

Inorganics

Case Narrative

COGCC

Complaint 200439757

Work Order Number: 1607366

1. This report consists of 4 water samples.
2. The samples were received intact ranging from 5.0° to 7.2° Celsius by ALS on 07/20/16.
3. The samples were 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.
4. The samples were analyzed following MCAWW and EMSL procedures for the current revisions of the following SOPs and methods:

| <u>Analyte</u> | <u>Method</u> | <u>SOP #</u> |
|----------------------|--------------------|--------------|
| Alkalinity | 310.1 | 1106 |
| Bicarbonate | 310.1 | 1106 |
| Carbonate | 310.1 | 1106 |
| pH | 150.1 | 1126 |
| Specific conductance | 120.1 | 1128 |
| TDS | 160.1 | 1101 |
| Bromide | 300.0 Revision 2.1 | 1113 |
| Chloride | 300.0 Revision 2.1 | 1113 |
| Fluoride | 300.0 Revision 2.1 | 1113 |
| Nitrate as N | 300.0 Revision 2.1 | 1113 |
| Nitrite as N | 300.0 Revision 2.1 | 1113 |
| Orthophosphate as P | 300.0 Revision 2.1 | 1113 |
| Sulfate | 300.0 Revision 2.1 | 1113 |

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, laboratory control sample (LCS) and laboratory control sample duplicate were prepared and analyzed with the samples in each applicable preparation batch.
- n The method blank associated with each applicable batch was below the reporting limit for the requested analytes.
- n All laboratory control sample criteria were met.
- n All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- n All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.

8. Matrix specific quality control procedures.

Sample 1607366-1 was designated as the quality control sample for the specific conductance and anion analyses. Per method requirements, matrix QC was performed for the remaining 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 anion batch. In order to achieve lower reporting limits for bromide, chloride, fluoride, nitrate as N, nitrite as N and orthophosphate as P, the sample was reanalyzed at a lower dilution. The MS and MSD were not reanalyzed. All guidance criteria for precision and accuracy were met for sulfate.
 - n A sample duplicate was prepared and analyzed with the specific conductance batch. All guidance criteria for precision were met.
9. Electrical conductivity screening indicated that the concentration of dissolved salts was high in sample 1607366-4. Therefore, it was necessary to dilute the samples prior to injection into the ion chromatograph in order to minimize the amount of salts loaded into the analytical column.

It was necessary to dilute all samples in order to bring the chloride and/or sulfate concentrations into the analytical range of the ion chromatograph (IC).

Reduced aliquots were taken of the samples for the alkalinity, bicarbonate and carbonate analysis. Reporting limits were elevated accordingly.

Reduced aliquots were taken of samples 1607366-3 and -4 for the TDS analysis. Reporting limits were elevated accordingly.



10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

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.

Megan Johnstone
Megan Johnstone
Inorganics Primary Data Reviewer

7/31/16
Date

C. Wolf
Inorganics Final Data Reviewer

7/31/16
Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- A “J” is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS’s Method Detection Limit. 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 -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1607366

Client Name: COGCC

Client Project Name: Complaint 200439757

Client Project Number:

Client PO Number: CT 2016-141

| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|-------------------------|-------------------|------------|--------|----------------|----------------|
| 754977 Platteville Lat. | 1607366-1 | | WATER | 20-Jul-16 | 8:08 |
| 754980 Platteville Lat. | 1607366-2 | | WATER | 20-Jul-16 | 8:30 |
| 753452 WW | 1607366-3 | | WATER | 20-Jul-16 | 9:45 |
| 754914 Sump | 1607366-4 | | WATER | 20-Jul-16 | 9:21 |



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1607366

Project Manager: ARW

Initials: SDM Date: 7-20-11

| | | | |
|--|-----------------|------------|-----------|
| 1. Does this project require any special handling in addition to standard ALS procedures? | | YES | <u>NO</u> |
| 2. Are custody seals on shipping containers intact? | <u>NONE</u> | YES | NO |
| 3. Are Custody seals on sample containers intact? | <u>NONE</u> | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present or other representative documents? | | <u>YES</u> | NO |
| 5. Are the COC and bottle labels complete and legible? | | <u>YES</u> | NO |
| 6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.) | | YES | <u>NO</u> |
| 7. Were airbills / shipping documents present and/or removable? | <u>DROP OFF</u> | YES | NO |
| 8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles) | N/A | <u>YES</u> | NO |
| 9. Are all aqueous non-preserved samples pH 4-9? | N/A | <u>YES</u> | NO |
| 10. Is there sufficient sample for the requested analyses? | | <u>YES</u> | NO |
| 11. Were all samples placed in the proper containers for the requested analyses? | | <u>YES</u> | NO |
| 12. Are all samples within holding times for the requested analyses? | | <u>YES</u> | NO |
| 13. Were all sample containers received intact? (not broken or leaking, etc.) | | <u>YES</u> | 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 | <u>NO</u> |
| 15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy | N/A | YES | <u>NO</u> |
| 16. Were the samples shipped on ice? | | <u>YES</u> | NO |
| 17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <u>#4</u> | RAD ONLY | YES | <u>NO</u> |
| Cooler #: <u>1</u> <u>2</u> | | | |
| Temperature (°C): <u>5.0</u> <u>7.2</u> | | | |
| No. of custody seals on cooler: <u>2</u> <u>2</u> | | | |
| External µR/hr reading: <u>N/A</u> <u>N/A</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.

* Cooler 2 out of temp. Samples received same day as receipt.
 * Sample 4 bottles 1 through 4 have a ^{right} layer of oil off top of sample water.
 6.) Sample 3 is missing the 200mL amber for TOC analysis. For Sample 3 the bottle for wet chem → The COC says 3 sample bottles only 1 received for the sample.

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

Project Manager Signature / Date: _____

BICARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: NONE
Analyst: Kristina L. Peters
Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/ LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|-------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 130 | 20 | | 25 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 120 | 20 | | 25 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 620 | 20 | | 25 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 380 | 20 | | 25 ml |

Comments:

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

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CARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: NONE
Analyst: Kristina L. Peters

Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 20 | 20 | U | 25 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 20 | 20 | U | 25 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 20 | 20 | U | 25 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 20 | 20 | U | 25 ml |

Comments:

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

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TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: NONE
Analyst: Kristina L. Peters

Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/ LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|-------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 130 | 20 | | 25 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 120 | 20 | | 25 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 620 | 20 | | 25 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 380 | 20 | | 25 ml |

Comments:

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

Data Package ID: *ak1607366-1*

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pH in water @25 Degrees Celsius

Method EPA150.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: NONE
Analyst: Kristina L. Peters

Final Volume: 20 ml
Matrix: WATER
Result Units: pH

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/ LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|-------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 8.38 | 0.1 | | 20 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 8.55 | 0.1 | | 20 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 8.41 | 0.1 | | 20 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/22/2016 | 07/22/2016 | N/A | 1 | 9.26 | 0.1 | | 20 ml |

Comments:

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

Data Package ID: pH1607366-1

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SPECIFIC CONDUCTIVITY

Method EPA120.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: NONE
Analyst: Kristina L. Peters

Final Volume: 30 ml
Matrix: WATER
Result Units: umhos/cm

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/ LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|-------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/21/2016 | 07/21/2016 | N/A | 1 | 963 | 1 | | 30 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/21/2016 | 07/21/2016 | N/A | 1 | 961 | 1 | | 30 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/21/2016 | 07/21/2016 | N/A | 1 | 1511 | 1 | | 30 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/21/2016 | 07/21/2016 | N/A | 1 | 3180 | 1 | | 30 ml |

Comments:

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

Data Package ID: sc1607366-1

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TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: COGCC
Client Project ID: Complaint 200439757
Work Order Number: 1607366
Reporting Basis: As Received
Prep Method: METHOD
Analyst: Kristina L. Peters

Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

| Client Sample ID | Lab ID | Date Collected | Date Prepared | Date Analyzed | Percent Moisture | Dilution Factor | Result | RptLimit/ LOQ/LOD | Flag | Sample Aliquot |
|-------------------------|-----------|----------------|---------------|---------------|------------------|-----------------|--------|-------------------|------|----------------|
| 754977 Platteville Lat. | 1607366-1 | 07/20/2016 | 07/21/2016 | 07/22/2016 | N/A | 1 | 550 | 20 | | 100 ml |
| 754980 Platteville Lat. | 1607366-2 | 07/20/2016 | 07/21/2016 | 07/22/2016 | N/A | 1 | 560 | 20 | | 100 ml |
| 753452 WW | 1607366-3 | 07/20/2016 | 07/21/2016 | 07/22/2016 | N/A | 1 | 910 | 40 | | 50 ml |
| 754914 Sump | 1607366-4 | 07/20/2016 | 07/21/2016 | 07/22/2016 | N/A | 1 | 2300 | 80 | | 25 ml |

Comments:

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

Data Package ID: *td1607366-1*

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Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Field ID: 754977 Platteville Lat.

Lab ID: 1607366-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

File Name: 160721IC3lims

Analyst: Charles B. Allen

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | Dilution Factor | Result | RptLimit/ LOQ/LOD | MDL/DL | Result Qualifier | EPA Qualifier |
|------------|-----------------------------------|-----------------|--------|-------------------|--------|------------------|---------------|
| 16984-48-8 | FLUORIDE AnalysisTime: 13:31 | 1 | 0.8 | 0.1 | 0.03 | | |
| 16887-00-6 | CHLORIDE AnalysisTime: 19:23 | 20 | 160 | 4 | 1.2 | | |
| 14797-65-0 | NITRITE AS N AnalysisTime: 13:31 | 1 | 0.03 | 0.1 | 0.03 | U | |
| 24959-67-9 | BROMIDE AnalysisTime: 13:31 | 1 | 0.12 | 0.2 | 0.06 | J | |
| 14797-55-8 | NITRATE AS N AnalysisTime: 13:31 | 1 | 0.11 | 0.2 | 0.06 | J | |
| 14265-44-2 | ORTHOPHOSPHATE AS P AnalysisTime: | 1 | 0.31 | 0.5 | 0.06 | J | |
| 14808-79-8 | SULFATE AnalysisTime: 13:45 | 10 | 130 | 10 | 3 | | |

Data Package ID: ic1607366-1

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Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Field ID: 754980 Platteville Lat.

Lab ID: 1607366-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

File Name: 160721IC3lims

Analyst: Charles B. Allen

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | Dilution Factor | Result | RptLimit/ LOQ/LOD | MDL/DL | Result Qualifier | EPA Qualifier |
|------------|-----------------------------------|-----------------|--------|-------------------|--------|------------------|---------------|
| 16984-48-8 | FLUORIDE AnalysisTime: 14:39 | 1 | 0.8 | 0.1 | 0.03 | | |
| 16887-00-6 | CHLORIDE AnalysisTime: 19:37 | 20 | 160 | 4 | 1.2 | | |
| 14797-65-0 | NITRITE AS N AnalysisTime: 14:39 | 1 | 0.03 | 0.1 | 0.03 | U | |
| 24959-67-9 | BROMIDE AnalysisTime: 14:39 | 1 | 0.13 | 0.2 | 0.06 | J | |
| 14797-55-8 | NITRATE AS N AnalysisTime: 14:39 | 1 | 0.081 | 0.2 | 0.06 | J | |
| 14265-44-2 | ORTHOPHOSPHATE AS P AnalysisTime: | 1 | 0.27 | 0.5 | 0.06 | J | |
| 14808-79-8 | SULFATE AnalysisTime: 14:26 | 10 | 130 | 10 | 3 | | |

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Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

| | |
|-----------|-----------|
| Field ID: | 753452 WW |
| Lab ID: | 1607366-3 |

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

File Name: 160721IC3lims

Analyst: Charles B. Allen

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | Dilution Factor | Result | RptLimit/ LOQ/LOD | MDL/DL | Result Qualifier | EPA Qualifier |
|------------|-----------------------------------|-----------------|--------|-------------------|--------|------------------|---------------|
| 16984-48-8 | FLUORIDE AnalysisTime: 17:22 | 1 | 2.2 | 0.1 | 0.03 | | |
| 16887-00-6 | CHLORIDE AnalysisTime: 14:53 | 12.5 | 120 | 2.5 | 0.75 | | |
| 14797-65-0 | NITRITE AS N AnalysisTime: 17:22 | 1 | 0.03 | 0.1 | 0.03 | U | |
| 24959-67-9 | BROMIDE AnalysisTime: 17:22 | 1 | 1.2 | 0.2 | 0.06 | | |
| 14797-55-8 | NITRATE AS N AnalysisTime: 17:22 | 1 | 0.06 | 0.2 | 0.06 | U | |
| 14265-44-2 | ORTHOPHOSPHATE AS P AnalysisTime: | 1 | 0.06 | 0.5 | 0.06 | U | |
| 14808-79-8 | SULFATE AnalysisTime: 17:22 | 1 | 0.3 | 1 | 0.3 | U | |

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Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

| | |
|-----------|-------------|
| Field ID: | 754914 Sump |
| Lab ID: | 1607366-4 |

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

File Name: 160721IC3lims

Analyst: Charles B. Allen

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | Dilution Factor | Result | RptLimit/ LOQ/LOD | MDL/DL | Result Qualifier | EPA Qualifier |
|------------|-----------------------------------|-----------------|--------|-------------------|--------|------------------|---------------|
| 16984-48-8 | FLUORIDE AnalysisTime: 17:49 | 10 | 0.7 | 1 | 0.3 | J | |
| 16887-00-6 | CHLORIDE AnalysisTime: 17:36 | 40 | 89 | 8 | 2.4 | | |
| 14797-65-0 | NITRITE AS N AnalysisTime: 17:49 | 10 | 0.3 | 1 | 0.3 | U | |
| 24959-67-9 | BROMIDE AnalysisTime: 17:49 | 10 | 0.6 | 2 | 0.6 | U | |
| 14797-55-8 | NITRATE AS N AnalysisTime: 17:49 | 10 | 66 | 2 | 0.6 | | |
| 14265-44-2 | ORTHOPHOSPHATE AS P AnalysisTime: | 10 | 0.6 | 5 | 0.6 | U | |
| 14808-79-8 | SULFATE AnalysisTime: 17:36 | 40 | 400 | 40 | 12 | | |

Data Package ID: ic1607366-1

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BICARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: AK160722-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160722-1

QCBatchID: AK160722-1-2

Run ID: AK160722-1A1

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 | RptLimit/ LOQ | Flag |
|--------------|---------------|---------------|------------------|-----------------|--------|---------------|------|
| AK160722-1MB | 7/22/2016 | 07/22/2016 | N/A | 1 | 5 | 5 | U |

Comments:

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

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CARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: AK160722-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160722-1

QCBatchID: AK160722-1-2

Run ID: AK160722-1A1

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 | RptLimit/ LOQ | Flag |
|--------------|---------------|---------------|------------------|-----------------|--------|---------------|------|
| AK160722-1MB | 7/22/2016 | 07/22/2016 | N/A | 1 | 5 | 5 | U |

Comments:

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

Data Package ID: *ak1607366-1*

Date Printed: Sunday, July 31, 2016

ALS -- Fort Collins

LIMS Version: 6.820

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TOTAL ALKALINITY AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: AK160722-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160722-1

QCBatchID: AK160722-1-2

Run ID: AK160722-1A1

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 | RptLimit/ LOQ | Flag |
|--------------|---------------|---------------|------------------|-----------------|--------|---------------|------|
| AK160722-1MB | 7/22/2016 | 07/22/2016 | N/A | 1 | 5 | 5 | U |

Comments:

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

Data Package ID: *ak1607366-1*

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TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: AK160722-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Jul-16

Date Analyzed: 22-Jul-16

Prep Method: NONE

Prep Batch: AK160722-1

QCBatchID: AK160722-1-2

Run ID: AK160722-1A1

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 |
|-------|---------------------------|-------------|------------|-----------------|------------------|------------|----------------|
| | TOTAL ALKALINITY AS CaCO3 | 100 | 98.4 | 5 | | 98 | 85 - 115 |

Lab ID: AK160722-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Jul-16

Date Analyzed: 22-Jul-16

Prep Method: NONE

Prep Batch: AK160722-1

QCBatchID: AK160722-1-2

Run ID: AK160722-1A1

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

| CASNO | Target Analyte | Spike Added | LCSD Result | Reporting Limit | Result Qualifier | LCSD % Rec. | RPD Limit | RPD |
|-------|---------------------------|-------------|-------------|-----------------|------------------|-------------|-----------|-----|
| | TOTAL ALKALINITY AS CaCO3 | 100 | 99 | 5 | | 99 | 15 | 1 |

Data Package ID: ak1607366-1

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Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Field ID: 754977 Platteville Lat.

Lab ID: 1607366-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 07/20/2016

Date Extracted: 07/21/2016

Date Analyzed: 07/21/2016

Prep Batch: SC160721-1

QCBatchID: SC160721-1-1

Run ID: SC160721-1A1

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 30 ml

Final Volume: 30 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 | 963 | | 963 | | 1 | 1 | 0 | 10 |

Data Package ID: sc1607366-1

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Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: TD160721-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 21-Jul-16

Date Analyzed: 22-Jul-16

Prep Method: METHOD

Prep Batch: TD160721-1

QCBatchID: TD160721-1-2

Run ID: TD160722-1A1

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 | RptLimit/ LOQ/LOD | Result Qualifier | EPA Qualifier |
|---------|------------------------|----|--------|----------------------|---------------------|------------------|
| 10-33-3 | TOTAL DISSOLVED SOLIDS | 1 | 20 | 20 | U | |

Data Package ID: *td1607366-1*

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Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: TD160721-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/21/2016

Date Analyzed: 07/22/2016

Prep Method: METHOD

Prep Batch: TD160721-1

QCBatchID: TD160721-1-2

Run ID: TD160722-1A1

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 | 386 | 20 | | 97 | 85 - 115% |

Lab ID: TD160721-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/21/2016

Date Analyzed: 07/22/2016

Prep Method: METHOD

Prep Batch: TD160721-1

QCBatchID: TD160721-1-2

Run ID: TD160722-1A1

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 | LCSD Result | Reporting Limit | Result Qualifier | LCSD % Rec. | RPD Limit | RPD |
|---------|------------------------|-------------|-------------|-----------------|------------------|-------------|-----------|-----|
| 10-33-3 | TOTAL DISSOLVED SOLIDS | 400 | 381 | 20 | | 95 | 5 | 1 |

Data Package ID: *td1607366-1*

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: IC160721-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: N/A

File Name: 160721IC3lims

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | DF | Result | RptLimit/ LOQ/LOD | MDL/DL | Result Qualifier | EPA Qualifier |
|------------|---------------------|----|--------|----------------------|--------|---------------------|------------------|
| 16984-48-8 | FLUORIDE | 1 | 0.03 | 0.1 | 0.03 | U | |
| 16887-00-6 | CHLORIDE | 1 | 0.06 | 0.2 | 0.06 | U | |
| 14797-65-0 | NITRITE AS N | 1 | 0.03 | 0.1 | 0.03 | U | |
| 24959-67-9 | BROMIDE | 1 | 0.06 | 0.2 | 0.06 | U | |
| 14797-55-8 | NITRATE AS N | 1 | 0.06 | 0.2 | 0.06 | U | |
| 14265-44-2 | ORTHOPHOSPHATE AS P | 1 | 0.06 | 0.5 | 0.06 | U | |
| 14808-79-8 | SULFATE | 1 | 0.3 | 1 | 0.3 | U | |

Data Package ID: ic1607366-1

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Ion Chromatography

Method EPA300.0

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Lab ID: IC160721-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/21/2016

Date Analyzed: 07/21/2016

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: N/A

File Name: 160721IC3lims

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 | 2.08 | 0.1 | | 104 | 90 - 110% |
| 16887-00-6 | CHLORIDE | 5 | 5.16 | 0.2 | | 103 | 90 - 110% |
| 14797-65-0 | NITRITE AS N | 2 | 2.05 | 0.1 | | 102 | 90 - 110% |
| 24959-67-9 | BROMIDE | 5 | 5.16 | 0.2 | | 103 | 90 - 110% |
| 14797-55-8 | NITRATE AS N | 5 | 5.21 | 0.2 | | 104 | 90 - 110% |
| 14265-44-2 | ORTHOPHOSPHATE AS P | 2 | 1.98 | 0.5 | | 99 | 90 - 110% |
| 14808-79-8 | SULFATE | 20 | 21.5 | 1 | | 108 | 90 - 110% |

Lab ID: IC160721-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07/21/2016

Date Analyzed: 07/21/2016

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: N/A

File Name: 160721IC3lims

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

| CASNO | Target Analyte | Spike Added | LCSD Result | Reporting Limit | Result Qualifier | LCSD % Rec. | RPD Limit | RPD |
|------------|---------------------|-------------|-------------|-----------------|------------------|-------------|-----------|-----|
| 16984-48-8 | FLUORIDE | 2 | 1.98 | 0.1 | | 99 | 15 | 5 |
| 16887-00-6 | CHLORIDE | 5 | 4.93 | 0.2 | | 99 | 15 | 4 |
| 14797-65-0 | NITRITE AS N | 2 | 1.95 | 0.1 | | 97 | 15 | 5 |
| 24959-67-9 | BROMIDE | 5 | 4.93 | 0.2 | | 99 | 15 | 5 |
| 14797-55-8 | NITRATE AS N | 5 | 4.96 | 0.2 | | 99 | 15 | 5 |
| 14265-44-2 | ORTHOPHOSPHATE AS P | 2 | 1.91 | 0.5 | | 96 | 15 | 4 |
| 14808-79-8 | SULFATE | 20 | 20.6 | 1 | | 103 | 15 | 4 |

Data Package ID: ic1607366-1

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1607366

Client Name: COGCC

ClientProject ID: Complaint 200439757

Field ID: 754977 Platteville Lat.

LabID: 1607366-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

File Name: 160721IC3lims

| CASNO | Target Analyte | Sample Result | Samp Qual | MS Result | MS Qual | Reporting Limit | Spike Added | MS % Rec. | Control Limits |
|------------|----------------|---------------|-----------|-----------|---------|-----------------|-------------|-----------|----------------|
| 14808-79-8 | SULFATE | 130 | | 330 | | 10 | 200 | 100 | 85 - 115% |

Field ID: 754977 Platteville Lat.

LabID: 1607366-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jul-16

Date Extracted: 21-Jul-16

Date Analyzed: 21-Jul-16

Prep Method: NONE

Prep Batch: IC160721-1

QCBatchID: IC160721-1-1

Run ID: IC160721-1A2

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

File Name: 160721IC3lims

| CASNO | Target Analyte | MSD Result | MSD Qual | Spike Added | MSD % Rec. | Reporting Limit | RPD Limit | RPD |
|------------|----------------|------------|----------|-------------|------------|-----------------|-----------|-----|
| 14808-79-8 | SULFATE | 328 | | 200 | 99 | 10 | 15 | 1 |

Data Package ID: *ic1607366-1*

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