



Dissolved Gasses

Case Narrative

Colorado Oil & Gas Conservation Commission

Complaint 200209993

Work Order Number: 0905095

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 05/13/09. The sample was free of headspace prior to analysis. Samples 0905095-1 and -1DUP 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, and sample duplicate. Per method requirements, a matrix spike was also performed for this analysis. Since the matrix spike was not performed on a sample from this order number, matrix spike results are not included in this report. The following is the sample used for the matrix QC:

| Sample ID | QC Type | Batch ID |
|-----------|---------|------------|
| 0905095-1 | DUP | HC090514-2 |

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.

4. All preparation QC results were within the acceptance criteria.
5. All samples are associated with one or more of the following analytical QC: initial calibrations, initial calibration verifications (ICV), and continuing calibration verifications (CCV).
6. All analytical QC were within the acceptance criteria.
7. Sample dilutions were not required for the requested analysis.
8. The sample was prepared and analyzed within the established holding times.



9. 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 certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Emily Knødel
Emily Knødel
Organics Primary Data Reviewer

05-18-09
Date

Dan Shepeman
Organics Final Data Reviewer

05-18-09
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.

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Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Complaint 200209993

Client Project Number:

Client PO Number: OE PHA 09000000004

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

CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: COGCCWorkorder No: 0905095Project Manager: AWInitials: CDTDate: 5-13-09

| | | |
|--|---|---|
| 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 | 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: _____ < green pea _____ > 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*: <u>#2</u> <input checked="" type="radio"/> <u>#4</u> RAD ONLY <input checked="" type="radio"/> YES | | NO |
| Cooler #: <u>1</u> | | |
| Temperature (°C): <u>5.6</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: 0905095-1-1 < green pea

Metals will be filtered and preserved in house. 5/13/09

If applicable, was the client contacted? YES / NO / ☒ NA Contact: _____

Date/Time: _____

Project Manager Signature / Date: _____

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

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

Dissolved Gasses

Method RSK175

Method Blank

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200209993

Lab ID: HC090514-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 14-May-09

Date Analyzed: 14-May-09

Prep Method: METHOD

Prep Batch: HC090514-2

QCBatchID: HC090514-2-2

Run ID: HC090514-1A

Cleanup: NONE

Basis: N/A

File Name: 01254.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: HC0905095-1

Date Printed: Monday, May 18, 2009

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LIMS Version: 6.263A

Page 1 of 1

Dissolved Gasses

Method RSK175

Sample Results

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200209993

Field ID: Williams WW

Lab ID: 0905095-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-May-09

Date Extracted: 14-May-09

Date Analyzed: 14-May-09

Prep Method: METHOD

Prep Batch: HC090514-2

QCBatchID: HC090514-2-2

Run ID: HC090514-1A

Cleanup: NONE

Basis: As Received

File Name: 01256.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 | 900 | 1 | | |
| 74-85-1 | ETHENE | 1 | 1 | 1 | U | |
| 74-84-0 | ETHANE | 1 | 2 | 2 | U | |

Data Package ID: HC0905095-1

Date Printed: Monday, May 18, 2009

ALS Laboratory Group -- FC

LIMS Version: 6.263A

Page 1 of 1

Dissolved Gasses

Method RSK175

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200209993

Lab ID: HC090514-2LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 05/14/2009

Date Analyzed: 05/14/2009

Prep Method: METHOD

Prep Batch: HC090514-2

QCBatchID: HC090514-2-2

Run ID: HC090514-1A

Cleanup: NONE

Basis: N/A

File Name: 01255.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 | 147 | 1 | | 103 | 80 - 120% |
| 74-85-1 | ETHENE | 249 | 250 | 1 | | 100 | 80 - 120% |
| 74-84-0 | ETHANE | 267 | 275 | 2 | | 103 | 80 - 120% |

Lab ID: HC090514-2LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 05/14/2009

Date Analyzed: 05/14/2009

Prep Method: METHOD

Prep Batch: HC090514-2

QCBatchID: HC090514-2-2

Run ID: HC090514-1A

Cleanup: NONE

Basis: N/A

File Name: 01266.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 | 150 | 1 | | 106 | 25 | 2 |
| 74-85-1 | ETHENE | 249 | 258 | 1 | | 104 | 25 | 3 |
| 74-84-0 | ETHANE | 267 | 283 | 2 | | 106 | 25 | 3 |

Data Package ID: HC0905095-1

Date Printed: Monday, May 18, 2009

ALS Laboratory Group -- FC

Page 1 of 1

LIMS Version: 6.263A

Dissolved Gasses

Method RSK175

Duplicate Sample Results

Lab Name: ALS Laboratory Group -- FC

Work Order Number: 0905095

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200209993

Field ID: Williams WW

Lab ID: 0905095-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 05/12/2009

Date Extracted: 05/14/2009

Date Analyzed: 05/14/2009

Prep Batch: HC090514-2

QC Batch ID: HC090514-2-2

Run ID: HC090514-1A

Cleanup: NONE

Basis: As Received

File Name: 01257.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 | 900 | | 966 | | 1 | 1 | 7 | 25 |
| 74-85-1 | ETHENE | 1 | U | 1 | U | 1 | 1 | | 25 |
| 74-84-0 | ETHANE | 2 | U | 2 | U | 2 | 1 | | 25 |

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Date Printed: Monday, May 18, 2009

ALS Laboratory Group -- FC

Page 1 of 1

LIMS Version: 6.263A