



## Dissolved Gasses Case Narrative

### Colorado Oil & Gas Conservation Commission Complaint 200294386

Work Order Number: 1102061

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 02/05/2011.

The sample was free of headspace prior to analysis.

The sample had a pH > 2 at the time of analysis.

2. The sample was prepared and analyzed according to method RSK-175 procedures and SOP449R0.
3. The preparation batch included a method blank, laboratory control sample, laboratory control sample duplicate, sample duplicate and matrix spike. The following is a list of samples used for the matrix QC:

Sample ID	QC Type	Batch ID
1102061-1	MS	HC110217-9a
1102061-1	DUP	HC110217-9a

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.

All preparation QC were within the acceptance criteria.

4. The sample was associated with one or more of the following analytical QC: initial calibrations, initial calibration verifications (ICV), and continuing calibration verifications (CCV).
5. All analytical QC were within the acceptance criteria.
6. Sample dilutions were not required for the requested analysis.



7. The sample was prepared and analyzed within the established holding time.
8. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 4.

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.

Mindy Norton

Mindy Norton  
Organics Primary Data Reviewer

2.17.11  
Date

Andrew J. Jeffers

Organics Final Data Reviewer

2-18-11  
Date



**ALS**  
**Data Qualifier Flags**  
**Chromatography and Mass Spectrometry**

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the data indicate the presence of a compound that meets the identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \*:** This flag indicates that a spike recovery is outside the control criteria.
- +:** This flag indicates that the relative percent difference (RPD) exceeds the control criteria.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1102061

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

**Client Project Name:** Complaint 200294386

**Client Project Number:**

**Client PO Number:** OE PHA 11000000014

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Dahl WW PM	1102061-1		WATER	03-Feb-11	14:56
Trip Blank	1102061-2		WATER	03-Feb-11	6:30
Dahl WW AM	1102061-3		WATER	03-Feb-11	11:59

WORKORDER  
#

110206

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DISPOSAL By Lab or Return to Client

[illegible]

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

**For metals or anions, please detail analytes below.**

Comments:	<p>Angus = Big, <math>10^3</math>, <math>10^4</math>, <math>10^5</math>, <math>10^6</math></p> <p>After I checked the quality of the product</p> <p>200,000 - 100,000 - 10 models</p> <p>700,000 - 100,000 - 11 models</p> <p>200,000 - 100,000 - 11 models</p> <p>700,000 - 100,000 - 11 models</p> <p>200,000 - 100,000 - 11 models</p> <p>700,000 - 100,000 - 11 models</p>	<p>QC PACKAGE (check below)</p> <table border="1"> <tr> <td>X</td> <td>LEVEL II: (Standard QC)</td> </tr> <tr> <td></td> <td>LEVEL III: (Std QC + forms)</td> </tr> <tr> <td></td> <td>LEVEL IV: (Std QC + forms + raw data)</td> </tr> <tr> <td></td> <td></td> </tr> </table>	X	LEVEL II: (Standard QC)		LEVEL III: (Std QC + forms)		LEVEL IV: (Std QC + forms + raw data)		
X	LEVEL II: (Standard QC)									
	LEVEL III: (Std QC + forms)									
	LEVEL IV: (Std QC + forms + raw data)									

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>P. G. H.</i>	<i>Peter G. H.</i>	<i>4/12/11</i>	<i>12:45</i>
RECEIVED BY	<i>C. Trumble</i>	<i>C. Trumble</i>	<i>2-8-11</i>	<i>1045</i>
RELINQUISHED BY			<i>aw</i>	
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



## CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CUGCCWorkorder No: 1102061Project Manager: AWInitials: CDT Date: 2-5-11

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody <b>seals on shipping containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels complete and legible</b> ?		<input checked="" type="radio"/> 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.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all <b>aqueous samples requiring preservation preserved correctly? (excluding volatiles)</b>	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples pH 4-9</b> ?	N/A	YES	<input checked="" type="radio"/> NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact</b> ? (not broken or leaking, etc.)		<input checked="" type="radio"/> 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	N/A	YES	<input checked="" type="radio"/> NO
15. Do perchlorate LCMS-MS samples <b>have</b> 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 <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.)	<input checked="" type="radio"/> N/A	YES	NO
17. Were the samples <b>shipped on ice</b> ?		<input checked="" type="radio"/> YES	NO
18. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: <u>#2</u> <input checked="" type="radio"/> <u>#4</u>	RAD ONLY	<input checked="" type="radio"/> YES
Cooler #:	<u>1</u>		
Temperature (°C):	<u>3.8°</u>		
No. of custody seals on cooler:	<u>2</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? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> NA (If no, see Form 008.)			

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

Headspace: 1102061-2-1 }  
 - 2-2 }  
 - 3-1 } GREEN PEA  
 - 3-2 }

Sample 1102061-3-4 and 1102061-3-5 received @ pH 2.5

If applicable, was the client contacted? YES / NO ☒ NO Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_Project Manager Signature / Date: AW 2/7/11

# Dissolved Gasses

Method RSK175

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1102061

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200294386

Lab ID: HC110217-9MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Feb-11

Date Analyzed: 17-Feb-11

Prep Method: METHOD

Prep Batch: HC110217-9

QCBatchID: HC110217-9-1

Run ID: HC110217-9A

Cleanup: NONE

Basis: N/A

File Name: 03373.dat

Sample Aliquot: 38.5 ml

Final Volume: 38.5 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
74-82-8	METHANE	1	1	1	U	
74-85-1	ETHENE	1	1	1	U	
74-84-0	ETHANE	1	2	2	U	

Data Package ID: MEE1102061-1

Date Printed: Thursday, February 17, 2011

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# Dissolved Gasses

Method RSK175

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1102061

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200294386

Field ID: Dahl WW PM

Lab ID: 1102061-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03-Feb-11

Date Extracted: 17-Feb-11

Date Analyzed: 17-Feb-11

Prep Method: METHOD

Prep Batch: HC110217-9

QCBatchID: HC110217-9-1

Run ID: HC110217-9A

Cleanup: NONE

Basis: As Received

File Name: 03375.dat

Sample Aliquot: 38.5 ml

Final Volume: 38.5 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
74-82-8	METHANE	1	1	1	U	
74-85-1	ETHENE	1	1	1	U	
74-84-0	ETHANE	1	2	2	U	

Data Package ID: MEE1102061-1

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# Dissolved Gasses

## Method RSK175

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1102061

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200294386

Lab ID: HC110217-9LCS

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 02/17/2011  
Date Analyzed: 02/17/2011  
Prep Method: METHOD

Prep Batch: HC110217-9  
QCBatchID: HC110217-9-1  
Run ID: HC110217-9A  
Cleanup: NONE  
Basis: N/A  
File Name: 03372.dat

Sample Aliquot: 38.5 ml  
Final Volume: 38.5 ml  
Result Units: UG/L  
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
74-82-8	METHANE	142	134	1		94	80 - 120%
74-85-1	ETHENE	249	229	1		92	80 - 120%
74-84-0	ETHANE	267	238	2		89	80 - 120%

Lab ID: HC110217-9LCSD

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 02/17/2011  
Date Analyzed: 02/17/2011  
Prep Method: METHOD

Prep Batch: HC110217-9  
QCBatchID: HC110217-9-1  
Run ID: HC110217-9A  
Cleanup: NONE  
Basis: N/A  
File Name: 03378.dat

Sample Aliquot: 38.5 ml  
Final Volume: 38.5 ml  
Result Units: UG/L  
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
74-82-8	METHANE	142	134	1		94	25	0
74-85-1	ETHENE	249	229	1		92	25	0
74-84-0	ETHANE	267	237	2		89	25	0

Data Package ID: MEE1102061-1

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# Dissolved Gasses

Method RSK175

Matrix Spike

Lab Name: ALS Environmental -- FC

Work Order Number: 1102061

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200294386

Field ID: Dahl WW PM

LabID: 1102061-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03-Feb-11

Date Extracted: 17-Feb-11

Date Analyzed: 17-Feb-11

Prep Batch: HC110217-9

QCBatchID: HC110217-9-1

Run ID: HC110217-9A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 38.5 ml

Final Volume: 38.5 ml

Result Units: UG/L

File Name: 03377.dat

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
74-82-8	METHANE	1	U	15.8		1	14.2	107	70 - 130%
74-85-1	ETHENE	1	U	25.7		1	24.9	103	70 - 130%
74-84-0	ETHANE	2	U	26.4		2	26.7	99	70 - 130%

Data Package ID: MEE1102061-1

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# Dissolved Gasses

Method RSK175

## Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1102061

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200294386

Field ID: Dahl WW PM

Lab ID: 1102061-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02/03/2011

Date Extracted: 02/17/2011

Date Analyzed: 02/17/2011

Prep Batch: HC110217-9

QCBatchID: HC110217-9-1

Run ID: HC110217-9A

Cleanup: NONE

Basis: As Received

File Name: 03376.dat

Sample Aliquot: 38.5 ml

Final Volume: 38.5 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
74-82-8	METHANE	1	U	1	U	1	1	3	25
74-85-1	ETHENE	1	U	1	U	1	1		25
74-84-0	ETHANE	2	U	2	U	2	1		25

Data Package ID: MEE1102061-1

Date Printed: Thursday, February 17, 2011

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