

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
RECEIVED 09/11/2014
DOC #2141645
REM #8552

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): Cuttings Pit Closure

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: <u>10335</u>	Contact Name and Telephone: <u>Jess Peonio</u>
Name of Operator: <u>Axia Energy, LLC</u>	No: <u>720-746-5212</u>
Address: <u>1430 Larimer St. - #400</u>	Fax: <u>NA</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	
API Number: <u>05-081-07780-00</u> County: <u>Moffat</u>	
Facility Name: <u>Bulldog #17-21H-893</u> Facility Number: <u>COGCC Facility #433308</u>	
Well Name: <u>Bulldog</u> Well Number: <u>#17-21H-893</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NW/NW, Section 17, T8N/R93W</u> Latitude: <u>40.651189</u> Longitude: <u>-107.863575</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Water Based Cuttings

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.): Ranching

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.): NA

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	_____	_____
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIALTION WORKPLAN

Describe Initial action taken (if previously provided, refer to that form or document):
See attached.

Describe how source is to be removed:
See attached.

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.:
See attached.



Tracking Number:	
Name of Operator:	
OGCC Operator No:	
Received Date:	
Well Name & No:	
Facility Name & No:	

OGCC Employee:

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
NA.

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.
See attached.

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:
NA

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
None required.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 7-1-14	Date Site Investigation Completed: 7-28-14	Date Remediation Plan Submitted: NA
Remediation Start Date: NA	Anticipated Completion Date: NA	Actual Completion Date: NA

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

Print Name: Jess Peonio Signed: Jess Peonio
Title: Regulatory Manager Date: 7-30-14

OGCC Approved: [Signature] Title: OPS I Date: 9/11/14

Bulldog #17-21H-893 – Facility ID #433308 - Form 27 – Final Remediation #8552 - Cuttings Pit Testing/Evaluation & Reclamation

Axia Energy, LLC respectfully requests approval for final closure and reclamation of the cuttings pit per the information provided below.

WORK PLAN/DISCUSSION (previously submitted with initial Form 27)

The subject pit was reclaimed in 2014 without a full sampling/testing protocol being conducted. A Form 4 was recently submitted concerning the excavation of the pit for sampling and proper testing and reclamation. Axia Energy proposes excavating the pit, setting any previously mixed cuttings material to the side in self-containment for testing. Each wall and the bottom of the previous cuttings pit (see attached) will be sampled during excavation to confirm that no contamination or liner leak occurred. Over excavation of contaminated pit walls and bottom will be performed on those areas showing field indicators or laboratory evidence of contamination if necessary. Once clean pit boundaries are confirmed, the pit will be backfilled and reclaimed properly. The cuttings will be tested to determine compliance with Table 910-1 standards and land treated in accordance with Rule 907.e.2 if necessary prior to implementing the cuttings into the pad location. If Table 910-1 standards cannot be met in a timely manner, the cuttings will be disposed of at a commercial disposal facility.

Sampling results will be provided when analysis completed to confirm the pit closure was done in accordance with COGCC rules and regulations. If analysis shows remediation is necessary, a supplemental Form 27 will be submitted with remediation plans.

SAMPLING DISCUSSION

This sampling narrative outlines the sampling for the closure of the reserve pit located on the Bulldog #17-21H-893 pad. This narrative is being provided in support the reserve pit closure documentation to detail what closure, and background samples were taken, where they were taken, and for what purpose.

Post Closure Sample 7/14/2014 (L710121)

- Axia removed the pit contents and liner prior to sampling. Post closure samples consisted of six grab samples taken from various points located at the pit bottom (x2) and each pit side wall. Samples were collected using an excavator to delineate and collect a sample of the pit boundaries. The pit bottom was approximately 13 feet below the pad surface. The post closure samples are represented in the 17-21 tabulated data spreadsheet. The Sample Names from the data tabulation describe the approximate sample locations and depths. The attached BULLDOG #17-21H-893 Sample Locations map shows post closure sample locations. The lab data reports for these samples are attached. The sample values can be found on lab report L710121 and the tabulated spreadsheet.

- Post closure values showed elevated concentrations for arsenic (As). Native background soil samples within the area showed elevated concentrations of naturally occurring As to be present within the area, reference Background Samples section below.

Background Samples 7/21/2014 (L711291 and L711672)

- In an effort to identify naturally occurring concentrations of As similar to that which was previously identified in the closure samples, Axia collected background samples from native undisturbed locations around the area to the north and south of the Pad. The background samples were in response to pit closure samples and can be found on 5-14H tabulated data spreadsheet (denoted with green headers). Sample Type for the above mentioned samples is defined as background with a BG in the nomenclature. The sample values can be found on lab reports L711291 and L711672. Those results identified in L711672 were derived from 6 aliquots acquired from the sample identified as 17-21 Pad BG4. Background samples are shown on the sample locations map.

- The sampling effort yielded background As concentrations within 15% of those found in the post closure samples.

In conclusion, this pit has been closed and meets both the COGCC 900 series and 1000 series rules for pit closure. All analyte concentrations were found to be below COGCC table 910-1 allowable concentrations or within 15% of native background levels.

SUMMARY TABLE OF SAMPLING RESULTS VS TABLE 910-1

Summary table of sampling results attached.

The lab analyses from the sampling are also attached.

PROPOSED RECLAMATION PLAN/DISCUSSION

Pit sampling and lab analysis indicate arsenic concentrations which exceed COGCC standards. Background sampling that was conducted show background arsenic concentrations within 15% of pit samples demonstrating that arsenic is naturally occurring in the immediate area and arsenic levels in/around the pit are not due to operations. Specifically, two sampled locations within the pit indicate arsenic levels of 3.0 mg/kg. Extensive background sampling indicates arsenic levels up to 2.6 mg/kg, therefore indicating that arsenic is naturally occurring within the immediate vicinity. Additionally, arsenic levels in the project area at surrounding locations have been demonstrated to exceed 3.0 mg/kg.

Pit sampling indicated a SAR (13) concentration which exceeds COGCC standards. The sample in question was taken from mixed pit cuttings. Due to the cuttings pit being constructed in the cut portion of the pad per COGCC regulations, the cuttings will be buried to below 3' during interim and/or final reclamation to meet COGCC requirements. Cover during reclamation will be collected from other areas of the pad in which SAR did not exceed COGCC Table 910-1.

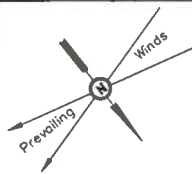
All other pit/cuttings samples collected are below Table 910-1 contaminant concentration limits.

Axia Energy respectfully requests approval to fully close the subject cuttings pit without additional remediation based on the above and attached sampling and laboratory results.

[illegible][illegible]

Metals in Soils												
23	Mercury	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
0.39	Arsenic	3	2.4	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3
15,000	Barium (LDNR True Total)	240	530	240	120	120	120	120	120	120	120	2.6
150	Chromium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
120,000	Copper	8	5.6	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	
3100	Lead	0.5	3.2	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
400	Nickel	0.6	0.1	7.1	7.3	9.5	5.7	5.7	5.7	5.7	5.7	
1800	Selenium	4.3	<2.0	2.2	2.2	4.0	2.8	2.8	2.8	2.8	2.8	
380	Zinc	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
11,000	Other	1.6	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
21,890		16	13	21	21	40	8.4	8.4	8.4	8.4	8.4	

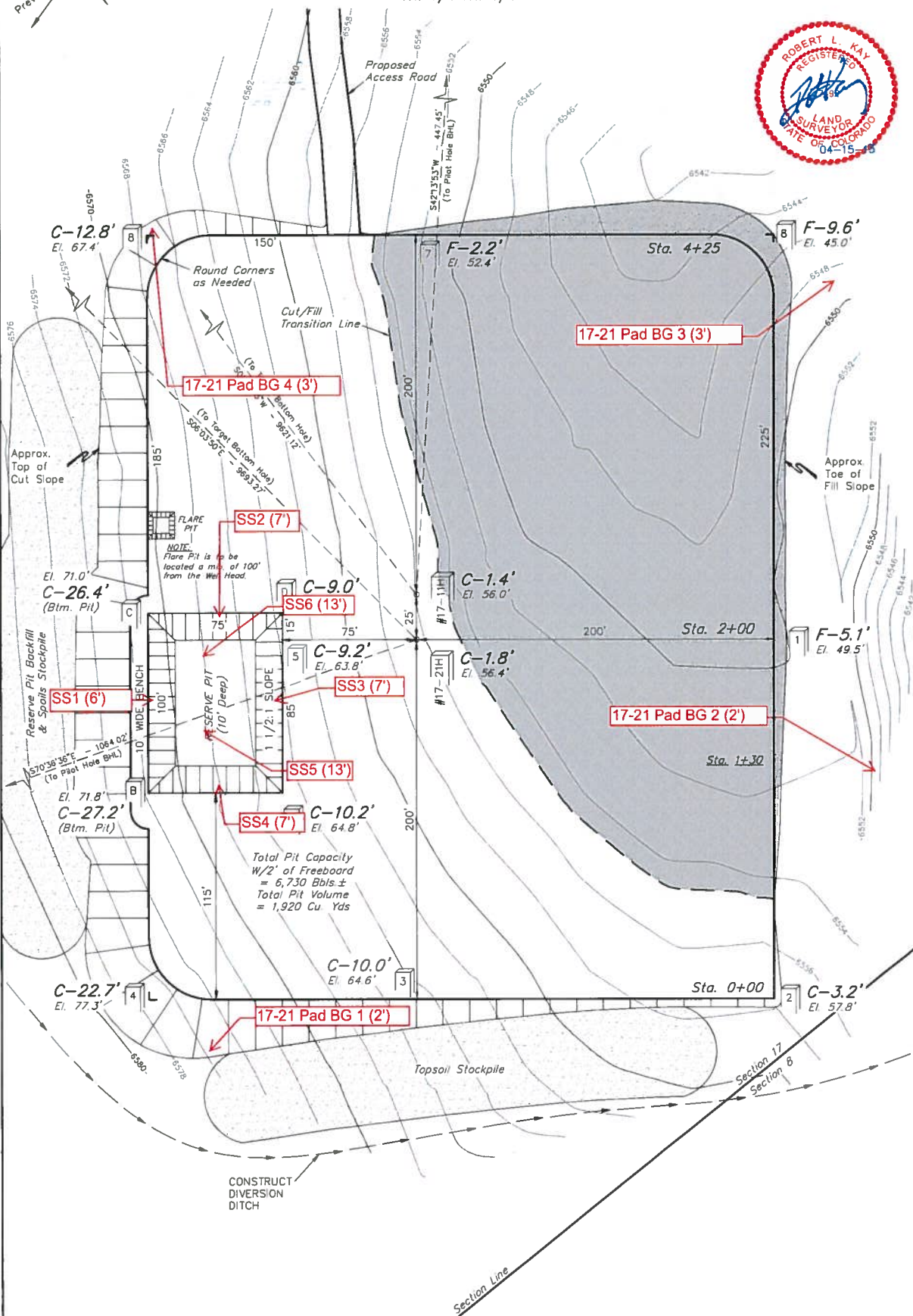
Background



AXIA ENERGY
CONSTRUCTION LAYOUT FOR
BULLDOG #17-11H-893 & #17-21H-893
SECTION 17, T8N, R93W, 6th. P.M.
NW 1/4 NW 1/4

FIGURE #1

SCALE: 1" = 50'
DATE: 03-28-13
DRAWN BY: J.G.G.
REV.: 04-15-13 A.T.



Elev. Ungraded Ground At #17-21H-893 Loc. Stake = 6556.4'
FINISHED GRADE ELEV. AT #17-21H-893 LOC. STAKE = 6554.6'

UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017



July 7, 2014

Rodney & Margaret Culverwell
Rio Ro Mo Acres, LLC
24319 County Road 17
Craig, CO 81625

Re: Bulldog #17-21H-893 - Cuttings Pit Reclamation

Mr. & Mrs. Culverwell:

Axia Energy, in an effort to minimize waste, has implemented a testing and beneficial re-use plan for the water based cuttings that were the result of the drilling of the Bulldog #17-21H-893 located on your property. All cuttings that were experienced during the oil based mud drilling interval were captured on location during drilling and disposed of at a commercial waste facility.

The testing and beneficial re-use plan for the water based cuttings involves:

- Removal and disposal of the cuttings pit liner
- Soil sampling and laboratory analysis of each of the pit walls as well as the base of the pit – to insure the pit liner was effective
- Mixing and drying of the water based cuttings
- Testing of the water based cuttings mixture against the Colorado Oil & Gas Conservation (COGCC) Table 910-1 stringent thresholds to insure no contaminated soils/cuttings
- When cuttings have been cleared by COGCC for re-use, the implementation/spreading of the cuttings mixture onto the pad surface for re-use

The COGCC requires written surface owner approval for the above plan. By signing below, you confirm your approval of Axia Energy's testing and beneficial re-use plan. Your confirmation of approval is greatly appreciated.

Should you have any questions or concerns with the above plan, please contact me at (720) 746-5212 or Jerry Holder at (970) 290-5909 and a representative of Axia Energy would be happy to meet with you to discuss further.

Thank you.

Jess Peonio
Senior Drilling Engineer & Regulatory Manager

Consent of Surface Owner
Bulldog #17-21H-893

Rodney & Margaret Culverwell

1430 Larimer St., Suite 400 • Denver, CO 80202 USA
Phone (720) 746-5200 • Fax (720) 746-5201



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Est. 1970

Robert Stockton
Olsson Associates- Grand Junction, CO
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

Report Summary

Monday July 28, 2014

Report Number: L710121

Samples Received: 07/15/14

Client Project:

Description: Axia Bulldog 20-12H-892 PH Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-1
Collected By : J. Surina
Collection Date : 07/14/14 11:25

ESC Sample # : L710121-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	8.0	2.0	mg/kg	Calc.	07/23/14	1
ORP	160		mV	2580 B-2011	07/22/14	1
pH	7.3		su	9045D	07/22/14	1
Sodium Adsorption Ratio	2.9			Calc.	07/21/14	1
Specific Conductance	710		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Arsenic	3.0	2.0	mg/kg	6010B	07/18/14	1
Barium	240	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	8.0	1.0	mg/kg	6010B	07/18/14	1
Copper	6.5	2.0	mg/kg	6010B	07/22/14	1
Lead	9.6	0.50	mg/kg	6010B	07/18/14	1
Nickel	4.3	2.0	mg/kg	6010B	07/22/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	26.	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/16/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/16/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/16/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/16/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/16/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	8021/8015	07/16/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/16/14	5
TPH (GC/FID) High Fraction	23.	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	94.4		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-01 (PH) - 7.4@20.1c
L710121-01 (PH) - 7.3@23.4c



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REPORT OF ANALYSIS

Robert Stockton
 Olsson Associates- Grand Junction,
 760 Horizon Drive, Ste 102
 Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
 Description : Axia Bulldog 17-21H-893 Pit Closure
 Sample ID : SS-1
 Collected By : J. Surina
 Collection Date : 07/14/14 11:25

ESC Sample # : L710121-01
 Site ID :
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	0.022	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	0.023	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	0.040	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	86.1		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	116.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	91.1		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 Note:
 The reported analytical results relate only to the sample submitted.
 This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 07/28/14 10:07 Printed: 07/28/14 10:08
 L710121-01 (PH) - 7.4@20.1c
 L710121-01 (PH) - 7.3@23.4c



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-2
Collected By : J. Surina
Collection Date : 07/14/14 11:30

ESC Sample # : L710121-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	5.6	2.0	mg/kg	Calc.	07/23/14	1
ORP	130		mV	2580 B-2011	07/22/14	1
pH	8.2		su	9045D	07/18/14	1
Sodium Adsorption Ratio	2.7			Calc.	07/21/14	1
Specific Conductance	420		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Arsenic	2.4	2.0	mg/kg	6010B	07/18/14	1
Barium	830	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	5.6	1.0	mg/kg	6010B	07/18/14	1
Copper	3.2	2.0	mg/kg	6010B	07/22/14	1
Lead	6.1	0.50	mg/kg	6010B	07/18/14	1
Nickel	BDL	2.0	mg/kg	6010B	07/22/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	13.	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/17/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/17/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	8021/8015	07/17/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/17/14	5
TPH (GC/FID) High Fraction	16.	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	74.7		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-02 (PH) - 8.2@19.3c



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REPORT OF ANALYSIS

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July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-2
Collected By : J. Surina
Collection Date : 07/14/14 11:30

ESC Sample # : L710121-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	0.028	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	0.0086	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	0.031	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	0.053	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	83.3		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	112.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	88.8		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L710121-02 (PH) - 8.2@19.3c



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Est. 1970

REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-3
Collected By : J. Surina
Collection Date : 07/14/14 11:35

ESC Sample # : L710121-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	5.9	2.0	mg/kg	Calc.	07/23/14	1
ORP	150		mV	2580 B-2011	07/22/14	1
pH	7.1		su	9045D	07/22/14	1
Sodium Adsorption Ratio	1.3			Calc.	07/21/14	1
Specific Conductance	720		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Arsenic	2.4	2.0	mg/kg	6010B	07/18/14	1
Barium	120	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	5.9	1.0	mg/kg	6010B	07/18/14	1
Copper	2.6	2.0	mg/kg	6010B	07/22/14	1
Lead	7.1	0.50	mg/kg	6010B	07/18/14	1
Nickel	2.2	2.0	mg/kg	6010B	07/22/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	18.	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/17/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/17/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	8021/8015	07/17/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/17/14	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	74.1		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-03 (PH) - 7.1@23.2c
L710121-03 (PH) - 7.1@20.2c



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-3
Collected By : J. Surina
Collection Date : 07/14/14 11:35

ESC Sample # : L710121-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	85.0		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	115.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	90.3		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L710121-03 (PH) - 7.1@23.2c

L710121-03 (PH) - 7.1@20.2c



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-4
Collected By : J. Surina
Collection Date : 07/14/14 11:40

ESC Sample # : L710121-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	5.5	2.0	mg/kg	Calc.	07/23/14	1
ORP	150		mV	2580 B-2011	07/22/14	1
pH	8.1		su	9045D	07/18/14	1
Sodium Adsorption Ratio	0.80			Calc.	07/21/14	1
Specific Conductance	300		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Arsenic	2.2	2.0	mg/kg	6010B	07/18/14	1
Barium	47.	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	5.5	1.0	mg/kg	6010B	07/18/14	1
Copper	3.9	2.0	mg/kg	6010B	07/22/14	1
Lead	7.3	0.50	mg/kg	6010B	07/18/14	1
Nickel	2.2	2.0	mg/kg	6010B	07/22/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	21.	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/17/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/17/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	8021/8015	07/17/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/17/14	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	92.5		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-04 (PH) - 8.1@19.3c



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-4
Collected By : J. Surina
Collection Date : 07/14/14 11:40

ESC Sample # : L710121-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	86.8		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	108.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	87.4		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-5
Collected By : J. Surina
Collection Date : 07/14/14 11:45

ESC Sample # : L710121-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	8.7	2.0	mg/kg	Calc.	07/23/14	1
ORP	150		mV	2580 B-2011	07/22/14	1
pH	8.2		su	9045D	07/18/14	1
Sodium Adsorption Ratio	2.4			Calc.	07/21/14	1
Specific Conductance	830		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Arsenic	3.0	2.0	mg/kg	6010B	07/18/14	1
Barium	880	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	8.7	1.0	mg/kg	6010B	07/18/14	1
Copper	8.5	2.0	mg/kg	6010B	07/22/14	1
Lead	9.5	0.50	mg/kg	6010B	07/18/14	1
Nickel	4.6	2.0	mg/kg	6010B	07/22/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	40.	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/17/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/17/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/17/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	8021/8015	07/17/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/17/14	5
TPH (GC/FID) High Fraction	46.	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	81.4		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-05 (PH) - 8.2@19.2c



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-5
Collected By : J. Surina
Collection Date : 07/14/14 11:45

ESC Sample # : L710121-05
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	0.010	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	0.023	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	0.038	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	86.3		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	115.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	93.4		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-6
Collected By : J. Surina
Collection Date : 07/14/14 11:50

ESC Sample # : L710121-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/18/14	1
Chromium, Trivalent	3.8	2.0	mg/kg	Calc.	07/25/14	1
ORP	150		mV	2580 B-2011	07/22/14	1
pH	8.2		su	9045D	07/18/14	1
Sodium Adsorption Ratio	0.95			Calc.	07/21/14	1
Specific Conductance	320		umhos/cm	9050AMod	07/22/14	1
Mercury	BDL	0.020	mg/kg	7471	07/16/14	1
Copper	BDL	2.0	mg/kg	6010B	07/22/14	1
Nickel	2.8	2.0	mg/kg	6010B	07/22/14	1
Arsenic	2.4	2.0	mg/kg	6010B	07/18/14	1
Barium	40.	0.50	mg/kg	6010B	07/18/14	1
Boron	BDL	10.	mg/kg	6010B	07/18/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/18/14	1
Chromium	3.8	1.0	mg/kg	6010B	07/18/14	1
Lead	5.7	0.50	mg/kg	6010B	07/18/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/18/14	1
Silver	BDL	1.0	mg/kg	6010B	07/18/14	1
Zinc	8.4	5.0	mg/kg	6010B	07/18/14	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/19/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/19/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/19/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/19/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/19/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	8021/8015	07/19/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/19/14	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/17/14	1
Surrogate recovery(%)						
o-Terphenyl	72.1		% Rec.	3546/DRO	07/17/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L710121-06 (PH) - 8.2@19.1c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 28, 2014

Date Received : July 15, 2014
Description : Axia Bulldog 17-21H-893 Pit Closure
Sample ID : SS-6
Collected By : J. Surina
Collection Date : 07/14/14 11:50

ESC Sample # : L710121-06
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/18/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/18/14	1
Surrogate Recovery						
p-Terphenyl-d14	88.8		% Rec.	8270C-SIM	07/18/14	1
Nitrobenzene-d5	112.		% Rec.	8270C-SIM	07/18/14	1
2-Fluorobiphenyl	91.9		% Rec.	8270C-SIM	07/18/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 07/28/14 10:07 Printed: 07/28/14 10:08
L710121-06 (PH) - 8.2@19.1c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L710121-01	WG732079	SAMP	TPH (GC/FID) High Fraction	R2964536	J6
L710121-02	WG731914	SAMP	2-Methylnaphthalene	R2964635	J6

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
07/28/14 at 10:08:19

TSR Signing Reports: 288
R5 - Desired TAT

Log all PAHs as PAHSIM.

Sample: L710121-01 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22
Sample: L710121-02 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22
Sample: L710121-03 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22
Sample: L710121-04 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22
Sample: L710121-05 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22
Sample: L710121-06 Account: OLSSONCO Received: 07/15/14 09:00 Due Date: 07/23/14 00:00 RPT Date: 07/28/14 10:07
Added CRICP per DR. AV 7/22



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG731887	07/16/14 11:04
Benzene	< .0005	mg/kg			WG731928	07/16/14 15:57
Ethylbenzene	< .0005	mg/kg			WG731928	07/16/14 15:57
Toluene	< .005	mg/kg			WG731928	07/16/14 15:57
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG731928	07/16/14 15:57
Total Xylene	< .0015	mg/kg			WG731928	07/16/14 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	97.90	59-128	WG731928	07/16/14 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG731928	07/16/14 15:57
1-Methylnaphthalene	< .02	mg/kg			WG731914	07/17/14 01:04
2-Chloronaphthalene	< .02	mg/kg			WG731914	07/17/14 01:04
2-Methylnaphthalene	< .02	mg/kg			WG731914	07/17/14 01:04
Acenaphthene	< .006	mg/kg			WG731914	07/17/14 01:04
Acenaphthylene	< .006	mg/kg			WG731914	07/17/14 01:04
Anthracene	< .006	mg/kg			WG731914	07/17/14 01:04
Benzo(a)anthracene	< .006	mg/kg			WG731914	07/17/14 01:04
Benzo(a)pyrene	< .006	mg/kg			WG731914	07/17/14 01:04
Benzo(b)fluoranthene	< .006	mg/kg			WG731914	07/17/14 01:04
Benzo(g,h,i)perylene	< .006	mg/kg			WG731914	07/17/14 01:04
Benzo(k)fluoranthene	< .006	mg/kg			WG731914	07/17/14 01:04
Chrysene	< .006	mg/kg			WG731914	07/17/14 01:04
Dibenz(a,h)anthracene	< .006	mg/kg			WG731914	07/17/14 01:04
Fluoranthene	< .006	mg/kg			WG731914	07/17/14 01:04
Fluorene	< .006	mg/kg			WG731914	07/17/14 01:04
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG731914	07/17/14 01:04
Naphthalene	< .02	mg/kg			WG731914	07/17/14 01:04
Phenanthrene	< .006	mg/kg			WG731914	07/17/14 01:04
Pyrene	< .006	mg/kg			WG731914	07/17/14 01:04
2-Fluorobiphenyl		% Rec.	81.40	38.2-135	WG731914	07/17/14 01:04
Nitrobenzene-d5		% Rec.	80.30	28.4-151	WG731914	07/17/14 01:04
p-Terphenyl-d14		% Rec.	70.80	34.2-141	WG731914	07/17/14 01:04
TPH (GC/FID) High Fraction	< 4	mg/kg			WG731975	07/16/14 20:25
o-Terphenyl		% Rec.	93.80	50-150	WG731975	07/16/14 20:25
Benzene	< .0005	mg/kg			WG732077	07/17/14 14:25
Ethylbenzene	< .0005	mg/kg			WG732077	07/17/14 14:25
Toluene	< .005	mg/kg			WG732077	07/17/14 14:25
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG732077	07/17/14 14:25
Total Xylene	< .0015	mg/kg			WG732077	07/17/14 14:25
a,a,a-Trifluorotoluene(FID)		% Rec.	97.70	59-128	WG732077	07/17/14 14:25
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG732077	07/17/14 14:25
TPH (GC/FID) High Fraction	< 4	mg/kg			WG732079	07/17/14 20:42
o-Terphenyl		% Rec.	87.10	50-150	WG732079	07/17/14 20:42
Chromium,Hexavalent	< 2	mg/kg			WG732062	07/18/14 17:19
Arsenic	< 1	mg/kg			WG732208	07/18/14 19:31
Barium	< .25	mg/kg			WG732208	07/18/14 19:31
Boron	< 10	mg/kg			WG732208	07/18/14 19:31

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Cadmium	< .25	mg/kg			WG732208	07/18/14 19:31
Chromium	< .5	mg/kg			WG732208	07/18/14 19:31
Lead	< .25	mg/kg			WG732208	07/18/14 19:31
Selenium	< 1	mg/kg			WG732208	07/18/14 19:31
Silver	< .5	mg/kg			WG732208	07/18/14 19:31
Zinc	< 1.5	mg/kg			WG732208	07/18/14 19:31
Benzene	< .0005	mg/kg			WG732563	07/19/14 01:28
Ethylbenzene	< .0005	mg/kg			WG732563	07/19/14 01:28
Toluene	< .005	mg/kg			WG732563	07/19/14 01:28
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG732563	07/19/14 01:28
Total Xylene	< .0015	mg/kg			WG732563	07/19/14 01:28
a,a,a-Trifluorotoluene(FID)		% Rec.	97.90	59-128	WG732563	07/19/14 01:28
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG732563	07/19/14 01:28
Copper	< 1	mg/kg			WG732823	07/22/14 12:36
Nickel	< 1	mg/kg			WG732823	07/22/14 12:36
Specific Conductance	0.990	umhos/cm			WG732890	07/22/14 15:16

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Mercury	mg/kg	0.0	0.00720	1.00	20	L710115-01	WG731887
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L710121-06	WG732062
Chromium, Hexavalent	mg/kg	5.90	5.90	0.0	20	L710129-06	WG732062
pH	su	7.30	7.30	0.274	1	L710121-01	WG733048
pH	su	7.10	7.10	0.282	1	L710121-03	WG733048
ORP	mV	120.	130.	6.35	20	L710121-02	WG732888
ORP	mV	39.0	40.0	2.53	20	L710167-07	WG732888
Specific Conductance	umhos/cm	410.	420.	1.44	20	L710121-02	WG732890
Specific Conductance	umhos/cm	3300	3200	2.47	20	L710984-06	WG732890

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	12.4	11.9	96.0	71.6-128	WG731887
Benzene	mg/kg	.05	0.0496	99.2	70-130	WG731928
Ethylbenzene	mg/kg	.05	0.0497	99.3	70-130	WG731928
Toluene	mg/kg	.05	0.0497	99.4	70-130	WG731928
Total Xylene	mg/kg	.15	0.151	101.	70-130	WG731928
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG731928
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.40	98.2	63.5-137	WG731928
a,a,a-Trifluorotoluene(FID)				98.30	59-128	WG731928

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1-Methylnaphthalene	mg/kg	.08	0.0630	78.7	48.9-127	WG731914
2-Chloronaphthalene	mg/kg	.08	0.0588	73.5	48.8-125	WG731914
2-Methylnaphthalene	mg/kg	.08	0.0631	78.8	45.7-131	WG731914
Acenaphthene	mg/kg	.08	0.0584	72.9	48.7-127	WG731914
Acenaphthylene	mg/kg	.08	0.0560	70.0	47.9-128	WG731914
Anthracene	mg/kg	.08	0.0607	75.9	51.3-136	WG731914
Benzo(a)anthracene	mg/kg	.08	0.0550	68.7	55-126	WG731914
Benzo(a)pyrene	mg/kg	.08	0.0544	67.9	51.9-127	WG731914
Benzo(b)fluoranthene	mg/kg	.08	0.0523	65.4	54-125	WG731914
Benzo(g,h,i)perylene	mg/kg	.08	0.0560	70.0	53.8-136	WG731914
Benzo(k)fluoranthene	mg/kg	.08	0.0542	67.7	53.9-132	WG731914
Chrysene	mg/kg	.08	0.0571	71.3	55.7-133	WG731914
Dibenz(a,h)anthracene	mg/kg	.08	0.0597	74.6	52.6-137	WG731914
Fluoranthene	mg/kg	.08	0.0651	81.4	54-132	WG731914
Fluorene	mg/kg	.08	0.0605	75.7	48.7-127	WG731914
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0578	72.3	53.8-138	WG731914
Naphthalene	mg/kg	.08	0.0542	67.8	42-127	WG731914
Phenanthrene	mg/kg	.08	0.0536	67.0	49.6-126	WG731914
Pyrene	mg/kg	.08	0.0494	61.8	54-129	WG731914
2-Fluorobiphenyl				78.20	38.2-135	WG731914
Nitrobenzene-d5				83.20	28.4-151	WG731914
p-Terphenyl-d14				66.70	34.2-141	WG731914
TPH (GC/FID) High Fraction	mg/kg	60	55.2	92.0	50-150	WG731975
o-Terphenyl				93.90	50-150	WG731975
Benzene	mg/kg	.05	0.0495	98.9	70-130	WG732077
Ethylbenzene	mg/kg	.05	0.0496	99.3	70-130	WG732077
Toluene	mg/kg	.05	0.0497	99.4	70-130	WG732077
Total Xylene	mg/kg	.15	0.151	101.	70-130	WG732077
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG732077
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.27	95.9	63.5-137	WG732077
a,a,a-Trifluorotoluene(FID)				98.10	59-128	WG732077
TPH (GC/FID) High Fraction	mg/kg	60	47.3	78.8	50-150	WG732079
o-Terphenyl				92.50	50-150	WG732079
Chromium,Hexavalent	mg/kg	125	146.	117.	80-120	WG732062
Arsenic	mg/kg	237	246.	104.	83.1-117	WG732208
Barium	mg/kg	252	252.	100.	84.1-116	WG732208
Boron	mg/kg	118	123.	104.	74-126	WG732208
Cadmium	mg/kg	191	188.	98.0	83.2-117	WG732208
Chromium	mg/kg	128	135.	105.	81.3-118	WG732208
Lead	mg/kg	103	104.	101.	83.1-117	WG732208
Selenium	mg/kg	110	113.	103.	78.7-122	WG732208
Silver	mg/kg	47.3	49.1	104.	66.2-134	WG732208
Zinc	mg/kg	183	187.	102.	82-118	WG732208
pH	su	6.33	6.28	99.2	98.3-101.7	WG732341
Benzene	mg/kg	.05	0.0478	95.6	70-130	WG732563

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Ethylbenzene	mg/kg	.05	0.0479	95.8	70-130	WG732563
Toluene	mg/kg	.05	0.0478	95.6	70-130	WG732563
Total Xylene	mg/kg	.15	0.144	96.3	70-130	WG732563
a,a,a-Trifluorotoluene(FID)				98.70	59-128	WG732563
a,a,a-Trifluorotoluene(PID)				103.0	54-144	WG732563
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.21	94.7	63.5-137	WG732563
a,a,a-Trifluorotoluene(FID)				98.00	59-128	WG732563
a,a,a-Trifluorotoluene(PID)				111.0	54-144	WG732563
pH	su	6.33	6.30	99.5	98.3-101.7	WG733048
Copper	mg/kg	123	122.	99.0	83.7-116	WG732823
Nickel	mg/kg	118	115.	98.0	82-118	WG732823
ORP	mV	100	103.	103.	90-110	WG732888
Specific Conductance	umhos/cm	1040	1010	97.1	85-115	WG732890

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0489	0.0496	98.0	70-130	1.30	20	WG731928
Ethylbenzene	mg/kg	0.0486	0.0497	97.0	70-130	2.26	20	WG731928
Toluene	mg/kg	0.0484	0.0497	97.0	70-130	2.55	20	WG731928
Total Xylene	mg/kg	0.148	0.151	98.0	70-130	2.42	20	WG731928
a,a,a-Trifluorotoluene(PID)				101.0	54-144			WG731928
TPH (GC/FID) Low Fraction	mg/kg	5.34	5.40	97.0	63.5-137	1.14	20	WG731928
a,a,a-Trifluorotoluene(FID)				97.80	59-128			WG731928
1-Methylnaphthalene	mg/kg	0.0620	0.0630	77.0	48.9-127	1.68	20	WG731914
2-Chloronaphthalene	mg/kg	0.0584	0.0588	73.0	48.8-125	0.760	20	WG731914
2-Methylnaphthalene	mg/kg	0.0618	0.0631	77.0	45.7-131	2.05	20	WG731914
Acenaphthene	mg/kg	0.0578	0.0584	72.0	48.7-127	0.970	20	WG731914
Acenaphthylene	mg/kg	0.0555	0.0560	69.0	47.9-128	1.01	20	WG731914
Anthracene	mg/kg	0.0607	0.0607	76.0	51.3-136	0.0700	20	WG731914
Benzo(a)anthracene	mg/kg	0.0549	0.0550	69.0	55-126	0.120	20	WG731914
Benzo(a)pyrene	mg/kg	0.0536	0.0544	67.0	51.9-127	1.37	20	WG731914
Benzo(b)fluoranthene	mg/kg	0.0543	0.0523	68.0	54-125	3.62	20	WG731914
Benzo(g,h,i)perylene	mg/kg	0.0546	0.0560	68.0	53.8-136	2.43	20	WG731914
Benzo(k)fluoranthene	mg/kg	0.0505	0.0542	63.0	53.9-132	6.99	20	WG731914
Chrysene	mg/kg	0.0563	0.0571	70.0	55.7-133	1.39	20	WG731914
Dibenz(a,h)anthracene	mg/kg	0.0581	0.0597	72.0	52.6-137	2.72	20	WG731914
Fluoranthene	mg/kg	0.0656	0.0651	82.0	54-132	0.660	20	WG731914
Fluorene	mg/kg	0.0602	0.0605	75.0	48.7-127	0.580	20	WG731914
Indeno(1,2,3-cd)pyrene	mg/kg	0.0573	0.0578	72.0	53.8-138	0.940	20	WG731914
Naphthalene	mg/kg	0.0547	0.0542	68.0	42-127	0.840	20	WG731914
Phenanthrene	mg/kg	0.0533	0.0536	67.0	49.6-126	0.560	20	WG731914
Pyrene	mg/kg	0.0494	0.0494	62.0	54-129	0.	20	WG731914
2-Fluorobiphenyl				79.50	38.2-135			WG731914
Nitrobenzene-d5				84.00	28.4-151			WG731914
p-Terphenyl-d14				67.90	34.2-141			WG731914
TPH (GC/FID) High Fraction	mg/kg	56.9	55.2	95.0	50-150	3.00	20	WG731975

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L710121

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Est. 1970

July 28, 2014

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
o-Terphenyl				94.80	50-150			
Benzene	mg/kg	0.0497	0.0495	99.0	70-130	0.410	20	WG732077
Ethylbenzene	mg/kg	0.0492	0.0496	98.0	70-130	0.870	20	WG732077
Toluene	mg/kg	0.0492	0.0497	98.0	70-130	1.01	20	WG732077
Total Xylene	mg/kg	0.149	0.151	99.0	70-130	1.32	20	WG732077
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG732077
TPH (GC/FID) Low Fraction	mg/kg	5.31	5.27	96.0	63.5-137	0.660	20	WG732077
a,a,a-Trifluorotoluene(PID)				99.50	59-128			WG732077
TPH (GC/FID) High Fraction	mg/kg	47.0	47.3	78.0	50-150	0.540	20	WG732079
o-Terphenyl				96.30	50-150			WG732079
Chromium,Hexavalent	mg/kg	146.	146.	117.	80-120	0.0	20	WG732062
Arsenic	mg/kg	242.	246.	102.	83.1-117	2.00	20	WG732208
Barium	mg/kg	246.	252.	98.0	84.1-116	2.00	20	WG732208
Boron	mg/kg	121.	123.	102.	74-126	2.00	20	WG732208
Cadmium	mg/kg	181.	188.	95.0	83.2-117	4.00	20	WG732208
Chromium	mg/kg	129.	135.	101.	81.3-118	4.00	20	WG732208
Lead	mg/kg	98.5	104.	96.0	83.1-117	5.00	20	WG732208
Selenium	mg/kg	110.	113.	100.	78.7-122	2.00	20	WG732208
Silver	mg/kg	48.6	49.1	103.	66.2-134	1.00	20	WG732208
Zinc	mg/kg	182.	187.	99.0	82-118	3.00	20	WG732208
pH	su	6.29	6.28	99.0	98.3-101.7	0.159	20	WG732341
Benzene	mg/kg	0.0480	0.0478	96.0	70-130	0.380	20	WG732563
Ethylbenzene	mg/kg	0.0478	0.0479	96.0	70-130	0.110	20	WG732563
Toluene	mg/kg	0.0475	0.0478	95.0	70-130	0.550	20	WG732563
Total Xylene	mg/kg	0.145	0.144	96.0	70-130	0.160	20	WG732563
a,a,a-Trifluorotoluene(FID)				98.30	59-128			WG732563
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG732563
TPH (GC/FID) Low Fraction	mg/kg	5.19	5.21	94.0	63.5-137	0.300	20	WG732563
a,a,a-Trifluorotoluene(FID)				98.20	59-128			WG732563
a,a,a-Trifluorotoluene(PID)				111.0	54-144			WG732563
pH	su	6.30	6.30	100.	98.3-101.7	0.0	20	WG733048
Copper	mg/kg	123.	122.	100.	83.7-116	1.00	20	WG732823
Nickel	mg/kg	118.	115.	100.	82-118	2.00	20	WG732823
ORP	mV	99.0	103.	99.0	90-110	3.96	20	WG732888
Specific Conductance	umhos/	1000	1010	96.0	85-115	0.995	20	WG732890

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.415	0.00720	.5	82.0	80-120	L710115-01	WG731887

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.231	0.000403	.05	92.0	49.7-127	L710121-01	WG731928
Ethylbenzene	mg/kg	0.229	0.000340	.05	91.0	40.8-141	L710121-01	WG731928
Toluene	mg/kg	0.233	0.00100	.05	93.0	49.8-132	L710121-01	WG731928
Total Xylene	mg/kg	0.696	0.00125	.15	93.0	41.2-140	L710121-01	WG731928
a,a,a-Trifluorotoluene(PID)					101.0	54-144		WG731928
TPH (GC/FID) Low Fraction	mg/kg	19.0	0.159	5.5	68.0	28.5-138	L710121-01	WG731928
a,a,a-Trifluorotoluene(FID)					95.40	59-128		WG731928
TPH (GC/FID) High Fraction	mg/kg	60.5	7.93	60	88.0	50-150	L709787-06	WG731975
o-Terphenyl					70.70	50-150		WG731975
Benzene	mg/kg	0.231	0.000496	.05	92.0	49.7-127	L710121-05	WG732077
Ethylbenzene	mg/kg	0.230	0.000393	.05	92.0	40.8-141	L710121-05	WG732077
Toluene	mg/kg	0.234	0.00145	.05	93.0	49.8-132	L710121-05	WG732077
Total Xylene	mg/kg	0.700	0.00175	.15	93.0	41.2-140	L710121-05	WG732077
a,a,a-Trifluorotoluene(PID)					100.0	54-144		WG732077
TPH (GC/FID) Low Fraction	mg/kg	21.8	0.142	5.5	79.0	28.5-138	L710121-05	WG732077
a,a,a-Trifluorotoluene(FID)					97.40	59-128		WG732077
TPH (GC/FID) High Fraction	mg/kg	53.0	23.1	60	50.0*	50-150	L710121-01	WG732079
o-Terphenyl					76.60	50-150		WG732079
1-Methylnaphthalene	mg/kg	0.0685	0.0308	.08	47.1	41.8-133	L710121-02	WG731914
2-Chloronaphthalene	mg/kg	0.0623	0.	.08	77.9	42.4-129	L710121-02	WG731914
2-Methylnaphthalene	mg/kg	0.0708	0.0529	.08	22.4*	37.5-137	L710121-02	WG731914
Acenaphthene	mg/kg	0.0602	0.00153	.08	73.3	39.4-132	L710121-02	WG731914
Acenaphthylene	mg/kg	0.0593	0.	.08	74.2	41.3-132	L710121-02	WG731914
Anthracene	mg/kg	0.0576	0.000886	.08	71.0	36.7-144	L710121-02	WG731914
Benzo(a)anthracene	mg/kg	0.0577	0.000734	.08	71.2	28-144	L710121-02	WG731914
Benzo(a)pyrene	mg/kg	0.0634	0.	.08	79.2	23.8-147	L710121-02	WG731914
Benzo(b)fluoranthene	mg/kg	0.0541	0.	.08	67.6	18.2-147	L710121-02	WG731914
Benzo(g,h,i)perylene	mg/kg	0.0553	0.	.08	69.2	9.2-155	L710121-02	WG731914
Benzo(k)fluoranthene	mg/kg	0.0665	0.	.08	83.1	26.5-143	L710121-02	WG731914
Chrysene	mg/kg	0.0615	0.000777	.08	76.0	27.4-150	L710121-02	WG731914
Dibenz(a,h)anthracene	mg/kg	0.0642	0.	.08	80.3	13.8-150	L710121-02	WG731914
Fluoranthene	mg/kg	0.0585	0.	.08	73.2	23.2-158	L710121-02	WG731914
Fluorene	mg/kg	0.0627	0.00321	.08	74.3	30.8-139	L710121-02	WG731914
Indeno(1,2,3-cd)pyrene	mg/kg	0.0578	0.	.08	72.3	10.7-155	L710121-02	WG731914
Naphthalene	mg/kg	0.0640	0.0278	.08	45.2	34.9-133	L710121-02	WG731914
Phenanthrene	mg/kg	0.0581	0.00859	.08	61.9	20.2-150	L710121-02	WG731914
Pyrene	mg/kg	0.0492	0.00198	.08	59.0	22.6-151	L710121-02	WG731914
2-Fluorobiphenyl					93.30	38.2-135		WG731914
Nitrobenzene-d5					117.0	28.4-151		WG731914
p-Terphenyl-d14					85.30	34.2-141		WG731914
Chromium, Hexavalent	mg/kg	22.5	0.0	20	110.	75-125	L710121-06	WG732062
Arsenic	mg/kg	51.5	2.38	50	98.0	75-125	L710121-06	WG732208
Barium	mg/kg	83.2	39.5	50	87.0	75-125	L710121-06	WG732208
Boron	mg/kg	45.7	-0.432	50	91.0	75-125	L710121-06	WG732208
Cadmium	mg/kg	49.6	0.107	50	99.0	75-125	L710121-06	WG732208
Chromium	mg/kg	55.1	3.83	50	100.	75-125	L710121-06	WG732208

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Lead	mg/kg	54.8	5.71	50	98.0	75-125	L710121-06	WG732208
Selenium	mg/kg	49.8	-0.0753	50	100.	75-125	L710121-06	WG732208
Silver	mg/kg	50.1	0.0839	50	100.	75-125	L710121-06	WG732208
Zinc	mg/kg	56.9	8.44	50	97.0	75-125	L710121-06	WG732208
Benzene	mg/kg	0.221	0.000333	.05	88.0	49.7-127	L710609-01	WG732563
Ethylbenzene	mg/kg	0.214	0.000379	.05	85.0	40.8-141	L710609-01	WG732563
Toluene	mg/kg	0.221	0.00109	.05	88.0	49.8-132	L710609-01	WG732563
Total Xylene	mg/kg	0.648	0.00158	.15	86.0	41.2-140	L710609-01	WG732563
a,a,a-Trifluorotoluene(FID)					97.20	59-128		WG732563
a,a,a-Trifluorotoluene(PID)					101.0	54-144		WG732563
TPH (GC/FID) Low Fraction	mg/kg	15.2	0.120	5.5	55.0	28.5-138	L710609-01	WG732563
a,a,a-Trifluorotoluene(FID)					96.60	59-128		WG732563
a,a,a-Trifluorotoluene(PID)					105.0	54-144		WG732563

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.447	0.415	87.9	80-120	7.00	20	L710115-01	WG731887
Benzene	mg/kg	0.224	0.231	89.5	49.7-127	3.02	23.5	L710121-01	WG731928
Ethylbenzene	mg/kg	0.217	0.229	86.8	40.8-141	5.16	23.8	L710121-01	WG731928
Toluene	mg/kg	0.221	0.233	88.0	49.8-132	5.40	23.5	L710121-01	WG731928
Total Xylene	mg/kg	0.658	0.696	87.6	41.2-140	5.55	23.7	L710121-01	WG731928
a,a,a-Trifluorotoluene(PID)				100.0	54-144				WG731928
TPH (GC/FID) Low Fraction	mg/kg	21.2	19.0	76.6	28.5-138	11.0	23.6	L710121-01	WG731928
a,a,a-Trifluorotoluene(FID)				97.70	59-128				WG731928
TPH (GC/FID) High Fraction	mg/kg	62.1	60.5	90.3	50-150	2.69	20	L709787-06	WG731975
o-Terphenyl				70.10	50-150				WG731975
Benzene	mg/kg	0.228	0.231	91.0	49.7-127	1.46	23.5	L710121-05	WG732077
Ethylbenzene	mg/kg	0.221	0.230	88.1	40.8-141	4.24	23.8	L710121-05	WG732077
Toluene	mg/kg	0.224	0.234	89.2	49.8-132	4.11	23.5	L710121-05	WG732077
Total Xylene	mg/kg	0.665	0.700	88.5	41.2-140	5.09	23.7	L710121-05	WG732077
a,a,a-Trifluorotoluene(PID)				100.0	54-144				WG732077
TPH (GC/FID) Low Fraction	mg/kg	20.4	21.8	73.8	28.5-138	6.64	23.6	L710121-05	WG732077
a,a,a-Trifluorotoluene(FID)				97.20	59-128				WG732077
TPH (GC/FID) High Fraction	mg/kg	55.3	53.0	53.7	50-150	4.32	20	L710121-01	WG732079
o-Terphenyl				96.60	50-150				WG732079
1-Methylnaphthalene	mg/kg	0.0656	0.0685	43.5	41.8-133	4.26	20.9	L710121-02	WG731914
2-Chloronaphthalene	mg/kg	0.0592	0.0623	74.0	42.4-129	5.09	20	L710121-02	WG731914
2-Methylnaphthalene	mg/kg	0.0685	0.0708	19.6*	37.5-137	3.19	20.4	L710121-02	WG731914
Acenaphthene	mg/kg	0.0581	0.0602	70.7	39.4-132	3.49	20	L710121-02	WG731914
Acenaphthylene	mg/kg	0.0562	0.0593	70.2	41.3-132	5.45	20	L710121-02	WG731914
Anthracene	mg/kg	0.0569	0.0576	70.0	36.7-144	1.38	20.7	L710121-02	WG731914
Benzo(a)anthracene	mg/kg	0.0549	0.0577	67.7	28-144	4.90	24.7	L710121-02	WG731914
Benzo(a)pyrene	mg/kg	0.0607	0.0634	75.9	23.8-147	4.24	25.3	L710121-02	WG731914
Benzo(b)fluoranthene	mg/kg	0.0538	0.0541	67.3	18.2-147	0.460	29.5	L710121-02	WG731914
Benzo(g,h,i)perylene	mg/kg	0.0533	0.0553	66.6	9.2-155	3.79	29.2	L710121-02	WG731914
Benzo(k)fluoranthene	mg/kg	0.0641	0.0665	80.1	26.5-143	3.62	26.1	L710121-02	WG731914

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chrysene	mg/kg	0.0574	0.0615	70.8	27.4-150	6.89	25.7	L710121-02	WG731914
Dibenz(a,h)anthracene	mg/kg	0.0604	0.0642	75.5	13.8-150	6.14	25.8	L710121-02	WG731914
Fluoranthene	mg/kg	0.0561	0.0585	70.1	23.2-158	4.27	26	L710121-02	WG731914
Fluorene	mg/kg	0.0630	0.0627	74.8	30.8-139	0.580	20	L710121-02	WG731914
Indeno(1,2,3-cd)pyrene	mg/kg	0.0554	0.0578	69.2	10.7-155	4.37	26.9	L710121-02	WG731914
Naphthalene	mg/kg	0.0605	0.0640	40.9	34.9-133	5.58	20.4	L710121-02	WG731914
Phenanthrene	mg/kg	0.0580	0.0581	61.7	20.2-150	0.270	24.6	L710121-02	WG731914
Pyrene	mg/kg	0.0488	0.0492	58.5	22.6-151	0.780	25.1	L710121-02	WG731914
2-Fluorobiphenyl				89.00	38.2-135				WG731914
Nitrobenzene-d5				112.0	28.4-151				WG731914
p-Terphenyl-d14				79.40	34.2-141				WG731914
Chromium,Hexavalent	mg/kg	22.6	22.5	113.	75-125	0.443	20	L710121-06	WG732062
Arsenic	mg/kg	51.3	51.5	97.9	75-125	0.0	20	L710121-06	WG732208
Barium	mg/kg	85.4	83.2	91.8	75-125	3.00	20	L710121-06	WG732208
Boron	mg/kg	45.9	45.7	92.7	75-125	1.00	20	L710121-06	WG732208
Cadmium	mg/kg	49.9	49.6	99.6	75-125	1.00	20	L710121-06	WG732208
Chromium	mg/kg	55.6	55.1	103.	75-125	1.00	20	L710121-06	WG732208
Lead	mg/kg	56.1	54.8	101.	75-125	2.00	20	L710121-06	WG732208
Selenium	mg/kg	49.3	49.8	98.8	75-125	1.00	20	L710121-06	WG732208
Silver	mg/kg	51.2	50.1	102.	75-125	2.00	20	L710121-06	WG732208
Zinc	mg/kg	57.5	56.9	98.0	75-125	1.00	20	L710121-06	WG732208
Benzene	mg/kg	0.208	0.221	82.9	49.7-127	6.25	23.5	L710609-01	WG732563
Ethylbenzene	mg/kg	0.196	0.214	78.2	40.8-141	8.65	23.8	L710609-01	WG732563
Toluene	mg/kg	0.203	0.221	80.6	49.8-132	8.65	23.5	L710609-01	WG732563
Total Xylene	mg/kg	0.591	0.648	78.6	41.2-140	9.24	23.7	L710609-01	WG732563
a,a,a-Trifluorotoluene(FID)				96.80	59-128				WG732563
a,a,a-Trifluorotoluene(PID)				101.0	54-144				WG732563
TPH (GC/FID) Low Fraction	mg/kg	18.3	15.2	66.0	28.5-138	18.0	23.6	L710609-01	WG732563
a,a,a-Trifluorotoluene(FID)				97.30	59-128				WG732563
a,a,a-Trifluorotoluene(PID)				107.0	54-144				WG732563

Post Spike

Serial Dilution

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Serial Dilution

Batch number /Run number / Sample number cross reference

WG731887: R2962869: L710121-01 02 03 04 05 06
WG731928: R2963109: L710121-01 02 03 04
WG731914: R2963625 R2964635: L710121- 02 03 04 05 06 01
WG731975: R2963689 R2963947: L710121-06
WG732077: R2964208: L710121-05
WG732079: R2964536: L710121-01 02 03 04 05
WG732062: R2965005: L710121-01 02 03 04 05 06
WG732208: R2965167: L710121-01 02 03 04 05 06
WG732138: R2965405: L710121-01 02 03 04 05 06
WG732341: R2965973: L710121-02 04 05 06
WG732563: R2966505: L710121-06
WG733048: R2966987: L710121-01 03
WG732823: R2966995 R2967324: L710121- 02 03 04 05 06 01
WG732888: R2967000: L710121-01 02 03 04 05 06
WG732890: R2967006: L710121-01 02 03 04 05 06

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

Olsson Associates- Grand Junction, CO
Robert Stockton
760 Horizon Drive, Ste 102

Grand Junction, CO 81506

Quality Assurance Report
Level II

L710121

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Tax I.D. 62-0814289

Est. 1970

July 28, 2014

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Robert Stockton
Olsson Associates- Grand Junction, CO
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

Report Summary

Wednesday July 23, 2014

Report Number: L711291

Samples Received: 07/22/14

Client Project:

Description: Axia Building 17-21H-893 Pit Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

July 23, 2014

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

ESC Sample # : L711291-01

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 1

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 14:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/23/14 14:23 Printed: 07/23/14 14:23



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REPORT OF ANALYSIS

July 23, 2014

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

ESC Sample # : L711291-02

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 2

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/23/14 14:23 Printed: 07/23/14 14:23



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REPORT OF ANALYSIS

July 23, 2014

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

ESC Sample # : L711291-03

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 3

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 14:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/23/14 14:23 Printed: 07/23/14 14:23



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REPORT OF ANALYSIS

July 23, 2014

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

ESC Sample # : L711291-04

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 4

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.6	2.0	mg/kg	6010B	07/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/23/14 14:23 Printed: 07/23/14 14:23

Summary of Remarks For Samples Printed
07/23/14 at 14:23:52

TSR Signing Reports: 288
R3 - Rush: Two Day

Log all PAHs as PAHSIM.

Sample: L711291-01 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/24/14 00:00 RPT Date: 07/23/14 14:23

Sample: L711291-02 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/24/14 00:00 RPT Date: 07/23/14 14:23

Sample: L711291-03 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/24/14 00:00 RPT Date: 07/23/14 14:23

Sample: L711291-04 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/24/14 00:00 RPT Date: 07/23/14 14:23



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Quality Assurance Report
Level II

L711291

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July 23, 2014

Laboratory Blank									
Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed			
Arsenic	< 1	mg/kg			WG733082	07/23/14 11:04			
Laboratory Control Sample									
Analyte	Units	Known Val	Result	% Rec	Limit	Batch			
Arsenic	mg/kg	237	241.	102.	83.1-117	WG733082			
Laboratory Control Sample Duplicate									
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch	
Arsenic	mg/kg	245.	241.	103.	83.1-117	1.00	20	WG733082	
Matrix Spike									
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch	
Arsenic	mg/kg	50.4	5.11	50	91.0	75-125	L711292-02	WG733082	
Matrix Spike Duplicate									
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Arsenic	mg/kg	49.6	50.4	89.0	75-125	2.00	20	L711292-02	WG733082
Post Spike									
Serial Dilution									

Batch number /Run number / Sample number cross reference

WG733082: R2967368: L711291-01 02 03 04

- * * Calculations are performed prior to rounding of reported values.
 - * Performance of this Analyte is outside of established criteria.
- For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Robert Stockton
Olsson Associates- Grand Junction, CO
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

Report Summary

Friday July 25, 2014

Report Number: L711672

Samples Received: 07/22/14

Client Project:

Description: Axia Building 17-21H-893 Pit Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 25, 2014

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure
Sample ID : 17-21 PAD BG 4
Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

ESC Sample # : L711672-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 25, 2014

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure
Sample ID : 17-21 PAD BG 4
Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

ESC Sample # : L711672-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 25, 2014

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure
Sample ID : 17-21 PAD BG 4
Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

ESC Sample # : L711672-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	BDL	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24



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REPORT OF ANALYSIS

July 25, 2014

Robert Stockton
Olsson Associates- Grand Junction,
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ESC Sample # : L711672-04

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 4

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.6	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

July 25, 2014

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure
Sample ID : 17-21 PAD BG 4
Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

ESC Sample # : L711672-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.6	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24



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REPORT OF ANALYSIS

July 25, 2014

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

ESC Sample # : L711672-06

Date Received : July 22, 2014
Description : Axia Building 17-21H-893 Pit Closure

Site ID :

Sample ID : 17-21 PAD BG 4

Project # :

Collected By : J. Sutrina
Collection Date : 07/21/14 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.3	2.0	mg/kg	6010B	07/25/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/25/14 08:24 Printed: 07/25/14 08:24

Summary of Remarks For Samples Printed
07/25/14 at 08:24:57

TSR Signing Reports: 288
R3 - Rush: Two Day

Log all PAHs as PAHSIM.

Sample: L711672-01 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23
Sample: L711672-02 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23
Sample: L711672-03 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23
Sample: L711672-04 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23
Sample: L711672-05 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23
Sample: L711672-06 Account: OLSSONCO Received: 07/22/14 09:00 Due Date: 07/25/14 00:00 RPT Date: 07/25/14 08:24
Relogged from L711291-04. AV 7/23



YOUR LAB OF CHOICE

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Robert Stockton
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Quality Assurance Report
Level II
L711672

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Est. 1970

July 25, 2014

Laboratory Blank							
Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed	
Arsenic	< 1	mg/kg			WG733405	07/25/14 00:49	
Laboratory Control Sample							
Analyte	Units	Known Val	Result	% Rec	Limit	Batch	
Arsenic	mg/kg	237	232.	98.0	83.1-117	WG733405	
Laboratory Control Sample Duplicate							
Analyte	Units	Result	Ref	% Rec	Limit	RPD	Limit Batch
Arsenic	mg/kg	234.	232.	99.0	83.1-117	1.00	20 WG733405

Batch number /Run number / Sample number cross reference

WG733405: R2968166: L711672-01 02 03 04 05 06

- * * Calculations are performed prior to rounding of reported values.
- * Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

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Robert Stockton
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Quality Assurance Report
Level II

L711672

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July 25, 2014

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

Billing Information:

Report to: Robert Stockton
Email to: rstockton@olssonassociates.com

Project	Axica Bulldog 17-21H-893 P.H
Description:	Closure

Phone: 970-263-7800
FAX: 970-263-7456

| Client Project #:

ESC Key:

Collected by: *L. S. Trina*

Site/Facility ID#:

P.O.#:

Collected by (signature):

Rush? (Lab MUST Be Notified)

Date Results Needed:

No.	of	Contr
-----	----	-------

_____	Same Day.....	200%
_____	Next Day.....	100%
_____	Two Day	50%
_____	Three Day	25%

Email? No ☒ Yes

FAX? No Yes

FAX? No Yes

Immediately Packed on Ice N

[illegible]

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Samples returned via: ☐ UPS

☒ FedEx ☐ CourierCondition: ✓ (lab use only)

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp:

Bottles Received:

CoC Seals Intact: Y Y ___ N ___ NA

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

Time:

pH Checked:

NCF:

7705 9329 4407

List 1 - Acenaphthene, Anthracene, Benzo(A)anthracene, Benzo(B)fluoranthene, Benzo(K)fluoranthene, Benzo(A)pyrene, Chrysene, Dibenzo(A,H)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3,C,D)pyrene, Naphthalene, Pyrene

List 2 - As, B, Ba, Cd, Cr3, Cr6, Cu, Pb, Hg, Ni, Se, Ag, Zn

B057

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

Billing Information:

Report to:

Robert Stockton

Email to:

rstockton@olssonassociates.co

Analysis/Container/Preservative

Chain of Custody
Page 1 of 2

12065 Lebanon Road
 Mt. Juliet, TN 37122

Phone: (800) 767-5859
 Phone: (615) 758-5858
 Fax: (615) 758-5859

Project Description: *Air Building 17-21H-893 PA Closure*

Phone: 970-263-7800
 FAX: 970-263-7456

Client Project #:

ESC Key:

Collected by: *J. Strina*

Site/Facility ID#:

P.O.#:

Collected by (signature):

Rush?

(Lab MUST Be Notified)

Same Day.....200%

Next Day.....100%

Two Day.....50%

Three Day.....25%

Date Results Needed:

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.
of
Cntrs

TPH (GRO)

TPH (DRO)

BTEX

PAH (See List 1)

Electrical Conductivity

SAR, pH

Metals (See List 2)

Arsenic

CoCode

(lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant

Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	TPH (GRO)	TPH (DRO)	BTEX	PAH (See List 1)	Electrical Conductivity	SAR, pH	Metals (See List 2)	Arsenic	Remarks/Contaminant	Sample # (lab only)
17-21 Pad BG1	Grab	SS		7/21/14	1415	1								X		671051-01
17-21 Pad BG2	Grab	SS		↓	1430	1								X		02
17-21 Pad BG3	Grab	SS		↓	1445	1								X		03
17-21 Pad BG4	Grab	SS		7/21/14	1500	1								X		04
	Grab	SS														
	Grab	SS														

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

770645167905 Flow _____ Other _____

Relinquished by: (Signature) <i>[Signature]</i>	Date: 7/21/14	Time: 1600	Received by: (Signature) <i>[Signature]</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 24°C Bottles Received: 4/402	CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 7-22-14 Time: 0900	pH Checked: NCF:

B057

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

Billing Information:

Report to:

Robert Stockton

Email to:

rstockton@olssonassociates.co

Analysis/Container/Preservative

Chain of Custody
Page 1 of 2


ESC
L.A.B S.C.I.E.N.C.E.S

12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

1711672

Project Description: Aria Building 17-21H-893 PA Closure

Phone: 970-263-7800
FAX: 970-263-7456

Client Project #:

ESC Key:

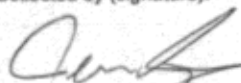
Collected by:

J. Savina

Site/Facility ID#:

P.O.#:

Collected by (signature):



Immediately Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)

Same Day.....200%
Next Day.....100%
Two Day.....50%
☒ Three Day.....25%

Date Results Needed:

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.
of
Cntrs

TPH (GRO)

TPH (DRO)

BTEX

PAH (See List 1)

Electrical Conductivity

SAR, pH

Metals (See List 2)

Arsenic

CoCode

(lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant

Sample # (lab only)

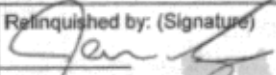
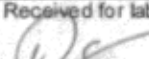
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	TPH (GRO)	TPH (DRO)	BTEX	PAH (See List 1)	Electrical Conductivity	SAR, pH	Metals (See List 2)	Arsenic	Remarks/Contaminant	Sample # (lab only)
17-21 Pad BG1	Grab	SS		7/21/14	1415	1								X		1711672-01
17-21 Pad BG2	Grab	SS		↓	1430	1								X		02
17-21 Pad BG3	Grab	SS		↓	1445	1								X		02
17-21 Pad BG4	Grab	SS		7/21/14	1500	1								X	L711672-01	02
	Grab	SS														
	Grab	SS														

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

770645167905 Flow _____ Other _____

Relinquished by: (Signature) 	Date: 7/21/14	Time: 1600	Received by: (Signature)	Samples returned via: <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> UPS	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 24°C	Bottles Received: 4/402
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 7-22-14	Time: 0900
					pH Checked: NCE:

Andy Vann

From: Daphne Richards
Sent: Wednesday, July 23, 2014 3:23 PM
To: Login
Cc: Andrew Holt; Ken Buckley
Subject: Rush relog L711291-04 R2

Importance: High

Please relog L711291-04 for ASICP

Client would like to take 6 aliquots of the sample and log to 6 separate dash numbers

Requesting next day tat due 7/24

List 1 - Acenaphthene, Anthracene, Benzo(A)anthracene, Benzo(B)fluoranthene, Benzo(K)fluoranthene, Benzo(A)pyrene, Chrysene, Dibenzo(A,H)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3,C,D)pyrene, Naphthalene, Pyrene

List 2 - As, B, Ba, Cd, Cr3, Cr6, Cu, Pb, Hg, Ni, Se, Ag, Zn