ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division
Fort Collins, Colorado

Metals
Case Narrative

Colorado Oil & Gas Conservation Commission
Complaint 200209993

Work Order Number: 0905095

1. This report consists of 1 water sample.

2. The sample was received cool and intact by ALS on 05/13/09.

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 samples 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. 11.

    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. 6.

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 sample were filtered, preserved, and digested at the same time as the sample. There were not more than 20 samples associated with the filtered blank each 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, with the exception of CCV4 and CCV5 for thallium. Thallium was not reported from the samples bracketed by these CCVs.

- 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 0905095-1 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.

   - 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 with the following exception:

Analyte	Sample ID
Sodium	0905095-1L

     The native sample result is flagged for serial dilution failure.

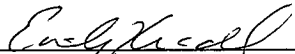10. It is a standard practice that samples for ICP-MS are analyzed at a dilution.

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 Knødel
Inorganics Primary Data Reviewer

05-22-09
Date

Inorganics Final Data Reviewer

5/22/09
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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
Client Project Name: Complaint 200209993
Client Project Number:
Client PO Number: OE PHA 09000000004

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Williams WW	0905095-1		WATER	12-May-09	8:36
Trip Blank	0905095-2		WATER	12-May-09	8:30

ALS Laboratory Group -- FC
LIMS Version: 6.264A

Date Printed: Friday, May 22, 2009

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Paragon Analytics
A Division of DataChem Laboratories, Inc.

225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511   (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0905095

Date 12/4/09   Page 1 of 1

Sampler(s): Gintautas

Project Name/No.:
Report To: Peter Gintautas
Phone: 719-846-3091
Fax:
E-mail: Peter.gintautas@state.co.us
Company: Colo. Oil + Gas Cons. Comm.
Address:

Turnaround (circle one) **Standard** or Rush (Due ____)   Dispose: Date 12/4/09 or Return to Client

Originator: Retain pink copy!

Sample ID	Lab ID	Matrix	Preservative (indicate type... HCl, etc.)	No. of Containers	VOCs SW8260B	BTEX (only) SW8021B	SVOCs SW8270C	OC Pesticides SW8081A	PCBs SW8082	Herbicides SW8151A	Explosives SW8330	TCLP Organics SW1311 SW8260B 8270C 8081A 8151A	TCLP Metals SW1311 7470	Total Metals by ICP Hg SW6010B 7470 7471 E200.7	Dissolved Metals by ICP Hg SW6010B 7470 E200.7	Total Metals by ICP/MS SW6020A E200.8	Dissolved Metals by ICP/MS SW6020A E200.8	Hexavalent Chromium SW7196A	Inorganic Anions SW9056 E300.0	Solids: Total E160.3 TDS E160.1 TSS E160.2	pH SW9040B SW9045C	TPH SW8015B GRO DRO	Gross Alpha/Beta SW9310 E900.0	Actinides by Paragon SOP	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 E903.1	Radium 228 SW9320 E904.0	Strontium 90 (Total RadioSr) D5811-00	Gamma Isotopes E901.1	Radon 222 SM7510RN	
complaint 2002-0999 3 Williams	UU	W	none	5	X	X	X							X	X	X	X	X	X	X	X										X
		W	HCl	3	X																											
Trip Blank		W	H₂y	1					X																						X
		W	HCl	3	X																											

(1) Relinquished By:	(1) Received By:
Signature	Signature Cheryl Trimble
Printed Name Peter Gintautas	Printed Name Cheryl Trimble
Date 12/4/09 Time 13:30 Company	Date 5-13-09 Time 0945 Company ALS
(2) Relinquished By:	(2) Received By:
Signature	Signature
Printed Name	Printed Name
Date ____ Time ____ Company	Date ____ Time ____ Company

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

Comments:
Anions = Br, Cl, F, NO₃, NO₂, SO₄
Filter + preserve metals upon receipt.
200.7 = B, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mn, Na, K, Sr, Zn
200.8 = Sb, As, Cd, Pb, Mo, Se, Ag, Tl, U

Form 2027.6.xls (6/16/06)

CONDITION OF SAMPLE UPON RECEIPT FORM ***Paragon Analytics***

Client: _COGCC_ Workorder No: _0905095_

Project Manager: _AW_ Initials: _CDT_ Date: _5-13-09_

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):	5.6							
No. of custody seals on cooler:	1							
DOT Survey/ Acceptance Information	External µR/hr reading:	13						
	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.

Headspace 0905095-1-1 < green pea
Metals will be filtered and preserved in house _aw 5/13/09_

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

Project Manager Signature / Date: _____ 5/13/09 _____

*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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID: Williams WW	
Lab ID: 0905095-1	

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-May-09
Date Extracted: 19-May-09
Date Analyzed: 19-May-09
Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090519-1
QCBatchID: IP090519-1-1
Run ID: IT090519-2A4
Cleanup: NONE
Basis: As Received
File Name: 090519A.

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

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	1	0.72	0.1		
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	45	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	0.01	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	9	1		
7439-96-5	MANGANESE	1	0.11	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	2.3	1		
7440-23-5	SODIUM	1	29	1		E
	SODIUM ADSORPTION RATIO	1	1	0.17		
7440-24-6	STRONTIUM	1	1.4	0.01		
7440-66-6	ZINC	1	0.028	0.02		

Data Package ID: *IT0905095-1*

Dissolved Metals by 200.8

Method EPA200.8 Revision 5.4
Sample Results

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID: Williams WW	**Sample Matrix:** WATER	**Prep Batch:** IP090519-1
Lab ID: 0905095-1	**% Moisture:** N/A	**QCBatchID:** IP090519-1-2
	Date Collected: 12-May-09	**Run ID:** IM090520-1A3
	Date Extracted: 19-May-09	**Cleanup:** NONE
	Date Analyzed: 20-May-09	**Basis:** As Received
	Prep Method: EPA200.2 Rev 2.8	**File Name:** 20MAY09A

Sample Aliquot: 50 g
Final Volume: 50 g
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	0.75	0.5		
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	0.17	0.1		

Data Package ID: *IM0905095-1*

Metals by 200.7

Method EPA200.7 Revision 4.4
Method Blank

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Lab ID: F090514-1MB

Sample Matrix: WATER	**Prep Batch:** IP090519-1	**Sample Aliquot:** 50 g
% Moisture: N/A	**QCBatchID:** IP090519-1-1	**Final Volume:** 50 g
Date Collected: N/A	**Run ID:** IT090519-2A4	**Result Units:** mg/l
Date Extracted: 19-May-09	**Cleanup:** NONE	**Clean DF:** 1
Date Analyzed: 19-May-09	**Basis:** N/A	
Prep Method: EPA200.2 Rev 2.8	**File Name:** 090519A.	

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	
7440-23-5	SODIUM	1	1	1	U	
7440-24-6	STRONTIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0905095-1*

Metals by 200.7

Method EPA200.7 Revision 4.4
Laboratory Control Sample

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200209993

Lab ID: F090514-1LCS

Sample Matrix: WATER	**Prep Batch:** IP090519-1
% Moisture: N/A	**QCBatchID:** IP090519-1-1
Date Collected: N/A	**Run ID:** IT090519-2A4
Date Extracted: 05/19/2009	**Cleanup:** NONE
Date Analyzed: 05/19/2009	**Basis:** N/A
Prep Method: EPA200.22.8	**File Name:** 090519A.

Sample Aliquot: 50 g
Final Volume: 50 g
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	1.99	0.1		100	85 - 115%
7440-41-7	BERYLLIUM	0.05	0.0474	0.002		95	85 - 115%
7440-42-8	BORON	1	0.98	0.1		98	85 - 115%
7440-70-2	CALCIUM	40	41.1	1		103	85 - 115%
7440-47-3	CHROMIUM	0.2	0.193	0.01		97	85 - 115%
7440-48-4	COBALT	0.5	0.49	0.01		98	85 - 115%
7440-50-8	COPPER	0.25	0.251	0.01		101	85 - 115%
7439-89-6	IRON	1	1	0.1		100	85 - 115%
7439-93-2	LITHIUM	0.5	0.521	0.01		104	85 - 115%
7439-95-4	MAGNESIUM	40	41.4	1		104	85 - 115%
7439-96-5	MANGANESE	0.5	0.514	0.01		103	85 - 115%
7440-02-0	NICKEL	0.5	0.484	0.02		97	85 - 115%
7440-09-7	POTASSIUM	40	44.7	1		112	85 - 115%
7440-23-5	SODIUM	40	41.8	1		104	85 - 115%
7440-24-6	STRONTIUM	0.5	0.51	0.01		102	85 - 115%
7440-66-6	ZINC	0.5	0.507	0.02		101	85 - 115%

Data Package ID: *IT0905095-1*

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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID:	Williams WW
LabID:	0905095-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-May-09
Date Extracted: 19-May-09
Date Analyzed: 19-May-09
Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090519-1
QCBatchID: IP090519-1-1
Run ID: IT090519-2A4
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: mg/l
File Name: 090519A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-39-3	BARIUM	0.72		2.67		0.1	2	97	70 - 130%
7440-41-7	BERYLLIUM	0.002	U	0.0464		0.002	0.05	93	70 - 130%
7440-42-8	BORON	0.1	U	0.989		0.1	1	99	70 - 130%
7440-70-2	CALCIUM	45		86.6		1	40	103	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	0.477		0.01	0.5	95	70 - 130%
7440-50-8	COPPER	0.01	U	0.25		0.01	0.25	100	70 - 130%
7439-89-6	IRON	0.1	U	0.951		0.1	1	95	70 - 130%
7439-93-2	LITHIUM	0.01	U	0.556		0.01	0.5	111	70 - 130%
7439-95-4	MAGNESIUM	9		49.8		1	40	102	70 - 130%
7439-96-5	MANGANESE	0.11		0.603		0.01	0.5	99	70 - 130%
7440-02-0	NICKEL	0.02	U	0.471		0.02	0.5	94	70 - 130%
7440-09-7	POTASSIUM	2.3		49.9		1	40	119	70 - 130%
7440-23-5	SODIUM	29		73.2		1	40	111	70 - 130%
7440-24-6	STRONTIUM	1.4		1.92		0.01	0.5	94	70 - 130%
7440-66-6	ZINC	0.028		0.513		0.02	0.5	97	70 - 130%

Data Package ID: *IT0905095-1*

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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID:	Williams WW
LabID:	0905095-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-May-09
Date Extracted: 19-May-09
Date Analyzed: 19-May-09
Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090519-1
QCBatchID: IP090519-1-1
Run ID: IT090519-2A4
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: mg/l
File Name: 090519A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-39-3	BARIUM	2.69		2	98	0.1	20	1
7440-41-7	BERYLLIUM	0.0479		0.05	96	0.002	20	3
7440-42-8	BORON	1.01		1	101	0.1	20	2
7440-70-2	CALCIUM	89.6		40	110	1	20	3
7440-47-3	CHROMIUM	0.195		0.2	97	0.01	20	3
7440-48-4	COBALT	0.492		0.5	98	0.01	20	3
7440-50-8	COPPER	0.252		0.25	101	0.01	20	1
7439-89-6	IRON	0.971		1	97	0.1	20	2
7439-93-2	LITHIUM	0.554		0.5	111	0.01	20	0
7439-95-4	MAGNESIUM	51.1		40	106	1	20	3
7439-96-5	MANGANESE	0.618		0.5	103	0.01	20	2
7440-02-0	NICKEL	0.485		0.5	97	0.02	20	3
7440-09-7	POTASSIUM	49.8		40	119	1	20	0
7440-23-5	SODIUM	73.3		40	111	1	20	0
7440-24-6	STRONTIUM	1.93		0.5	98	0.01	20	1
7440-66-6	ZINC	0.534		0.5	101	0.02	20	4

Data Package ID: *IT0905095-1*

Metals by 200.8

Method EPA200.8 Revision 5.4
Method Blank

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Lab ID: F090514-1MB	**Sample Matrix:** WATER	**Prep Batch:** IP090519-1	**Sample Aliquot:** 50 g
	% Moisture: N/A	**QCBatchID:** IP090519-1-2	**Final Volume:** 50 g
	Date Collected: N/A	**Run ID:** IM090520-1A3	**Result Units:** UG/L
	Date Extracted: 19-May-09	**Cleanup:** NONE	**Clean DF:** 1
	Date Analyzed: 20-May-09	**Basis:** N/A	
	Prep Method: EPA200.2 Rev 2.8	**File Name:** 20MAY09A	

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: *IM0905095-1*

Metals by 200.8

Method EPA200.8 Revision 5.4
Laboratory Control Sample

Lab Name: ALS Laboratory Group -- FC
Work Order Number: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Lab ID: FM90514-1LCS

Sample Matrix: WATER	
% Moisture: N/A	
Date Collected: N/A	
Date Extracted: 05/19/2009	
Date Analyzed: 05/20/2009	
Prep Method: EPA200.22.8	

Prep Batch: IP090519-1
QCBatchID: IP090519-1-2
Run ID: IM090520-1A3
Cleanup: NONE
Basis: N/A
File Name: 20MAY09A

Sample Aliquot: 50 g
Final Volume: 50 g
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	20	20.2	0.3		101	85 - 115%
7440-38-2	ARSENIC	40	35.1	2		88	85 - 115%
7440-43-9	CADMIUM	20	20.5	0.3		103	85 - 115%
7439-92-1	LEAD	100	102	0.5		102	85 - 115%
7439-98-7	MOLYBDENUM	20	20.1	1		100	85 - 115%
7782-49-2	SELENIUM	40	34.6	1		86	85 - 115%
7440-22-4	SILVER	20	20.4	0.1		102	85 - 115%
7440-28-0	THALLIUM	1	1.06	0.2		106	85 - 115%
7440-61-1	URANIUM	20	20.1	0.1		101	85 - 115%

Data Package ID: *IM0905095-1*

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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID:	Williams WW
LabID:	0905095-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-May-09
Date Extracted: 19-May-09
Date Analyzed: 20-May-09
Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090519-1
QCBatchID: IP090519-1-2
Run ID: IM090520-1A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
File Name: 20MAY09A

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	19.6		0.3	20	98	70 - 130%
7440-38-2	ARSENIC	2	U	35.4		2	40	88	70 - 130%
7440-43-9	CADMIUM	0.3	U	20.2		0.3	20	101	70 - 130%
7439-92-1	LEAD	0.75		101		0.5	100	100	70 - 130%
7439-98-7	MOLYBDENUM	1	U	20.7		1	20	103	70 - 130%
7782-49-2	SELENIUM	1	U	34.6		1	40	87	70 - 130%
7440-22-4	SILVER	0.1	U	20.5		0.1	20	102	70 - 130%
7440-28-0	THALLIUM	0.2	U	1.07		0.2	1	107	70 - 130%
7440-61-1	URANIUM	0.17		21		0.1	20	104	70 - 130%

Data Package ID: *IM0905095-1*

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: 0905095
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200209993

Field ID:	Williams WW
LabID:	0905095-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-May-09
Date Extracted: 19-May-09
Date Analyzed: 20-May-09
Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090519-1
QCBatchID: IP090519-1-2
Run ID: IM090520-1A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
File Name: 20MAY09A

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	19.6		20	98	0.3	20	0
7440-38-2	ARSENIC	35.6		40	89	2	20	1
7440-43-9	CADMIUM	20.4		20	102	0.3	20	1
7439-92-1	LEAD	103		100	102	0.5	20	2
7439-98-7	MOLYBDENUM	20.4		20	102	1	20	1
7782-49-2	SELENIUM	35		40	87	1	20	1
7440-22-4	SILVER	20.2		20	101	0.1	20	1
7440-28-0	THALLIUM	1.07		1	107	0.2	20	0
7440-61-1	URANIUM	21.1		20	104	0.1	20	0

Data Package ID: *IM0905095-1*