



ALS Paragon



Inorganics Case Narrative

Colorado Oil & Gas Conservation Commission

Complaint 200205808

Work Order Number: 0903060

1. This report consists of 2 water samples.
2. The samples were received cool and intact by ALS Paragon on 03/10/09.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures and Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.
5. The samples were analyzed following MCAWW and EMSL procedures for the following methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	310.1	1106 Rev 7
Bicarbonate	310.1	1106 Rev 7
Carbonate	310.1	1106 Rev 7
pH	150.1	1126 Rev 16
Specific conductance	120.1	1128 Rev 9
Sulfide	376.1	1120 Rev 5
TDS	160.1	1101 Rev 10
Bromide	300.0	1113 Rev 11
Chloride	300.0	1113 Rev 11
Fluoride	300.0	1113 Rev 11
Nitrate as N	300.0	1113 Rev 11
Nitrite as N	300.0	1113 Rev 11
Sulfate	300.0	1113 Rev 11

6. All standards and solutions were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold time for each analysis.



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

8. General quality control procedures.

- n A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in each applicable preparation batch. There were not more than 20 samples in each preparation batch.
- n The method blank associated with each applicable batch was below the reporting limit for the requested analytes. This indicates that no contaminants were introduced to the samples during preparation and analysis.
- n The LCS was within the acceptance limits for each applicable analysis.
- n All initial and continuing calibration blanks (ICB/CCB) associated with each applicable analytical batch were below the reporting limit for the requested analytes.
- n All initial and continuing calibration verifications (ICV/CCV) associated with each applicable analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.

9. Matrix specific quality control procedures.

Sample 0903060-1 was designated as the quality control sample for the pH, specific conductance, sulfide, bromide, chloride, nitrate as N, nitrite as N, and sulfate analyses. Per method requirements, matrix QC was performed for the alkalinity, bicarbonate, carbonate, TDS, and fluoride analyses. 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.

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.

- n A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the bromide, chloride, nitrate as N, nitrite as N, and sulfate batch. All guidance criteria for precision and accuracy were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Nitrite as N	0903060-1MS & MSD

The native sample result is flagged for nitrite as N. The laboratory control sample indicates that the procedure was in control.

- n Matrix spike recoveries could not be evaluated for the following analytes:

<u>Analyte</u>	<u>Sample ID</u>
Chloride	0903060-1MS & MSD
Sulfate	0903060-1MS & MSD

The chloride and sulfate concentration in the native sample was above the analytical range; therefore accurate quantitation of MS/MSD recoveries were not possible as the spike added



was small relative to the unspiked sample concentration. The LCS, ICV, and CCV results indicate the procedure was in control for these analytes.

- A sample duplicate was prepared and analyzed with the pH, specific conductance, and sulfide batches. All guidance criteria for precision were met.

10. Electrical conductivity screening indicated that the concentration of dissolved salts was high in the samples. Therefore, it was necessary to dilute the samples prior to injection into the ion chromatograph in order to minimize the amount of salts loaded into the analytical column

It was necessary to further dilute the samples in order to bring the chloride and/or sulfate concentrations into the analytical range of the ion chromatograph (IC).

Reduced aliquots were taken of the samples for the alkalinity, bicarbonate, and carbonate analysis. Reporting limits were elevated accordingly.

Reduced aliquots were taken of the samples for the TDS analysis. Reporting limits were elevated accordingly

11. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 3.

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

Megan Johnson
Megan Johnson
Inorganics Primary Data Reviewer

3/23/09
Date

C.C. EA
Inorganics Final Data Reviewer

3/23/09
Date



Inorganic Data Reporting Qualifiers

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

- Concentration qualifier -- If the analyte was analyzed for but not detected a “U” is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
 - N - Spiked sample recovery not within control limits.
 - * - Duplicate analysis (relative percent difference) not within control limits.
 - Z - Calibration spike recovery not within control limits.

ALS Paragon

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Complaint 200205808

Client Project Number:

Client PO Number: OE PHA 090000000004

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Angely WW 1	0903060-1		WATER	09-Mar-09	9:56
Angely WW 2	0903060-2		WATER	09-Mar-09	10:30
Trip Blank	0903060-3		WATER	09-Mar-09	

Report To: Peter Gintautas
Phone: 714-846-3091
Fax:
E-mail: peter.gintautas@state.co.us
Company: Colo. Div. of Gas Cars, Comm.
Address:

Complaint 2002-04738

Circle method (right); provide additional information as needed (comments).

Sample ID	Date	Time *	Lab ID	Matrix	Preservative (Indicate type ... HCl, etc.)	No. of Containers
Angely WW 1	9 May 09	09:56	W		none	5
					HCl 3	
					H ₂ SO ₄ 1	
					H ₂ CO ₃ 1	
Angely WW 2	9 May 09	10:30	W		none	2

[illegible]

* 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:

Comments:
Filter + pressure metals upon receipt
Anions = Br, Cl, F, NO₂, NO₃, SO₄

$$\text{ZrO}_2 = \text{Ba}_2, \text{Be}_2, \text{B}_2, \text{Ca}_2, \text{Cr}_2, \text{Cu}_2, \text{Fe}_2, \text{Li}_2, \text{Mg}_2, \text{Mn}_2, \text{Ni}_2, \text{K}_2, \text{Na}_2, \text{Zn}_2, \text{Sr}$$

FCV.E = Sb, As, Cd, Pb, Mn, Se, Ag, Te, U.

Relinquished By: <u>[Signature]</u> Signature _____ Printed Name <u>John C. [unclear]</u> Date <u>9/11/09</u> Time <u>16:30</u> Company <u>CCBS</u>	Relinquished By: _____ Signature _____ Printed Name _____ Date _____ Time _____ Company _____
Relinquished By: <u>[Signature]</u> Signature _____ Printed Name <u>John C. [unclear]</u> Date <u>3-10-09</u> Time <u>1010</u> Company <u>ACS</u>	Relinquished By: _____ Signature _____ Printed Name _____ Date _____ Time _____ Company _____

CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: COC GWorkorder No: 0903060Project Manager: AWInitials: Pre Date: 3-10-09

1. Does this project require any special handling in addition to standard Paragon 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?	NONE	<u>YES</u>	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?	DROP OFF	<u>YES</u>	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: <u> </u> < green pea <u>✓</u> > green pea	N/A	YES	<u>NO</u>
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?		<u>YES</u>	NO
18. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <u>#2</u> <u>#4</u>	RAD ONLY	<u>YES</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2.8</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>11</u>			
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.

3 vials for VL = Headspace <green pea #4 #5 #6

3 vials for methan - #7 #8 #9 #7 huge Bubble 809 small bubbles

If applicable, was the client contacted? YES / NO / NA Contact: Peter Gintantas Date/Time: 3/10/09Project Manager Signature / Date: [Signature] 3/10/09

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

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

BICARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: Complaint 200205808
Work Order Number: 0903060
Reporting Basis: As Received
Prep Method: NONE
Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/20/2009	03/20/2009	N/A	1	62	10		50 ml
Angely WW 2	0903060-2	03/09/2009	03/20/2009	03/20/2009	N/A	1	140	10		50 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0903060-1*

Date Printed: Monday, March 23, 2009

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CARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200205808

Work Order Number: 0903060

Final Volume: 100 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/20/2009	03/20/2009	N/A	1	10	10	U	50 ml
Angely WW 2	0903060-2	03/09/2009	03/20/2009	03/20/2009	N/A	1	10	10	U	50 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0903060-1*

Date Printed: Monday, March 23, 2009

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TOTAL ALKALINITY AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: Complaint 200205808
Work Order Number: 0903060
Reporting Basis: As Received
Prep Method: NONE
Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/20/2009	03/20/2009	N/A	1	62	10		50 ml
Angely WW 2	0903060-2	03/09/2009	03/20/2009	03/20/2009	N/A	1	140	10		50 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0903060-1

Date Printed: Monday, March 23, 2009

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pH in water @25 Degrees Celsius

Method EPA150.1

Sample Results

Lab Name: ALS Paragon
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: Complaint 200205808
Work Order Number: 0903060
Reporting Basis: As Received
Prep Method: METHOD
Final Volume: 20 ml
Matrix: WATER
Result Units: pH

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/13/2009	03/13/2009	N/A	1	7.75	0.1		20 ml
Angely WW 2	0903060-2	03/09/2009	03/13/2009	03/13/2009	N/A	1	7.81	0.1		20 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ph0903060-1*

Date Printed: Monday, March 23, 2009

ALS Paragon

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SPECIFIC CONDUCTIVITY

Method EPA120.1

Sample Results

Lab Name: ALS Paragon
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: Complaint 200205808
Work Order Number: 0903060
Reporting Basis: As Received
Prep Method: METHOD
Final Volume: 45 ml
Matrix: WATER
Result Units: umhos/cm

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/13/2009	03/13/2009	N/A	1	2000	1		45 ml
Angely WW 2	0903060-2	03/09/2009	03/13/2009	03/13/2009	N/A	1	1365	1		45 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *sc0903060-1*

Date Printed: Monday, March 23, 2009

ALS Paragon

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Sulfide

Method EPA376.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID:	Angely WW 1
Lab ID:	0903060-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 09-Mar-09

Date Extracted: 16-Mar-09

Date Analyzed: 16-Mar-09

Prep Method: NONE

Prep Batch: S090316-1

QCBatchID: S090316-1-1

Run ID: s090316-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 200 ml

Final Volume: 200 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
18496-25-8	SULFIDE	1	2	2	U	

Data Package ID: s0903060-1

Date Printed: Monday, March 23, 2009

ALS Paragon

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TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: ALS Paragon
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: Complaint 200205808
Work Order Number: 0903060
Reporting Basis: As Received
Prep Method: METHOD
Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Angely WW 1	0903060-1	03/09/2009	03/10/2009	03/11/2009	N/A	1	1500	40		50 ml
Angely WW 2	0903060-2	03/09/2009	03/10/2009	03/11/2009	N/A	1	900	40		50 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *td0903060-1*

Date Printed: Monday, March 23, 2009

ALS Paragon

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID: Angely WW 1

Lab ID: 0903060-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 09-Mar-09

Date Extracted: 11-Mar-09

Date Analyzed: 11-Mar-09

Prep Method: NONE

Prep Batch: IC090311-1

QCBatchID: IC090311-1-1

Run ID: ic090311-1a

Cleanup: NONE

Basis: As Received

File Name: 90311_013.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	2	3.4	0.2		
16887-00-6	CHLORIDE	50	50	10		
14797-65-0	NITRITE AS N	2	0.2	0.2	U	N
24959-67-9	BROMIDE	2	0.66	0.4		
14797-55-8	NITRATE AS N	2	0.4	0.4	U	
14808-79-8	SULFATE	50	930	50		

Data Package ID: ic0903060-1

Date Printed: Tuesday, March 24, 2009

ALS Paragon

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID: Angely WW 2

Lab ID: 0903060-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 09-Mar-09

Date Extracted: 11-Mar-09

Date Analyzed: 11-Mar-09

Prep Method: NONE

Prep Batch: IC090311-1

QCBatchID: IC090311-1-1

Run ID: ic090311-1a

Cleanup: NONE

Basis: As Received

File Name: 90311_014.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	2	6	0.2		
16887-00-6	CHLORIDE	2	37	0.4		
14797-65-0	NITRITE AS N	2	0.2	0.2	U	
24959-67-9	BROMIDE	2	0.4	0.4	U	
14797-55-8	NITRATE AS N	2	0.4	0.4	U	
14808-79-8	SULFATE	20	470	20		

Data Package ID: ic0903060-1

Date Printed: Tuesday, March 24, 2009

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BICARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: AK090320-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090320-1

QCBatchID: AK090320-1-1

Run ID: ak090320-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090320-1MB	3/20/2009	03/20/2009	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0903060-1

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CARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: AK090320-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090320-1

QCBatchID: AK090320-1-1

Run ID: ak090320-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090320-1MB	3/20/2009	03/20/2009	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0903060-1

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TOTAL ALKALINITY AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: AK090320-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090320-1

QCBatchID: AK090320-1-1

Run ID: ak090320-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090320-1MB	3/20/2009	03/20/2009	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0903060-1

Date Printed: Monday, March 23, 2009

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TOTAL ALKALINITY AS CaCO₃

Method EPA310.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: AK090320-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/20/2009

Date Analyzed: 03/20/2009

Prep Batch: AK090320-1

QCBatchID: AK090320-1-1

Run ID: ak090320-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY AS CaCO ₃	100	101	5		100	85 - 115

Data Package ID: ak0903060-1

Date Printed: Monday, March 23, 2009

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pH

Method EPA150.1

Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID: Angely WW 1

Lab ID: 0903060-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/09/2009

Date Extracted: 03/13/2009

Date Analyzed: 03/13/2009

Prep Batch: PH090313-1

QCBatchID: PH090313-1-1

Run ID: ph090313-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 ml

Final Volume: 20 ml

Result Units: pH

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-29-7	PH	7.75		7.87		0.1	1		0.2

Data Package ID: *ph0903060-1*

Date Printed: Monday, March 23, 2009

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Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID: Angely WW 1

Lab ID: 0903060-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/09/2009

Date Extracted: 03/13/2009

Date Analyzed: 03/13/2009

Prep Batch: SC090313-1

QCBatchID: SC090313-1-2

Run ID: sc090313-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 45 ml

Final Volume: 45 ml

Result Units: umhos/cm

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-34-4	SPECIFIC CONDUCTIVITY	2000		1970		1	1	2	10

Data Package ID: sc0903060-1

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Sulfide

Method EPA376.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: S090316-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 16-Mar-09

Date Analyzed: 16-Mar-09

Prep Method: NONE

Prep Batch: S090316-1

QCBatchID: S090316-1-1

Run ID: s090316-1a

Cleanup: NONE

Basis: N/A

File Name:

Sample Aliquot: 200 ml

Final Volume: 200 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
18496-25-8	SULFIDE	1	2	2	U	

Data Package ID: s0903060-1

Date Printed: Monday, March 23, 2009

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Sulfide

Method EPA376.1 Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: S090316-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/16/2009

Date Analyzed: 03/16/2009

Prep Method: NONE

Prep Batch: S090316-1

QCBatchID: S090316-1-1

Run ID: s090316-1a

Cleanup: NONE

Basis: N/A

File Name:

Sample Aliquot: 200 ml

Final Volume: 200 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
18496-25-8	SULFIDE	7.73	8.08	2		105	80 - 120%

Data Package ID: s0903060-1

Date Printed: Monday, March 23, 2009

ALS Paragon

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Sulfide

Method EPA376.1 Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Field ID: Angely WW 1

Lab ID: 0903060-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/09/2009

Date Extracted: 03/16/2009

Date Analyzed: 03/16/2009

Prep Batch: S090316-1

QCBatchID: S090316-1-1

Run ID: s090316-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 200 ml

Final Volume: 200 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
18496-25-8	SULFIDE	2	U	2	U	2	1		20

Data Package ID: s0903060-1

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Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: TD090310-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 10-Mar-09

Date Analyzed: 11-Mar-09

Prep Method: METHOD

Prep Batch: TD090310-1

QCBatchID: TD090310-1-1

Run ID: td090311-1a

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td0903060-1*

Date Printed: Monday, March 23, 2009

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Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: TD090310-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/10/2009

Date Analyzed: 03/11/2009

Prep Method: METHOD

Prep Batch: TD090310-1

QCBatchID: TD090310-1-1

Run ID: td090311-1a

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	394	20		99	85 - 115%

Data Package ID: *td0903060-1*

Date Printed: Monday, March 23, 2009

ALS Paragon

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Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: IC090310-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 10-Mar-09

Date Analyzed: 10-Mar-09

Prep Method: NONE

Prep Batch: IC090310-1

QCBatchID: IC090310-1-1

Run ID: ic090310-1a

Cleanup: NONE

Basis: N/A

File Name: 90310_011.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	0.2	0.2	U	
14797-65-0	NITRITE AS N	1	0.1	0.1	U	
24959-67-9	BROMIDE	1	0.2	0.2	U	
14797-55-8	NITRATE AS N	1	0.2	0.2	U	
14808-79-8	SULFATE	1	1	1	U	

Data Package ID: ic0903060-1

Date Printed: Monday, March 23, 2009

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Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: IC090311-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 11-Mar-09

Date Analyzed: 11-Mar-09

Prep Method: NONE

Prep Batch: IC090311-1

QCBatchID: IC090311-1-1

Run ID: ic090311-1a

Cleanup: NONE

Basis: N/A

File Name: 90311_028.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	

Data Package ID: ic0903060-1

Date Printed: Monday, March 23, 2009

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Ion Chromatography

Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: IC090310-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/10/2009

Date Analyzed: 03/10/2009

Prep Method: NONE

Prep Batch: IC090310-1

QCBatchID: IC090310-1-1

Run ID: ic090310-1a

Cleanup: NONE

Basis: N/A

File Name: 90310_012.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16887-00-6	CHLORIDE	5	4.73	0.2		95	90 - 110%
14797-65-0	NITRITE AS N	2	1.98	0.1		99	90 - 110%
24959-67-9	BROMIDE	5	4.86	0.2		97	90 - 110%
14797-55-8	NITRATE AS N	5	4.96	0.2		99	90 - 110%
14808-79-8	SULFATE	25	25	1		100	90 - 110%

Data Package ID: ic0903060-1

Date Printed: Monday, March 23, 2009

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Ion Chromatography

Method EPA300.0

Laboratory Control Sample

Lab Name: Paragon Analytics

Work Order Number: 0903060

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200205808

Lab ID: IC090311-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/11/2009

Date Analyzed: 03/11/2009

Prep Method: NONE

Prep Batch: IC090311-1

QCBatchID: IC090311-1-1

Run ID: ic090311-1a

Cleanup: NONE

Basis: N/A

File Name: 90311_029.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	2.5	2.6	0.1		104	90 - 110%

Data Package ID: *ic0903060-1*

Date Printed: Monday, March 23, 2009

ALS Paragon

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Ion Chromatography

Method EPA300.0 Revision 2.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon
Work Order Number: 0903060
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200205808

Field ID: Angely WW 1
LabID: 0903060-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 09-Mar-09
Date Extracted: 10-Mar-09
Date Analyzed: 10-Mar-09
Prep Method: NONE

Prep Batch: IC090310-1
QCBatchID: IC090310-1-1
Run ID: ic090310-1a
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
File Name: 90310_015.DXD

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
14797-65-0	NITRITE AS N	0.2	U	3.32	N	0.2	4	83	85 - 115%
24959-67-9	BROMIDE	0.66		10.4		0.4	10	97	85 - 115%
14797-55-8	NITRATE AS N	0.4	U	9.83		0.4	10	98	85 - 115%

Field ID: Angely WW 1
LabID: 0903060-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 09-Mar-09
Date Extracted: 10-Mar-09
Date Analyzed: 10-Mar-09
Prep Method: NONE

Prep Batch: IC090310-1
QCBatchID: IC090310-1-1
Run ID: ic090310-1a
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
File Name: 90310_016.DXD

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
14797-65-0	NITRITE AS N	3.33	N	4	83	0.2	15	0
24959-67-9	BROMIDE	10.2		10	95	0.4	15	2
14797-55-8	NITRATE AS N	9.56		10	96	0.4	15	3

Data Package ID: ic0903060-1