



# ALS Paragon



## Inorganics Case Narrative

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### Colorado Oil & Gas Conservation Commission

Complaint 200204739

Work Order Number: 0903072

1. This report consists of 2 soil samples.
2. The samples were received intact at ambient temperature by ALS Paragon on 03/11/09.
3. The samples were prepared for analysis based on SW-846, 3<sup>rd</sup> Edition procedures, Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures, and Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.
4. The samples were analyzed following SW-846, MCAWW, and EMSL procedures for the following methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
pH	9045C	1126 Rev 16
Specific conductance	120.1	1128 Rev 9
Bromide	300.0	1113 Rev 11
Chloride	300.0	1113 Rev 11
Sulfate	300.0	1113 Rev 11

5. All standards and solutions were used within their recommended shelf life.
6. 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.

7. General quality control procedures.

- n A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in the bromide, chloride, and sulfate preparation batch. There were not more than 20 samples in this preparation batch.



- The method blank associated with the bromide, chloride, and sulfate batch was below the reporting limit for the requested analytes. This indicates that no contaminants were introduced to the samples during preparation and analysis.
- The LCS was within the acceptance limits for the bromide, chloride, and sulfate analysis.
- All initial and continuing calibration blanks (ICB/CCB) associated with the bromide, chloride, and sulfate analytical batch were below the reporting limit for the requested analytes with the exception of CCB1 for chloride. The samples bracketed by this CCB contained more than ten times the concentration of chloride that was detected in the CCB.
- All initial and continuing calibration verifications (ICV/CCV) associated with each analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.

8. Matrix specific quality control procedures.

Sample 0903072-1 was designated as the quality control sample for the pH and specific conductance analyses. Per method requirements, matrix QC was performed for the bromide, chloride, and sulfate 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.

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

9. Sample dilutions were not required for the requested analyses.

10. 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

3/20/09  
Date

C. A. [Signature]  
Inorganics Final Data Reviewer

3/19/09  
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

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**Paragon OrderNum:** 0903072

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:**

**Client Project Number:** Complaint 200204739

**Client PO Number:** OE PHA 090000000004

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Sandoval 100309 B	0903072-1		SOIL	10-Mar-09	8:33
Sandoval 100309 S	0903072-2		SOIL	10-Mar-09	9:35

## CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: COCGWorkorder No: 0903072Project Manager: AWInitials: me Date: 3-11-09

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?	YES	<u>NO</u>
2. Are custody <b>seals</b> on <b>shipping containers</b> intact?	<u>NONE</u>	YES NO
3. Are Custody seals on <b>sample containers</b> intact?	<u>NONE</u>	YES NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?	YES	NO
5. Are the <b>COC and bottle labels complete and legible</b> ?	YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)	YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF YES	NO
8. Are all aqueous <b>samples requiring preservation preserved correctly?</b> (excluding volatiles)	<u>N/A</u>	YES NO
9. Are all aqueous <b>non-preserved samples pH 4-9?</b>	<u>N/A</u>	YES NO
10. Is there <b>sufficient sample</b> for the requested analyses?	YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?	YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?	YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)	YES	NO
14. Are all samples requiring <b>no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon)</b> headspace free? <b>Size of bubble:</b> <u>      </u> < green pea <u>      </u> > green pea	<u>N/A</u>	YES NO
15. Do perchlorate LCMS-MS samples <b>have</b> headspace? (at least 1/3 of container required)	<u>N/A</u>	YES NO
16. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<u>N/A</u>	YES NO
17. Were the samples <b>shipped on ice?</b>	YES	<u>NO</u>
18. Were cooler temperatures measured at 0.1-6.0°C? <b>IR gun used*:</b> <u>#2</u> <u>#4</u> <b>RAD ONLY</b>	YES	<u>NO</u>
Cooler #: <u>1</u>		
Temperature (°C): <u>Amb</u>		
No. of custody seals on cooler: <u>0</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 / <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: \_\_\_\_\_ Date/Time: \_\_\_\_\_Project Manager Signature / Date: Aw 3/11/09

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

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



Paragon Analyticals

A Division of DataChem Laboratories, Inc.

225 Commerce Drive Fort Collins, CO 80524

800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Accession Number (LAB ID)

Chain-of-Custody

Date

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Originator: Retain pink copy!

Project Name/No.: Complaint 2002-04739 Sampler(s): CH-101 Standard or Rush (Due 14) Dispose: Date 3/06/04 or Return to Client

Report To: Peter Gintautas  
Phone: 719-846-3071  
Fax:  
E-mail:  
Company:  
Address:

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

Sample ID	Date	Time *	Lab ID	Matrix	Preservative (Indicate type... HCL, etc.)	No. of Containers	VOCS	BTEX (only)	SVOCs	OC Pesticides	PCBs	Herbicides	Explosives	TCLP Organics SW1311	TCLP Metals SW1311 Hg	Total Metals by ICP Hg	Dissolved Metals by ICP Hg	Total Metals by ICP/MS	Dissolved Metals by ICP/MS	Hexavalent Chromium	Inorganic Anions	Solids:	pH	TPH	Gross Alpha / Beta	Actinides by Paragon SOP	Tritium	Total Alpha-Emitting Radium	Radium 226	Radium 228	Strontium 90 (Total RadioSr)	Gamma Isotopes	Radon 222
Standard 1000g B	10/10/03	08:13	10	S	None	2										X					X	X	X										
Standard 1000g S	10/10/03	08:15	2	S	None	2										X					X	X	X										

\* 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, SO4  
CATIONS = Sb, Ag, Ba, Be, B, Cd, Cr, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, K, Se, As, Na, Si, Th, U, Zn

Relinquished By: <u>P. Gintautas</u> Signature Printed Name Date <u>3-11-04</u> Time <u>11:00</u> Company <u>CH-101</u>	Relinquished By: <u>P. Gintautas</u> Signature Printed Name Date Company
Received By: <u>P. Gintautas</u> Signature Printed Name Date <u>3-11-04</u> Time <u>0935</u> Company <u>CH-101</u>	Received By: <u>P. Gintautas</u> Signature Printed Name Date Company

# Solid pH in water @25 Degrees Celsius

Method SW9045C

## Sample Results

**Lab Name:** ALS Paragon  
**Client Name:** Colorado Oil & Gas Conservation Commission  
**Client Project ID:** Complaint 200204739  
**Work Order Number:** 0903072  
**Reporting Basis:** As Received  
**Prep Method:** METHOD  
**Final Volume:** 20 ml  
**Matrix:** SOIL  
**Result Units:** pH

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Sandoval 100309 B	0903072-1	03/10/2009	03/13/2009	03/13/2009	N/A	1	8.34	0.1		20 g
Sandoval 100309 S	0903072-2	03/10/2009	03/13/2009	03/13/2009	N/A	1	8.52	0.1		20 g

### Comments:

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

**Data Package ID:** *ph0903072-1*

**Date Printed:** Thursday, March 19, 2009

**ALS Paragon**

LIMS Version: 6.252A

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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 200204739  
**Work Order Number:** 0903072  
**Reporting Basis:** Dry Weight  
**Prep Method:** METHOD  
**Final Volume:** 40 ml  
**Matrix:** SOIL  
**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
Sandoval 100309 B	0903072-1	03/10/2009	03/13/2009	03/13/2009	N/A	1	83	1		4 g
Sandoval 100309 S	0903072-2	03/10/2009	03/13/2009	03/13/2009	N/A	1	82	1		4 g

### Comments:

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

**Data Package ID:** *sc0903072-1*

**Date Printed:** Thursday, March 19, 2009

**ALS Paragon**

LIMS Version: 6.252A

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# Ion Chromatography

Method EPA300.0 Revision 2.1

## Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Field ID:	Sandoval 100309 B
Lab ID:	0903072-1

Sample Matrix: SOIL

% Moisture: 6.8

Date Collected: 10-Mar-09

Date Extracted: 12-Mar-09

Date Analyzed: 13-Mar-09

Prep Method: METHOD

Prep Batch: WC090312-1

QCBatchID: WC090312-1-2

Run ID: ic090313-1a

Cleanup: NONE

Basis: Dry Weight

File Name: 90313\_032.DXD

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	2.3	2.1		
24959-67-9	BROMIDE	1	2.1	2.1	U	
14808-79-8	SULFATE	1	29	11		

Data Package ID: *ic0903072-1*

Date Printed: Thursday, March 19, 2009

ALS Paragon

LIMS Version: 6.252A

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# Ion Chromatography

Method EPA300.0 Revision 2.1

## Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Field ID: Sandoval 100309 S

Lab ID: 0903072-2

Sample Matrix: SOIL

% Moisture: 3.1

Date Collected: 10-Mar-09

Date Extracted: 12-Mar-09

Date Analyzed: 13-Mar-09

Prep Method: METHOD

Prep Batch: WC090312-1

QCBatchID: WC090312-1-2

Run ID: ic090313-1a

Cleanup: NONE

Basis: Dry Weight

File Name: 90313\_033.DXD

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	6.1	2.1		
24959-67-9	BROMIDE	1	2.1	2.1	U	
14808-79-8	SULFATE	1	49	10		

Data Package ID: *ic0903072-1*

Date Printed: Thursday, March 19, 2009

ALS Paragon

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# pH

## Method SW9045

### Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Field ID: Sandoval 100309 B

Lab ID: 0903072-1D

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: 03/10/2009

Date Extracted: 03/13/2009

Date Analyzed: 03/13/2009

Prep Batch: PH090313-1

QCBatchID: PH090313-1-2

Run ID: ph090313-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 g

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	8.34		8.48		0.1	1		0.5

Data Package ID: *ph0903072-1*

Date Printed: Thursday, March 19, 2009

ALS Paragon

LIMS Version: 6.252A

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# Specific Conductance in Water

Method EPA120.1

## Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Field ID: Sandoval 100309 B

Lab ID: 0903072-1D

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: 03/10/2009

Date Extracted: 03/13/2009

Date Analyzed: 03/13/2009

Prep Batch: SC090313-1

QCBatchID: SC090313-1-1

Run ID: sc090313-1a

Cleanup: NONE

Basis: Dry Weight

File Name:

Sample Aliquot: 4 g

Final Volume: 40 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	83		75		1	1	10	10

Data Package ID: sc0903072-1

Date Printed: Thursday, March 19, 2009

ALS Paragon

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# Ion Chromatography

Method EPA300.0 Revision 2.1

## Method Blank

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Lab ID: WC090312-1MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12-Mar-09

Date Analyzed: 13-Mar-09

Prep Method: METHOD

Prep Batch: WC090312-1

QCBatchID: WC090312-1-2

Run ID: ic090313-1a

Cleanup: NONE

Basis: N/A

File Name: 90313\_009.DXD

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	2	2	U	
24959-67-9	BROMIDE	1	2	2	U	
14808-79-8	SULFATE	1	10	10	U	

Data Package ID: ic0903072-1

Date Printed: Thursday, March 19, 2009

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# Ion Chromatography

Method EPA300.0 Revision 2.1

## Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0903072

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204739

Lab ID: WC090312-1LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/12/2009

Date Analyzed: 03/13/2009

Prep Method: METHOD

Prep Batch: WC090312-1

QCBatchID: WC090312-1-2

Run ID: ic090313-1a

Cleanup: NONE

Basis: N/A

File Name: 90313\_010.DXD

Sample Aliquot: 4 g

Final Volume: 40 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16887-00-6	CHLORIDE	100	98.9	2		99	85 - 115%
24959-67-9	BROMIDE	100	97.5	2		98	85 - 115%
14808-79-8	SULFATE	500	509	10		102	85 - 115%

Data Package ID: ic0903072-1

Date Printed: Thursday, March 19, 2009

ALS Paragon

LIMS Version: 6.252A

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