

Dissolved Gasses

Case Narrative

COGCC

Burkhart -- 25087038

Work Order Number: 1202226

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 02/20/2012.

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 SOP449R1.
3. The preparation batch included a method blank, laboratory control sample, laboratory control sample duplicate, sample duplicate, and matrix spike. Per method requirements, matrix QC was performed for this 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.

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

2-09-12
Date

Andrea S. Jeff.
Organics Final Data Reviewer

2-29-12
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

OrderNum: 1202226

Client Name: COGCC

Client Project Name: Burkhart

Client Project Number: 25087038

Client PO Number:

| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|-----------------------|-------------------|------------|--------|----------------|----------------|
| Burkhart 1/#200340214 | 1202226-1 | | WATER | 20-Feb-12 | 12:00 |



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

| | | | | | | | |
|---|--|---|--|---------------------------|--|-------------------------------|--|
| PROJECT NAME <i>Bidwell, Burkhardt, Olson</i> | | SAMPLER SITE ID | | DATE <i>2/20/12</i> | | WORKORDER # <i>1202226</i> | |
| PROJECT NO. <i>25087038</i> | | EDD FORMAT | | TURNAROUND <i>STD</i> | | PAGE <i>1</i> of <i>1</i> | |
| COMPANY NAME <i>Terracon Consultants</i> | | PURCHASE ORDER <i>COGCC</i> | | DISPOSAL <i>Ex Lab</i> | | Return to Client | |
| SEND REPORT TO <i>John Axelsson / Amy Wolf</i> | | BILL TO COMPANY <i>COGCC</i> | | DATE <i>2/20/12</i> | | PAGE <i>1</i> of <i>1</i> | |
| ADDRESS <i>10625 W 170th Ave, Golden, CO 80633</i> | | INVOICE ATTN TO <i>John Axelsson</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |
| CITY / STATE / ZIP <i>Golden, CO 80633</i> | | ADDRESS <i>10625 W 170th Ave, Golden, CO 80633</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |
| PHONE <i>303-923-3300</i> | | CITY / STATE / ZIP <i>Golden, CO 80633</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |
| FAX <i>303-923-3300</i> | | PHONE <i>303-923-3300</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |
| E-MAIL <i>Jc.dellaport@terracon.com</i> | | FAX <i>303-923-3300</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |
| E-MAIL <i>Jc.dellaport@terracon.com</i> | | E-MAIL <i>Jc.dellaport@terracon.com</i> | | TURNAROUND <i>STD</i> | | DISPOSAL <i>Ex Lab</i> | |

*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: <i>Please include sulfate, nitrate/nitrite w/ Total N</i> | QC PACKAGE (check below) | |
| | <input type="checkbox"/> LEVEL II (Standard QC) | <input type="checkbox"/> |
| | <input type="checkbox"/> LEVEL III (Std QC + forms) | <input type="checkbox"/> |
| | <input type="checkbox"/> LEVEL IV (Std QC + forms + raw data) | <input type="checkbox"/> |
| Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035 | | |

| | | | | |
|---|-----------------------------------|--------------------------------------|------------------------|---------------------|
| RELINQUISHED BY <i>John Axelsson</i> | SIGNATURE <i>John Axelsson</i> | PRINTED NAME <i>John Axelsson</i> | DATE <i>2/20/12</i> | TIME <i>1700</i> |
| RECEIVED BY <i>John Axelsson</i> | SIGNATURE <i>John Axelsson</i> | PRINTED NAME <i>John Axelsson</i> | DATE <i>2-20-12</i> | TIME <i>1700</i> |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |
| RELINQUISHED BY | | | | |
| RECEIVED BY | | | | |



CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCCWorkorder No: 1202226Project Manager: AWInitials: CDT Date: 2-20-12

| | | | |
|---|---|--------------------------------------|-------------------------------------|
| 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? | <input checked="" type="radio"/> NONE | 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? | <input checked="" type="radio"/> DROP OFF | YES | NO |
| 8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles) | N/A | <input checked="" type="radio"/> YES | 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? | | YES | <input checked="" type="radio"/> 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 | <input checked="" type="radio"/> YES | 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 | | <input checked="" type="radio"/> YES | NO |
| Cooler #: <u>1</u> | | | |
| Temperature (°C): <u>2.4</u> | | | |
| No. of custody seals on cooler: <u>0</u> | | | |
| External µR/hr reading: <u>NA</u> | | | |
| Background µR/hr reading: <u>NA</u> | | | |
| Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" 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.

RECEIVED 6 total UOA VIALS, SO ASSIGNED 2 FOR EACH ANALYSIS.

• 2/22/12: cancelled NO2/NO3 by 353.2 due to samples bottles being left out of cooler overnight. Replaced analysis with 300.0 NO2 and 300.0 NO3. aw 2/22/12

If applicable, was the client contacted? ☒ YES / ☒ NO / ☒ NA Contact: John Axelson aw 2/22/12 Date/Time: 2/22/12Project Manager Signature / Date: C. Wolf 2/21/12

Dissolved Gasses

Method RSK175

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1202226

Client Name: COGCC

ClientProject ID: Burkhart 25087038

Lab ID: HC120222-9MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Feb-12

Date Analyzed: 22-Feb-12

Prep Method: METHOD

Prep Batch: HC120222-9

QCBatchID: HC120222-9-3

Run ID: HC120222-9A

Cleanup: NONE

Basis: N/A

File Name: 04226.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 | |

Data Package ID: MEE1202226-1

Dissolved Gasses

Method RSK175

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1202226

Client Name: COGCC

ClientProject ID: Burkhart 25087038

Field ID: Burkhart 1/#200340214
Lab ID: 1202226-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Feb-12

Date Extracted: 22-Feb-12

Date Analyzed: 22-Feb-12

Prep Method: METHOD

Prep Batch: HC120222-9

QCBatchID: HC120222-9-3

Run ID: HC120222-9A

Cleanup: NONE

Basis: As Received

File Name: 04235.dat

Analyst: Dan Sheneman

Sample Aliquot: 38.5ML

Final Volume: 38.5ML

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 | |

Data Package ID: MEE1202226-1

Dissolved Gasses

Method RSK175

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1202226

Client Name: COGCC

ClientProject ID: Burkhart 25087038

Lab ID: HC120222-9LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02/22/2012

Date Analyzed: 02/22/2012

Prep Method: METHOD

Prep Batch: HC120222-9

QCBatchID: HC120222-9-3

Run ID: HC120222-9A

Cleanup: NONE

Basis: N/A

File Name: 04225.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 | 159 | 1 | | 112 | 80 - 120% |

Lab ID: HC120222-9LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02/22/2012

Date Analyzed: 02/22/2012

Prep Method: METHOD

Prep Batch: HC120222-9

QCBatchID: HC120222-9-3

Run ID: HC120222-9A

Cleanup: NONE

Basis: N/A

File Name: 04237.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 | 142 | 1 | | 100 | 25 | 11 |

Data Package ID: MEE1202226-1