



ALS Paragon



Inorganics Case Narrative

Colorado Oil & Gas Conservation Commission

Complaint 200206880

Work Order Number: 0904002

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS Paragon on 04/01/09.
3. The sample had been correctly preserved for the requested analyses.
4. The sample was 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 sample was 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 with the exception of the sodium thiosulfate standard solution used to standardize the iodine solution for sulfide by 376.1. The sample was a non-detect for sulfide. Re-analysis could not be performed because the sample was depleted. A Non-Conformance Report (NCR) has been included to document this occurrence.



7. The sample was 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 with the exception of CCV1 for chloride and CCV4 for bromide. None of the samples associated with this order number were bracketed by CCV1. The MS and MSD were bracketed by CCV4. A Non-Conformance Report (NCR) has been included to document this occurrence.

9. Matrix specific quality control procedures.

Sample 0904002-1 was designated as the quality control sample for the pH, specific conductance, sulfide, bromide, chloride, fluoride, nitrate as N, nitrite as N, and sulfate analyses. Per method requirements, matrix QC was performed for the alkalinity, bicarbonate, carbonate, and TDS 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, fluoride, nitrate as N, nitrite as N, and sulfate batch. All guidance criteria for precision and accuracy were met.
 - n A sample duplicate was prepared and analyzed with the pH, specific conductance, and sulfide batches. All guidance criteria for precision were met.
10. Reduced aliquots were taken of the samples for the alkalinity, bicarbonate, and carbonate 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

4/13/09
Date

C.A. LA
Inorganics Final Data Reviewer

4/13/09
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: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Complaint 200206880

Client Project Number:

Client PO Number: OE PHA 090000000004

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Ross WW	0904002-1		WATER	31-Mar-09	10:18
Trip Blank	0904002-2		WATER	31-Mar-09	



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) 0904002

Chain-of-Custody Date 3/16/06 Page 1 of 1

Originator: Retain pink copy!

Project Name/No.:	Sampler(s):	Standard	Rush (Due 14 days)	Dispose: Date	3 days	or Return to Client
Report To: Peter Gintantas						
Phone: 719-846-3091						
Fax:						
E-mail: peter.gintantas@state.co.us						
Company: Colo. Oil & Gas Cons. Comm.						
Address:						
Complaint 200206880						
Circle Method (right); provide additional information as needed (comments).						
Sample ID	Date	Time *	Matrix	Preservative	No. of Containers	
ROSS WU	3/16/06	1	W	HCl		
		2	W	HCl		
		3	W	HCl		
		4	W	HCl		
		5	W	HCl		
		6	W	HCl		
		7	W	HCl		
		8	W	HCl		
		9	W	HCl		
		10	W	HCl		
		11	W	HCl		
		12	W	HCl		
		13	W	HCl		
		14	W	HCl		
		15	W	HCl		
		16	W	HCl		
		17	W	HCl		
		18	W	HCl		
		19	W	HCl		
		20	W	HCl		
		21	W	HCl		
		22	W	HCl		
		23	W	HCl		
		24	W	HCl		
		25	W	HCl		
		26	W	HCl		
		27	W	HCl		
		28	W	HCl		
		29	W	HCl		
		30	W	HCl		
		31	W	HCl		
		32	W	HCl		
		33	W	HCl		
		34	W	HCl		
		35	W	HCl		
		36	W	HCl		
		37	W	HCl		
		38	W	HCl		
		39	W	HCl		
		40	W	HCl		
		41	W	HCl		
		42	W	HCl		
		43	W	HCl		
		44	W	HCl		
		45	W	HCl		
		46	W	HCl		
		47	W	HCl		
		48	W	HCl		
		49	W	HCl		
		50	W	HCl		
		51	W	HCl		
		52	W	HCl		
		53	W	HCl		
		54	W	HCl		
		55	W	HCl		
		56	W	HCl		
		57	W	HCl		
		58	W	HCl		
		59	W	HCl		
		60	W	HCl		
		61	W	HCl		
		62	W	HCl		
		63	W	HCl		
		64	W	HCl		
		65	W	HCl		
		66	W	HCl		
		67	W	HCl		
		68	W	HCl		
		69	W	HCl		
		70	W	HCl		
		71	W	HCl		
		72	W	HCl		
		73	W	HCl		
		74	W	HCl		
		75	W	HCl		
		76	W	HCl		
		77	W	HCl		
		78	W	HCl		
		79	W	HCl		
		80	W	HCl		
		81	W	HCl		
		82	W	HCl		
		83	W	HCl		
		84	W	HCl		
		85	W	HCl		
		86	W	HCl		
		87	W	HCl		
		88	W	HCl		
		89	W	HCl		
		90	W	HCl		
		91	W	HCl		
		92	W	HCl		
		93	W	HCl		
		94	W	HCl		
		95	W	HCl		
		96	W	HCl		
		97	W	HCl		
		98	W	HCl		
		99	W	HCl		
		100	W	HCl		
		101	W	HCl		
		102	W	HCl		
		103	W	HCl		
		104	W	HCl		
		105	W	HCl		
		106	W	HCl		
		107	W	HCl		
		108	W	HCl		
		109	W	HCl		
		110	W	HCl		
		111	W	HCl		
		112	W	HCl		
		113	W	HCl		
		114	W	HCl		
		115	W	HCl		
		116	W	HCl		
		117	W	HCl		
		118	W	HCl		
		119	W	HCl		
		120	W	HCl		
		121	W	HCl		
		122	W	HCl		
		123	W	HCl		
		124	W	HCl		
		125	W	HCl		
		126	W	HCl		
		127	W	HCl		
		128	W	HCl		
		129	W	HCl		
		130	W	HCl		
		131	W	HCl		
		132	W	HCl		
		133	W	HCl		
		134	W	HCl		
		135	W	HCl		
		136	W	HCl		
		137	W	HCl		
		138	W	HCl		
		139	W	HCl		
		140	W	HCl		
		141	W	HCl		
		142	W	HCl		
		143	W	HCl		
		144	W	HCl		
		145	W	HCl		
		146	W	HCl		
		147	W	HCl		
		148	W	HCl		
		149	W	HCl		
		150	W	HCl		
		151	W	HCl		
		152	W	HCl		
		153	W	HCl		
		154	W	HCl		
		155	W	HCl		
		156	W	HCl		
		157	W	HCl		
		158	W	HCl		
		159	W	HCl		
		160	W	HCl		
		161	W	HCl		
		162	W	HCl		
		163	W	HCl		
		164	W	HCl		
		165	W	HCl		
		166	W	HCl		
		167	W	HCl		
		168	W	HCl		
		169	W	HCl		
		170	W	HCl		
		171	W	HCl		
		172	W	HCl		
		173	W	HCl		
		174	W	HCl		
		175	W	HCl		
		176	W	HCl		
		177	W	HCl		
		178	W	HCl		
		179	W	HCl		
		180	W	HCl		
		181	W	HCl		
		182	W	HCl		
		183	W	HCl		
		184	W	HCl		
		185	W	HCl		
		186	W	HCl		
		187	W	HCl		
		188	W	HCl		
		189	W	HCl		
		190	W	HCl		
		191	W	HCl		
		192	W	HCl		
		193	W	HCl		
		194	W	HCl		
		195	W	HCl		
		196	W	HCl		
		197	W	HCl		
		198	W	HCl		
		199	W	HCl		
		200	W	HCl		
		201	W	HCl		
		202	W	HCl		
		203	W	HCl		
		204	W	HCl		
		205	W	HCl		
		206	W	HCl		
		207	W	HCl		
		208	W	HCl		
		209	W	HCl		
		210	W	HCl		
		211	W	HCl		
		212	W	HCl		
		213	W	HCl		
		214	W	HCl		
		215	W	HCl		
		216	W	HCl		
		217	W	HCl		
		218	W	HCl		
		219	W	HCl		
		220	W	HCl		
		221	W	HCl		
		222	W	HCl		
		223	W	HCl		
		224	W	HCl		
		225	W	HCl		
		226	W	HCl		
		227	W	HCl		
		228	W	HCl		
		229	W	HCl		
		230	W	HCl		
		231	W	HCl		
		232	W	HCl		
		233	W	HCl		
		234	W	HCl		
		235	W	HCl		
		236	W	HCl		
		237	W	HCl		
		238	W	HCl		
		239	W	HCl		
		240	W	HCl		
		241	W	HCl		
		242	W	HCl		
		243	W	HCl		
		244	W	HCl		
		245	W	HCl		
		246	W	HCl		
		247	W	HCl		
		248	W	HCl		
		249	W	HCl		
		250	W	HCl		
		251	W	HCl		
		252	W	HCl		
		253	W	HCl		
		254	W	HCl		
		255	W	HCl		
		256	W	HCl		
		257	W	HCl		
		258	W	HCl		
		259	W	HCl		
		260	W	HCl		
		261	W	HCl		
		262	W	HCl		
		263	W	HCl		
		264	W	HCl		
		265	W	HCl		
		266	W	HCl		
		267	W	HCl		
		268	W	HCl		
		269	W	HCl		
		270	W	HCl		
		271	W	HCl		
		272	W	HCl		
		273	W	HCl		
		274	W	HCl		
		275	W	HCl		
		276	W	HCl		
		277	W	HCl		
		278	W	HCl		
		279	W	HCl		
		280	W	HCl		
		281	W	HCl		
		282	W	HCl		
		283	W	HCl		
		284	W	HCl		
		285	W	HCl		
		286	W	HCl		
		287	W	HCl		
		288	W	HCl		
		289	W	HCl		
		290	W	HCl		
		291	W	HCl		

CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: COGCCWorkorder No: 0904002Project Manager: AWInitials: CDTDate: 4-1-09

1. Does this project require any special handling in addition to standard Paragon procedures?	YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?	<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible ?	<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)	<input checked="" type="radio"/> YES	<input checked="" type="radio"/> NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF <input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A <input checked="" type="radio"/> YES	<input checked="" type="radio"/> NO
9. Are all aqueous non-preserved samples pH 4-9 ?	N/A <input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?	<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?	<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?	<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact ? (not broken or leaking, etc.)	<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: <input checked="" type="checkbox"/> < green pea <input type="checkbox"/> > green pea	N/A	YES <input checked="" type="radio"/> NO
15. Do perchlorate LCMS-MS samples have headspace? (at least 1/3 of container required)	<input checked="" type="radio"/> 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.)	<input checked="" type="radio"/> N/A	YES NO
17. Were the samples shipped on ice ?	<input checked="" type="radio"/> YES	NO
18. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY <input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>		
Temperature (°C): <u>3.8</u>		
No. of custody seals on cooler: <u>1</u>		
External µR/hr reading: <u>13</u>		
Background µR/hr reading: <u>11</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> 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: 0904002-2-1 < green pea (Trip Blank - not listed on COC)
- Metals bottle received unpreserved. Filter + preserve prior to analysis.

If applicable, was the client contacted? ☒ YES / NO / NA Contact: Peter Gintautas Date/Time: e-mail 4/1/09

Project Manager Signature / Date: [Signature] 4/1/09

*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 200206880

Work Order Number: 0904002

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
Ross WW	0904002-1	03/31/2009	04/03/2009	04/03/2009	N/A	1	160	20		25 ml

Comments:

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

Data Package ID: *ak0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 3

CARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200206880

Work Order Number: 0904002

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
Ross WW	0904002-1	03/31/2009	04/03/2009	04/03/2009	N/A	1	20	20	U	25 ml

Comments:

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

Data Package ID: *ak0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 2 of 3

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200206880

Work Order Number: 0904002

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
Ross WW	0904002-1	03/31/2009	04/03/2009	04/03/2009	N/A	1	160	20		25 ml

Comments:

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

Data Package ID: *ak0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 3 of 3

pH

Method EPA150.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID:	Ross WW
Lab ID:	0904002-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 31-Mar-09

Date Extracted: 03-Apr-09

Date Analyzed: 03-Apr-09

Prep Method: NONE

Prep Batch: PH090403-1

QCBatchID: PH090403-1-1

Run ID: ph090403-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 ml

Final Volume: 20 ml

Result Units: pH

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-29-7	PH	1	8.32	0.1		

Data Package ID: *ph0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID:	Ross WW
Lab ID:	0904002-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 31-Mar-09

Date Extracted: 03-Apr-09

Date Analyzed: 03-Apr-09

Prep Method: NONE

Prep Batch: SC090403-1

QCBatchID: SC090403-1-1

Run ID: sc090403-1a

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	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-34-4	SPECIFIC CONDUCTIVITY	1	464	1		

Data Package ID: sc0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Sulfide

Method EPA376.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID:	Ross WW
Lab ID:	0904002-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 31-Mar-09

Date Extracted: 01-Apr-09

Date Analyzed: 01-Apr-09

Prep Method: NONE

Prep Batch: S090401-1

QCBatchID: S090401-1-1

Run ID: s090401-2a

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: s0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID:	Ross WW
Lab ID:	0904002-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 31-Mar-09

Date Extracted: 01-Apr-09

Date Analyzed: 02-Apr-09

Prep Method: METHOD

Prep Batch: TD090401-1

QCBatchID: TD090401-1-1

Run ID: td090402-1a

Cleanup: NONE

Basis: As Received

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	280	20		

Data Package ID: *td0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID: Ross WW

Lab ID: 0904002-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 31-Mar-09

Date Extracted: 01-Apr-09

Date Analyzed: 01-Apr-09

Prep Method: NONE

Prep Batch: IC090401-1

QCBatchID: IC090401-1-1

Run ID: ic090401-1a

Cleanup: NONE

Basis: As Received

File Name: 90401_022.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	1	1.8	0.1		
16887-00-6	CHLORIDE	1	7.5	0.2		
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	74	1		

Data Package ID: ic0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

Page 1 of 1

LIMS Version: 6.254A

BICARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

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
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

Comments:

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

Data Package ID: ak0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 3

CARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

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
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

Comments:

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

Data Package ID: ak0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 2 of 3

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

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
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

Comments:

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

Data Package ID: ak0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 3 of 3

TOTAL ALKALINITY AS CaCO₃

Method EPA310.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: AK090403-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/03/2009

Date Analyzed: 04/03/2009

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

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	98.3	5		98	85 - 115

Data Package ID: ak0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

pH

Method EPA150.1

Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID: Ross WW

Lab ID: 0904002-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/31/2009

Date Extracted: 04/03/2009

Date Analyzed: 04/03/2009

Prep Batch: PH090403-1

QCBatchID: PH090403-1-1

Run ID: ph090403-1a

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	8.32		8.35		0.1	1		0.2

Data Package ID: *ph0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID: Ross WW

Lab ID: 0904002-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/31/2009

Date Extracted: 04/03/2009

Date Analyzed: 04/03/2009

Prep Batch: SC090403-1

QCBatchID: SC090403-1-1

Run ID: sc090403-1a

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	464		468		1	1	1	10

Data Package ID: sc0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Sulfide

Method EPA376.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: S090401-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01-Apr-09

Date Analyzed: 01-Apr-09

Prep Method: NONE

Prep Batch: S090401-1

QCBatchID: S090401-1-1

Run ID: s090401-2a

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: s0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Sulfide

Method EPA376.1 Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: S090401-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/01/2009

Date Analyzed: 04/01/2009

Prep Method: NONE

Prep Batch: S090401-1

QCBatchID: S090401-1-1

Run ID: s090401-2a

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	15.3	15.3	2		100	80 - 120%

Data Package ID: s0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Sulfide

Method EPA376.1 Duplicate Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Field ID: Ross WW

Lab ID: 0904002-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03/31/2009

Date Extracted: 04/01/2009

Date Analyzed: 04/01/2009

Prep Batch: S090401-1

QCBatchID: S090401-1-1

Run ID: s090401-2a

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: s0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: TD090401-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01-Apr-09

Date Analyzed: 02-Apr-09

Prep Method: METHOD

Prep Batch: TD090401-1

QCBatchID: TD090401-1-1

Run ID: td090402-1a

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: *td0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: TD090401-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/01/2009

Date Analyzed: 04/02/2009

Prep Method: METHOD

Prep Batch: TD090401-1

QCBatchID: TD090401-1-1

Run ID: td090402-1a

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	406	20		102	85 - 115%

Data Package ID: *td0904002-1*

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: IC090401-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01-Apr-09

Date Analyzed: 01-Apr-09

Prep Method: NONE

Prep Batch: IC090401-1

QCBatchID: IC090401-1-1

Run ID: ic090401-1a

Cleanup: NONE

Basis: N/A

File Name: 90401_014.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	
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: ic0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Ion Chromatography

Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904002

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200206880

Lab ID: IC090401-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/01/2009

Date Analyzed: 04/01/2009

Prep Method: NONE

Prep Batch: IC090401-1

QCBatchID: IC090401-1-1

Run ID: ic090401-1a

Cleanup: NONE

Basis: N/A

File Name: 90401_015.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	2.51	0.1		100	90 - 110%
16887-00-6	CHLORIDE	5	4.92	0.2		98	90 - 110%
14797-65-0	NITRITE AS N	2	2.06	0.1		103	90 - 110%
24959-67-9	BROMIDE	5	5.05	0.2		101	90 - 110%
14797-55-8	NITRATE AS N	5	4.77	0.2		95	90 - 110%
14808-79-8	SULFATE	25	24.4	1		97	90 - 110%

Data Package ID: ic0904002-1

Date Printed: Wednesday, April 08, 2009

ALS Paragon

LIMS Version: 6.254A

Page 1 of 1

Ion Chromatography

Method EPA300.0 Revision 2.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon
Work Order Number: 0904002
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200206880

Field ID: Ross WW LabID: 0904002-1MS	Sample Matrix: WATER % Moisture: N/A Date Collected: 31-Mar-09 Date Extracted: 01-Apr-09 Date Analyzed: 01-Apr-09 Prep Method: NONE	Prep Batch: IC090401-1 QCBatchID: IC090401-1-1 Run ID: ic090401-1a Cleanup: NONE Basis: As Received	Sample Aliquot: 5 ml Final Volume: 5 ml Result Units: MG/L File Name: 90401_025.DXD
---	--	--	--

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	1.8		3.72		0.1	2	97	85 - 115%
16887-00-6	CHLORIDE	7.5		12.4		0.2	5	98	85 - 115%
14797-65-0	NITRITE AS N	0.1	U	1.97		0.1	2	98	85 - 115%
24959-67-9	BROMIDE	0.2	U	5.55		0.2	5	111	85 - 115%
14797-55-8	NITRATE AS N	0.2	U	5.13		0.2	5	103	85 - 115%
14808-79-8	SULFATE	74		91.3		1	20	85	85 - 115%

Field ID: Ross WW LabID: 0904002-1MSD	Sample Matrix: WATER % Moisture: N/A Date Collected: 31-Mar-09 Date Extracted: 01-Apr-09 Date Analyzed: 01-Apr-09 Prep Method: NONE	Prep Batch: IC090401-1 QCBatchID: IC090401-1-1 Run ID: ic090401-1a Cleanup: NONE Basis: As Received	Sample Aliquot: 5 ml Final Volume: 5 ml Result Units: MG/L File Name: 90401_026.DXD
--	--	--	--

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16984-48-8	FLUORIDE	3.91		2	107	0.1	15	5
16887-00-6	CHLORIDE	12.6		5	102	0.2	15	2
14797-65-0	NITRITE AS N	2.01		2	100	0.1	15	2
24959-67-9	BROMIDE	5.44		5	109	0.2	15	2
14797-55-8	NITRATE AS N	5.07		5	101	0.2	15	1
14808-79-8	SULFATE	92.6		20	92	1	15	1

Data Package ID: *ic0904002-1*

CONTROLLED

NON-CONFORMANCE REPORT

Non-Conformance

Initiated By: Jason B. McNall on 4/1/2009

Event Type: Laboratory Incident/Error

Event Explanation: The sulfide analysis was performed using an expired 'sodium thiosulfate standard solution'. The solution had expired 10 days earlier on 3/21/2009. The sample has been depleted.

Action To

Prevent Recurrence: discussion with Analyst

Corrective Action

Corrective Action: Document in Narrative

Department Manager Approval: Eric A. Lintner

Approval Date: 4/3/2009

Corrective Action Comments:

Workorders Affected

Workorder -- Procedure

0904002 -- EPA376.1

Peter Gintautas was contacted on 4/1/2009

Approved By

Amy R. Wolf

Approval Date

4/1/2009

There Are No Associated Batches

NCR Approval

Project Manager Approval: ARW on 4/1/2009

Department Manager Approval: Eric A. Lintner on 4/3/2009

QA Manager Approval: Deb Scheib on 4/3/2009

CONTROLLED NON-CONFORMANCE REPORT

Non-Conformance

Initiated By: Eric A. Lintner on 4/2/2009

Event Type: Method Requirements Not Met -- CCV

Event Explanation: The closing CCV was high for Br-, 111%. The only samples associated were the MS/MSD set. The MS/MSD passed for Br- at 111% and 109%, and the native sample was a 'ND'.

Action To

Prevent Recurrence: Noted

Corrective Action

Corrective Action: Document in Narrative

Department Manager Approval: Eric A. Lintner

Approval Date: 4/3/2009

Corrective Action Comments:

Workorders Affected

Workorder -- Procedure

0904002 -- EPA300.0

Peter Gintautas was contacted on 4/3/2009

Approved By

Amy R. Wolf

Approval Date

4/3/2009

There Are No Associated Batches

NCR Approval

Project Manager Approval: ARW on 4/3/2009

Department Manager Approval: Eric A. Lintner on 4/3/2009

QA Manager Approval: Deb Scheib on 4/3/2009