

Metals

Case Narrative

Colorado Oil & Gas Conservation Commission

Box Elder Creek

Work Order Number: 1508348

1. This report consists of 2 water samples.
2. The samples were received cool and intact by ALS on 08/21/15.
3. The samples were to be analyzed for dissolved metals. The samples were filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than 2 prior to analysis.
4. The samples were prepared and analyzed based on Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures.

Prior to analysis by Trace ICP, an ionization buffer was added to the samples to improve the sodium and potassium quantitation.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 200.2 and the current revision of SOP 806.

5. Analysis by Trace ICP followed method 200.7 and the current revision of SOP 807.

Analysis by ICP-MS followed method 200.8 and the current revision of SOP 827.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.



- A filter (method) blank and laboratory control sample were filtered, preserved, and digested at the same time as the sample.
- The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes.
- All laboratory control sample criteria were met.
- All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
- The interference check samples associated with Method 200.7 were within acceptance criteria.
- The interference check samples associated with Method 200.8 were analyzed.

9. Matrix specific quality control procedures.

Per method requirements, matrix QC was performed for each analysis. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

10. Both samples required a dilution to bring sodium into the analytical range of the Trace ICP.

It is a standard practice that samples for ICP-MS are analyzed at a dilution.

11. Sodium Adsorption Ratio (SAR) was determined by calculation based on a reference from the client. Calcium, magnesium, and sodium concentrations were determined by ICP, Method 200.7.

$$SAR = Na / (((Ca + Mg) / 2)^{1/2})$$

The analyte results are the meq/L concentrations based on conversions from their mg/L concentrations. Please note that the SAR value is unitless.



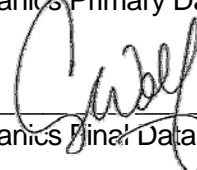
The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Jill Latele
Inorganics Primary Data Reviewer

8/27/15

Date



[unclear]
Inorganics Final Data Reviewer

8/31/15

Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A “J” is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a “U” is entered. For samples, negative values are reported as non-detects (“U” flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is “J” flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
 - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 - M - Duplicate injection precision was not met.
 - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 - * - Duplicate analysis (relative percent difference) not within control limits.
 - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1508348

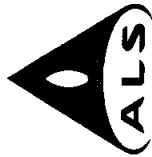
Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Box Elder Creek

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Box Elder Down	1508348-1		WATER	20-Aug-15	11:48
Box Elder Up	1508348-2		WATER	20-Aug-15	14:05
Trip Blank	1508348-3		WATER	20-Aug-15	7:00



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

PROJECT NAME Box Elder Creek		SAMPLER SITE ID		DATE 27 Aug 2015		WORKORDER # 1508348	
PROJECT No.		EDD FORMAT		TURNAROUND		PAGE 1 of 1	
COMPANY NAME Colorado Environmental Services, Inc.		PURCHASE ORDER		By Lab - or		Return to Client	
SEND REPORT TO Peter Contantus		BILL TO COMPANY		DISPOSAL			
ADDRESS		INVOICE ATTN TO					
CITY / STATE / ZIP		ADDRESS					
PHONE		CITY / STATE / ZIP					
FAX		PHONE					
E-MAIL pcontantus@coloradoenv.com		FAX					
E-MAIL		E-MAIL					
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
①	Box Elder Down	W	26 Aug 15	11:48	6	W	X
↓	Box Elder Down	W	26 Aug 15	11:48	5	E	
②	Box Elder Down	W	26 Aug 15	11:48	1	3	
↓	Box Elder Up	W	26 Aug 15	14:05	3	HLL	
↓	Box Elder Up	W	26 Aug 15	14:05	5	E	
↓	Box Elder Up	W	26 Aug 15	14:05	1	3	
③	Tip Blak	W	26 Aug 15	07:00	3	1	
	NEA at GRC 3 day if possible						
	rest 14 days						

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Filter 11 group metals on receipt = dissolved 20.7-6000-11, 20.707-1000 20.7-6000-16, 20.707-1000 Anions = P, Cl, F, NO ₃ , SO ₄ , CO ₃ , SiO ₄	RELINQUISHED BY Peter Contantus	SIGNATURE Peter Contantus	PRINTED NAME Peter Contantus	DATE 27 Aug 2015	TIME 08:05
	RECEIVED BY Zach D. Calumet	SIGNATURE Zach D. Calumet	PRINTED NAME Zach D. Calumet	DATE 8/11/15	TIME 8:05
	RELINQUISHED BY				
	RECEIVED BY				
	RELINQUISHED BY				
	RECEIVED BY				

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-NaHSO₄ 7-Other 8-4 degrees C 9-5035

pdf cjh



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1508348

Project Manager: AW

Initials: CDT Date: 8-21-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	NONE	<u>YES</u>	NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible?		<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	<u>DROP OFF</u>	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<u>YES</u>	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<u>YES</u>	NO
10. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO
11. Were all samples placed in the proper containers for the requested analyses?		<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<u>YES</u>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	YES	<u>NO</u>
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	<u>NO</u>
16. Were the samples shipped on ice?		<u>YES</u>	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <u>#4</u> RAD ONLY		<u>YES</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.6</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>NA</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <u>NA</u> (If no, see Form 008.)			

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

If applicable, was the client contacted? YES / NO / NA Contact: Gary Date/Time: 8/21/15

Project Manager Signature / Date: Gary 8/21/15

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

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

Dissolved Metals by 200.7

Method EPA200.7 Revision 4.4

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Down

Lab ID: 1508348-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Method: EPA200.2 Rev 2.2

Prep Batch: IP150825-3

QC Batch ID: IP150825-3-5

Run ID: IT150826-1A6

Cleanup: NONE

Basis: As Received

File Name: 150826A.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-41-7	BERYLLIUM	1	0.00051	0.002	0.00051	U	
7440-42-8	BORON	1	0.33	0.1	0.0072		
7440-70-2	CALCIUM	1	180	1	0.034		
7440-47-3	CHROMIUM	1	0.0015	0.01	0.0015	U	
7439-89-6	IRON	1	0.016	0.1	0.016	U	
7439-93-2	LITHIUM	1	0.091	0.01	0.0014		
7439-95-4	MAGNESIUM	1	59	1	0.023		
7440-02-0	NICKEL	1	0.0025	0.02	0.0024	J	
7440-09-7	POTASSIUM	1	15	1	0.22		
7440-21-3	SILICON	1	6.8	0.05	0.016		
7440-23-5	SODIUM	10	270	10	0.43		
	SODIUM ADSORPTION RATIO	10	4.5	1.7	0.44		
7440-62-2	VANADIUM	1	0.0022	0.01	0.0014	J	

Data Package ID: it1508348-1

Date Printed: Thursday, August 27, 2015

ALS Environmental -- FC

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Dissolved Metals by 200.7

Method EPA200.7 Revision 4.4

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Up

Lab ID: 1508348-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Method: EPA200.2 Rev 2.2

Prep Batch: IP150825-3

QC Batch ID: IP150825-3-5

Run ID: IT150826-1A6

Cleanup: NONE

Basis: As Received

File Name: 150826A.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-41-7	BERYLLIUM	1	0.00051	0.002	0.00051	U	
7440-42-8	BORON	1	0.32	0.1	0.0072		
7440-70-2	CALCIUM	1	160	1	0.034		
7440-47-3	CHROMIUM	1	0.0015	0.01	0.0015	U	
7439-89-6	IRON	1	0.016	0.1	0.016	U	
7439-93-2	LITHIUM	1	0.082	0.01	0.0014		
7439-95-4	MAGNESIUM	1	56	1	0.023		
7440-02-0	NICKEL	1	0.0032	0.02	0.0024	J	
7440-09-7	POTASSIUM	1	14	1	0.22		
7440-21-3	SILICON	1	6.3	0.05	0.016		
7440-23-5	SODIUM	10	250	10	0.43		
	SODIUM ADSORPTION RATIO	10	4.3	1.7	0.44		
7440-62-2	VANADIUM	1	0.0029	0.01	0.0014	J	

Data Package ID: it1508348-1

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Dissolved Metals by 200.8

Method EPA200.8 Revision 5.4

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Down

Lab ID: 1508348-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Method: EPA200.2 Rev 2.2

Prep Batch: IP150825-3

QCBatchID: IP150825-3-2

Run ID: IM150826-10A5

Cleanup: NONE

Basis: As Received

File Name: 013SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	0.043	0.05	0.013	J	
7440-36-0	ANTIMONY	10	0.00018	0.0003	0.00018	U	
7440-38-2	ARSENIC	10	0.0026	0.002	0.00035		
7440-39-3	BARIUM	10	0.045	0.001	0.00058		
7440-43-9	CADMIUM	10	0.00018	0.0003	0.00018	U	
7440-48-4	COBALT	10	0.00056	0.001	0.00024	J	
7440-50-8	COPPER	10	0.003	0.01	0.003	U	
7439-92-1	LEAD	10	0.00013	0.0005	0.00013	U	
7439-96-5	MANGANESE	10	0.065	0.002	0.0007		
7439-98-7	MOLYBDENUM	10	0.0072	0.001	0.0005		
7782-49-2	SELENIUM	10	0.0022	0.001	0.00068		
7440-22-4	SILVER	10	0.00004	0.0001	0.000038	J	
7440-23-5	SODIUM	10	300	1	0.24		
7440-24-6	STRONTIUM	10	2.7	0.001	0.00066		
7440-28-0	THALLIUM	10	0.00006	0.0002	0.00004	J	
7440-29-1	THORIUM	10	0.00008	0.0002	0.000074	J	
7440-61-1	URANIUM	10	0.032	0.0001	0.00005		
7440-66-6	ZINC	10	0.0062	0.02	0.0062	U	

Data Package ID: im1508348-1

Date Printed: Thursday, August 27, 2015

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Dissolved Metals by 200.8

Method EPA200.8 Revision 5.4

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Up

Lab ID: 1508348-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Method: EPA200.2 Rev 2.2

Prep Batch: IP150825-3

QCBatchID: IP150825-3-2

Run ID: IM150826-10A5

Cleanup: NONE

Basis: As Received

File Name: 014SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	0.042	0.05	0.013	J	
7440-36-0	ANTIMONY	10	0.00018	0.0003	0.00018	U	
7440-38-2	ARSENIC	10	0.003	0.002	0.00035		
7440-39-3	BARIUM	10	0.046	0.001	0.00058		
7440-43-9	CADMIUM	10	0.00018	0.0003	0.00018	U	
7440-48-4	COBALT	10	0.0005	0.001	0.00024	J	
7440-50-8	COPPER	10	0.003	0.01	0.003	U	
7439-92-1	LEAD	10	0.00013	0.0005	0.00013	U	
7439-96-5	MANGANESE	10	0.069	0.002	0.0007		
7439-98-7	MOLYBDENUM	10	0.0078	0.001	0.0005		
7782-49-2	SELENIUM	10	0.0028	0.001	0.00068		
7440-22-4	SILVER	10	0.000038	0.0001	0.000038	U	
7440-23-5	SODIUM	10	280	1	0.24		
7440-24-6	STRONTIUM	10	2.4	0.001	0.00066		
7440-28-0	THALLIUM	10	0.00004	0.0002	0.00004	U	
7440-29-1	THORIUM	10	0.000074	0.0002	0.000074	U	
7440-61-1	URANIUM	10	0.031	0.0001	0.00005		
7440-66-6	ZINC	10	0.0062	0.02	0.0062	U	

Data Package ID: *im1508348-1*

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Metals by 200.7

Method EPA200.7 Revision 4.4

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: FP150825-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Batch: IP150825-3

QCBatchID: IP150825-3-5

Run ID: IT150826-1A6

Cleanup: NONE

Basis: N/A

File Name: 150826A.

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-41-7	BERYLLIUM	1	0.00051	0.002	0.00051	U	
7440-42-8	BORON	1	0.0072	0.1	0.0072	U	
7440-70-2	CALCIUM	1	0.034	1	0.034	U	
7440-47-3	CHROMIUM	1	0.0015	0.01	0.0015	U	
7439-89-6	IRON	1	0.016	0.1	0.016	U	
7439-93-2	LITHIUM	1	0.0035	0.01	0.0014	J	
7439-95-4	MAGNESIUM	1	0.023	1	0.023	U	
7440-02-0	NICKEL	1	0.0024	0.02	0.0024	U	
7440-09-7	POTASSIUM	1	0.26	1	0.22	J	
7440-21-3	SILICON	1	0.016	0.05	0.016	U	
7440-23-5	SODIUM	1	0.069	1	0.043	J	
7440-62-2	VANADIUM	1	0.0014	0.01	0.0014	U	

Data Package ID: *it1508348-1*

Date Printed: Thursday, August 27, 2015

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Metals by 200.7

Method EPA200.7 Revision 4.4

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: FP150825-3LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08/25/2015

Date Analyzed: 08/26/2015

Prep Method: EPA200.22.2

Prep Batch: IP150825-3

QCBatchID: IP150825-3-5

Run ID: IT150826-1A6

Cleanup: NONE

Basis: N/A

File Name: 150826A.

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-41-7	BERYLLIUM	0.05	0.0491	0.002		98	85 - 115%
7440-42-8	BORON	1	1.06	0.1		106	85 - 115%
7440-70-2	CALCIUM	40	42	1		105	85 - 115%
7440-47-3	CHROMIUM	0.2	0.202	0.01		101	85 - 115%
7439-89-6	IRON	1	0.947	0.1		95	85 - 115%
7439-93-2	LITHIUM	0.5	0.525	0.01		105	85 - 115%
7439-95-4	MAGNESIUM	40	41.1	1		103	85 - 115%
7440-02-0	NICKEL	0.5	0.516	0.02		103	85 - 115%
7440-09-7	POTASSIUM	40	44.5	1		111	85 - 115%
7440-21-3	SILICON	1	1.05	0.05		105	85 - 115%
7440-23-5	SODIUM	40	43.1	1		108	85 - 115%
7440-62-2	VANADIUM	0.5	0.503	0.01		101	85 - 115%

Data Package ID: *it1508348-1*

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Metals by 200.8

Method EPA200.8 Revision 5.4

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: FP150825-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 25-Aug-15

Date Analyzed: 26-Aug-15

Prep Batch: IP150825-3

QCBatchID: IP150825-3-2

Run ID: IM150826-10A5

Cleanup: NONE

Basis: N/A

File Name: 011SMPL_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	0.013	0.05	0.013	U	
7440-36-0	ANTIMONY	10	0.00018	0.0003	0.00018	U	
7440-38-2	ARSENIC	10	0.00035	0.002	0.00035	U	
7440-39-3	BARIUM	10	0.00058	0.001	0.00058	U	
7440-43-9	CADMIUM	10	0.00018	0.0003	0.00018	U	
7440-48-4	COBALT	10	0.00024	0.001	0.00024	U	
7440-50-8	COPPER	10	0.003	0.01	0.003	U	
7439-92-1	LEAD	10	0.00013	0.0005	0.00013	U	
7439-96-5	MANGANESE	10	0.0007	0.002	0.0007	U	
7439-98-7	MOLYBDENUM	10	0.0005	0.001	0.0005	U	
7782-49-2	SELENIUM	10	0.00068	0.001	0.00068	U	
7440-22-4	SILVER	10	0.000038	0.0001	0.000038	U	
7440-23-5	SODIUM	10	0.38	1	0.24	J	
7440-24-6	STRONTIUM	10	0.00066	0.001	0.00066	U	
7440-28-0	THALLIUM	10	0.00004	0.0002	0.00004	U	
7440-29-1	THORIUM	10	0.000074	0.0002	0.000074	U	
7440-61-1	URANIUM	10	0.00005	0.0001	0.00005	U	
7440-66-6	ZINC	10	0.017	0.02	0.0062	J	

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Metals by 200.8

Method EPA200.8 Revision 5.4

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: FM150825-3LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08/25/2015

Date Analyzed: 08/26/2015

Prep Method: EPA200.22.2

Prep Batch: IP150825-3

QCBatchID: IP150825-3-2

Run ID: IM150826-10A5

Cleanup: NONE

Basis: N/A

File Name: 012SMPL_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7429-90-5	ALUMINUM	5	5.36	0.05		107	85 - 115%
7440-36-0	ANTIMONY	0.03	0.0322	0.0003		107	85 - 115%
7440-38-2	ARSENIC	0.1	0.107	0.002		107	85 - 115%
7440-39-3	BARIUM	0.1	0.113	0.001		113	85 - 115%
7440-43-9	CADMIUM	0.03	0.0324	0.0003		108	85 - 115%
7440-48-4	COBALT	0.1	0.112	0.001		112	85 - 115%
7440-50-8	COPPER	1	1.02	0.01		102	85 - 115%
7439-92-1	LEAD	0.05	0.0527	0.0005		105	85 - 115%
7439-96-5	MANGANESE	0.1	0.112	0.002		112	85 - 115%
7439-98-7	MOLYBDENUM	0.1	0.108	0.001		108	85 - 115%
7782-49-2	SELENIUM	0.1	0.113	0.001		113	85 - 115%
7440-22-4	SILVER	0.01	0.0112	0.0001		112	85 - 115%
7440-23-5	SODIUM	10	10.9	1		109	85 - 115%
7440-24-6	STRONTIUM	0.1	0.109	0.001		109	85 - 115%
7440-28-0	THALLIUM	0.002	0.00223	0.0002		112	85 - 115%
7440-29-1	THORIUM	0.01	0.0103	0.0002		103	85 - 115%
7440-61-1	URANIUM	0.01	0.0103	0.0001		103	85 - 115%
7440-66-6	ZINC	2	2.15	0.02		108	85 - 115%

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