"/>
15071023-02	CS28-BASE2	Soil		7/17/2015 11:50	7/18/2015 10:00	<input type="checkbox"/>
15071023-03	CS28-NW	Soil		7/17/2015 11:40	7/18/2015 10:00	<input type="checkbox"/>
15071023-04	CS28-SW	Soil		7/17/2015 10:30	7/18/2015 10:00	<input type="checkbox"/>
15071023-05	CS28-WW	Soil		7/17/2015 11:30	7/18/2015 10:00	<input type="checkbox"/>
15071023-06	CS28-EW	Soil		7/17/2015 10:20	7/18/2015 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Work Order: 15071023

Case Narrative

Samples for the above noted Work Order were received on 07/18/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:
No deviations or anomalies were noted.

Volatile Organics:
Batch 73727, Method VOC_8260_S, Sample 15071023-04A: Surrogate high due to matrix interference.

Batch 73727, Method VOC_8260_S, Sample 15071023-04A: The sample ran at a dilution due to the high concentration of target analytes.

Batch 73727, Method VOC_8260_S, Sample 15071023-05A: The sample ran at a dilution due to the high concentration of target analytes.

No other deviations or anomalies were noted.

Extractable Organics:
Batch 73711, Method DRO_8015_S, Sample 15071023-04A: Surrogate high due to matrix interference.

No other deviations or anomalies were noted.

Metals:
Batch 74114, Method ICP_6010_S, Sample 15071023-05AMS: The MS recovery was above the upper control limit for Chrome. The corresponding result in the parent sample may be biased high for this analyte.

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Work Order: 15071023

Case Narrative

Batch 74114, Method ICP_6010_S, Sample 15071023-05AMS: The MS recovery was outside of the control limit for Barium and Zinc; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for these analytes.

Batch 75149, Method ICP_6010_S, Sample 15071023-06A: The MS and MSD recoveries were outside of the control limit for Barium, Nickel, and Zinc; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte.

Batch 75149, Method ICP_6010_S, Sample 15071023-06AMS: The MS recovery was above the upper control limit for Chrome. The corresponding result in the parent sample may be biased high for this analyte.

Batch 75149, Method ICP_6010_S, Sample 15071023-06AMSD: The MSD recovery was outside of the control limit for Copper. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte.

Batch 75155, Method HG_7471_S, Sample 15071023-06A: Analysis requested after hold time expired.

No other deviations or anomalies were noted.

Wet Chemistry:

Batch 75158, Method CR6_7196_S, Sample 15071023-06A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

Batch 75158, Method CR6_7196_S, Sample 15071023-06A: The MS and MSD recoveries were below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte:

Batch 75166, Method PH_9045_S, Sample 15071023-06A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

No other deviations or anomalies were noted.

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

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

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-BASE
Collection Date: 7/17/2015 10:35 AM

Work Order: 15071023
Lab ID: 15071023-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	67		SW8015M		Prep: SW3541 / 7/20/15	Analyst: IT
Surr: 4-Terphenyl-d14	75.1		5.0	mg/Kg-dry	1	7/21/2015 02:59 AM
			39-133	%REC	1	7/21/2015 02:59 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	230		SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
Surr: Toluene-d8	95.4		3.0	mg/Kg-dry	1	7/21/2015 08:13 AM
			50-150	%REC	1	7/21/2015 08:13 AM
MERCURY BY CVAA						
Mercury	0.057		SW7471B		Prep: SW7471 / 7/30/15	Analyst: LR
			0.015	mg/Kg-dry	1	7/30/2015 05:44 PM
METALS ANALYSIS BY ICP						
Arsenic	7.7		SW846 6010C		Prep: SW3050B / 7/28/15	Analyst: JEC
Barium	230		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Cadmium	ND		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Chromium	14		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Copper	19		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Lead	14		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Nickel	36		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Selenium	1.7		0.83	mg/Kg-dry	1	7/29/2015 11:01 PM
Silver	ND		0.42	mg/Kg-dry	1	7/29/2015 11:01 PM
Zinc	83		0.83	mg/Kg-dry	1	7/29/2015 11:01 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Calcium	340		5.0	mg/L	10	7/30/2015 04:44 PM
Magnesium	45		2.0	mg/L	10	7/30/2015 04:44 PM
Sodium	4,000		20	mg/L	100	7/31/2015 10:45 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Exchangeable Sodium Percentage	44		0.010	none	1	7/30/2015
Sodium Adsorption Ratio	55		0.010	none	1	7/30/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/20/15	Analyst: RS
Acenaphthene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Anthracene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Benzo(a)anthracene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Benzo(a)pyrene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Benzo(b)fluoranthene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Benzo(k)fluoranthene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Chrysene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Dibenzo(a,h)anthracene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-BASE
Collection Date: 7/17/2015 10:35 AM

Work Order: 15071023
Lab ID: 15071023-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Fluorene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Indeno(1,2,3-cd)pyrene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Naphthalene	130		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Pyrene	ND		8.0	µg/Kg-dry	1	7/21/2015 01:51 AM
Surr: 2-Fluorobiphenyl	63.8		12-100	%REC	1	7/21/2015 01:51 AM
Surr: 4-Terphenyl-d14	71.1		25-137	%REC	1	7/21/2015 01:51 AM
Surr: Nitrobenzene-d5	50.9		37-107	%REC	1	7/21/2015 01:51 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/20/15	Analyst: AK	
Benzene	100		37	µg/Kg-dry	1	7/20/2015 11:54 AM
Ethylbenzene	610		37	µg/Kg-dry	1	7/20/2015 11:54 AM
m,p-Xylene	230		73	µg/Kg-dry	1	7/20/2015 11:54 AM
o-Xylene	ND		37	µg/Kg-dry	1	7/20/2015 11:54 AM
Toluene	ND		37	µg/Kg-dry	1	7/20/2015 11:54 AM
Xylenes, Total	220		110	µg/Kg-dry	1	7/20/2015 11:54 AM
Surr: 1,2-Dichloroethane-d4	98.0		70-130	%REC	1	7/20/2015 11:54 AM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	7/20/2015 11:54 AM
Surr: Dibromofluoromethane	98.4		70-130	%REC	1	7/20/2015 11:54 AM
Surr: Toluene-d8	98.2		70-130	%REC	1	7/20/2015 11:54 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 7/29/15	Analyst: JB	
Electrical Conductivity @ Saturation	24		0.050	mmhos/cm @2	10	7/30/2015 10:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: MB		
Chromium, Trivalent	14		0.61	mg/Kg-dry	1	9/16/2015 01:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 7/19/15	Analyst: MB	
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/21/2015 04:00 PM
MOISTURE			E160.3M	Analyst: PT		
Moisture	18		0.050	% of sample	1	7/20/2015 02:30 PM
PH			SW9045D	Prep: EXTRACT / 7/22/15	Analyst: BRH	
pH	7.9			s.u.	1	7/22/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-BASE2
Collection Date: 7/17/2015 11:50 AM

Work Order: 15071023
Lab ID: 15071023-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	19		SW8015M		Prep: SW3541 / 7/20/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	<i>80.0</i>		<i>4.8</i>	<i>mg/Kg-dry</i>	<i>1</i>	7/21/2015 03:29 AM
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	7/21/2015 03:29 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
<i>Surr: Toluene-d8</i>	<i>95.7</i>		<i>2.9</i>	<i>mg/Kg-dry</i>	<i>1</i>	7/21/2015 08:37 AM
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	7/21/2015 08:37 AM
MERCURY BY CVAA						
Mercury	0.020		SW7471B		Prep: SW7471 / 7/30/15	Analyst: LR
			0.014	mg/Kg-dry	1	7/30/2015 05:46 PM
METALS ANALYSIS BY ICP						
Arsenic	8.8		SW846 6010C		Prep: SW3050B / 7/28/15	Analyst: JEC
Barium	170		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Cadmium	ND		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Chromium	12		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Copper	19		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Lead	14		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Nickel	37		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Selenium	2.2		0.85	mg/Kg-dry	1	7/29/2015 11:06 PM
Silver	ND		0.43	mg/Kg-dry	1	7/29/2015 11:06 PM
Zinc	80		0.85	mg/Kg-dry	1	7/29/2015 11:06 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Calcium	760		5.0	mg/L	10	7/30/2015 04:50 PM
Magnesium	82		2.0	mg/L	10	7/30/2015 04:50 PM
Sodium	3,200		2.0	mg/L	10	7/30/2015 04:50 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Exchangeable Sodium Percentage	29		0.010	none	1	7/30/2015
Sodium Adsorption Ratio	29		0.010	none	1	7/30/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/20/15	Analyst: RS
Acenaphthene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Benzo(a)anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Benzo(a)pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Benzo(b)fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Benzo(k)fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Chrysene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Dibenzo(a,h)anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-BASE2
Collection Date: 7/17/2015 11:50 AM

Work Order: 15071023
Lab ID: 15071023-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Fluorene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Indeno(1,2,3-cd)pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Naphthalene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 02:11 AM
Surr: 2-Fluorobiphenyl	78.0		12-100	%REC	1	7/21/2015 02:11 AM
Surr: 4-Terphenyl-d14	79.0		25-137	%REC	1	7/21/2015 02:11 AM
Surr: Nitrobenzene-d5	63.5		37-107	%REC	1	7/21/2015 02:11 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/20/15		Analyst: AK
Benzene	ND		35	µg/Kg-dry	1	7/20/2015 12:19 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	7/20/2015 12:19 PM
m,p-Xylene	ND		71	µg/Kg-dry	1	7/20/2015 12:19 PM
o-Xylene	ND		35	µg/Kg-dry	1	7/20/2015 12:19 PM
Toluene	ND		35	µg/Kg-dry	1	7/20/2015 12:19 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	7/20/2015 12:19 PM
Surr: 1,2-Dichloroethane-d4	97.1		70-130	%REC	1	7/20/2015 12:19 PM
Surr: 4-Bromofluorobenzene	99.8		70-130	%REC	1	7/20/2015 12:19 PM
Surr: Dibromofluoromethane	96.8		70-130	%REC	1	7/20/2015 12:19 PM
Surr: Toluene-d8	97.2		70-130	%REC	1	7/20/2015 12:19 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 7/29/15		Analyst: JB
Electrical Conductivity @ Saturation	21		0.050	mmhos/cm @2	10	7/30/2015 10:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Prep: SW3060A / 7/19/15		Analyst: JB
Chromium, Trivalent	12		0.59	mg/Kg-dry	1	7/30/2015 11:30 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 7/19/15		Analyst: MB
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/21/2015 04:00 PM
MOISTURE			E160.3M	Prep: EXTRACT / 7/22/15		Analyst: PT
Moisture	15		0.050	% of sample	1	7/20/2015 02:30 PM
PH			SW9045D	Prep: EXTRACT / 7/22/15		Analyst: BRH
pH	7.7			s.u.	1	7/22/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-NW
Collection Date: 7/17/2015 11:40 AM

Work Order: 15071023
Lab ID: 15071023-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	20		SW8015M		Prep: SW3541 / 7/20/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	77.9		4.9	mg/Kg-dry	1	7/21/2015 03:59 AM
			39-133	%REC	1	7/21/2015 03:59 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
<i>Surr: Toluene-d8</i>	100		3.0	mg/Kg-dry	1	7/21/2015 09:01 AM
			50-150	%REC	1	7/21/2015 09:01 AM
MERCURY BY CVAA						
Mercury	0.022		SW7471B		Prep: SW7471 / 7/30/15	Analyst: LR
			0.015	mg/Kg-dry	1	7/30/2015 05:48 PM
METALS ANALYSIS BY ICP						
Arsenic	9.4		SW846 6010C		Prep: SW3050B / 7/28/15	Analyst: JEC
Barium	55		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Cadmium	ND		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Chromium	11		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Copper	16		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Lead	12		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Nickel	29		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Selenium	1.5		0.82	mg/Kg-dry	1	7/29/2015 11:11 PM
Silver	ND		0.41	mg/Kg-dry	1	7/29/2015 11:11 PM
Zinc	69		0.82	mg/Kg-dry	1	7/29/2015 11:11 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Calcium	650		5.0	mg/L	10	7/30/2015 04:56 PM
Magnesium	140		2.0	mg/L	10	7/30/2015 04:56 PM
Sodium	4,200		20	mg/L	100	7/31/2015 10:51 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Exchangeable Sodium Percentage	36		0.010	none	1	7/30/2015
Sodium Adsorption Ratio	39		0.010	none	1	7/30/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/20/15	Analyst: RS
Acenaphthene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Benzo(a)anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Benzo(a)pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Benzo(b)fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Benzo(k)fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Chrysene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Dibenzo(a,h)anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-NW
Collection Date: 7/17/2015 11:40 AM

Work Order: 15071023
Lab ID: 15071023-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Fluorene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Indeno(1,2,3-cd)pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Naphthalene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 02:32 AM
Surr: 2-Fluorobiphenyl	76.4		12-100	%REC	1	7/21/2015 02:32 AM
Surr: 4-Terphenyl-d14	71.0		25-137	%REC	1	7/21/2015 02:32 AM
Surr: Nitrobenzene-d5	63.2		37-107	%REC	1	7/21/2015 02:32 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/20/15	Analyst: AK	
Benzene	ND		36	µg/Kg-dry	1	7/20/2015 12:43 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	7/20/2015 12:43 PM
m,p-Xylene	ND		71	µg/Kg-dry	1	7/20/2015 12:43 PM
o-Xylene	ND		36	µg/Kg-dry	1	7/20/2015 12:43 PM
Toluene	ND		36	µg/Kg-dry	1	7/20/2015 12:43 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	7/20/2015 12:43 PM
Surr: 1,2-Dichloroethane-d4	99.8		70-130	%REC	1	7/20/2015 12:43 PM
Surr: 4-Bromofluorobenzene	99.0		70-130	%REC	1	7/20/2015 12:43 PM
Surr: Dibromofluoromethane	98.8		70-130	%REC	1	7/20/2015 12:43 PM
Surr: Toluene-d8	98.8		70-130	%REC	1	7/20/2015 12:43 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 7/29/15	Analyst: JB	
Electrical Conductivity @ Saturation	28		0.050	mmhos/cm @2	10	7/30/2015 10:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	11		0.60	mg/Kg-dry	1	7/30/2015 11:30 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 7/19/15	Analyst: MB	
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/21/2015 04:00 PM
MOISTURE			E160.3M	Analyst: PT		
Moisture	16		0.050	% of sample	1	7/20/2015 02:30 PM
PH			SW9045D	Prep: EXTRACT / 7/22/15	Analyst: BRH	
pH	7.7			s.u.	1	7/22/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-SW
Collection Date: 7/17/2015 10:30 AM

Work Order: 15071023
Lab ID: 15071023-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 7/20/15	Analyst: IT
DRO (C10-C28)	4,100		25	mg/Kg-dry	5	7/21/2015 04:29 AM
Surr: 4-Terphenyl-d14	191	S	39-133	%REC	5	7/21/2015 04:29 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
GRO (C6-C10)	10,000		15	mg/Kg-dry	5	7/21/2015 09:28 AM
Surr: Toluene-d8	96.4		50-150	%REC	5	7/21/2015 09:28 AM
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/20/15	Analyst: RS
Acenaphthene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Anthracene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Benzo(a)anthracene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Benzo(a)pyrene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Benzo(b)fluoranthene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Benzo(k)fluoranthene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Chrysene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Dibenzo(a,h)anthracene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Fluoranthene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Fluorene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Indeno(1,2,3-cd)pyrene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Naphthalene	2,400		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Pyrene	ND		80	µg/Kg-dry	10	7/21/2015 02:53 AM
Surr: 2-Fluorobiphenyl	70.0		12-100	%REC	10	7/21/2015 02:53 AM
Surr: 4-Terphenyl-d14	64.4		25-137	%REC	10	7/21/2015 02:53 AM
Surr: Nitrobenzene-d5	57.8		37-107	%REC	10	7/21/2015 02:53 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 7/20/15	Analyst: LSY
Benzene	6,600		730	µg/Kg-dry	20	7/20/2015 05:14 PM
Ethylbenzene	12,000		730	µg/Kg-dry	20	7/20/2015 05:14 PM
m,p-Xylene	100,000		1,500	µg/Kg-dry	20	7/20/2015 05:14 PM
o-Xylene	32,000		730	µg/Kg-dry	20	7/20/2015 05:14 PM
Toluene	ND		37	µg/Kg-dry	1	7/20/2015 01:08 PM
Xylenes, Total	140,000		2,200	µg/Kg-dry	20	7/20/2015 05:14 PM
Surr: 1,2-Dichloroethane-d4	94.6		70-130	%REC	1	7/20/2015 01:08 PM
Surr: 1,2-Dichloroethane-d4	96.8		70-130	%REC	20	7/20/2015 05:14 PM
Surr: 4-Bromofluorobenzene	127		70-130	%REC	1	7/20/2015 01:08 PM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	20	7/20/2015 05:14 PM
Surr: Dibromofluoromethane	95.2		70-130	%REC	1	7/20/2015 01:08 PM
Surr: Dibromofluoromethane	94.0		70-130	%REC	20	7/20/2015 05:14 PM
Surr: Toluene-d8	114		70-130	%REC	20	7/20/2015 05:14 PM
Surr: Toluene-d8	501	S	70-130	%REC	1	7/20/2015 01:08 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-SW
Collection Date: 7/17/2015 10:30 AM

Work Order: 15071023
Lab ID: 15071023-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MOISTURE			E160.3M			Analyst: PT
Moisture	18		0.050	% of sample	1	7/20/2015 02:30 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-WW
Collection Date: 7/17/2015 11:30 AM

Work Order: 15071023
Lab ID: 15071023-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 7/21/15	Analyst: IT
DRO (C10-C28)	17		4.9	mg/Kg-dry	1	7/22/2015 08:57 AM
Surr: 4-Terphenyl-d14	51.5		39-133	%REC	1	7/22/2015 08:57 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	7/21/2015 09:52 AM
Surr: Toluene-d8	99.7		50-150	%REC	1	7/21/2015 09:52 AM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 7/30/15	Analyst: LR
Mercury	0.020		0.014	mg/Kg-dry	1	7/30/2015 05:51 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 7/28/15	Analyst: JEC
Arsenic	9.3		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Barium	150		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Cadmium	ND		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Chromium	12		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Copper	16		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Lead	12		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Nickel	32		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Selenium	2.0		0.82	mg/Kg-dry	1	7/29/2015 11:17 PM
Silver	ND		0.41	mg/Kg-dry	1	7/29/2015 11:17 PM
Zinc	70		0.82	mg/Kg-dry	1	7/29/2015 11:17 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Calcium	310		5.0	mg/L	10	7/30/2015 05:02 PM
Magnesium	84		2.0	mg/L	10	7/30/2015 05:02 PM
Sodium	4,000		20	mg/L	100	7/31/2015 10:57 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 7/29/15	Analyst: JEC
Exchangeable Sodium Percentage	43		0.010	none	1	7/30/2015
Sodium Adsorption Ratio	52		0.010	none	1	7/30/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/21/15	Analyst: RS
Acenaphthene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Benzo(a)anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Benzo(a)pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Benzo(b)fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Benzo(k)fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Chrysene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Dibenzo(a,h)anthracene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-WW
Collection Date: 7/17/2015 11:30 AM

Work Order: 15071023
Lab ID: 15071023-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Fluorene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Indeno(1,2,3-cd)pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Naphthalene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Pyrene	ND		7.8	µg/Kg-dry	1	7/21/2015 09:01 PM
Surr: 2-Fluorobiphenyl	54.0		12-100	%REC	1	7/21/2015 09:01 PM
Surr: 4-Terphenyl-d14	58.5		25-137	%REC	1	7/21/2015 09:01 PM
Surr: Nitrobenzene-d5	55.5		37-107	%REC	1	7/21/2015 09:01 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/20/15		Analyst: JNJ
Benzene	ND		35	µg/Kg-dry	1	7/21/2015 09:54 AM
Ethylbenzene	ND		35	µg/Kg-dry	1	7/21/2015 09:54 AM
m,p-Xylene	ND		70	µg/Kg-dry	1	7/21/2015 09:54 AM
o-Xylene	ND		35	µg/Kg-dry	1	7/21/2015 09:54 AM
Toluene	ND		35	µg/Kg-dry	1	7/21/2015 09:54 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	7/21/2015 09:54 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	7/21/2015 09:54 AM
Surr: 4-Bromofluorobenzene	99.4		70-130	%REC	1	7/21/2015 09:54 AM
Surr: Dibromofluoromethane	93.4		70-130	%REC	1	7/21/2015 09:54 AM
Surr: Toluene-d8	101		70-130	%REC	1	7/21/2015 09:54 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 7/29/15		Analyst: JB
Electrical Conductivity @ Saturation	24		0.050	mmhos/cm @2	10	7/30/2015 10:15 AM
CHROMIUM, TRIVALENT			CALCULATION	Prep: SW3060A / 7/19/15		Analyst: JB
Chromium, Trivalent	11		0.58	mg/Kg-dry	1	7/30/2015 11:30 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 7/19/15		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	7/21/2015 04:00 PM
MOISTURE			E160.3M	Prep: EXTRACT / 7/22/15		Analyst: PT
Moisture	14		0.050	% of sample	1	7/20/2015 02:30 PM
PH			SW9045D	Prep: EXTRACT / 7/22/15		Analyst: BRH
pH	7.9			s.u.	1	7/22/2015 02:00 PM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-EW
Collection Date: 7/17/2015 10:20 AM

Work Order: 15071023
Lab ID: 15071023-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	490		SW8015M		Prep: SW3541 / 7/20/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	<i>84.0</i>		<i>4.8</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/21/2015 05:59 AM</i>
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	<i>7/21/2015 05:59 AM</i>
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 7/20/15	Analyst: IT
<i>Surr: Toluene-d8</i>	<i>99.6</i>		<i>2.9</i>	<i>mg/Kg-dry</i>	<i>1</i>	<i>7/21/2015 10:17 AM</i>
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	<i>7/21/2015 10:17 AM</i>
MERCURY BY CVAA						
Mercury	0.019	H	SW7471B		Prep: SW7471 / 8/24/15	Analyst: LR
			0.017	mg/Kg-dry	1	8/24/2015 02:37 PM
METALS ANALYSIS BY ICP						
Arsenic	9.8		SW846 6010C		Prep: SW3050B / 8/24/15	Analyst: JEC
Barium	120		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Cadmium	ND		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Chromium	12		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Copper	18		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Lead	13		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Nickel	31		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Selenium	1.9		0.77	mg/Kg-dry	1	8/24/2015 12:19 PM
Silver	ND		0.38	mg/Kg-dry	1	8/24/2015 12:19 PM
Zinc	76		0.77	mg/Kg-dry	1	8/24/2015 12:19 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/26/15	Analyst: JEC
Calcium	440		5.0	mg/L	10	8/26/2015 01:15 PM
Magnesium	140		2.0	mg/L	10	8/26/2015 01:15 PM
Sodium	3,900		20	mg/L	100	8/26/2015 01:32 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/26/15	Analyst: JEC
Sodium Adsorption Ratio	42		0.010	none	1	8/26/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 7/20/15	Analyst: RS
Acenaphthene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Benzo(a)anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Benzo(a)pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Benzo(b)fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Benzo(k)fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Chrysene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Dibenzo(a,h)anthracene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Fluoranthene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM

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

ALS Group USA, Corp

Date: 16-Sep-15

Client: Olsson Associates
Project: EMC CS28 PIT 07.17.15
Sample ID: CS28-EW
Collection Date: 7/17/2015 10:20 AM

Work Order: 15071023
Lab ID: 15071023-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Indeno(1,2,3-cd)pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Naphthalene	20		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Pyrene	ND		7.7	µg/Kg-dry	1	7/21/2015 03:34 AM
Surr: 2-Fluorobiphenyl	75.2		12-100	%REC	1	7/21/2015 03:34 AM
Surr: 4-Terphenyl-d14	78.4		25-137	%REC	1	7/21/2015 03:34 AM
Surr: Nitrobenzene-d5	58.2		37-107	%REC	1	7/21/2015 03:34 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/20/15	Analyst: AK	
Benzene	ND		35	µg/Kg-dry	1	7/20/2015 02:00 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	7/20/2015 02:00 PM
m,p-Xylene	ND		70	µg/Kg-dry	1	7/20/2015 02:00 PM
o-Xylene	ND		35	µg/Kg-dry	1	7/20/2015 02:00 PM
Toluene	ND		35	µg/Kg-dry	1	7/20/2015 02:00 PM
Xylenes, Total	ND		110	µg/Kg-dry	1	7/20/2015 02:00 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	7/20/2015 02:00 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	7/20/2015 02:00 PM
Surr: Dibromofluoromethane	96.8		70-130	%REC	1	7/20/2015 02:00 PM
Surr: Toluene-d8	97.4		70-130	%REC	1	7/20/2015 02:00 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 8/26/15	Analyst: JB	
Electrical Conductivity @ Saturation	22		0.050	mmhos/cm @2	10	8/26/2015 02:30 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	12		0.58	mg/Kg-dry	1	8/25/2015 03:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/24/15	Analyst: MB	
Chromium, Hexavalent	ND	H	1.1	mg/Kg-dry	1	8/25/2015 12:30 PM
MOISTURE			E160.3M	Analyst: PT		
Moisture	14		0.050	% of sample	1	7/20/2015 02:30 PM
PH			SW9045D	Prep: EXTRACT / 8/24/15	Analyst: ED	
pH	8.0	H		s.u.	1	8/24/2015 01:15 PM

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

Client: Olsson Associates

QC BATCH REPORT

Work Order: 15071023

Project: EMC CS28 PIT 07.17.15

Batch ID: 73711

Instrument ID GC8

Method: SW8015M

MBLK		Sample ID: DBLKS1-73711-73711				Units: mg/Kg		Analysis Date: 7/20/2015 11:58 PM		
Client ID:		Run ID: GC8_150720C				SeqNo: 3379505		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.557	0	2	0	77.8	39-133	0			

LCS		Sample ID: DLCSS1-73711-73711				Units: mg/Kg		Analysis Date: 7/21/2015 12:29 PM		
Client ID:		Run ID: GC8_150720C				SeqNo: 3379519		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	153.1	5.0	200	0	76.5	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.471	0	2	0	73.6	39-133	0			

MS		Sample ID: 1507984-01B MS				Units: mg/Kg		Analysis Date: 7/21/2015 12:58 PM		
Client ID:		Run ID: GC8_150720C				SeqNo: 3379520		Prep Date: 7/20/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	716.9	81	323.4	415.6	93.2	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.348	0	3.234	0	72.6	39-133	0			

MSD		Sample ID: 1507984-01B MSD				Units: mg/Kg		Analysis Date: 7/21/2015 01:29 AM		
Client ID:		Run ID: GC8_150720C				SeqNo: 3379506		Prep Date: 7/20/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	640.5	82	328.7	415.6	68.4	48-110	716.9	11.2	30	
<i>Surr: 4-Terphenyl-d14</i>	2.163	0	3.287	0	65.8	39-133	2.348	8.22	30	

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-04A	15071023-05A	15071023-06A

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73770** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-73770-73770				Units: mg/Kg		Analysis Date: 7/22/2015 12:27 PM		
Client ID:		Run ID: GC8_150721B				SeqNo: 3381125		Prep Date: 7/21/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.596	0	2	0	79.8	39-133	0			

LCS		Sample ID: DLCSS1-73770-73770				Units: mg/Kg		Analysis Date: 7/22/2015 12:57 PM		
Client ID:		Run ID: GC8_150721B				SeqNo: 3381127		Prep Date: 7/21/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	168.2	5.0	200	0	84.1	61-109	0			
Surr: 4-Terphenyl-d14	1.655	0	2	0	82.7	39-133	0			

MS		Sample ID: 15071046-01D MS				Units: mg/Kg		Analysis Date: 7/22/2015 01:57 AM		
Client ID:		Run ID: GC8_150721B				SeqNo: 3381115		Prep Date: 7/21/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	278	8.1	323.1	25.62	78.1	48-110	0			
Surr: 4-Terphenyl-d14	2.67	0	3.231	0	82.7	39-133	0			

MSD		Sample ID: 15071046-01D MSD				Units: mg/Kg		Analysis Date: 7/22/2015 02:27 AM		
Client ID:		Run ID: GC8_150721B				SeqNo: 3381118		Prep Date: 7/21/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	284.3	8.3	330.2	25.62	78.3	48-110	278	2.25	30	
Surr: 4-Terphenyl-d14	2.597	0	3.302	0	78.6	39-133	2.67	2.8	30	

The following samples were analyzed in this batch:

15071023-05A

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73728** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-73728-73728				Units: µg/Kg		Analysis Date: 7/21/2015 07:25 AM		
Client ID:		Run ID: GC10_150720B				SeqNo: 3379858		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500	0	0	0	0	0			
Surr: Toluene-d8	4842	0	5000	0	96.8	50-150	0			

LCS		Sample ID: LCS-73728-73728				Units: µg/Kg		Analysis Date: 7/21/2015 06:36 AM		
Client ID:		Run ID: GC10_150720B				SeqNo: 3379856		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	573500	2,500	500000	0	115	70-130	0			
Surr: Toluene-d8	4796	0	5000	0	95.9	50-150	0			

MS		Sample ID: 15071038-01A MS				Units: µg/Kg		Analysis Date: 7/21/2015 11:29 AM		
Client ID:		Run ID: GC10_150720B				SeqNo: 3379867		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	794800	2,500	500000	187500	121	70-130	0			
Surr: Toluene-d8	4847	0	5000	0	96.9	50-150	0			

MSD		Sample ID: 15071038-01A MSD				Units: µg/Kg		Analysis Date: 7/21/2015 11:53 AM		
Client ID:		Run ID: GC10_150720B				SeqNo: 3379868		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	805500	2,500	500000	187500	124	70-130	794800	1.33	30	
Surr: Toluene-d8	4888	0	5000	0	97.8	50-150	4847	0.832	30	

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-04A	15071023-05A	15071023-06A

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **74177** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-74177-74177					Units: mg/Kg		Analysis Date: 7/30/2015 04:34 PM		
Client ID:			Run ID: HG1_150730A				SeqNo: 3396053		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury ND 0.020

LCS		Sample ID: LCS-74177-74177				Units: mg/Kg		Analysis Date: 7/30/2015 04:36 PM		
Client ID:		Run ID: HG1_150730A				SeqNo: 3396054		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1778 0.020 0.1665 0 107 80-120 0

MS		Sample ID: 15071440-03CMS				Units: mg/Kg		Analysis Date: 7/30/2015 04:40 PM		
Client ID:		Run ID: HG1_150730A				SeqNo: 3396081		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1109 0.013 0.105 0.001071 105 75-125 0

MSD		Sample ID: 15071440-03CMSD				Units: mg/Kg		Analysis Date: 7/30/2015 04:43 PM		
Client ID:		Run ID: HG1_150730A			SeqNo: 3396082		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1085 0.012 0.1035 0.001071 104 75-125 0.1109 2.18 35

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-05A		

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75155** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-75155-75155				Units: mg/Kg		Analysis Date: 8/24/2015 02:33 PM		
Client ID:		Run ID: HG1_150824A				SeqNo: 3429250		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-75155-75155				Units: mg/Kg		Analysis Date: 8/24/2015 02:35 PM		
Client ID:		Run ID: HG1_150824A				SeqNo: 3429251		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1889 0.020 0.1665 0 113 80-120 0

MS		Sample ID: 15071023-06AMS				Units: mg/Kg		Analysis Date: 8/24/2015 02:39 PM		
Client ID: CS28-EW		Run ID: HG1_150824A				SeqNo: 3429253		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1493 0.014 0.1192 0.01627 112 75-125 0

MS		Sample ID: 15081010-01AMS				Units: mg/Kg		Analysis Date: 8/24/2015 02:55 PM		
Client ID:		Run ID: HG1_150824A				SeqNo: 3429637		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1406 0.014 0.1151 0.0153 109 75-125 0

MSD		Sample ID: 15071023-06AMSD				Units: mg/Kg		Analysis Date: 8/24/2015 02:42 PM		
Client ID: CS28-EW		Run ID: HG1_150824A				SeqNo: 3429254		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1474 0.014 0.1186 0.01627 111 75-125 0.1493 1.28 35

MSD		Sample ID: 15081010-01AMSD				Units: mg/Kg		Analysis Date: 8/24/2015 02:58 PM		
Client ID:		Run ID: HG1_150824A				SeqNo: 3429646		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1375 0.013 0.1121 0.0153 109 75-125 0.1406 2.17 35

The following samples were analyzed in this batch:

15071023-06A

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **74114** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-74114-74114				Units: mg/Kg		Analysis Date: 7/29/2015 10:49 PM		
Client ID:		Run ID: ICP2_150729A				SeqNo: 3393940		Prep Date: 7/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.01139	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1008	0.50								J

LCS		Sample ID: LCS-74114-74114				Units: mg/Kg		Analysis Date: 7/29/2015 10:55 PM		
Client ID:		Run ID: ICP2_150729A				SeqNo: 3393941		Prep Date: 7/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.939	0.25	5	0	98.8	80-120	0			
Barium	5.048	0.25	5	0	101	80-120	0			
Cadmium	4.715	0.50	5	0	94.3	80-120	0			
Chromium	5.718	0.25	5	0	114	80-120	0			
Copper	4.98	0.50	5	0	99.6	80-120	0			
Lead	5.263	0.25	5	0	105	80-120	0			
Nickel	5.186	0.25	5	0	104	80-120	0			
Selenium	5.228	0.50	5	0	105	80-120	0			
Zinc	4.743	0.50	5	0	94.9	80-120	0			

LCS		Sample ID: LCS-74114-74114				Units: mg/Kg		Analysis Date: 7/30/2015 11:07 AM		
Client ID:		Run ID: ICP2_150730A				SeqNo: 3395414		Prep Date: 7/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	4.995	0.25	5	0	99.9	80-120	0			

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: 74114 Instrument ID ICP2 Method: SW846 6010C

MS				Sample ID: 15071023-05AMS			Units: mg/Kg		Analysis Date: 7/29/2015 11:22 PM	
Client ID: CS28-WW				Run ID: ICP2_150729A			SeqNo: 3393946		Prep Date: 7/28/2015	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.82	0.35	6.983	7.948	113	75-125	0			
Barium	143.5	0.35	6.983	128.2	220	75-125	0			SO
Cadmium	6.924	0.70	6.983	-0.005169	99.2	75-125	0			
Chromium	20.23	0.35	6.983	9.957	147	75-125	0			S
Copper	20.95	0.70	6.983	14.01	99.4	75-125	0			
Lead	17.46	0.35	6.983	10.36	102	75-125	0			
Nickel	34.7	0.35	6.983	27.57	102	75-125	0			
Selenium	9.559	0.70	6.983	1.718	112	75-125	0			
Silver	6.84	0.35	6.983	-0.06698	98.9	75-125	0			
Zinc	67.37	0.70	6.983	59.56	112	75-125	0			O

MSD				Sample ID: 15071023-05AMSD			Units: mg/Kg		Analysis Date: 7/29/2015 11:27 PM	
Client ID: CS28-WW				Run ID: ICP2_150729A			SeqNo: 3393947		Prep Date: 7/28/2015	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.46	0.35	6.993	7.948	107	75-125	15.82	2.28	20	
Barium	143.8	0.35	6.993	128.2	224	75-125	143.5	0.207	20	SO
Cadmium	6.784	0.70	6.993	-0.005169	97.1	75-125	6.924	2.03	20	
Chromium	19.75	0.35	6.993	9.957	140	75-125	20.23	2.38	20	S
Copper	20.66	0.70	6.993	14.01	95.2	75-125	20.95	1.38	20	
Lead	16.91	0.35	6.993	10.36	93.7	75-125	17.46	3.2	20	
Nickel	34.21	0.35	6.993	27.57	95	75-125	34.7	1.41	20	
Selenium	9.495	0.70	6.993	1.718	111	75-125	9.559	0.668	20	
Silver	6.684	0.35	6.993	-0.06698	96.5	75-125	6.84	2.32	20	
Zinc	66.28	0.70	6.993	59.56	96.1	75-125	67.37	1.64	20	O

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-05A		

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **74132** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 15071362-01ADUP				Units: mg/L		Analysis Date: 7/30/2015 01:17 PM		
Client ID:		Run ID: ICP2_150730A				SeqNo: 3395748		Prep Date: 7/29/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	136.6	5.0	0	0	0	0-0	137.4	0.635		
Magnesium	31.75	2.0	0	0	0	0-0	31.14	1.94		
Sodium	12.68	2.0	0	0	0	0-0	13.57	6.79		

DUP		Sample ID: 15071362-01ADUP				Units: none		Analysis Date: 7/30/2015		
Client ID:		Run ID: SAR_150730A				SeqNo: 3395801		Prep Date: 7/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Exchangeable Sodium Percentage	ND	0.010	0	0	0		0			
Sodium Adsorption Ratio	0.254	0.010	0	0	0		0			

The following samples were analyzed in this batch:

15071023-01B	15071023-02B	15071023-03B
15071023-05B		

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75149** Instrument ID **ICP2** Method: **SW846 6010C**

Sample ID: MBLK-75149-75149				Units: mg/Kg			Analysis Date: 8/24/2015 12:03 PM			
Client ID:		Run ID: ICP2_150824A			SeqNo: 3428896		Prep Date: 8/24/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.01547	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	0.1916	0.50								J
Silver	ND	0.25								
Zinc	ND	0.50								

LCS				Sample ID: LCS-75149-75149				Units: mg/Kg			Analysis Date: 8/24/2015 12:13 PM		
Client ID:			Run ID: ICP2_150824A				SeqNo: 3429036			Prep Date: 8/24/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Arsenic	5.067	0.25	5	0	101	80-120	0						
Barium	5.386	0.25	5	0	108	80-120	0						
Cadmium	4.818	0.50	5	0	96.4	80-120	0						
Chromium	5.67	0.25	5	0	113	80-120	0						
Copper	5.259	0.50	5	0	105	80-120	0						
Lead	5.204	0.25	5	0	104	80-120	0						
Nickel	5.339	0.25	5	0	107	80-120	0						
Selenium	5.351	0.50	5	0	107	80-120	0						
Silver	5.058	0.25	5	0	101	80-120	0						
Zinc	4.805	0.50	5	0	96.1	80-120	0						

MS				Sample ID: 15071023-06AMS			Units: mg/Kg		Analysis Date: 8/24/2015 12:24 PM		
Client ID: CS28-EW			Run ID: ICP2_150824A		SeqNo: 3429038		Prep Date: 8/24/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	16.42	0.33	6.519	8.389	123	75-125	0				
Barium	92.09	0.33	6.519	99.83	-119	75-125	0			SO	
Cadmium	6.455	0.65	6.519	0.01976	98.7	75-125	0				
Chromium	20.34	0.33	6.519	10.34	153	75-125	0			S	
Copper	21.1	0.65	6.519	15.65	83.6	75-125	0				
Lead	17.49	0.33	6.519	11.42	93.1	75-125	0				
Nickel	35.07	0.33	6.519	26.79	127	75-125	0			SO	
Selenium	8.815	0.65	6.519	1.626	110	75-125	0				
Silver	6.815	0.33	6.519	-0.03283	105	75-125	0				
Zinc	74.93	0.65	6.519	64.92	154	75-125	0			SO	

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75149** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 15071023-06AMSD				Units: mg/Kg		Analysis Date: 8/24/2015 12:29 PM		
Client ID: CS28-EW		Run ID: ICP2_150824A				SeqNo: 3429039		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.81	0.33	6.519	8.389	98.5	75-125	16.42	10.3	20	
Barium	84.92	0.33	6.519	99.83	-229	75-125	92.09	8.1	20	SO
Cadmium	6.032	0.65	6.519	0.01976	92.2	75-125	6.455	6.78	20	
Chromium	19.43	0.33	6.519	10.34	139	75-125	20.34	4.58	20	S
Copper	19.38	0.65	6.519	15.65	57.2	75-125	21.1	8.5	20	S
Lead	16.88	0.33	6.519	11.42	83.8	75-125	17.49	3.53	20	
Nickel	32.28	0.33	6.519	26.79	84.2	75-125	35.07	8.26	20	O
Selenium	8.287	0.65	6.519	1.626	102	75-125	8.815	6.17	20	
Silver	6.419	0.33	6.519	-0.03283	99	75-125	6.815	5.99	20	
Zinc	68.53	0.65	6.519	64.92	55.3	75-125	74.93	8.93	20	SO

The following samples were analyzed in this batch:

15071023-06A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75189** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 15081209-01ADUP				Units: mg/L		Analysis Date: 8/26/2015 01:26 PM		
Client ID:		Run ID: ICP2_150826A				SeqNo: 3432576		Prep Date: 8/26/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	238.8	5.0	0	0	0	0-0	243.3	1.9		
Magnesium	54.27	2.0	0	0	0	0-0	55.81	2.8		
Sodium	30.66	2.0	0	0	0	0-0	33.02	7.39		

DUP		Sample ID: 15081209-01ADUP				Units: none		Analysis Date: 8/26/2015		
Client ID:		Run ID: SAR_150826A				SeqNo: 3432603		Prep Date: 8/26/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.4661	0.010	0	0	0		0.4965	6.32	50	

The following samples were analyzed in this batch:

15071023-06B

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73710** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-73710-73710				Units: µg/Kg		Analysis Date: 7/20/2015 05:57 PM		
Client ID:		Run ID: SVMS8_150720A				SeqNo: 3379986		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	1299	0	1667	0	77.9	12-100	0			
Surr: 4-Terphenyl-d14	1465	0	1667	0	87.9	25-137	0			
Surr: Nitrobenzene-d5	1216	0	1667	0	72.9	37-107	0			

LCS		Sample ID: SLCSS1-73710-73710				Units: µg/Kg		Analysis Date: 7/20/2015 06:17 PM		
Client ID:		Run ID: SVMS8_150720A				SeqNo: 3379987		Prep Date: 7/20/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	555.3	6.7	666.7	0	83.3	45-110	0			
Anthracene	629	6.7	666.7	0	94.3	55-105	0			
Benzo(a)anthracene	604	6.7	666.7	0	90.6	50-110	0			
Benzo(a)pyrene	608.7	6.7	666.7	0	91.3	50-110	0			
Benzo(b)fluoranthene	614.3	6.7	666.7	0	92.1	45-115	0			
Benzo(k)fluoranthene	607	6.7	666.7	0	91	45-115	0			
Chrysene	580.7	6.7	666.7	0	87.1	55-110	0			
Dibenzo(a,h)anthracene	568.7	6.7	666.7	0	85.3	40-125	0			
Fluoranthene	640.7	6.7	666.7	0	96.1	55-115	0			
Fluorene	581.3	6.7	666.7	0	87.2	50-110	0			
Indeno(1,2,3-cd)pyrene	606.3	6.7	666.7	0	90.9	40-120	0			
Naphthalene	413	6.7	666.7	0	61.9	40-105	0			
Pyrene	642.7	6.7	666.7	0	96.4	45-125	0			
Surr: 2-Fluorobiphenyl	1239	0	1667	0	74.4	12-100	0			
Surr: 4-Terphenyl-d14	1384	0	1667	0	83.1	25-137	0			
Surr: Nitrobenzene-d5	1221	0	1667	0	73.3	37-107	0			

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: 73710 Instrument ID SVMS8 Method: SW846 8270D

MS				Sample ID: 15071004-01A MS			Units: µg/Kg		Analysis Date: 7/20/2015 08:46 PM		
Client ID:			Run ID: SVMS8_150720A			SeqNo: 3379988		Prep Date: 7/20/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1129	13	1282	0	88	45-110	0				
Anthracene	1232	13	1282	0	96.1	55-105	0				
Benzo(a)anthracene	1220	13	1282	14.79	94	50-110	0				
Benzo(a)pyrene	1207	13	1282	14.46	93	50-110	0				
Benzo(b)fluoranthene	1252	13	1282	19.39	96.1	45-115	0				
Benzo(k)fluoranthene	1192	13	1282	10.19	92.2	45-115	0				
Chrysene	1154	13	1282	10.52	89.2	55-110	0				
Dibenzo(a,h)anthracene	1218	13	1282	4.6	94.6	40-125	0				
Fluoranthene	1260	13	1282	17.42	96.9	55-115	0				
Fluorene	1171	13	1282	0	91.3	50-110	0				
Indeno(1,2,3-cd)pyrene	1220	13	1282	14.46	94.1	40-120	0				
Naphthalene	783.2	13	1282	0	61.1	40-105	0				
Pyrene	1314	13	1282	19.06	101	45-125	0				
Surr: 2-Fluorobiphenyl	2508	0	3205	0	78.3	12-100	0				
Surr: 4-Terphenyl-d14	2857	0	3205	0	89.1	25-137	0				
Surr: Nitrobenzene-d5	2316	0	3205	0	72.3	37-107	0				

MSD				Sample ID: 15071004-01A MSD			Units: µg/Kg		Analysis Date: 7/20/2015 09:06 PM		
Client ID:			Run ID: SVMS8_150720A			SeqNo: 3379989		Prep Date: 7/20/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1076	13	1256	0	85.6	45-110	1129	4.8	30		
Anthracene	1190	13	1256	0	94.7	55-105	1232	3.5	30		
Benzo(a)anthracene	1136	13	1256	14.79	89.3	50-110	1220	7.15	30		
Benzo(a)pyrene	1132	13	1256	14.46	89	50-110	1207	6.38	30		
Benzo(b)fluoranthene	1162	13	1256	19.39	91	45-115	1252	7.45	30		
Benzo(k)fluoranthene	1108	13	1256	10.19	87.4	45-115	1192	7.28	30		
Chrysene	1074	13	1256	10.52	84.7	55-110	1154	7.16	30		
Dibenzo(a,h)anthracene	1078	13	1256	4.6	85.4	40-125	1218	12.2	30		
Fluoranthene	1118	13	1256	17.42	87.6	55-115	1260	12	30		
Fluorene	1098	13	1256	0	87.4	50-110	1171	6.45	30		
Indeno(1,2,3-cd)pyrene	1175	13	1256	14.46	92.4	40-120	1220	3.78	30		
Naphthalene	752.3	13	1256	0	59.9	40-105	783.2	4.02	30		
Pyrene	1333	13	1256	19.06	105	45-125	1314	1.46	30		
Surr: 2-Fluorobiphenyl	2486	0	3140	0	79.2	12-100	2508	0.919	40		
Surr: 4-Terphenyl-d14	2817	0	3140	0	89.7	25-137	2857	1.41	40		
Surr: Nitrobenzene-d5	2255	0	3140	0	71.8	37-107	2316	2.65	40		

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-04A	15071023-05A	15071023-06A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73767** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-73767-73767				Units: µg/Kg			Analysis Date: 7/21/2015 04:33 PM		
Client ID:			Run ID: SVMS5_150721A				SeqNo: 3381388		Prep Date: 7/21/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Acenaphthene	ND	6.7											
Anthracene	ND	6.7											
Benzo(a)anthracene	ND	6.7											
Benzo(a)pyrene	ND	6.7											
Benzo(b)fluoranthene	ND	6.7											
Benzo(k)fluoranthene	ND	6.7											
Chrysene	ND	6.7											
Dibenzo(a,h)anthracene	ND	6.7											
Fluoranthene	ND	6.7											
Fluorene	ND	6.7											
Indeno(1,2,3-cd)pyrene	ND	6.7											
Naphthalene	ND	6.7											
Pyrene	ND	6.7											
Surr: 2-Fluorobiphenyl	1387	0	1667	0	83.2	12-100	0						
Surr: 4-Terphenyl-d14	1622	0	1667	0	97.3	25-137	0						
Surr: Nitrobenzene-d5	1469	0	1667	0	88.1	37-107	0						

LCS				Sample ID: SLCSS1-73767-73767				Units: µg/Kg		Analysis Date: 7/21/2015 04:55 PM	
Client ID:			Run ID: SVMS5_150721A			SeqNo: 3381389		Prep Date: 7/21/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	564.3	6.7	666.7	0	84.6	45-110	0				
Anthracene	661	6.7	666.7	0	99.1	55-105	0				
Benzo(a)anthracene	661.3	6.7	666.7	0	99.2	50-110	0				
Benzo(a)pyrene	650	6.7	666.7	0	97.5	50-110	0				
Benzo(b)fluoranthene	672.7	6.7	666.7	0	101	45-115	0				
Benzo(k)fluoranthene	645.3	6.7	666.7	0	96.8	45-115	0				
Chrysene	655	6.7	666.7	0	98.2	55-110	0				
Dibenzo(a,h)anthracene	615	6.7	666.7	0	92.2	40-125	0				
Fluoranthene	694.3	6.7	666.7	0	104	55-115	0				
Fluorene	590	6.7	666.7	0	88.5	50-110	0				
Indeno(1,2,3-cd)pyrene	618.7	6.7	666.7	0	92.8	40-120	0				
Naphthalene	413.3	6.7	666.7	0	62	40-105	0				
Pyrene	674.3	6.7	666.7	0	101	45-125	0				
Surr: 2-Fluorobiphenyl	1442	0	1667	0	86.5	12-100	0				
Surr: 4-Terphenyl-d14	1618	0	1667	0	97.1	25-137	0				
Surr: Nitrobenzene-d5	1449	0	1667	0	86.9	37-107	0				

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73767** Instrument ID **SVMS5** Method: **SW846 8270D**

MS				Sample ID: 15071046-03A MS			Units: µg/Kg		Analysis Date: 7/21/2015 07:31 PM	
Client ID:		Run ID: SVMS5_150721A			SeqNo: 3381390		Prep Date: 7/21/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	976.6	13	1253	0	77.9	45-110	0			
Anthracene	1236	13	1253	6.894	98.1	55-105	0			
Benzo(a)anthracene	1274	13	1253	23.31	99.8	50-110	0			
Benzo(a)pyrene	1233	13	1253	24.62	96.4	50-110	0			
Benzo(b)fluoranthene	1330	13	1253	26.59	104	45-115	0			
Benzo(k)fluoranthene	1237	13	1253	16.09	97.4	45-115	0			
Chrysene	1272	13	1253	22.65	99.7	55-110	0			
Dibenzo(a,h)anthracene	1065	13	1253	0	85	40-125	0			
Fluoranthene	1334	13	1253	57.12	102	55-115	0			
Fluorene	1071	13	1253	0	85.5	50-110	0			
Indeno(1,2,3-cd)pyrene	1175	13	1253	22.32	92	40-120	0			
Naphthalene	628.3	13	1253	0	50.1	40-105	0			
Pyrene	1353	13	1253	34.47	105	45-125	0			
Surr: 2-Fluorobiphenyl	2259	0	3132	0	72.1	12-100	0			
Surr: 4-Terphenyl-d14	3156	0	3132	0	101	25-137	0			
Surr: Nitrobenzene-d5	2186	0	3132	0	69.8	37-107	0			

MSD				Sample ID: 15071046-03A MSD			Units: µg/Kg		Analysis Date: 7/21/2015 07:54 PM	
Client ID:		Run ID: SVMS5_150721A			SeqNo: 3381391		Prep Date: 7/21/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1176	13	1317	0	89.3	45-110	976.6	18.5	30	
Anthracene	1333	13	1317	6.894	101	55-105	1236	7.56	30	
Benzo(a)anthracene	1304	13	1317	23.31	97.2	50-110	1274	2.32	30	
Benzo(a)pyrene	1292	13	1317	24.62	96.2	50-110	1233	4.7	30	
Benzo(b)fluoranthene	1370	13	1317	26.59	102	45-115	1330	2.92	30	
Benzo(k)fluoranthene	1310	13	1317	16.09	98.2	45-115	1237	5.76	30	
Chrysene	1291	13	1317	22.65	96.3	55-110	1272	1.5	30	
Dibenzo(a,h)anthracene	1125	13	1317	0	85.4	40-125	1065	5.48	30	
Fluoranthene	1397	13	1317	57.12	102	55-115	1334	4.63	30	
Fluorene	1226	13	1317	0	93	50-110	1071	13.5	30	
Indeno(1,2,3-cd)pyrene	1200	13	1317	22.32	89.4	40-120	1175	2.14	30	
Naphthalene	869.3	13	1317	0	66	40-105	628.3	32.2	30	R
Pyrene	1359	13	1317	34.47	101	45-125	1353	0.415	30	
Surr: 2-Fluorobiphenyl	2963	0	3293	0	90	12-100	2259	26.9	40	
Surr: 4-Terphenyl-d14	3249	0	3293	0	98.7	25-137	3156	2.9	40	
Surr: Nitrobenzene-d5	3087	0	3293	0	93.8	37-107	2186	34.2	40	

The following samples were analyzed in this batch:

15071023-05A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73727** Instrument ID **VMS9** Method: **SW8260B**

MBLK				Sample ID: MBLK-73727-73727				Units: µg/Kg			Analysis Date: 7/20/2015 12:07 PM		
Client ID:			Run ID: VMS9_150720A			SeqNo: 3377577			Prep Date: 7/20/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	ND	30											
Ethylbenzene	ND	30											
m,p-Xylene	ND	60											
o-Xylene	ND	30											
Toluene	ND	30											
Xylenes, Total	ND	90											
Surr: 1,2-Dichloroethane-d4	1035	0	1000	0	104	70-130		0					
Surr: 4-Bromofluorobenzene	885.5	0	1000	0	88.6	70-130		0					
Surr: Dibromofluoromethane	1032	0	1000	0	103	70-130		0					
Surr: Toluene-d8	951	0	1000	0	95.1	70-130		0					

LCS				Sample ID: LCS-73727-73727			Units: µg/Kg		Analysis Date: 7/20/2015 10:24 AM		
Client ID:			Run ID: VMS9_150720A			SeqNo: 3377576		Prep Date: 7/20/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1075	30	1000	0	108	75-125	0				
Ethylbenzene	1036	30	1000	0	104	75-125	0				
m,p-Xylene	2142	60	2000	0	107	80-125	0				
o-Xylene	1032	30	1000	0	103	75-125	0				
Toluene	1024	30	1000	0	102	70-125	0				
Xylenes, Total	3174	90	3000	0	106	75-125	0				
Surr: 1,2-Dichloroethane-d4	972	0	1000	0	97.2	70-130	0				
Surr: 4-Bromofluorobenzene	989.5	0	1000	0	99	70-130	0				
Surr: Dibromofluoromethane	991.5	0	1000	0	99.2	70-130	0				
Surr: Toluene-d8	983	0	1000	0	98.3	70-130	0				

MS				Sample ID: 15071026-01A MS				Units: µg/Kg		Analysis Date: 7/22/2015 12:05 PM	
Client ID:			Run ID: VMS6_150721A			SeqNo: 3381260		Prep Date: 7/20/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1090	30	1000	0	109	75-125	0				
Ethylbenzene	1046	30	1000	0	105	75-125	0				
m,p-Xylene	2136	60	2000	0	107	80-125	0				
o-Xylene	1006	30	1000	0	101	75-125	0				
Toluene	1053	30	1000	0	105	70-125	0				
Xylenes, Total	3141	90	3000	0	105	75-125	0				
Surr: 1,2-Dichloroethane-d4	976	0	1000	0	97.6	70-130	0				
Surr: 4-Bromofluorobenzene	1006	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	938	0	1000	0	93.8	70-130	0				
Surr: Toluene-d8	1006	0	1000	0	101	70-130	0				

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73727** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 15071026-01A MSD			Units: µg/Kg		Analysis Date: 7/22/2015 12:29 PM	
Client ID:				Run ID: VMS6_150721A			SeqNo: 3381263		Prep Date: 7/20/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1118	30	1000	0	112	75-125	1090	2.45	30	
Ethylbenzene	1090	30	1000	0	109	75-125	1046	4.21	30	
m,p-Xylene	2194	60	2000	0	110	80-125	2136	2.7	30	
o-Xylene	1053	30	1000	0	105	75-125	1006	4.62	30	
Toluene	1092	30	1000	0	109	70-125	1053	3.59	30	
Xylenes, Total	3247	90	3000	0	108	75-125	3141	3.32	30	
Surr: 1,2-Dichloroethane-d4	977	0	1000	0	97.7	70-130	976	0.102	30	
Surr: 4-Bromofluorobenzene	1015	0	1000	0	102	70-130	1006	0.841	30	
Surr: Dibromofluoromethane	930	0	1000	0	93	70-130	938	0.857	30	
Surr: Toluene-d8	1019	0	1000	0	102	70-130	1006	1.23	30	

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-04A	15071023-05A	15071023-06A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73816** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-73816-73816				Units: mg/Kg		Analysis Date: 7/21/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150721S		SeqNo: 3380370		Prep Date: 7/19/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-73816-73816				Units: mg/Kg		Analysis Date: 7/21/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150721S		SeqNo: 3380369		Prep Date: 7/19/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.56 1.0 5 0 91.2 80-120 0

MS		Sample ID: 15071004-01A MS				Units: mg/Kg		Analysis Date: 7/21/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150721S		SeqNo: 3380352		Prep Date: 7/19/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.301 0.97 4.854 0.1827 84.8 75-125 0

MS		Sample ID: 15071004-01A MSI				Units: mg/Kg		Analysis Date: 7/21/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150721S		SeqNo: 3380354		Prep Date: 7/19/2015		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3043 99 2788 0.1827 109 75-125 0

MSD		Sample ID: 15071004-01A MSD				Units: mg/Kg		Analysis Date: 7/21/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150721S		SeqNo: 3380353		Prep Date: 7/19/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.3 1.0 5 0.1827 82.3 75-125 4.301 0.0226 20

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-05A		

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **73877** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-73877-73877				Units: s.u.			Analysis Date: 7/22/2015 02:00 PM			
Client ID:				Run ID: WETCHEM_150722L				SeqNo: 3382081			Prep Date: 7/22/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		3.9	0	4	0	97.5	90-110	0						

DUP		Sample ID: 15071152-01A DUP				Units: s.u.		Analysis Date: 7/22/2015 02:00 PM		
Client ID:		Run ID: WETCHEM_150722L				SeqNo: 3382083		Prep Date: 7/22/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	11.23	0	0	0	0	0-0	11.17	0.536	20	

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-05A		

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **74132** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 15071362-01A DUP				Units: mmhos/cm @25°		Analysis Date: 7/30/2015 10:15 AM		
Client ID:		Run ID: WETCHEM_150730C				SeqNo: 3394795		Prep Date: 7/29/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.05	0.050	0	0	0		1.265	18.6	50	

The following samples were analyzed in this batch:

15071023-01B	15071023-02B	15071023-03B
15071023-05B		

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75158** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-75158-75158				Units: mg/Kg		Analysis Date: 8/25/2015 12:30 PM		
Client ID:		Run ID: WETCHEM_150825F		SeqNo: 3430838		Prep Date: 8/24/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-75158-75158				Units: mg/Kg		Analysis Date: 8/25/2015 12:30 PM		
Client ID:		Run ID: WETCHEM_150825F		SeqNo: 3430839		Prep Date: 8/24/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.2 1.0 5 0 104 80-120 0

MS		Sample ID: 15071023-06A MS				Units: mg/Kg		Analysis Date: 8/25/2015 12:30 PM		
Client ID: CS28-EW		Run ID: WETCHEM_150825F		SeqNo: 3430841		Prep Date: 8/24/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.833 0.98 4.902 0.4369 69.3 75-125 0 SH

MS		Sample ID: 15071023-06A MSI				Units: mg/Kg		Analysis Date: 8/25/2015 12:30 PM		
Client ID: CS28-EW		Run ID: WETCHEM_150825F		SeqNo: 3430843		Prep Date: 8/24/2015		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1925 99 1959 0.4369 98.2 75-125 0 H

MSD		Sample ID: 15071023-06A MSD				Units: mg/Kg		Analysis Date: 8/25/2015 12:30 PM		
Client ID: CS28-EW		Run ID: WETCHEM_150825F		SeqNo: 3430842		Prep Date: 8/24/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.833 0.98 4.902 0.4369 69.3 75-125 3.833 0 20 SH

The following samples were analyzed in this batch:

15071023-06A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75166** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-75166-75166				Units: s.u.		Analysis Date: 8/24/2015 01:15 PM		
Client ID:		Run ID: WETCHEM_150824I				SeqNo: 3429444		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	3.97	0	4	0	99.2	90-110	0			
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DUP		Sample ID: 15081016-01A DUP				Units: s.u.		Analysis Date: 8/24/2015 01:15 PM		
Client ID:		Run ID: WETCHEM_150824I				SeqNo: 3429447		Prep Date: 8/24/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	8.18	0	0	0	0	0-0	8.02	1.98	20	
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DUP		Sample ID: 15081117-01A DUP					Units: s.u.		Analysis Date: 8/24/2015 01:15 PM		
Client ID:			Run ID: WETCHEM_150824I			SeqNo: 3429457		Prep Date: 8/24/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.25	0	0	0	0	0-0	8.23	0.243	20	
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The following samples were analyzed in this batch:

15071023-06A

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

Client: Olsson Associates
Work Order: 15071023
Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **75189** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 15081209-01A DUP				Units: mmhos/cm @25°		Analysis Date: 8/26/2015 02:30 PM		
Client ID:		Run ID: WETCHEM_150826D				SeqNo: 3432631		Prep Date: 8/26/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.868	0.050	0	0	0		1.939	3.73	50	

The following samples were analyzed in this batch:

15071023-06B

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

Client: Olsson Associates
 Work Order: 15071023
 Project: EMC CS28 PIT 07.17.15

QC BATCH REPORT

Batch ID: **R168005** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R168005				Units: % of sample			Analysis Date: 7/20/2015 02:30 PM		
Client ID:		Run ID: MOIST_150720B				SeqNo: 3379334			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture ND 0.050

LCS		Sample ID: LCS-R168005				Units: % of sample			Analysis Date: 7/20/2015 02:30 PM		
Client ID:		Run ID: MOIST_150720B				SeqNo: 3379332			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 15071023-01A DUP				Units: % of sample			Analysis Date: 7/20/2015 02:30 PM		
Client ID: CS28-BASE		Run ID: MOIST_150720B				SeqNo: 3379297			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 18.07 0.050 0 0 0 17.95 0.666 20

DUP		Sample ID: 15071042-01A DUP				Units: % of sample			Analysis Date: 7/20/2015 02:30 PM		
Client ID:		Run ID: MOIST_150720B				SeqNo: 3379310			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 25.02 0.050 0 0 0 25.52 1.98 20 H

The following samples were analyzed in this batch:

15071023-01A	15071023-02A	15071023-03A
15071023-04A	15071023-05A	15071023-06A

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 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	EMC CS28 Pit					A TPH (GRO & DRO)											
Work Order		Project Number	014.1867.100.100001					B BTEX											
Company Name	Olsson Associates	Bill To Company	Olsson Associates					C PAH (See Attached List) CO Table 910											
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky					D Electrical Conductivity											
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102					E Sodium Adsorption Ratio											
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506					F pH											
Phone	970.263.7800	Phone	970.263.7800					G Metals (See Attached List) CO Table 910											
Fax	970.263.7456	Fax	970.263.7456					H Arsenic Only											
e-Mail Address	tdobransky@oceanconsulting.com	e-Mail Address						I											
								J											
No.	Sample Description	Date	Time	Matrix	Pts	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	CS28-BASE	07/17/15	1035	Soil	8	2	X	X	X	X	X	X	X						
2	CS28-BASE2	07/17/15	1150	Soil	8	2	X	X	X	X	X	X	X						
3	CS28-NW	07/17/15	1140	Soil	8	2	X	X	X	X	X	X	X						
4	CS28-SW	07/17/15	1030	Soil	8	2	X	X	X	X	X	X	X						
5	CS28-WW	07/17/15	1130	Soil	8	2	X	X	X	X	X	X	X						
6	CS28-EW	07/17/15	1020	Soil	8	2	X	X	X	X	X	X	X						
7																			
Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:				Results Due Date:											
Jason McLarty		FedEx		<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input checked="" type="checkbox"/> 24 Hour															
Relinquished by:		Date:	Time:	Received by:		Notes:		Chevron Pricing Applies - Per Bruce Schlatter Please rush only TPH, BTEX and PAH at 24hr or ASAP. Hold remaining pending hydrocarbon results. Report Preliminary hydrocarbon results as they finish.											
[Signature]		7/17/15	1600	[Signature]															
Relinquished by:		Date:	Time:	Received by (Laboratory):		Cooler Temp.		QC Package: (Check Box Below)											
FEOE		7/18/15	1000	[Signature]		3.2°		<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											
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):															
KEU		7/18/15	1130	[Signature]															

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **18-Jul-15 00:00**

Work Order: **15071023**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

18-Jul-15
Date

Reviewed by: Lee Drndol
eSignature

20-Jul-15
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>3.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/18/2015 11:34:02 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:



16-Aug-2015

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

Re: **EMC CS28 Pit**

Work Order: **1508365**

Dear Tim,

ALS Environmental received 2 samples on 07-Aug-2015 10:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 26.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1508365**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>
1508365-01	CS28-SW2	Soil		8/6/2015 13:15	8/7/2015 10:00	<input type="checkbox"/>
1508365-02	CS28-SW3	Soil		8/6/2015 13:40	8/7/2015 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: EMC CS28 Pit
WorkOrder: 1508365

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

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

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1508365

Case Narrative

Samples for the above noted Work Order were received on 08/07/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:

No deviations or anomalies were noted.

Volatile Organics:

No deviations or anomalies were noted.

Extractable Organics:

No deviations or anomalies were noted.

Metals:

Batch 74692, Method ICP, 6010, Sample 1508365-01AMS: The MS & MSD recoveries were outside the control limits for Barium, Nickel, and Zinc; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for these analytes.

Batch 74692, Method ICP, 6010, Sample 1508365-01AMS: The matrix spike recovery was outside of the control limit for Arsenic; however, the matrix spike duplicate recovery and the RPD between the MS and MSD were in control. No qualification is required for this analyte.

Batch 74692, Method ICP, 6010, Sample 1508365-01A: The MS & MSD recoveries were above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high for this analyte.

No other deviations or anomalies were noted.

Wet Chemistry:

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1508365

Case Narrative

No deviations or anomalies were noted.

ALS Group USA, Corp

Date: 16-Aug-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-SW2
Collection Date: 8/6/2015 01:15 PM

Work Order: 1508365
Lab ID: 1508365-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 8/7/15	Analyst: IT
DRO (C10-C28)	23		4.9	mg/Kg-dry	1	8/10/2015 03:39 PM
Surr: 4-Terphenyl-d14	59.4		39-133	%REC	1	8/10/2015 03:39 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D			Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	8/7/2015 09:27 PM
Surr: Toluene-d8	96.9		50-150	%REC	1	8/7/2015 09:27 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 8/11/15	Analyst: LR
Mercury	0.033		0.017	mg/Kg-dry	1	8/11/2015 08:01 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 8/12/15	Analyst: JEC
Arsenic	10		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Barium	210		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Cadmium	ND		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Chromium	12		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Copper	18		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Lead	13		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Nickel	35		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Selenium	2.0		0.81	mg/Kg-dry	1	8/12/2015 06:48 PM
Silver	ND		0.41	mg/Kg-dry	1	8/12/2015 06:48 PM
Zinc	78		0.81	mg/Kg-dry	1	8/12/2015 06:48 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/13/15	Analyst: JEC
Calcium	160		5.0	mg/L	10	8/14/2015 11:24 AM
Magnesium	45		2.0	mg/L	10	8/14/2015 11:24 AM
Sodium	4,100		20	mg/L	100	8/14/2015 12:44 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/13/15	Analyst: JEC
Sodium Adsorption Ratio	74		0.010	none	1	8/14/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/7/15	Analyst: RS
Acenaphthene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Anthracene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Benzo(a)anthracene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Benzo(a)pyrene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Benzo(b)fluoranthene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Benzo(k)fluoranthene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Chrysene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Dibenzo(a,h)anthracene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Fluoranthene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM

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

ALS Group USA, Corp

Date: 16-Aug-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-SW2
Collection Date: 8/6/2015 01:15 PM

Work Order: 1508365
Lab ID: 1508365-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Indeno(1,2,3-cd)pyrene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Naphthalene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Pyrene	ND		0.0078	mg/Kg-dry	1	8/8/2015 02:11 AM
Surr: 2-Fluorobiphenyl	86.5		12-100	%REC	1	8/8/2015 02:11 AM
Surr: 4-Terphenyl-d14	99.9		25-137	%REC	1	8/8/2015 02:11 AM
Surr: Nitrobenzene-d5	92.0		37-107	%REC	1	8/8/2015 02:11 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 8/7/15		Analyst: LSY
Benzene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:10 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:10 PM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	8/7/2015 09:10 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:10 PM
Toluene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:10 PM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	8/7/2015 09:10 PM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1	8/7/2015 09:10 PM
Surr: 4-Bromofluorobenzene	97.9		70-130	%REC	1	8/7/2015 09:10 PM
Surr: Dibromofluoromethane	101		70-130	%REC	1	8/7/2015 09:10 PM
Surr: Toluene-d8	97.6		70-130	%REC	1	8/7/2015 09:10 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 8/13/15		Analyst: JB
Electrical Conductivity @ Saturation	22		0.050	mmhos/cm @2	10	8/14/2015 06:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	11		0.59	mg/Kg-dry	1	8/14/2015 01:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/12/15		Analyst: MB
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	8/13/2015 04:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	15		0.050	% of sample	1	8/7/2015 03:45 PM
PH			SW9045D	Prep: EXTRACT / 8/12/15		Analyst: JB
pH	7.7			s.u.	1	8/12/2015 01:00 PM

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

ALS Group USA, Corp

Date: 16-Aug-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-SW3
Collection Date: 8/6/2015 01:40 PM

Work Order: 1508365
Lab ID: 1508365-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	60		SW8015M		Prep: SW3541 / 8/7/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	<i>74.3</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	8/10/2015 04:09 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW3541 / 8/7/15	Analyst: IT
<i>Surr: Toluene-d8</i>	<i>101</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	8/7/2015 09:51 PM
MERCURY BY CVAA						
Mercury	0.021		SW7471B		Prep: SW7471 / 8/11/15	Analyst: LR
			0.015	mg/Kg-dry	1	8/11/2015 08:03 PM
METALS ANALYSIS BY ICP						
Arsenic	8.8		SW846 6010C		Prep: SW3050B / 8/12/15	Analyst: JEC
Barium	280		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Cadmium	ND		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Chromium	9.7		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Copper	13		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Lead	8.6		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Nickel	34		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Selenium	1.7		0.79	mg/Kg-dry	1	8/12/2015 07:10 PM
Silver	ND		0.40	mg/Kg-dry	1	8/12/2015 07:10 PM
Zinc	63		0.79	mg/Kg-dry	1	8/12/2015 07:10 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/13/15	Analyst: JEC
Calcium	180		5.0	mg/L	10	8/14/2015 11:30 AM
Magnesium	53		2.0	mg/L	10	8/14/2015 11:30 AM
Sodium	3,100		2.0	mg/L	10	8/14/2015 11:30 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/13/15	Analyst: JEC
Sodium Adsorption Ratio	52		0.010	none	1	8/14/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/7/15	Analyst: RS
Acenaphthene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Anthracene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Benzo(a)anthracene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Benzo(a)pyrene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Benzo(b)fluoranthene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Benzo(k)fluoranthene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Chrysene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Dibenzo(a,h)anthracene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Fluoranthene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM

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

ALS Group USA, Corp

Date: 16-Aug-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-SW3
Collection Date: 8/6/2015 01:40 PM

Work Order: 1508365
Lab ID: 1508365-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Indeno(1,2,3-cd)pyrene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Naphthalene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Pyrene	ND		0.0075	mg/Kg-dry	1	8/8/2015 01:48 AM
Surr: 2-Fluorobiphenyl	72.2		12-100	%REC	1	8/8/2015 01:48 AM
Surr: 4-Terphenyl-d14	89.4		25-137	%REC	1	8/8/2015 01:48 AM
Surr: Nitrobenzene-d5	68.3		37-107	%REC	1	8/8/2015 01:48 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 8/7/15		Analyst: LSY
Benzene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:37 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:37 PM
m,p-Xylene	ND		0.069	mg/Kg-dry	1	8/7/2015 09:37 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:37 PM
Toluene	ND		0.035	mg/Kg-dry	1	8/7/2015 09:37 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	8/7/2015 09:37 PM
Surr: 1,2-Dichloroethane-d4	99.7		70-130	%REC	1	8/7/2015 09:37 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	8/7/2015 09:37 PM
Surr: Dibromofluoromethane	100		70-130	%REC	1	8/7/2015 09:37 PM
Surr: Toluene-d8	96.9		70-130	%REC	1	8/7/2015 09:37 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 8/13/15		Analyst: JB
Electrical Conductivity @ Saturation	18		0.050	mmhos/cm @2	10	8/14/2015 06:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	9.7		0.58	mg/Kg-dry	1	8/14/2015 01:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/12/15		Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	8/13/2015 04:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	13		0.050	% of sample	1	8/7/2015 03:45 PM
PH			SW9045D	Prep: EXTRACT / 8/12/15		Analyst: JB
pH	8.2			s.u.	1	8/12/2015 01:00 PM

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

ALS Group USA, Corp

Date: 16-Aug-15

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74535** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-74535-74535				Units: mg/Kg		Analysis Date: 8/10/2015 02:39 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3410712		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) ND 5.0
Surr: 4-Terphenyl-d14 1.396 0 2 0 69.8 39-133 0

LCS		Sample ID: DLCSS1-74535-74535				Units: mg/Kg		Analysis Date: 8/10/2015 03:09 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3410713		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 164.7 5.0 200 0 82.4 61-109 0
Surr: 4-Terphenyl-d14 1.353 0 2 0 67.6 39-133 0

MS		Sample ID: 1508306-01B MS				Units: mg/Kg		Analysis Date: 8/10/2015 05:36 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411355		Prep Date: 8/7/2015		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 2300 21 165.8 7652 -3230 48-110 0 SO
Surr: 4-Terphenyl-d14 1.519 0 1.658 0 91.6 39-133 0

MSD		Sample ID: 1508306-01B MSD				Units: mg/Kg		Analysis Date: 8/10/2015 06:06 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411356		Prep Date: 8/7/2015		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 7563 41 164.4 7652 -53.7 48-110 2300 107 30 SRO
Surr: 4-Terphenyl-d14 1.745 0 1.644 0 106 39-133 1.519 13.9 30

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74547a** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-74547-74547a				Units: µg/Kg		Analysis Date: 8/7/2015 01:43 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408701		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5035	0	5000	0	101	50-150	0			

LCS		Sample ID: LCS-74547-74547a				Units: µg/Kg		Analysis Date: 8/7/2015 01:18 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408700		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	547700	2,500	500000	0	110	70-130	0			
Surr: Toluene-d8	4950	0	5000	0	99	50-150	0			

MS		Sample ID: 1508198-01A MS				Units: µg/Kg		Analysis Date: 8/7/2015 03:47 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408703		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	544100	2,500	500000	0	109	70-130	0			
Surr: Toluene-d8	4829	0	5000	0	96.6	50-150	0			

MSD		Sample ID: 1508198-01A MSD				Units: µg/Kg		Analysis Date: 8/7/2015 04:11 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408704		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	550900	2,500	500000	0	110	70-130	544100	1.24	30	
Surr: Toluene-d8	4987	0	5000	0	99.7	50-150	4829	3.22	30	

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74675** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-74675-74675					Units: mg/Kg		Analysis Date: 8/11/2015 07:31 PM		
Client ID:			Run ID: HG1_150811A				SeqNo: 3413640		Prep Date: 8/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury ND 0.020

LCS		Sample ID: LCS-74675-74675				Units: mg/Kg		Analysis Date: 8/11/2015 07:33 PM		
Client ID:		Run ID: HG1_150811A				SeqNo: 3413643		Prep Date: 8/11/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1894 0.020 0.1665 0 114 80-120 0

MS		Sample ID: 1508383-05CMS					Units: mg/Kg		Analysis Date: 8/11/2015 08:24 PM		
Client ID:			Run ID: HG1_150811A			SeqNo: 3413677		Prep Date: 8/11/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1451 0.013 0.1065 0.02943 109 75-125 0

MSD		Sample ID: 1508383-05CMSD					Units: mg/Kg		Analysis Date: 8/11/2015 08:26 PM		
Client ID:			Run ID: HG1_150811A			SeqNo: 3413678		Prep Date: 8/11/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1439 0.013 0.1068 0.02943 107 75-125 0.1451 0.899 35

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74692**

Instrument ID **ICP2**

Method: **SW846 6010C**

MBLK				Sample ID: MBLK-74692-74692			Units: mg/Kg		Analysis Date: 8/12/2015 07:37 PM		
Client ID:			Run ID: ICP2_150812A			SeqNo: 3415140		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	ND	0.25									
Barium	ND	0.25									
Cadmium	ND	0.50									
Chromium	0.009371	0.25								J	
Copper	ND	0.50									
Lead	ND	0.25									
Nickel	ND	0.25									
Selenium	ND	0.50									
Silver	ND	0.25									
Zinc	ND	0.50									

LCS				Sample ID: LCS-74692-74692				Units: mg/Kg		Analysis Date: 8/12/2015 07:43 PM		
Client ID:			Run ID: ICP2_150812A			SeqNo: 3415141		Prep Date: 8/12/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	4.913	0.25	5	0	98.3	80-120	0					
Barium	4.867	0.25	5	0	97.3	80-120	0					
Cadmium	4.711	0.50	5	0	94.2	80-120	0					
Chromium	5.14	0.25	5	0	103	80-120	0					
Copper	5.045	0.50	5	0	101	80-120	0					
Lead	5.059	0.25	5	0	101	80-120	0					
Nickel	5.281	0.25	5	0	106	80-120	0					
Selenium	5.088	0.50	5	0	102	80-120	0					
Silver	5.111	0.25	5	0	102	80-120	0					
Zinc	4.654	0.50	5	0	93.1	80-120	0					

MS				Sample ID: 1508365-01AMS			Units: mg/Kg		Analysis Date: 8/12/2015 06:54 PM		
Client ID: CS28-SW2			Run ID: ICP2_150812A			SeqNo: 3415132		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	17.14	0.35	6.935	8.444	125	75-125	0			S	
Barium	206.3	0.35	6.935	178.2	405	75-125	0			SO	
Cadmium	7.608	0.69	6.935	0.1245	108	75-125	0				
Chromium	21.22	0.35	6.935	9.803	165	75-125	0			S	
Copper	22.09	0.69	6.935	14.92	103	75-125	0				
Lead	18.1	0.35	6.935	11.14	100	75-125	0				
Nickel	38.09	0.35	6.935	30.05	116	75-125	0			O	
Selenium	9.441	0.69	6.935	1.709	111	75-125	0				
Silver	8.079	0.35	6.935	-0.01755	117	75-125	0				
Zinc	70.15	0.69	6.935	66.18	57.3	75-125	0			SO	

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

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74692** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1508365-01AMSD				Units: mg/Kg		Analysis Date: 8/12/2015 06:59 PM		
Client ID: CS28-SW2		Run ID: ICP2_150812A				SeqNo: 3415133		Prep Date: 8/12/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.89	0.35	6.935	8.444	107	75-125	17.14	7.57	20	
Barium	171.6	0.35	6.935	178.2	-94.8	75-125	206.3	18.4	20	SO
Cadmium	7.152	0.69	6.935	0.1245	101	75-125	7.608	6.18	20	
Chromium	20.79	0.35	6.935	9.803	158	75-125	21.22	2.06	20	S
Copper	22.67	0.69	6.935	14.92	112	75-125	22.09	2.6	20	
Lead	17.94	0.35	6.935	11.14	98	75-125	18.1	0.908	20	
Nickel	37.69	0.35	6.935	30.05	110	75-125	38.09	1.06	20	O
Selenium	9.14	0.69	6.935	1.709	107	75-125	9.441	3.23	20	
Silver	7.612	0.35	6.935	-0.01755	110	75-125	8.079	5.95	20	
Zinc	73.44	0.69	6.935	66.18	105	75-125	70.15	4.59	20	O

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74706** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1508365-02BDUP				Units: mg/L		Analysis Date: 8/14/2015 11:36 AM		
Client ID: CS28-SW3		Run ID: ICP2_150814A				SeqNo: 3417375		Prep Date: 8/13/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	154.1	5.0	0	0	0	0-0	182.1	16.6		
Magnesium	45.54	2.0	0	0	0	0-0	53.12	15.4		
Sodium	2788	2.0	0	0	0	0-0	3079	9.93		

DUP		Sample ID: 1508365-02BDUP				Units: none		Analysis Date: 8/14/2015		
Client ID: CS28-SW3		Run ID: SAR_150814A				SeqNo: 3417502		Prep Date: 8/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	50.71	0.010	0	0	0		51.64	1.81	50	

The following samples were analyzed in this batch: | 1508365-01B 1508365-02B |

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 74534 Instrument ID SVMS5 Method: SW846 8270D

MBLK				Sample ID: SBLKS1-74534-74534				Units: µg/Kg			Analysis Date: 8/7/2015 05:34 PM			
Client ID:				Run ID: SVMS5_150807A				SeqNo: 3409618			Prep Date: 8/7/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Acenaphthene	ND	6.7												
Anthracene	ND	6.7												
Benzo(a)anthracene	ND	6.7												
Benzo(a)pyrene	ND	6.7												
Benzo(b)fluoranthene	ND	6.7												
Benzo(k)fluoranthene	ND	6.7												
Chrysene	ND	6.7												
Dibenzo(a,h)anthracene	ND	6.7												
Fluoranthene	ND	6.7												
Fluorene	ND	6.7												
Indeno(1,2,3-cd)pyrene	ND	6.7												
Naphthalene	ND	6.7												
Pyrene	ND	6.7												
Surr: 2-Fluorobiphenyl	1365	0	1667	0	81.9	12-100	0							
Surr: 4-Terphenyl-d14	1584	0	1667	0	95	25-137	0							
Surr: Nitrobenzene-d5	1434	0	1667	0	86.1	37-107	0							

LCS				Sample ID: SLCSS1-74534-74534				Units: µg/Kg		Analysis Date: 8/10/2015 01:34 PM	
Client ID:			Run ID: SVMS8_150807C			SeqNo: 3410107		Prep Date: 8/7/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	588.7	6.7	666.7	0	88.3	45-110	0				
Anthracene	656	6.7	666.7	0	98.4	55-105	0				
Benzo(a)anthracene	687.3	6.7	666.7	0	103	50-110	0				
Benzo(a)pyrene	693.7	6.7	666.7	0	104	50-110	0				
Benzo(b)fluoranthene	730	6.7	666.7	0	109	45-115	0				
Benzo(k)fluoranthene	730.7	6.7	666.7	0	110	45-115	0				
Chrysene	658.7	6.7	666.7	0	98.8	55-110	0				
Dibenzo(a,h)anthracene	579.7	6.7	666.7	0	86.9	40-125	0				
Fluoranthene	761.7	6.7	666.7	0	114	55-115	0				
Fluorene	621	6.7	666.7	0	93.1	50-110	0				
Indeno(1,2,3-cd)pyrene	685	6.7	666.7	0	103	40-120	0				
Naphthalene	566.3	6.7	666.7	0	84.9	40-105	0				
Pyrene	738	6.7	666.7	0	111	45-125	0				
Surr: 2-Fluorobiphenyl	1335	0	1667	0	80.1	12-100	0				
Surr: 4-Terphenyl-d14	1645	0	1667	0	98.7	25-137	0				
Surr: Nitrobenzene-d5	1451	0	1667	0	87.1	37-107	0				

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 74534 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1508222-06C MS			Units: µg/Kg		Analysis Date: 8/7/2015 07:27 PM		
Client ID:			Run ID: SVMS5_150807A			SeqNo: 3409622		Prep Date: 8/7/2015		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	849.5	66	661.1	216.1	95.8	45-110	0				
Anthracene	1887	66	661.1	1044	128	55-105	0			S	
Benzo(a)anthracene	3672	66	661.1	2749	140	50-110	0			SO	
Benzo(a)pyrene	3186	66	661.1	2337	128	50-110	0			S	
Benzo(b)fluoranthene	4128	66	661.1	3052	163	45-115	0			SO	
Benzo(k)fluoranthene	1712	66	661.1	1207	76.5	45-115	0				
Chrysene	3702	66	661.1	2809	135	55-110	0			SO	
Dibenzo(a,h)anthracene	1256	66	661.1	428.8	125	40-125	0			S	
Fluoranthene	8168	66	661.1	6116	310	55-115	0			SO	
Fluorene	1035	66	661.1	349	104	50-110	0				
Indeno(1,2,3-cd)pyrene	2833	66	661.1	1825	152	40-120	0			S	
Naphthalene	783.4	66	661.1	282.6	75.8	40-105	0				
Pyrene	5926	66	661.1	4763	176	45-125	0			SO	
Surr: 2-Fluorobiphenyl	1183	0	1653	0	71.6	12-100	0				
Surr: 4-Terphenyl-d14	1200	0	1653	0	72.6	25-137	0				
Surr: Nitrobenzene-d5	1464	0	1653	0	88.6	37-107	0				

MSD				Sample ID: 1508222-06C MSD			Units: µg/Kg		Analysis Date: 8/7/2015 07:49 PM		
Client ID:			Run ID: SVMS5_150807A			SeqNo: 3409625		Prep Date: 8/7/2015		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	839.9	66	658.8	216.1	94.7	45-110	849.5	1.14	30		
Anthracene	1848	66	658.8	1044	122	55-105	1887	2.12	30	S	
Benzo(a)anthracene	3468	66	658.8	2749	109	50-110	3672	5.72	30	O	
Benzo(a)pyrene	2991	66	658.8	2337	99.2	50-110	3186	6.34	30		
Benzo(b)fluoranthene	3689	66	658.8	3052	96.7	45-115	4128	11.2	30	O	
Benzo(k)fluoranthene	1650	66	658.8	1207	67.3	45-115	1712	3.69	30		
Chrysene	3359	66	658.8	2809	83.6	55-110	3702	9.7	30	O	
Dibenzo(a,h)anthracene	1061	66	658.8	428.8	95.9	40-125	1256	16.9	30		
Fluoranthene	7697	66	658.8	6116	240	55-115	8168	5.93	30	SO	
Fluorene	1008	66	658.8	349	100	50-110	1035	2.62	30		
Indeno(1,2,3-cd)pyrene	2836	66	658.8	1825	153	40-120	2833	0.109	30	S	
Naphthalene	836.6	66	658.8	282.6	84.1	40-105	783.4	6.57	30		
Pyrene	4641	66	658.8	4763	-18.6	45-125	5926	24.3	30	SO	
Surr: 2-Fluorobiphenyl	1219	0	1647	0	74	12-100	1183	2.94	40		
Surr: 4-Terphenyl-d14	1100	0	1647	0	66.8	25-137	1200	8.68	40		
Surr: Nitrobenzene-d5	1571	0	1647	0	95.4	37-107	1464	7.04	40		

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 74561 Instrument ID VMS6 Method: SW8260B

MBLK Sample ID: MBLK-74561-74561				Units: µg/Kg		Analysis Date: 8/7/2015 04:18 PM				
Client ID:		Run ID: VMS6_150807A		SeqNo: 3409737		Prep Date: 8/7/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	1020	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	965.5	0	1000	0	96.6	70-130	0			
Surr: Dibromofluoromethane	1038	0	1000	0	104	70-130	0			
Surr: Toluene-d8	989.5	0	1000	0	99	70-130	0			

LCS Sample ID: LCS-74561-74561				Units: µg/Kg		Analysis Date: 8/7/2015 02:43 PM				
Client ID:		Run ID: VMS6_150807A		SeqNo: 3409735		Prep Date: 8/7/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1008	30	1000	0	101	75-125	0			
Ethylbenzene	971.5	30	1000	0	97.2	75-125	0			
m,p-Xylene	1946	60	2000	0	97.3	80-125	0			
o-Xylene	931	30	1000	0	93.1	75-125	0			
Toluene	974	30	1000	0	97.4	70-125	0			
Xylenes, Total	2876	90	3000	0	95.9	75-125	0			
Surr: 1,2-Dichloroethane-d4	994.5	0	1000	0	99.4	70-130	0			
Surr: 4-Bromofluorobenzene	981.5	0	1000	0	98.2	70-130	0			
Surr: Dibromofluoromethane	994.5	0	1000	0	99.4	70-130	0			
Surr: Toluene-d8	971	0	1000	0	97.1	70-130	0			

MS Sample ID: 1508361-02A MS				Units: µg/Kg		Analysis Date: 8/8/2015 09:11 AM				
Client ID:		Run ID: VMS9_150807B		SeqNo: 3409550		Prep Date: 8/7/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1078	30	1000	0	108	75-125	0			
Ethylbenzene	999	30	1000	0	99.9	75-125	0			
m,p-Xylene	1886	60	2000	0	94.3	80-125	0			
o-Xylene	904.5	30	1000	0	90.4	75-125	0			
Toluene	1045	30	1000	0	104	70-125	0			
Xylenes, Total	2791	90	3000	0	93	75-125	0			
Surr: 1,2-Dichloroethane-d4	1086	0	1000	0	109	70-130	0			
Surr: 4-Bromofluorobenzene	1070	0	1000	0	107	70-130	0			
Surr: Dibromofluoromethane	1057	0	1000	0	106	70-130	0			
Surr: Toluene-d8	993	0	1000	0	99.3	70-130	0			

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74561** Instrument ID **VMS6** Method: **SW8260B**

MSD				Sample ID: 1508361-02A MSD			Units: µg/Kg		Analysis Date: 8/8/2015 09:36 AM		
Client ID:			Run ID: VMS9_150807B			SeqNo: 3409551		Prep Date: 8/7/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1096	30	1000	0	110	75-125	1078	1.61	30		
Ethylbenzene	1066	30	1000	0	107	75-125	999	6.49	30		
m,p-Xylene	2008	60	2000	0	100	80-125	1886	6.24	30		
o-Xylene	945	30	1000	0	94.5	75-125	904.5	4.38	30		
Toluene	1102	30	1000	0	110	70-125	1045	5.26	30		
Xylenes, Total	2953	90	3000	0	98.4	75-125	2791	5.64	30		
Surr: 1,2-Dichloroethane-d4	1052	0	1000	0	105	70-130	1086	3.13	30		
Surr: 4-Bromofluorobenzene	1084	0	1000	0	108	70-130	1070	1.21	30		
Surr: Dibromofluoromethane	1020	0	1000	0	102	70-130	1057	3.61	30		
Surr: Toluene-d8	1003	0	1000	0	100	70-130	993	1	30		

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74706** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1508365-02B DUP				Units: mmhos/cm @25°		Analysis Date: 8/14/2015 06:30 PM		
Client ID: CS28-SW3		Run ID: WETCHEM_150814N		SeqNo: 3418331		Prep Date: 8/13/2015		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	16.56	0.050	0	0	0		17.96	8.11	50	

The following samples were analyzed in this batch:

1508365-01B	1508365-02B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74708** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74708-74708				Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:		Run ID: WETCHEM_150812H				SeqNo: 3414137		Prep Date: 8/12/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	3.95	0	4	0	98.8	90-110	0			
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DUP		Sample ID: 1508361-01A DUP					Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:			Run ID: WETCHEM_150812H			SeqNo: 3414139		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.25	0	0	0	0	0-0	8.13	1.47	20	
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DUP		Sample ID: 1508443-05A DUP					Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:			Run ID: WETCHEM_150812H			SeqNo: 3414147		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.13	0	0	0	0	0-0	8.19	0.735	20	
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The following samples were analyzed in this batch:

1508365-01A	1508365-02A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1508365
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **74796** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-74796-74796				Units: mg/Kg		Analysis Date: 8/13/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150813H		SeqNo: 3416373		Prep Date: 8/12/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.32	1.0								J

LCS		Sample ID: LCS-74796-74796				Units: mg/Kg		Analysis Date: 8/13/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150813H		SeqNo: 3416372		Prep Date: 8/12/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.43	1.0	5	0	88.6	80-120	0			

MS		Sample ID: 1508583-03B MS				Units: mg/Kg		Analysis Date: 8/13/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150813H		SeqNo: 3416366		Prep Date: 8/12/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	1.0	5.155	0	0	75-125	0			S

MS		Sample ID: 1508583-03B MSI				Units: mg/Kg		Analysis Date: 8/13/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150813H		SeqNo: 3416368		Prep Date: 8/12/2015		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2881	93	3233	0	89.1	75-125	0			

MSD		Sample ID: 1508583-03B MSD				Units: mg/Kg		Analysis Date: 8/13/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150813H		SeqNo: 3416367		Prep Date: 8/12/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.3265	1.0	5.102	0	6.4	75-125	0.1959	0	20	JS

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Client: Olsson Associates
 Work Order: 1508365
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **R169300** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R169300				Units: % of sample			Analysis Date: 8/7/2015 03:45 PM		
Client ID:		Run ID: MOIST_150807A				SeqNo: 3409631			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture ND 0.050

LCS		Sample ID: LCS-R169300				Units: % of sample			Analysis Date: 8/7/2015 03:45 PM		
Client ID:		Run ID: MOIST_150807A				SeqNo: 3409628			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1508294-01A DUP				Units: % of sample			Analysis Date: 8/7/2015 03:45 PM		
Client ID:		Run ID: MOIST_150807A				SeqNo: 3409605			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 10.56 0.050 0 0 0 10.3 2.49 20

DUP		Sample ID: 1508365-01A DUP				Units: % of sample			Analysis Date: 8/7/2015 03:45 PM		
Client ID: CS28-SW2		Run ID: MOIST_150807A				SeqNo: 3409624			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 15.42 0.050 0 0 0 15.3 0.781 20

The following samples were analyzed in this batch:

1508365-01A 1508365-02A

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

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **07-Aug-15 10:00**

Work Order: **1508365**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

07-Aug-15
Date

Reviewed by: Lee Arnold
eSignature

07-Aug-15
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>2.4/2.4 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/7/2015 12:11:24 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



18-Sep-2015

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

Re: **EMC CS28 Pit**

Work Order: **1509370**

Dear Tim,

ALS Environmental received 4 samples on 05-Sep-2015 10:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 34.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Chad Whelton

Les Arnold
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1509370

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>
1509370-01	CS28-BG1	Soil		9/3/2015 09:10	9/5/2015 10:00	<input type="checkbox"/>
1509370-02	CS28-IC1	Soil		9/3/2015 09:45	9/5/2015 10:00	<input type="checkbox"/>
1509370-03	CS28-IC2	Soil		9/3/2015 09:55	9/5/2015 10:00	<input type="checkbox"/>
1509370-04	CS28-IC3	Soil		9/3/2015 14:00	9/5/2015 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1509370

Case Narrative

Samples for the above noted Work Order were received on 09/05/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:

No deviations or anomalies were noted.

Volatile Organics:

No deviations or anomalies were noted.

Extractable Organics:

No deviations or anomalies were noted.

Metals:

Batch 75735, Method 6010 for metals; Sample 1509370-01A: The reporting limits are elevated due to internal standard failure in the undiluted run for these analytes: Arsenic, Chromium, Lead, Selenium, and Zinc

Batch 75735, Method 6010 for metals; Sample 1509370-02A: The reporting limits are elevated due to internal standard failure in the undiluted run for these analytes: Arsenic, Chromium, Lead, Selenium, and Zinc

Batch 75735, Method 6010 for metals; Sample 1509370-03A: The reporting limits are elevated due to internal standard failure in the undiluted run for these analytes: Arsenic, Chromium, Lead, Selenium, and Zinc

Batch 75735, Method 6010 for metals; Sample 1509370-03A: The MS and MSD recoveries were outside of the control limit for Zinc; however, the result in the parent sample is greater

Client: Olsson Associates
Project: EMC CS28 Pit
Work Order: 1509370

Case Narrative

than 4x the spike amount. No qualification is required for this analyte.

Batch 75735, Method 6010 for metals; Sample 1509370-03A: The matrix spike recovery was outside of the control limit for Nickel; however, the matrix spike duplicate recovery and the RPD between the MS and MSD were in control. No qualification is required for this analyte.

Batch 75735, Method 6010 for metals; Sample 1509370-03A: The MS and MSD recoveries were outside of the control limit for Barium; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte.

Batch 75735, Method 6010 for metals; Sample 1509370-03A: The MS recovery was above the upper control limit for Chrome. The corresponding result in the parent sample may be biased high for this analyte.

No other deviations or anomalies were noted.

Wet Chemistry:

No deviations or anomalies were noted.

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

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

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-BG1
Collection Date: 9/3/2015 09:10 AM

Work Order: 1509370
Lab ID: 1509370-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 9/9/15	Analyst: IT
DRO (C10-C28)	26		4.2	mg/Kg-dry	1	9/9/2015 07:56 PM
Surr: 4-Terphenyl-d14	57.7		39-133	%REC	1	9/9/2015 07:56 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 9/8/15	Analyst: IT
GRO (C6-C10)	ND		2.6	mg/Kg-dry	1	9/8/2015 05:53 PM
Surr: Toluene-d8	106		50-150	%REC	1	9/8/2015 05:53 PM
MERCURY BY CVAA						
			SW7471B		Prep: SW7471 / 9/9/15	Analyst: RG
Mercury	0.056		0.015	mg/Kg-dry	1	9/9/2015 06:23 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 9/8/15	Analyst: JEC
Arsenic	7.4		0.82	mg/Kg-dry	2	9/9/2015 03:51 PM
Barium	170		0.41	mg/Kg-dry	1	9/9/2015 01:07 PM
Beryllium	0.53		0.33	mg/Kg-dry	2	9/9/2015 03:51 PM
Cadmium	ND		0.41	mg/Kg-dry	1	9/9/2015 01:07 PM
Chromium	13		0.82	mg/Kg-dry	2	9/9/2015 03:51 PM
Copper	18		0.41	mg/Kg-dry	1	9/9/2015 01:07 PM
Lead	12		0.82	mg/Kg-dry	2	9/9/2015 03:51 PM
Nickel	34		0.41	mg/Kg-dry	1	9/9/2015 01:07 PM
Selenium	ND		1.6	mg/Kg-dry	2	9/9/2015 03:51 PM
Silver	ND		0.41	mg/Kg-dry	1	9/9/2015 01:07 PM
Zinc	70		1.6	mg/Kg-dry	2	9/9/2015 03:51 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Calcium	590		5.0	mg/L	10	9/10/2015 12:51 PM
Magnesium	37		2.0	mg/L	10	9/10/2015 12:51 PM
Sodium	82		2.0	mg/L	10	9/10/2015 12:51 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Sodium Adsorption Ratio	0.88		0.010	none	1	9/10/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/8/15	Analyst: RM
Acenaphthene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Anthracene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Benzo(a)anthracene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Benzo(a)pyrene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Benzo(b)fluoranthene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Benzo(k)fluoranthene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Chrysene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Dibenzo(a,h)anthracene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-BG1
Collection Date: 9/3/2015 09:10 AM

Work Order: 1509370
Lab ID: 1509370-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Fluorene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Indeno(1,2,3-cd)pyrene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Naphthalene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Pyrene	ND		6.8	µg/Kg-dry	1	9/9/2015 06:46 AM
Surr: 2-Fluorobiphenyl	63.9		12-100	%REC	1	9/9/2015 06:46 AM
Surr: 4-Terphenyl-d14	75.9		25-137	%REC	1	9/9/2015 06:46 AM
Surr: Nitrobenzene-d5	63.7		37-107	%REC	1	9/9/2015 06:46 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/8/15		Analyst: LSY
Benzene	ND		31	µg/Kg-dry	1	9/8/2015 04:55 PM
Ethylbenzene	ND		31	µg/Kg-dry	1	9/8/2015 04:55 PM
m,p-Xylene	ND		62	µg/Kg-dry	1	9/8/2015 04:55 PM
o-Xylene	ND		31	µg/Kg-dry	1	9/8/2015 04:55 PM
Toluene	ND		31	µg/Kg-dry	1	9/8/2015 04:55 PM
Xylenes, Total	ND		93	µg/Kg-dry	1	9/8/2015 04:55 PM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	9/8/2015 04:55 PM
Surr: 4-Bromofluorobenzene	86.4		70-130	%REC	1	9/8/2015 04:55 PM
Surr: Dibromofluoromethane	104		70-130	%REC	1	9/8/2015 04:55 PM
Surr: Toluene-d8	95.3		70-130	%REC	1	9/8/2015 04:55 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/10/15		Analyst: JB
Electrical Conductivity @ Saturation	4.3		0.050	mmhos/cm @2	10	9/10/2015 11:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	13		0.52	mg/Kg-dry	1	9/11/2015 01:46 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/9/15		Analyst: MB
Chromium, Hexavalent	ND		0.98	mg/Kg-dry	1	9/10/2015 04:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	3.7		0.050	% of sample	1	9/10/2015 06:23 PM
PH			SW9045D	Prep: EXTRACT / 9/8/15		Analyst: KF
pH	8.1			s.u.	1	9/8/2015 01:00 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-IC1
Collection Date: 9/3/2015 09:45 AM

Work Order: 1509370
Lab ID: 1509370-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	12		SW8015M		Prep: SW3541 / 9/9/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	66.9		4.4	mg/Kg-dry	1	9/9/2015 06:26 PM
			39-133	%REC	1	9/9/2015 06:26 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 9/8/15	Analyst: IT
<i>Surr: Toluene-d8</i>	102		2.7	mg/Kg-dry	1	9/8/2015 06:18 PM
			50-150	%REC	1	9/8/2015 06:18 PM
MERCURY BY CVAA						
Mercury	0.048		SW7471B		Prep: SW7471 / 9/9/15	Analyst: RG
			0.017	mg/Kg-dry	1	9/9/2015 06:25 PM
METALS ANALYSIS BY ICP						
Arsenic	6.1		SW846 6010C		Prep: SW3050B / 9/8/15	Analyst: JEC
Barium	78		0.78	mg/Kg-dry	2	9/9/2015 03:57 PM
Beryllium	0.41		0.39	mg/Kg-dry	1	9/9/2015 01:12 PM
Cadmium	ND		0.31	mg/Kg-dry	2	9/9/2015 03:57 PM
Chromium	9.1		0.39	mg/Kg-dry	1	9/9/2015 01:12 PM
Copper	13		0.78	mg/Kg-dry	2	9/9/2015 03:57 PM
Lead	9.5		0.39	mg/Kg-dry	1	9/9/2015 01:12 PM
Nickel	28		0.78	mg/Kg-dry	2	9/9/2015 03:57 PM
Selenium	ND		0.39	mg/Kg-dry	1	9/9/2015 01:12 PM
Silver	ND		1.6	mg/Kg-dry	2	9/9/2015 03:57 PM
Zinc	54		0.39	mg/Kg-dry	1	9/9/2015 01:12 PM
			1.6	mg/Kg-dry	2	9/9/2015 03:57 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Calcium	470		5.0	mg/L	10	9/10/2015 12:57 PM
Magnesium	580		2.0	mg/L	10	9/10/2015 12:57 PM
Sodium	950		2.0	mg/L	10	9/10/2015 12:57 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Sodium Adsorption Ratio	6.9		0.010	none	1	9/10/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/8/15	Analyst: RM
Acenaphthene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Anthracene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Benzo(a)anthracene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Benzo(a)pyrene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Benzo(b)fluoranthene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Benzo(k)fluoranthene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Chrysene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Dibenzo(a,h)anthracene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-IC1
Collection Date: 9/3/2015 09:45 AM

Work Order: 1509370
Lab ID: 1509370-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Fluorene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Indeno(1,2,3-cd)pyrene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Naphthalene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Pyrene	ND		7.0	µg/Kg-dry	1	9/9/2015 07:08 AM
Surr: 2-Fluorobiphenyl	70.0		12-100	%REC	1	9/9/2015 07:08 AM
Surr: 4-Terphenyl-d14	89.7		25-137	%REC	1	9/9/2015 07:08 AM
Surr: Nitrobenzene-d5	69.6		37-107	%REC	1	9/9/2015 07:08 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/8/15	Analyst: BG	
Benzene	ND		32	µg/Kg-dry	1	9/9/2015 07:00 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	9/9/2015 07:00 AM
m,p-Xylene	ND		64	µg/Kg-dry	1	9/9/2015 07:00 AM
o-Xylene	ND		32	µg/Kg-dry	1	9/9/2015 07:00 AM
Toluene	ND		32	µg/Kg-dry	1	9/9/2015 07:00 AM
Xylenes, Total	ND		96	µg/Kg-dry	1	9/9/2015 07:00 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	9/9/2015 07:00 AM
Surr: 4-Bromofluorobenzene	94.0		70-130	%REC	1	9/9/2015 07:00 AM
Surr: Dibromofluoromethane	98.0		70-130	%REC	1	9/9/2015 07:00 AM
Surr: Toluene-d8	99.5		70-130	%REC	1	9/9/2015 07:00 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/10/15	Analyst: JB	
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	9/10/2015 11:30 AM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JJG		
Chromium, Trivalent	8.7		0.53	mg/Kg-dry	1	9/11/2015 01:46 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/9/15	Analyst: MB	
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	9/10/2015 04:00 PM
MOISTURE			E160.3M	Analyst: EVB		
Moisture	6.4		0.050	% of sample	1	9/10/2015 06:23 PM
PH			SW9045D	Prep: EXTRACT / 9/8/15	Analyst: KF	
pH	8.0			s.u.	1	9/8/2015 01:00 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-IC2
Collection Date: 9/3/2015 09:55 AM

Work Order: 1509370
Lab ID: 1509370-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	30		SW8015M		Prep: SW3541 / 9/9/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	68.3		4.4	mg/Kg-dry	1	9/9/2015 08:26 PM
			39-133	%REC	1	9/9/2015 08:26 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 9/8/15	Analyst: IT
<i>Surr: Toluene-d8</i>	105		2.7	mg/Kg-dry	1	9/8/2015 06:43 PM
			50-150	%REC	1	9/8/2015 06:43 PM
MERCURY BY CVAA						
Mercury	0.048		SW7471B		Prep: SW7471 / 9/9/15	Analyst: RG
			0.017	mg/Kg-dry	1	9/9/2015 06:27 PM
METALS ANALYSIS BY ICP						
Arsenic	6.1		SW846 6010C		Prep: SW3050B / 9/8/15	Analyst: JEC
Barium	79		2.1	mg/Kg-dry	5	9/9/2015 10:56 AM
Beryllium	0.42		0.42	mg/Kg-dry	1	9/9/2015 10:12 AM
Cadmium	ND		0.17	mg/Kg-dry	1	9/9/2015 10:12 AM
Chromium	9.6		0.42	mg/Kg-dry	1	9/9/2015 10:12 AM
Copper	14		2.1	mg/Kg-dry	5	9/9/2015 10:56 AM
Lead	10		0.42	mg/Kg-dry	1	9/9/2015 10:12 AM
Nickel	28		2.1	mg/Kg-dry	5	9/9/2015 10:56 AM
Selenium	ND		0.42	mg/Kg-dry	1	9/9/2015 10:12 AM
Silver	ND		4.2	mg/Kg-dry	5	9/9/2015 10:56 AM
Zinc	57		0.42	mg/Kg-dry	1	9/9/2015 10:12 AM
			4.2	mg/Kg-dry	5	9/9/2015 10:56 AM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Calcium	460		5.0	mg/L	10	9/10/2015 01:02 PM
Magnesium	600		2.0	mg/L	10	9/10/2015 01:02 PM
Sodium	1,100		2.0	mg/L	10	9/10/2015 01:02 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Sodium Adsorption Ratio	7.8		0.010	none	1	9/10/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/9/15	Analyst: RM
Acenaphthene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Anthracene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Benzo(a)anthracene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Benzo(a)pyrene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Benzo(b)fluoranthene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Benzo(k)fluoranthene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Chrysene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Dibenzo(a,h)anthracene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-IC2
Collection Date: 9/3/2015 09:55 AM

Work Order: 1509370
Lab ID: 1509370-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Fluorene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Indeno(1,2,3-cd)pyrene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Naphthalene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Pyrene	ND		7.0	µg/Kg-dry	1	9/10/2015 02:19 AM
Surr: 2-Fluorobiphenyl	72.6		12-100	%REC	1	9/10/2015 02:19 AM
Surr: 4-Terphenyl-d14	95.9		25-137	%REC	1	9/10/2015 02:19 AM
Surr: Nitrobenzene-d5	69.5		37-107	%REC	1	9/10/2015 02:19 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/8/15		Analyst: AK
Benzene	ND		32	µg/Kg-dry	1	9/9/2015 04:59 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	9/9/2015 04:59 AM
m,p-Xylene	ND		65	µg/Kg-dry	1	9/9/2015 04:59 AM
o-Xylene	ND		32	µg/Kg-dry	1	9/9/2015 04:59 AM
Toluene	ND		32	µg/Kg-dry	1	9/9/2015 04:59 AM
Xylenes, Total	ND		97	µg/Kg-dry	1	9/9/2015 04:59 AM
Surr: 1,2-Dichloroethane-d4	95.4		70-130	%REC	1	9/9/2015 04:59 AM
Surr: 4-Bromofluorobenzene	94.7		70-130	%REC	1	9/9/2015 04:59 AM
Surr: Dibromofluoromethane	96.6		70-130	%REC	1	9/9/2015 04:59 AM
Surr: Toluene-d8	99.6		70-130	%REC	1	9/9/2015 04:59 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/10/15		Analyst: JB
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	9/10/2015 11:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	9.3		0.54	mg/Kg-dry	1	9/11/2015 01:46 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/9/15		Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	9/10/2015 04:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	7.4		0.050	% of sample	1	9/10/2015 06:23 PM
PH			SW9045D	Prep: EXTRACT / 9/8/15		Analyst: KF
pH	8.1			s.u.	1	9/8/2015 01:00 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates
Project: EMC CS28 Pit
Sample ID: CS28-IC3
Collection Date: 9/3/2015 02:00 PM

Work Order: 1509370
Lab ID: 1509370-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	42		SW8015M		Prep: SW3541 / 9/9/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	66.9		4.3	mg/Kg-dry	1	9/9/2015 08:56 PM
			39-133	%REC	1	9/9/2015 08:56 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 9/8/15	Analyst: IT
<i>Surr: Toluene-d8</i>	105		2.6	mg/Kg-dry	1	9/8/2015 07:08 PM
			50-150	%REC	1	9/8/2015 07:08 PM
MERCURY BY CVAA						
Mercury	0.046		SW7471B		Prep: SW7471 / 9/9/15	Analyst: RG
			0.014	mg/Kg-dry	1	9/9/2015 06:42 PM
METALS ANALYSIS BY ICP						
Arsenic	6.8		SW846 6010C		Prep: SW3050B / 9/8/15	Analyst: JEC
Barium	59		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Beryllium	0.41		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Cadmium	ND		0.34	mg/Kg-dry	2	9/9/2015 04:02 PM
Chromium	9.3		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Copper	13		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Lead	11		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Nickel	27		0.86	mg/Kg-dry	2	9/9/2015 04:02 PM
Selenium	1.7		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
Silver	ND		0.86	mg/Kg-dry	1	9/9/2015 01:18 PM
Zinc	60		0.43	mg/Kg-dry	1	9/9/2015 01:18 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Calcium	440		5.0	mg/L	10	9/10/2015 12:11 PM
Magnesium	650		2.0	mg/L	10	9/10/2015 12:11 PM
Sodium	1,200		2.0	mg/L	10	9/10/2015 12:11 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/10/15	Analyst: JEC
Sodium Adsorption Ratio	8.2		0.010	none	1	9/10/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/9/15	Analyst: RM
Acenaphthene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Anthracene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Benzo(a)anthracene	8.0		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Benzo(a)pyrene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Benzo(b)fluoranthene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Benzo(k)fluoranthene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Chrysene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Dibenzo(a,h)anthracene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: Olsson Associates

Project: EMC CS28 Pit

Sample ID: CS28-IC3

Collection Date: 9/3/2015 02:00 PM

Work Order: 1509370

Lab ID: 1509370-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Fluorene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Indeno(1,2,3-cd)pyrene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Naphthalene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Pyrene	ND		6.9	µg/Kg-dry	1	9/10/2015 02:39 AM
Surr: 2-Fluorobiphenyl	58.1		12-100	%REC	1	9/10/2015 02:39 AM
Surr: 4-Terphenyl-d14	72.0		25-137	%REC	1	9/10/2015 02:39 AM
Surr: Nitrobenzene-d5	52.6		37-107	%REC	1	9/10/2015 02:39 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/8/15		Analyst: AK
Benzene	ND		32	µg/Kg-dry	1	9/9/2015 05:25 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	9/9/2015 05:25 AM
m,p-Xylene	ND		63	µg/Kg-dry	1	9/9/2015 05:25 AM
o-Xylene	ND		32	µg/Kg-dry	1	9/9/2015 05:25 AM
Toluene	ND		32	µg/Kg-dry	1	9/9/2015 05:25 AM
Xylenes, Total	ND		95	µg/Kg-dry	1	9/9/2015 05:25 AM
Surr: 1,2-Dichloroethane-d4	95.4		70-130	%REC	1	9/9/2015 05:25 AM
Surr: 4-Bromofluorobenzene	96.0		70-130	%REC	1	9/9/2015 05:25 AM
Surr: Dibromofluoromethane	95.4		70-130	%REC	1	9/9/2015 05:25 AM
Surr: Toluene-d8	99.1		70-130	%REC	1	9/9/2015 05:25 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/10/15		Analyst: JB
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @2	10	9/10/2015 11:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	8.7		0.53	mg/Kg-dry	1	9/11/2015 01:46 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/9/15		Analyst: MB
Chromium, Hexavalent	ND		1.0	mg/Kg-dry	1	9/10/2015 04:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	5.0		0.050	% of sample	1	9/10/2015 06:23 PM
PH			SW9045D	Prep: EXTRACT / 9/8/15		Analyst: KF
pH	8.2			s.u.	1	9/8/2015 01:00 PM

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORTBatch ID: **75811**Instrument ID **GC8**Method: **SW8015M**

MBLK		Sample ID: DBLKS1-75811-75811				Units: mg/Kg		Analysis Date: 9/9/2015 04:27 PM		
Client ID:		Run ID: GC8_150909A				SeqNo: 3451804		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.405	0	2	0	70.2	39-133		0		

LCS		Sample ID: DLCSS1-75811-75811				Units: mg/Kg		Analysis Date: 9/9/2015 04:57 PM		
Client ID:		Run ID: GC8_150909A				SeqNo: 3451805		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	176.2	5.0	200	0	88.1	61-109		0		
Surr: 4-Terphenyl-d14	1.311	0	2	0	65.5	39-133		0		

MS		Sample ID: 1509370-02A MS				Units: mg/Kg		Analysis Date: 9/9/2015 05:27 PM		
Client ID: CS28-IC1		Run ID: GC8_150909A				SeqNo: 3451806		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	140.9	4.1	162.4	11.49	79.7	48-110		0		
Surr: 4-Terphenyl-d14	1.036	0	1.624	0	63.8	39-133		0		

MSD		Sample ID: 1509370-02A MSD				Units: mg/Kg		Analysis Date: 9/9/2015 05:57 PM		
Client ID: CS28-IC1		Run ID: GC8_150909A				SeqNo: 3451807		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	141	4.1	164.5	11.49	78.7	48-110	140.9	0.0578	30	
Surr: 4-Terphenyl-d14	1.016	0	1.645	0	61.7	39-133	1.036	1.96	30	

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75734** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-75734-75734				Units: µg/Kg		Analysis Date: 9/8/2015 01:42 PM		
Client ID:		Run ID: GC9_150908A				SeqNo: 3449771		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4700	0	5000	0	94	50-150	0			

LCS		Sample ID: LCS-75734-75734				Units: µg/Kg		Analysis Date: 9/8/2015 01:17 PM		
Client ID:		Run ID: GC9_150908A				SeqNo: 3449770		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	464200	2,500	500000	0	92.8	70-130	0			
Surr: Toluene-d8	5362	0	5000	0	107	50-150	0			

MS		Sample ID: 1509370-01A MS				Units: µg/Kg		Analysis Date: 9/8/2015 09:12 PM		
Client ID: CS28-BG1		Run ID: GC9_150908A				SeqNo: 3449814		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	498300	2,500	500000	0	99.7	70-130	0			
Surr: Toluene-d8	5078	0	5000	0	102	50-150	0			

MSD		Sample ID: 1509370-01A MSD				Units: µg/Kg		Analysis Date: 9/8/2015 09:37 PM		
Client ID: CS28-BG1		Run ID: GC9_150908A				SeqNo: 3449817		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	503300	2,500	500000	0	101	70-130	498300	1	30	
Surr: Toluene-d8	5286	0	5000	0	106	50-150	5078	4	30	

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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

Client: Olsson Associates
Work Order: 1509370
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75823** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-75823-75823				Units: mg/Kg		Analysis Date: 9/9/2015 05:30 PM		
Client ID:		Run ID: HG1_150909A				SeqNo: 3451225		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.003333	0.020								J

LCS		Sample ID: LCS-75823-75823				Units: mg/Kg		Analysis Date: 9/9/2015 05:38 PM		
Client ID:		Run ID: HG1_150909A				SeqNo: 3451227		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1883	0.020	0.1665		0	113	80-120	0		

MS		Sample ID: 1509370-03AMS				Units: mg/Kg		Analysis Date: 9/9/2015 06:30 PM		
Client ID: CS28-IC2		Run ID: HG1_150909A				SeqNo: 3451245		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.2018	0.016	0.1367	0.04447	115	75-125		0		

MSD		Sample ID: 1509370-03AMSD				Units: mg/Kg		Analysis Date: 9/9/2015 06:32 PM		
Client ID: CS28-IC2		Run ID: HG1_150909A				SeqNo: 3451246		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1985	0.016	0.1345	0.04447	115	75-125	0.2018	1.63	35	

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75735**

Instrument ID **ICP2**

Method: **SW846 6010C**

MBLK		Sample ID: MBLK-75735-75735				Units: mg/Kg		Analysis Date: 9/9/2015 09:49 AM		
Client ID:		Run ID: ICP2_150909A				SeqNo: 3450044		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic	ND	0.25								
Barium	ND	0.25								
Beryllium	ND	0.10								
Cadmium	ND	0.50								
Chromium	0.01125	0.25								J
Copper	0.03858	0.50								J
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	0.1618	0.50								J
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: LCS-75735-75735				Units: mg/Kg		Analysis Date: 9/9/2015 09:54 AM		
Client ID:		Run ID: ICP2_150909A				SeqNo: 3450046		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic	4.849	0.25	5	0	97	80-120	0			
Barium	4.806	0.25	5	0	96.1	80-120	0			
Beryllium	4.664	0.10	5	0	93.3	80-120	0			
Cadmium	4.491	0.50	5	0	89.8	80-120	0			
Chromium	5.087	0.25	5	0	102	80-120	0			
Copper	5.114	0.50	5	0	102	80-120	0			
Lead	4.912	0.25	5	0	98.2	80-120	0			
Nickel	5.178	0.25	5	0	104	80-120	0			
Selenium	5.028	0.50	5	0	101	80-120	0			
Silver	4.809	0.25	5	0	96.2	80-120	0			
Zinc	4.428	0.50	5	0	88.6	80-120	0			

MS		Sample ID: 1509370-03AMS				Units: mg/Kg		Analysis Date: 9/9/2015 10:17 AM		
Client ID: CS28-IC2		Run ID: ICP2_150909A				SeqNo: 3450051		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Barium	82.86	0.38	7.634	73.21	127	75-125	0			SO
Beryllium	7.596	0.15	7.634	0.3903	94.4	75-125	0			
Cadmium	6.914	0.76	7.634	-0.01852	90.8	75-125	0			
Copper	21.31	0.76	7.634	12.8	111	75-125	0			
Nickel	35.87	0.38	7.634	26.27	126	75-125	0			S
Silver	7.853	0.38	7.634	-0.02121	103	75-125	0			

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 75735 Instrument ID ICP2 Method: SW846 6010C

MS					Sample ID: 1509370-03AMS		Units: mg/Kg		Analysis Date: 9/9/2015 11:01 AM	
Client ID: CS28-IC2			Run ID: ICP2_150909A			SeqNo: 3450059		Prep Date: 9/8/2015		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.09	1.9	7.634	5.673	110	75-125	0			
Chromium	21.81	1.9	7.634	8.864	170	75-125	0			S
Lead	17.55	1.9	7.634	9.669	103	75-125	0			
Selenium	8.704	3.8	7.634	1.321	96.7	75-125	0			
Zinc	62.11	3.8	7.634	52.5	126	75-125	0			SO

MSD				Sample ID: 1509370-03AMSD			Units: mg/Kg		Analysis Date: 9/9/2015 10:23 AM		
Client ID: CS28-IC2			Run ID: ICP2_150909A			SeqNo: 3450052		Prep Date: 9/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Barium	73.08	0.38	7.669	73.21	-1.67	75-125	82.86	12.5	20	SO	
Beryllium	7.535	0.15	7.669	0.3903	93.2	75-125	7.596	0.802	20		
Cadmium	6.872	0.77	7.669	-0.01852	89.9	75-125	6.914	0.61	20		
Copper	20	0.77	7.669	12.8	93.9	75-125	21.31	6.33	20		
Nickel	33.95	0.38	7.669	26.27	100	75-125	35.87	5.49	20		
Silver	7.801	0.38	7.669	-0.02121	102	75-125	7.853	0.654	20		

MSD				Sample ID: 1509370-03AMSD			Units: mg/Kg		Analysis Date: 9/9/2015 11:07 AM		
Client ID: CS28-IC2				Run ID: ICP2_150909A			SeqNo: 3450060		Prep Date: 9/8/2015		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	13.23	1.9	7.669	5.673	98.6	75-125	14.09	6.24	20	S	
Chromium	20.8	1.9	7.669	8.864	156	75-125	21.81	4.78	20		
Lead	17.47	1.9	7.669	9.669	102	75-125	17.55	0.463	20		
Selenium	9.202	3.8	7.669	1.321	103	75-125	8.704	5.56	20		
Zinc	59.43	3.8	7.669	52.5	90.3	75-125	62.11	4.42	20	O	

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75815** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1509370-04BDUP				Units: mg/L		Analysis Date: 9/10/2015 12:17 PM		
Client ID: CS28-IC3		Run ID: ICP2_150910A				SeqNo: 3452262		Prep Date: 9/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	451.4	5.0	0	0	0	0-0	435.9	3.5		
Magnesium	674.9	2.0	0	0	0	0-0	645.7	4.43		
Sodium	1196	2.0	0	0	0	0-0	1158	3.23		

DUP		Sample ID: 1509370-04BDUP				Units: none		Analysis Date: 9/10/2015		
Client ID: CS28-IC3		Run ID: SAR_150910A				SeqNo: 3452516		Prep Date: 9/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	8.325	0.010	0	0	0		8.23	1.15	50	

The following samples were analyzed in this batch:

1509370-01B	1509370-02B	1509370-03B
1509370-04B		

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 75719 Instrument ID SVMS5 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-75719-75719				Units: µg/Kg		Analysis Date: 9/8/2015 10:27 PM		
Client ID:		Run ID: SVMS5_150908A				SeqNo: 3450499		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	1364	0	1667	0	81.9	12-100	0			
Surr: 4-Terphenyl-d14	1699	0	1667	0	102	25-137	0			
Surr: Nitrobenzene-d5	1326	0	1667	0	79.6	37-107	0			

LCS		Sample ID: SLCSS1-75719-75719				Units: µg/Kg		Analysis Date: 9/8/2015 10:49 PM		
Client ID:		Run ID: SVMS5_150908A				SeqNo: 3450500		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	554.7	6.7	666.7	0	83.2	45-110	0			
Anthracene	642	6.7	666.7	0	96.3	55-105	0			
Benzo(a)anthracene	630	6.7	666.7	0	94.5	50-110	0			
Benzo(a)pyrene	642	6.7	666.7	0	96.3	50-110	0			
Benzo(b)fluoranthene	639.7	6.7	666.7	0	95.9	45-115	0			
Benzo(k)fluoranthene	660.3	6.7	666.7	0	99	45-115	0			
Chrysene	628.7	6.7	666.7	0	94.3	55-110	0			
Dibenzo(a,h)anthracene	522	6.7	666.7	0	78.3	40-125	0			
Fluoranthene	613.3	6.7	666.7	0	92	55-115	0			
Fluorene	574	6.7	666.7	0	86.1	50-110	0			
Indeno(1,2,3-cd)pyrene	539.3	6.7	666.7	0	80.9	40-120	0			
Naphthalene	562.3	6.7	666.7	0	84.3	40-105	0			
Pyrene	728.7	6.7	666.7	0	109	45-125	0			
Surr: 2-Fluorobiphenyl	1281	0	1667	0	76.9	12-100	0			
Surr: 4-Terphenyl-d14	1587	0	1667	0	95.2	25-137	0			
Surr: Nitrobenzene-d5	1311	0	1667	0	78.7	37-107	0			

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: 75719 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1509368-23A MS			Units: µg/Kg		Analysis Date: 9/9/2015 12:51 PM		
Client ID:			Run ID: SVMS5_150908A			SeqNo: 3450509		Prep Date: 9/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	544.3	6.6	657	4.883	82.1	45-110		0			
Anthracene	637.6	6.6	657	0	97	55-105		0			
Benzo(a)anthracene	629.4	6.6	657	0	95.8	50-110		0			
Benzo(a)pyrene	672.4	6.6	657	0	102	50-110		0			
Benzo(b)fluoranthene	655	6.6	657	0	99.7	45-115		0			
Benzo(k)fluoranthene	628	6.6	657	0	95.6	45-115		0			
Chrysene	600.4	6.6	657	0	91.4	55-110		0			
Dibenzo(a,h)anthracene	603.7	6.6	657	0	91.9	40-125		0			
Fluoranthene	618.5	6.6	657	0	94.1	55-115		0			
Fluorene	576.1	6.6	657	6.185	86.8	50-110		0			
Indeno(1,2,3-cd)pyrene	637.2	6.6	657	0	97	40-120		0			
Naphthalene	522.6	6.6	657	0	79.5	40-105		0			
Pyrene	713.8	6.6	657	3.906	108	45-125		0			
Surr: 2-Fluorobiphenyl	1229	0	1642	0	74.9	12-100		0			
Surr: 4-Terphenyl-d14	1530	0	1642	0	93.2	25-137		0			
Surr: Nitrobenzene-d5	1279	0	1642	0	77.9	37-107		0			

MSD				Sample ID: 1509368-23A MSD			Units: µg/Kg		Analysis Date: 9/9/2015 01:13 AM		
Client ID:			Run ID: SVMS5_150908A			SeqNo: 3450501		Prep Date: 9/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	504.2	6.5	652.3	4.883	76.5	45-110	544.3	7.64	30		
Anthracene	589.3	6.5	652.3	0	90.3	55-105	637.6	7.86	30		
Benzo(a)anthracene	574	6.5	652.3	0	88	50-110	629.4	9.2	30		
Benzo(a)pyrene	611.5	6.5	652.3	0	93.7	50-110	672.4	9.48	30		
Benzo(b)fluoranthene	593.3	6.5	652.3	0	90.9	45-115	655	9.89	30		
Benzo(k)fluoranthene	582.5	6.5	652.3	0	89.3	45-115	628	7.52	30		
Chrysene	557.1	6.5	652.3	0	85.4	55-110	600.4	7.5	30		
Dibenzo(a,h)anthracene	532.9	6.5	652.3	0	81.7	40-125	603.7	12.5	30		
Fluoranthene	553.8	6.5	652.3	0	84.9	55-115	618.5	11	30		
Fluorene	549.2	6.5	652.3	6.185	83.2	50-110	576.1	4.78	30		
Indeno(1,2,3-cd)pyrene	576.3	6.5	652.3	0	88.3	40-120	637.2	10	30		
Naphthalene	495.1	6.5	652.3	0	75.9	40-105	522.6	5.41	30		
Pyrene	662.4	6.5	652.3	3.906	101	45-125	713.8	7.46	30		
Surr: 2-Fluorobiphenyl	1136	0	1631	0	69.7	12-100	1229	7.88	40		
Surr: 4-Terphenyl-d14	1413	0	1631	0	86.6	25-137	1530	8.01	40		
Surr: Nitrobenzene-d5	1198	0	1631	0	73.5	37-107	1279	6.5	40		

The following samples were analyzed in this batch:

1509370-01A 1509370-02A

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75810** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-75810-75810				Units: µg/Kg			Analysis Date: 9/9/2015 08:11 PM		
Client ID:			Run ID: SVMS8_150909A				SeqNo: 3453201		Prep Date: 9/9/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Acenaphthene	ND	6.7											
Anthracene	ND	6.7											
Benzo(a)anthracene	ND	6.7											
Benzo(a)pyrene	ND	6.7											
Benzo(b)fluoranthene	ND	6.7											
Benzo(k)fluoranthene	ND	6.7											
Chrysene	ND	6.7											
Dibenzo(a,h)anthracene	ND	6.7											
Fluoranthene	ND	6.7											
Fluorene	ND	6.7											
Indeno(1,2,3-cd)pyrene	ND	6.7											
Naphthalene	ND	6.7											
Pyrene	ND	6.7											
<i>Surr: 2-Fluorobiphenyl</i>	<i>1138</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>68.3</i>	<i>12-100</i>		<i>0</i>					
<i>Surr: 4-Terphenyl-d14</i>	<i>1607</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>96.4</i>	<i>25-137</i>		<i>0</i>					
<i>Surr: Nitrobenzene-d5</i>	<i>1154</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>69.2</i>	<i>37-107</i>		<i>0</i>					

LCS				Sample ID: SLCSS1-75810-75810				Units: µg/Kg		Analysis Date: 9/9/2015 08:30 PM	
Client ID:			Run ID: SVMS8_150909A			SeqNo: 3453204		Prep Date: 9/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	546.7	6.7	666.7	0	82	45-110	0				
Anthracene	663.3	6.7	666.7	0	99.5	55-105	0				
Benzo(a)anthracene	639.3	6.7	666.7	0	95.9	50-110	0				
Benzo(a)pyrene	658	6.7	666.7	0	98.7	50-110	0				
Benzo(b)fluoranthene	673.3	6.7	666.7	0	101	45-115	0				
Benzo(k)fluoranthene	664	6.7	666.7	0	99.6	45-115	0				
Chrysene	613	6.7	666.7	0	91.9	55-110	0				
Dibenzo(a,h)anthracene	563	6.7	666.7	0	84.4	40-125	0				
Fluoranthene	644	6.7	666.7	0	96.6	55-115	0				
Fluorene	579.3	6.7	666.7	0	86.9	50-110	0				
Indeno(1,2,3-cd)pyrene	577	6.7	666.7	0	86.5	40-120	0				
Naphthalene	534.7	6.7	666.7	0	80.2	40-105	0				
Pyrene	768.3	6.7	666.7	0	115	45-125	0				
Surr: 2-Fluorobiphenyl	1167	0	1667	0	70	12-100	0				
Surr: 4-Terphenyl-d14	1652	0	1667	0	99.1	25-137	0				
Surr: Nitrobenzene-d5	1229	0	1667	0	73.7	37-107	0				

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75810** Instrument ID **SVMS8** Method: **SW846 8270D**

MS				Sample ID: 1509240-17B MS			Units: µg/Kg		Analysis Date: 9/9/2015 08:50 PM		
Client ID:			Run ID: SVMS8_150909A			SeqNo: 3453206		Prep Date: 9/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1760	20	1967	0	89.5	45-110	0				
Anthracene	2098	20	1967	0	107	55-105	0			S	
Benzo(a)anthracene	2253	20	1967	268.3	101	50-110	0				
Benzo(a)pyrene	2190	20	1967	248.2	98.7	50-110	0				
Benzo(b)fluoranthene	2372	20	1967	323.6	104	45-115	0				
Benzo(k)fluoranthene	1948	20	1967	120.3	92.9	45-115	0				
Chrysene	2099	20	1967	250.1	94	55-110	0				
Dibenzo(a,h)anthracene	1755	20	1967	0	89.2	40-125	0				
Fluoranthene	2678	20	1967	555.6	108	55-115	0				
Fluorene	1868	20	1967	0	95	50-110	0				
Indeno(1,2,3-cd)pyrene	1992	20	1967	143.2	94	40-120	0				
Naphthalene	1557	20	1967	0	79.1	40-105	0				
Pyrene	3291	20	1967	637.7	135	45-125	0			S	
Surr: 2-Fluorobiphenyl	3543	0	4917	0	72.1	12-100	0				
Surr: 4-Terphenyl-d14	4870	0	4917	0	99.1	25-137	0				
Surr: Nitrobenzene-d5	3494	0	4917	0	71.1	37-107	0				

MSD				Sample ID: 1509240-17B MSD				Units: µg/Kg		Analysis Date: 9/9/2015 09:09 PM	
Client ID:			Run ID: SVMS8_150909A			SeqNo: 3453207		Prep Date: 9/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1671	19	1886	0	88.6	45-110	1760	5.18	30		
Anthracene	2018	19	1886	0	107	55-105	2098	3.89	30	S	
Benzo(a)anthracene	2058	19	1886	268.3	94.9	50-110	2253	9.04	30		
Benzo(a)pyrene	2065	19	1886	248.2	96.3	50-110	2190	5.89	30		
Benzo(b)fluoranthene	2190	19	1886	323.6	98.9	45-115	2372	7.97	30		
Benzo(k)fluoranthene	1768	19	1886	120.3	87.4	45-115	1948	9.66	30		
Chrysene	1925	19	1886	250.1	88.8	55-110	2099	8.67	30		
Dibenzo(a,h)anthracene	1692	19	1886	0	89.7	40-125	1755	3.67	30		
Fluoranthene	2512	19	1886	555.6	104	55-115	2678	6.39	30		
Fluorene	1755	19	1886	0	93	50-110	1868	6.24	30		
Indeno(1,2,3-cd)pyrene	1893	19	1886	143.2	92.8	40-120	1992	5.11	30		
Naphthalene	1437	19	1886	0	76.2	40-105	1557	7.96	30		
Pyrene	3111	19	1886	637.7	131	45-125	3291	5.61	30	S	
Surr: 2-Fluorobiphenyl	3291	0	4716	0	69.8	12-100	3543	7.38	40		
Surr: 4-Terphenyl-d14	4549	0	4716	0	96.5	25-137	4870	6.83	40		
Surr: Nitrobenzene-d5	3280	0	4716	0	69.6	37-107	3494	6.3	40		

The following samples were analyzed in this batch:

1509370-03A 1509370-04A

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75733** Instrument ID **VMS7** Method: **SW8260B**

MBLK Sample ID: MBLK-75733-75733				Units: µg/Kg			Analysis Date: 9/8/2015 12:29 PM			
Client ID:		Run ID: VMS7_150908A		SeqNo: 3448435		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	1020	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	992.5	0	1000	0	99.2	70-130	0			
Surr: Dibromofluoromethane	983.5	0	1000	0	98.4	70-130	0			
Surr: Toluene-d8	988	0	1000	0	98.8	70-130	0			

LCS Sample ID: LCS-75733-75733				Units: µg/Kg			Analysis Date: 9/8/2015 10:47 AM			
Client ID:		Run ID: VMS7_150908A		SeqNo: 3448434		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1143	30	1000	0	114	75-125	0			
Ethylbenzene	1087	30	1000	0	109	75-125	0			
m,p-Xylene	2202	60	2000	0	110	80-125	0			
o-Xylene	1062	30	1000	0	106	75-125	0			
Toluene	1108	30	1000	0	111	70-125	0			
Xylenes, Total	3263	90	3000	0	109	75-125	0			
Surr: 1,2-Dichloroethane-d4	995.5	0	1000	0	99.6	70-130	0			
Surr: 4-Bromofluorobenzene	1018	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	1018	0	1000	0	102	70-130	0			
Surr: Toluene-d8	995	0	1000	0	99.5	70-130	0			

MS Sample ID: 1509370-01A MS				Units: µg/Kg			Analysis Date: 9/8/2015 09:37 PM			
Client ID: CS28-BG1		Run ID: VMS9_150908A		SeqNo: 3449177		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1010	30	1000	0	101	75-125	0			
Ethylbenzene	921	30	1000	0	92.1	75-125	0			
m,p-Xylene	1914	60	2000	0	95.7	80-125	0			
o-Xylene	922	30	1000	0	92.2	75-125	0			
Toluene	971.5	30	1000	0	97.2	70-125	0			
Xylenes, Total	2836	90	3000	0	94.5	75-125	0			
Surr: 1,2-Dichloroethane-d4	962.5	0	1000	0	96.2	70-130	0			
Surr: 4-Bromofluorobenzene	1060	0	1000	0	106	70-130	0			
Surr: Dibromofluoromethane	1032	0	1000	0	103	70-130	0			
Surr: Toluene-d8	968	0	1000	0	96.8	70-130	0			

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

Client: Olsson Associates
Work Order: 1509370
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75733** Instrument ID **VMS7** Method: **SW8260B**

MSD				Sample ID: 1509370-01A MSD			Units: µg/Kg		Analysis Date: 9/8/2015 10:02 PM		
Client ID: CS28-BG1				Run ID: VMS9_150908A			SeqNo: 3449180		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1052	30	1000	0	105	75-125	1010	4.17	30		
Ethylbenzene	953	30	1000	0	95.3	75-125	921	3.42	30		
m,p-Xylene	1961	60	2000	0	98	80-125	1914	2.45	30		
o-Xylene	938.5	30	1000	0	93.8	75-125	922	1.77	30		
Toluene	1008	30	1000	0	101	70-125	971.5	3.69	30		
Xylenes, Total	2900	90	3000	0	96.6	75-125	2836	2.23	30		
Surr: 1,2-Dichloroethane-d4	970.5	0	1000	0	97	70-130	962.5	0.828	30		
Surr: 4-Bromofluorobenzene	1061	0	1000	0	106	70-130	1060	0.0943	30		
Surr: Dibromofluoromethane	969	0	1000	0	96.9	70-130	1032	6.35	30		
Surr: Toluene-d8	970.5	0	1000	0	97	70-130	968	0.258	30		

The following samples were analyzed in this batch: 1509370-01A

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75767** Instrument ID **VMS9** Method: **SW8260B**

MBLK Sample ID: MBLK-75767-75767				Units: µg/Kg			Analysis Date: 9/8/2015 02:13 PM			
Client ID:		Run ID: VMS9_150908A		SeqNo: 3448713		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	1032	0	1000	0	103	70-130	0			
Surr: 4-Bromofluorobenzene	884.5	0	1000	0	88.4	70-130	0			
Surr: Dibromofluoromethane	1029	0	1000	0	103	70-130	0			
Surr: Toluene-d8	977.5	0	1000	0	97.8	70-130	0			

LCS Sample ID: LCS-75767-75767				Units: µg/Kg			Analysis Date: 9/8/2015 12:05 PM			
Client ID:		Run ID: VMS9_150908A		SeqNo: 3448711		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	948	30	1000	0	94.8	75-125	0			
Ethylbenzene	899	30	1000	0	89.9	75-125	0			
m,p-Xylene	1865	60	2000	0	93.2	80-125	0			
o-Xylene	914.5	30	1000	0	91.4	75-125	0			
Toluene	957	30	1000	0	95.7	70-125	0			
Xylenes, Total	2780	90	3000	0	92.6	75-125	0			
Surr: 1,2-Dichloroethane-d4	911	0	1000	0	91.1	70-130	0			
Surr: 4-Bromofluorobenzene	1058	0	1000	0	106	70-130	0			
Surr: Dibromofluoromethane	982	0	1000	0	98.2	70-130	0			
Surr: Toluene-d8	1008	0	1000	0	101	70-130	0			

MS Sample ID: 1509370-02A MS				Units: µg/Kg			Analysis Date: 9/9/2015 07:26 AM			
Client ID: CS28-IC1		Run ID: VMS5_150908A		SeqNo: 3450145		Prep Date: 9/8/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	982.5	30	1000	0	98.2	75-125	0			
Ethylbenzene	971.5	30	1000	0	97.2	75-125	0			
m,p-Xylene	1978	60	2000	0	98.9	80-125	0			
o-Xylene	941	30	1000	0	94.1	75-125	0			
Toluene	971.5	30	1000	0	97.2	70-125	0			
Xylenes, Total	2918	90	3000	0	97.3	75-125	0			
Surr: 1,2-Dichloroethane-d4	997.5	0	1000	0	99.8	70-130	0			
Surr: 4-Bromofluorobenzene	1002	0	1000	0	100	70-130	0			
Surr: Dibromofluoromethane	957	0	1000	0	95.7	70-130	0			
Surr: Toluene-d8	984.5	0	1000	0	98.4	70-130	0			

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75767** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 1509370-02A MSD			Units: µg/Kg		Analysis Date: 9/9/2015 07:51 AM		
Client ID: CS28-IC1				Run ID: VMS5_150908A			SeqNo: 3450146		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	998	30	1000	0	99.8	75-125	982.5	1.57	30		
Ethylbenzene	1000	30	1000	0	100	75-125	971.5	2.89	30		
m,p-Xylene	2000	60	2000	0	100	80-125	1978	1.11	30		
o-Xylene	959	30	1000	0	95.9	75-125	941	1.89	30		
Toluene	984.5	30	1000	0	98.4	70-125	971.5	1.33	30		
Xylenes, Total	2958	90	3000	0	98.6	75-125	2918	1.36	30		
Surr: 1,2-Dichloroethane-d4	991	0	1000	0	99.1	70-130	997.5	0.654	30		
Surr: 4-Bromofluorobenzene	1007	0	1000	0	101	70-130	1002	0.448	30		
Surr: Dibromofluoromethane	986	0	1000	0	98.6	70-130	957	2.99	30		
Surr: Toluene-d8	1006	0	1000	0	101	70-130	984.5	2.16	30		

The following samples were analyzed in this batch:

1509370-02A	1509370-03A	1509370-04A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1509370
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75768** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-75768-75768					Units: s.u.		Analysis Date: 9/8/2015 01:00 PM		
Client ID:			Run ID: WETCHEM_150908D			SeqNo: 3448283		Prep Date: 9/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH 4.01 0 4 0 100 90-110 0

DUP		Sample ID: 1509238-01A DUP					Units: s.u.		Analysis Date: 9/8/2015 01:00 PM	
Client ID:			Run ID: WETCHEM_150908D			SeqNo: 3448285		Prep Date: 9/8/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 6.35 0 0 0 0 0-0 6.31 0.632 20

DUP		Sample ID: 1509371-01B DUP				Units: s.u.		Analysis Date: 9/8/2015 01:00 PM		
Client ID:		Run ID: WETCHEM_150908D			SeqNo: 3448302		Prep Date: 9/8/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 8.41 0 0 0 0 0-0 8.26 1.8 20

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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

Client: Olsson Associates
Work Order: 1509370
Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75815** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1509370-04B DUP				Units: mmhos/cm @25°		Analysis Date: 9/10/2015 11:30 AM		
Client ID: CS28-IC3		Run ID: WETCHEM_150910G				SeqNo: 3451992		Prep Date: 9/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	12.91	0.050	0	0	0		12.25	5.25	50	

The following samples were analyzed in this batch:

1509370-01B	1509370-02B	1509370-03B
1509370-04B		

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **75943** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-75943-75943				Units: mg/Kg		Analysis Date: 9/10/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150910P				SeqNo: 3453554		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-75943-75943				Units: mg/Kg		Analysis Date: 9/10/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150910P				SeqNo: 3453553		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.43 1.0 5 0 88.6 80-120 0

MS		Sample ID: 1509371-01B MS				Units: mg/Kg		Analysis Date: 9/10/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150910P				SeqNo: 3453548		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.861 0.93 4.63 0.3168 76.6 75-125 0

MS		Sample ID: 1509371-01B MSI				Units: mg/Kg		Analysis Date: 9/10/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150910P				SeqNo: 3453550		Prep Date: 9/9/2015		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2249 97 2531 0.3168 88.8 75-125 0

MSD		Sample ID: 1509371-01B MSD				Units: mg/Kg		Analysis Date: 9/10/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_150910P				SeqNo: 3453549		Prep Date: 9/9/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.01 0.96 4.808 0.3168 76.8 75-125 3.861 3.77 20

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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

Client: Olsson Associates
 Work Order: 1509370
 Project: EMC CS28 Pit

QC BATCH REPORT

Batch ID: **R171422** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R171422				Units: % of sample		Analysis Date: 9/10/2015 06:23 PM		
Client ID:		Run ID: MOIST_150910C				SeqNo: 3453761		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R171422				Units: % of sample		Analysis Date: 9/10/2015 06:23 PM		
Client ID:		Run ID: MOIST_150910C				SeqNo: 3453759		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.99 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1509240-11B DUP				Units: % of sample		Analysis Date: 9/10/2015 06:23 PM		
Client ID:		Run ID: MOIST_150910C				SeqNo: 3453710		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 23.9 0.050 0 0 0 24.4 2.07 20

DUP		Sample ID: 1509325-01B DUP				Units: % of sample		Analysis Date: 9/10/2015 06:23 PM		
Client ID:		Run ID: MOIST_150910C				SeqNo: 3453722		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.89 0.050 0 0 0 19.54 3.38 20

The following samples were analyzed in this batch:

1509370-01A	1509370-02A	1509370-03A
1509370-04A		

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



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 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	EMC CS28 Pit					A TPH (GRO & DRO)											
Work Order		Project Number	014.1867.100.100001					B BTEX											
Company Name	Olsson Associates	Bill To Company	Olsson Associates					C PAH (See Attached List) CO Table 910											
Send Report To	Tim Dobransky	Invoice Attn	Tim Dobransky					D Electrical Conductivity											
Address	760 Horizon Drive, Ste. 102	Address	760 Horizon Drive, Ste. 102					E Sodium Adsorption Ratio											
City/State/Zip	Grand Junction, CO 81506	City/State/Zip	Grand Junction, CO 81506					F pH											
Phone	970.263.7800	Phone	970.263.7800					G Metals (See Attached List) CO Table 910											
Fax	970.263.7456	Fax	970.263.7456					H Arsenic Only											
e-Mail Address	tdobransky@oacconsulting.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	CS28-BG1	09/03/15	910	Soil	8	2	X	X	X	X	X	X	X						
2	CS28-IC1	09/03/15	945	Soil	8	2	X	X	X	X	X	X	X						
3	CS28-IC2	09/03/15	955	Soil	8	2	X	X	X	X	X	X	X						
4	CS28-IC3	09/03/15	1400	Soil	8	2	X	X	X	X	X	X	X						
5																			
6																			
7																			
Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Other		Results Due Date:											
Jason McLarty		FedEx		STD 10 Wk Days		5 Wk Days		2 Wk Days		24 Hour									
Relinquished by:	Date:	Time:	Received by:		Notes:														
Jason McLarty	9/3/15	12:00	[Signature]		Chevron Pricing Applies - Per Bruce Schlatter Please report results to: anne.kakai@aecom.com, jim.litz@aecom.com, humbertopaz@chevron.com, bmal@chevron.com and tdobransky@olssonassociates.com														
Relinquished by:	Date:	Time:	Received by (Laboratory):		QC Package: (Check Box Below)														
[Signature]	9-3-15	1725	[Signature]		Cooler Temp. x Level II: Standard QC														
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		Level III: Std QC + Raw Data														
					Level IV: SW846 CLP-Like														
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																			
Other:																			

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

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FedEx *NEW Package*
Express *US Airbill*

Tracking
Number

8001 2142 2980

0200 from No.

FedEx Retrieval

1 From
Date 9-3-15

Sender's Name Nick MARTINEZ Phone 616 244-1633

Company ALS Environmental - PLeckhite

Address

City PLeckhite State TO ZIP 41635

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Receiving Phone 394-6070

Company ALS Environmental Holland Lab

Address 3352 128th AVE

Address

City Holland State MI ZIP 49424



8001 2142 2980

ORIGIN ID:GJTA (616) 399-6070
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE
HOLLAND, MI 494249263
UNITED STATES US

SHIP DATE: 03SEP15
ACTWT: 135.6 LB
CAD: /POS1601
DIMS: 34x18x18 IN
BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
3352 128TH AVE

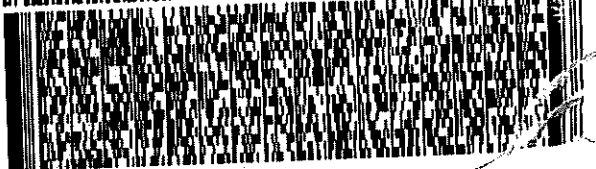
HOLLAND MI 49424

(616) 399-6070
TEL
FAX

REF:

DEPT:

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00



FRI - SEP 10:30A
PRIORITY OVERNIGHT

TAKE 8001 2142 2980
0200

XX HLMA



4 Express Package Service *To send business
NOTE: Service will be changed. Please select carefully.

Next Business Day

06 ☐ FedEx First Overnight

07 ☒ FedEx Priority Overnight

08 ☐ FedEx Standard Overnight

09 ☐ FedEx 2Day

10 ☐ FedEx 2Day AM

11 ☐ FedEx 2Day PM

12 ☐ FedEx 2Day A.M.

13 ☐ FedEx 2Day P.M.

14 ☐ FedEx 2Day A.M.

15 ☐ FedEx 2Day P.M.

16 ☐ FedEx 2Day A.M.

17 ☐ FedEx 2Day P.M.

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40 ☐ FedEx 2Day A.M.

41 ☐ FedEx 2Day P.M.

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **05-Sep-15 10:00**

Work Order: **1509370**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

05-Sep-15
Date

Reviewed by: Lee Arnold
eSignature

05-Sep-15
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/5/2015 11:44:31 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: