ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division
Fort Collins, Colorado

Metals

Case Narrative

Colorado Oil & Gas Conservation Commission

Complaint 200241120

Work Order Number: 1005024

1. This report consists of 1 water sample.

2. The sample was received cool and intact by ALS on 05/05/10.

3. The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

4. The sample was prepared for analysis 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 sample and associated QC to improve the sodium and potassium quantitation.

   For analysis by Trace ICP and ICP-MS, the sample was digested following method 200.2 and SOP 806 Rev. 13.

   The sample was prepared for ICP-MS analysis of arsenic and selenium by passing the digested sample and associated QC through a cation exchange column. The cation exchange column removes cations from the matrix and eliminates the CaCl+ (mass 75) interferences on arsenic.

5. The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures.

   Analysis by Trace ICP followed method 200.7 and SOP 807 Rev. 12.

   The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution.

During sample analysis concentrations are computed by the software and the results are printed in mg/L. The instrument software does not provide a printout which gives both intensity and concentration. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2nd source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations at two times those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

Analysis by ICP-MS followed method 200.8 and SOP 827 Rev. 7.

The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution. A calibration equation relating instrument response to concentration is developed by the instrument software. The equation is a higher order polynomial. This type of equation is used to improve quantitation accuracy at lower concentrations where the relationship between concentration and instrument response is non-linear.

During sample analysis concentrations are computed by the software and the results are printed in ug/L. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2nd source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations near the middle of the analytical range but different than those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.

7. The sample was 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 samples were filtered, preserved, and digested at the same time as the samples. There were not more than 20 samples associated with each filtered blank and laboratory control sample.
- The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes.
- The laboratory control samples associated with this digestion batch were within the acceptance limits. This indicates complete digestions according to the method.
- All initial and continuing calibration blanks associated with each analytical batch were below the practical quantitation limits for the requested analytes.
- All initial and continuing calibration verifications associated with each analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- The interference check samples associated with Method 200.7 were within acceptance criteria.
- The interference check samples associated with Method 200.8 were analyzed, and the high standard readbacks were within acceptance criteria.

9. Matrix specific quality control procedures.

   Sample 1005024-1 was designated as the quality control sample for each analysis.

   Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

   - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
   - Matrix spike recoveries could not be evaluated for the following analyte:

Analyte	Sample ID
Strontium	1005024-1

     The concentration of this analyte in the native sample was greater than four times the concentration of matrix spike added during the digestion. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The laboratory control sample indicates that the digestion and analysis were in control.
   - A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
   - A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.

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

11. Sodium Adsorption Ration (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 me/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.

Emily Knodel
Inorganics Primary Data Reviewer

05-14-10
Date

Inorganics Final Data Reviewer

5/14/10
Date

Inorganic Data Reporting Qualifiers

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

- Result qualifier -- If the analyte was analyzed for but not detected a “U” is entered.
- 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.

ALS Laboratory Group -- FC

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 1005024
Client Name: Colorado Oil & Gas Conservation Commission
Client Project Name: Complaint 200241120
Client Project Number:
Client PO Number: OE PHA 10-41

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Lizardy WW	1005024-1		WATER	04-May-10	14:07
Trip Blank	1005024-2		WATER	04-May-10	7:00

ALS Laboratory Group

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

Chain-of-Custody

Date | Page 1 of 1 | Lab ID 1005024

Project Name/No.: Complaint 2-0024 1120 | Sampler(s): Gintautas | Turnaround: Standard or Due 14 day | Disposal: By Lab or Return to Client

REPORT TO: Potter Gintautas
PHONE: 719-846-3091
FAX:
E-MAIL: potter.gintautas@state.co.us
COMPANY: Colo. Oil & Gas Cons. Comm
ADDRESS: PO Box 106
Trinidad CO 81082

Provide additional information as needed in Comments below.

Circle Analytical Method Above

Sample ID	Date	Time *	Lab ID	Matrix	Preservative (Type HCl, etc.)	No. of Containers	TPH	VOCs	~~BTEX + MBE~~ RSK 175	SVOCs	OC Pesticides	PCBs	Herbicides	Explosives	TCLP Organics SW1311	TCLP Metals SW1311	Total Metals (ICP) or Hg	Dissolved Metals (ICP) or Hg	Total Metals (ICP-MS)	Dissolved Metals (ICP-MS)	~~Hexavalent Chromium~~ Alkalinity	Inorganic Anions	Solids	pH	~~Perchlorate~~ Conductivity	TDS	Actinides	Gamma Isotopes	Gross Alpha / Beta	Total Alpha-Emitting Radium	Radium 226	Radium 228	Strontium 90 (Total RadioSr)	Tritium	Radon 222	
Lizard Well	4 May	14:07	1	W	HCl	3		X																											
	↓	↓	↓	W	H2SO4	1																			X										
	↓	↓	↓	W	none	5												X		X	X	X	X	X	X									X	X
Trip Blank	4 May	07:xx	2	W	HCl	2		X																											

* 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 analyte list below.

Comments:

Anions = Br, Cl, F, NO2, NO3, SO4
Filter and preserve metals upon receipt = dissolved.
~~200.7~~ = Ba, Be, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mn, Ni, K, Si, Sr, V, Zn
200.8 = Sb, As, Cd, Pb, Mo, Se, Ag, Tl, U

Originator: Retain pink page or a photocopy!

Form 202r7 (5/19/09)

Relinquished By: (1)	Relinquished By: (2)
Signature: [signature]	Signature:
Printed Name: Potter Gintautas	Printed Name:
Date: 4 May 2010 Time: 16:20	Date: Time:
Company: COGCC	Company:

Received By: (1)	Received By: (2)
Signature: [signature]	Signature:
Printed Name: Lauren Schmitz	Printed Name:
Date: 5/5/10 Time: 1020	Date: Time:
Company: ALS	Company:

CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1005024

Project Manager: ARW Initials: LAS Date: 5/5/10

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

Cooler #:	1
Temperature (°C):	4.6
No. of custody seals on cooler:	1
DOT Survey/ Acceptance Information — External µR/hr reading:	13
DOT Survey/ Acceptance Information — Background µR/hr reading:	11

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

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

(#8) Metals - filter and preserve prior to analysis.

(*14) 1005024-1-3 (Lizardy WW voa) had headspace < pea size

If applicable, was the client contacted? (YES) / NO / NA Contact: Peter Cointantas Date/Time: 5/6/10 e-mail

Project Manager Signature / Date: 5/6/10

*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 Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Field ID: Lizardy WW
Lab ID: 1005024-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-1
Run ID: IT100511-2A5
Cleanup: NONE
Basis: As Received
File Name: 100511A.

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: mg/l
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	1	0.1	0.1	U	
7440-41-7	BERYLLIUM	1	0.002	0.002	U	
7440-42-8	BORON	1	0.1	0.1	U	
7440-70-2	CALCIUM	1	110	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.016	0.01		
7439-89-6	IRON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.014	0.01		
7439-95-4	MAGNESIUM	1	38	1		
7439-96-5	MANGANESE	1	0.32	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	4.2	1		
7440-21-3	SILICON	1	4.7	0.05		
7440-23-5	SODIUM	1	68	1		
	SODIUM ADSORPTION RATIO	1	1.4	0.17		
7440-24-6	STRONTIUM	1	2.7	0.01		
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT1005024-1*

Dissolved Metals by 200.8

Method EPA200.8 Revision 5.4

Sample Results

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Field ID: Lizardy WW
Lab ID: 1005024-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-3
Run ID: IM100511-10A3
Cleanup: NONE
Basis: As Received
File Name: 012SMPL.

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.3	0.3	U	
7440-38-2	ARSENIC	10	2	2	U	
7440-43-9	CADMIUM	10	0.3	0.3	U	
7439-92-1	LEAD	10	0.5	0.5	U	
7439-98-7	MOLYBDENUM	10	1	1	U	
7782-49-2	SELENIUM	10	1	1	U	
7440-22-4	SILVER	10	0.1	0.1	U	
7440-28-0	THALLIUM	10	0.2	0.2	U	
7440-61-1	URANIUM	10	0.69	0.1		

Data Package ID: *IM1005024-1*

Metals by 200.7

Method EPA200.7 Revision 4.4

Method Blank

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Lab ID: F100506-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-1
Run ID: IT100511-2A5
Cleanup: NONE
Basis: N/A
File Name: 100511A.

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: mg/l
Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	1	0.1	0.1	U	
7440-41-7	BERYLLIUM	1	0.002	0.002	U	
7440-42-8	BORON	1	0.1	0.1	U	
7440-70-2	CALCIUM	1	1	1	U	
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7439-95-4	MAGNESIUM	1	1	1	U	
7439-96-5	MANGANESE	1	0.01	0.01	U	
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	1	1	U	
7440-21-3	SILICON	1	0.05	0.05	U	
7440-23-5	SODIUM	1	1	1	U	
7440-24-6	STRONTIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT1005024-1*

Metals by 200.7

Method EPA200.7 Revision 4.4

Laboratory Control Sample

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Lab ID: IP100510-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/10/2010
Date Analyzed: 05/11/2010
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-1
Run ID: IT100511-2A5
Cleanup: NONE
Basis: N/A
File Name: 100511A.

Sample Aliquot: 50 g
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
7440-39-3	BARIUM	2	1.88	0.1		94	85 - 115%
7440-41-7	BERYLLIUM	0.05	0.0498	0.002		100	85 - 115%
7440-42-8	BORON	1	0.956	0.1		96	85 - 115%
7440-70-2	CALCIUM	40	39	1		98	85 - 115%
7440-47-3	CHROMIUM	0.2	0.195	0.01		97	85 - 115%
7440-48-4	COBALT	0.5	0.477	0.01		95	85 - 115%
7440-50-8	COPPER	0.25	0.24	0.01		96	85 - 115%
7439-89-6	IRON	1	0.962	0.1		96	85 - 115%
7439-93-2	LITHIUM	0.5	0.458	0.01		92	85 - 115%
7439-95-4	MAGNESIUM	40	39.5	1		99	85 - 115%
7439-96-5	MANGANESE	0.5	0.467	0.01		93	85 - 115%
7440-02-0	NICKEL	0.5	0.476	0.02		95	85 - 115%
7440-09-7	POTASSIUM	40	39.7	1		99	85 - 115%
7440-21-3	SILICON	2	1.9	0.05		95	85 - 115%
7440-23-5	SODIUM	40	37.8	1		94	85 - 115%
7440-24-6	STRONTIUM	0.5	0.492	0.01		98	85 - 115%
7440-62-2	VANADIUM	0.5	0.479	0.01		96	85 - 115%
7440-66-6	ZINC	0.5	0.48	0.02		96	85 - 115%

Data Package ID: *IT1005024-1*

Metals by 200.7

Method EPA200.7 Revision 4.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1005024
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200241120

Field ID:	Lizardy WW
LabID:	1005024-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-1
Run ID: IT100511-2A5
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: mg/l
File Name: 100511A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-39-3	BARIUM	0.1	U	1.87		0.1	2	93	70 - 130%
7440-41-7	BERYLLIUM	0.002	U	0.048		0.002	0.05	96	70 - 130%
7440-42-8	BORON	0.1	U	0.971		0.1	1	97	70 - 130%
7440-70-2	CALCIUM	110		148		1	40	94	70 - 130%
7440-47-3	CHROMIUM	0.01	U	0.189		0.01	0.2	95	70 - 130%
7440-48-4	COBALT	0.01	U	0.461		0.01	0.5	92	70 - 130%
7440-50-8	COPPER	0.016		0.257		0.01	0.25	96	70 - 130%
7439-89-6	IRON	0.1	U	0.963		0.1	1	96	70 - 130%
7439-93-2	LITHIUM	0.014		0.527		0.01	0.5	103	70 - 130%
7439-95-4	MAGNESIUM	38		77.2		1	40	97	70 - 130%
7439-96-5	MANGANESE	0.32		0.765		0.01	0.5	89	70 - 130%
7440-02-0	NICKEL	0.02	U	0.456		0.02	0.5	91	70 - 130%
7440-09-7	POTASSIUM	4.2		49.1		1	40	112	70 - 130%
7440-21-3	SILICON	4.7		6.41		0.05	2	87	70 - 130%
7440-23-5	SODIUM	68		107		1	40	98	70 - 130%
7440-24-6	STRONTIUM	2.7		3.12		0.01	0.5	79	70 - 130%
7440-62-2	VANADIUM	0.01	U	0.466		0.01	0.5	93	70 - 130%
7440-66-6	ZINC	0.02	U	0.471		0.02	0.5	94	70 - 130%

Data Package ID: *IT1005024-1*

Metals by 200.7

Method EPA200.7 Revision 4.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1005024
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200241120

Field ID: Lizardy WW
LabID: 1005024-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-1
Run ID: IT100511-2A5
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: mg/l
File Name: 100511A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-39-3	BARIUM	1.87		2	94	0.1	20	0
7440-41-7	BERYLLIUM	0.0478		0.05	96	0.002	20	0
7440-42-8	BORON	0.971		1	97	0.1	20	0
7440-70-2	CALCIUM	148		40	94	1	20	0
7440-47-3	CHROMIUM	0.187		0.2	93	0.01	20	1
7440-48-4	COBALT	0.46		0.5	92	0.01	20	0
7440-50-8	COPPER	0.257		0.25	96	0.01	20	0
7439-89-6	IRON	0.947		1	95	0.1	20	2
7439-93-2	LITHIUM	0.525		0.5	102	0.01	20	0
7439-95-4	MAGNESIUM	76.9		40	96	1	20	0
7439-96-5	MANGANESE	0.762		0.5	88	0.01	20	0
7440-02-0	NICKEL	0.456		0.5	91	0.02	20	0
7440-09-7	POTASSIUM	48.9		40	112	1	20	0
7440-21-3	SILICON	6.41		2	87	0.05	20	0
7440-23-5	SODIUM	106		40	95	1	20	1
7440-24-6	STRONTIUM	3.12		0.5	79	0.01	20	0
7440-62-2	VANADIUM	0.465		0.5	93	0.01	20	0
7440-66-6	ZINC	0.47		0.5	94	0.02	20	0

Data Package ID: *IT1005024-1*

Metals by 200.8

Method EPA200.8 Revision 5.4

Method Blank

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Lab ID: F100506-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-3
Run ID: IM100511-10A3
Cleanup: NONE
Basis: N/A
File Name: 009SMPL.

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.3	0.3	U	
7440-38-2	ARSENIC	10	2	2	U	
7440-43-9	CADMIUM	10	0.3	0.3	U	
7439-92-1	LEAD	10	0.5	0.5	U	
7439-98-7	MOLYBDENUM	10	1	1	U	
7782-49-2	SELENIUM	10	1	1	U	
7440-22-4	SILVER	10	0.1	0.1	U	
7440-28-0	THALLIUM	10	0.2	0.2	U	
7440-61-1	URANIUM	10	0.1	0.1	U	

Data Package ID: *IM1005024-1*

Metals by 200.8

Method EPA200.8 Revision 5.4

Laboratory Control Sample

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 1005024

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200241120

Lab ID: F100506-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/10/2010
Date Analyzed: 05/11/2010
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-3
Run ID: IM100511-10A3
Cleanup: NONE
Basis: N/A
File Name: 011SMPL.

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	30	27.7	0.3		92	85 - 115%
7440-38-2	ARSENIC	100	89.8	2		90	85 - 115%
7440-43-9	CADMIUM	30	28.6	0.3		95	85 - 115%
7439-92-1	LEAD	50	46.7	0.5		93	85 - 115%
7439-98-7	MOLYBDENUM	100	89	1		89	85 - 115%
7782-49-2	SELENIUM	100	94.3	1		94	85 - 115%
7440-22-4	SILVER	10	9.03	0.1		90	85 - 115%
7440-28-0	THALLIUM	1	0.87	0.2		87	85 - 115%
7440-61-1	URANIUM	10	8.94	0.1		89	85 - 115%

Data Package ID: *IM1005024-1*

Metals by 200.8

Method EPA200.8 Revision 5.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1005024
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200241120

Field ID: Lizardy WW
LabID: 1005024-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-3
Run ID: IM100511-10A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: UG/L
File Name: 015SMPL.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.3	U	29.1		0.3	30	97	70 - 130%
7440-38-2	ARSENIC	2	U	96.9		2	100	97	70 - 130%
7440-43-9	CADMIUM	0.3	U	30.2		0.3	30	101	70 - 130%
7439-92-1	LEAD	0.5	U	48.6		0.5	50	97	70 - 130%
7439-98-7	MOLYBDENUM	1	U	94.8		1	100	95	70 - 130%
7782-49-2	SELENIUM	1	U	96.6		1	100	97	70 - 130%
7440-22-4	SILVER	0.1	U	10		0.1	10	100	70 - 130%
7440-28-0	THALLIUM	0.2	U	0.94		0.2	1	94	70 - 130%
7440-61-1	URANIUM	0.69		10.1		0.1	10	94	70 - 130%

Data Package ID: *IM1005024-1*

Metals by 200.8

Method EPA200.8 Revision 5.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 1005024
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200241120

Field ID: Lizardy WW
LabID: 1005024-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 04-May-10
Date Extracted: 10-May-10
Date Analyzed: 11-May-10
Prep Method: EPA200.2

Prep Batch: IP100510-2
QCBatchID: IP100510-2-3
Run ID: IM100511-10A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 ml
Result Units: UG/L
File Name: 016SMPL.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	28.5		30	95	0.3	20	2
7440-38-2	ARSENIC	93		100	93	2	20	4
7440-43-9	CADMIUM	28.7		30	96	0.3	20	5
7439-92-1	LEAD	48.4		50	97	0.5	20	0
7439-98-7	MOLYBDENUM	94.3		100	94	1	20	1
7782-49-2	SELENIUM	94.6		100	95	1	20	2
7440-22-4	SILVER	9.19		10	92	0.1	20	8
7440-28-0	THALLIUM	1.02		1	102	0.2	20	
7440-61-1	URANIUM	9.99		10	93	0.1	20	1

Data Package ID: *IM1005024-1*