

Inorganics Case Narrative

COGCC

Work Order Number: 1606358

1. This report consists of 2 water samples.
2. The samples were received cool and intact by ALS on 06/21/16.
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 1606358-1 was designated as the quality control sample for each analysis.

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, 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.
- n Matrix spike recoveries could not be evaluated for the following analyte:

<u>Analyte</u>	<u>Sample ID</u>
Chloride	1606358-1MS & MSD

The chloride concentration in the MS and MSD was above the analytical range; therefore accurate quantitation of MS/MSD recoveries were not possible. The LCS, ICV, and CCV results indicate the procedure was in control for this analyte.

- n A sample duplicate was prepared and analyzed with the alkalinity, bicarbonate, carbonate, pH, specific conductance and TDS batches. All guidance criteria for precision were met.

For pH, the difference between the pH of the sample and its duplicate must be less than or equal to 0.2 pH units to be in control. RPD is not calculated for this analysis.

9. Electrical conductivity screening indicated that the concentration of dissolved salts was high in sample 1606358-1. 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.



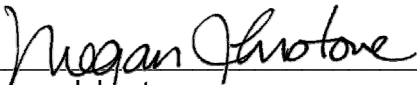
It was necessary to dilute both samples in order to bring the chloride, nitrate as N and/or sulfate concentrations into the analytical range of the ion chromatograph (IC).

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

A reduced aliquot was taken of sample 1606358-1 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.

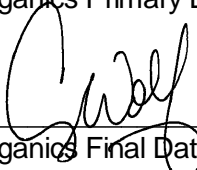
The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Megan Johnstone
Inorganics Primary Data Reviewer

6/28/16

Date



Inorganics Final Data Reviewer

6/29/16

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 Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1606358

Client Name: COGCC

Client Project Name:

Client Project Number:

Client PO Number: CT 2016-141

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
754914 Sump	1606358-1		WATER	20-Jun-16	
754915 Ret. Pond	1606358-2		WATER	20-Jun-16	13:52



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1606358

Project Manager: ARW

Initials: RUH Date: 6/21/16

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.)		<u>(YES)</u>	NO
7. Were airbills / shipping documents present and/or removable?	<u>(DROP OFF)</u>	<u>(YES)</u>	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<u>(N/A)</u>	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<u>(N/A)</u>	<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: <u> </u> < green pea <u> </u> > green pea	<u>(N/A)</u>	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: <u>X</u> dusting <u> </u> moderate <u> </u> heavy	<u>(N/A)</u>	<u>(YES)</u>	NO
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>	<u>(RAD ONLY)</u>	<u>(YES)</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>4.0°C</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>NA</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.

15) Sample 2 has dusting of sediment.

If applicable, was the client contacted? YES / NO / (NA) Contact: Cuby Date/Time: 6/22/16

Project Manager Signature / Date: Cuby 6/22/16

BICARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: COGCC
Client Project ID:
Work Order Number: 1606358 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L
Analyst: Kristina L. Peters

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/22/2016	N/A	1	250	20		25 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/22/2016	N/A	1	180	20		25 ml

Comments:

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

Data Package ID: *ak1606358-1*

CARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: COGCC
Client Project ID:
Work Order Number: 1606358 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L
Analyst: Kristina L. Peters

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/22/2016	N/A	1	20	20	U	25 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/22/2016	N/A	1	20	20	U	25 ml

Comments:

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

Data Package ID: *ak1606358-1*

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: COGCC
Client Project ID:
Work Order Number: 1606358 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L
Analyst: Kristina L. Peters

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/22/2016	N/A	1	250	20		25 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/22/2016	N/A	1	180	20		25 ml

Comments:

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

Data Package ID: *ak1606358-1*

Date Printed: Tuesday, June 28, 2016

ALS Environmental -- FC

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pH in water @25 Degrees Celsius

Method EPA150.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: COGCC
Client Project ID:
Work Order Number: 1606358
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
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/22/2016	N/A	1	7.19	0.1		20 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/22/2016	N/A	1	7.75	0.1		20 ml

Comments:

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

Data Package ID: pH1606358-1

SPECIFIC CONDUCTIVITY

Method EPA120.1

Sample Results

Lab Name: ALS Environmental -- FC

Client Name: COGCC

Client Project ID:

Work Order Number: 1606358

Final Volume: 30 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: umhos/cm

Analyst: Kristina L. Peters

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/22/2016	N/A	1	2900	1		30 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/22/2016	N/A	1	684	1		30 ml

Comments:

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

Data Package ID: sc1606358-1

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TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: COGCC
Client Project ID:
Work Order Number: 1606358 Final Volume: 50 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: METHOD Result Units: MG/L
Analyst: Kristina L. Peters

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
754914 Sump	1606358-1	06/20/2016	06/22/2016	06/23/2016	N/A	1	1900	40		50 ml
754915 Ret. Pond	1606358-2	06/20/2016	06/22/2016	06/23/2016	N/A	1	430	20		100 ml

Comments:

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

Data Package ID: *td1606358-1*

Date Printed: Tuesday, June 28, 2016

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Field ID:	754914 Sump
Lab ID:	1606358-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jun-16

Date Extracted: 21-Jun-16

Date Analyzed: 21-Jun-16

Prep Method: NONE

Prep Batch: IC160621-1

QCBatchID: IC160621-1-1

Run ID: IC160621-3A3

Cleanup: NONE

Basis: As Received

File Name: 160621ic3limsm

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: 14:31	25	2.5	2.5	0.75		
16887-00-6	CHLORIDE AnalysisTime: 14:31	25	220	5	1.5		
14797-65-0	NITRITE AS N AnalysisTime: 15:37	5	0.15	0.5	0.15	U	
24959-67-9	BROMIDE AnalysisTime: 15:37	5	0.44	1	0.3	J	
14797-55-8	NITRATE AS N AnalysisTime: 14:31	25	69	5	1.5		
14265-44-2	ORTHOPHOSPHATE AS P AnalysisTime:	5	0.3	2.5	0.3	U	
14808-79-8	SULFATE AnalysisTime: 14:31	25	780	25	7.5		

Data Package ID: ic1606358-1

Date Printed: Tuesday, June 28, 2016

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Field ID:	754915 Ret. Pond
Lab ID:	1606358-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Jun-16

Date Extracted: 21-Jun-16

Date Analyzed: 21-Jun-16

Prep Method: NONE

Prep Batch: IC160621-1

QCBatchID: IC160621-1-1

Run ID: IC160621-3A3

Cleanup: NONE

Basis: As Received

File Name: 160621ic3limsm

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: 16:42	1	0.32	0.1	0.03		
16887-00-6	CHLORIDE AnalysisTime: 16:28	5	16	1	0.3		
14797-65-0	NITRITE AS N AnalysisTime: 16:42	1	0.03	0.1	0.03	U	
24959-67-9	BROMIDE AnalysisTime: 16:42	1	0.06	0.2	0.06	U	
14797-55-8	NITRATE AS N AnalysisTime: 16:42	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: 16:28	5	150	5	1.5		

Data Package ID: ic1606358-1

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BICARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: AK160622-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160622-1

QCBatchID: AK160622-1-1

Run ID: AK160622-1A1

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
AK160622-1MB	6/22/2016	06/22/2016	N/A	1	5	5	U

Comments:

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

Data Package ID: *ak1606358-1*

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CARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: AK160622-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160622-1

QCBatchID: AK160622-1-1

Run ID: AK160622-1A1

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
AK160622-1MB	6/22/2016	06/22/2016	N/A	1	5	5	U

Comments:

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

Data Package ID: *ak1606358-1*

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TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: AK160622-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK160622-1

QCBatchID: AK160622-1-1

Run ID: AK160622-1A1

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
AK160622-1MB	6/22/2016	06/22/2016	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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TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: AK160622-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Jun-16

Date Analyzed: 22-Jun-16

Prep Method: NONE

Prep Batch: AK160622-1

QCBatchID: AK160622-1-1

Run ID: AK160622-1A1

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	99.2	5		99	85 - 115

Lab ID: AK160622-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Jun-16

Date Analyzed: 22-Jun-16

Prep Method: NONE

Prep Batch: AK160622-1

QCBatchID: AK160622-1-1

Run ID: AK160622-1A1

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	97.5	5		97	15	2

Data Package ID: ak1606358-1

Date Printed: Tuesday, June 28, 2016

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BICARBONATE AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
754914 Sump	1606358-1D	06/22/2016	06/22/2016	1	249		250		20	1	15

Comments:

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

Data Package ID: *ak1606358-1*

Date Printed: Tuesday, June 28, 2016

ALS Environmental -- FC

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CARBONATE AS CaCO₃

Method EPA310.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
754914 Sump	1606358-1D	06/22/2016	06/22/2016	1	20	U	20	U	20		15

Comments:

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

Data Package ID: *ak1606358-1*

Date Printed: Tuesday, June 28, 2016

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TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
754914 Sump	1606358-1D	06/22/2016	06/22/2016	1	249		250		20	1	15

Comments:

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

Data Package ID: *ak1606358-1*

Date Printed: Tuesday, June 28, 2016

ALS Environmental -- FC

LIMS Version: 6.817

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pH
Method EPA150.1
Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Field ID:	754914 Sump
Lab ID:	1606358-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06/20/2016

Date Extracted: 06/22/2016

Date Analyzed: 06/22/2016

Prep Batch: PH160622-1

QCBatchID: PH160622-1-1

Run ID: PH160622-1A1

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	7.19		7.18		0.1	1		0.2

Data Package ID: pH1606358-1

Date Printed: Tuesday, June 28, 2016

ALS Environmental -- FC

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LIMS Version: 6.817

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Field ID:	754914 Sump
Lab ID:	1606358-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06/20/2016

Date Extracted: 06/22/2016

Date Analyzed: 06/22/2016

Prep Batch: SC160622-1

QCBatchID: SC160622-1-1

Run ID: SC160622-1A

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	2900		2910		1	1	0	10

Data Package ID: sc1606358-1

Date Printed: Tuesday, June 28, 2016

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Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: TD160622-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 22-Jun-16

Date Analyzed: 23-Jun-16

Prep Method: METHOD

Prep Batch: TD160622-1

QCBatchID: TD160622-1-2

Run ID: TD160623-1A1

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: *td1606358-1*

Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: TD160622-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/22/2016

Date Analyzed: 06/23/2016

Prep Method: METHOD

Prep Batch: TD160622-1

QCBatchID: TD160622-1-2

Run ID: TD160623-1A1

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	379	20		95	85 - 115%

Lab ID: TD160622-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/22/2016

Date Analyzed: 06/23/2016

Prep Method: METHOD

Prep Batch: TD160622-1

QCBatchID: TD160622-1-2

Run ID: TD160623-1A1

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	374	20		94	5	1

Data Package ID: *td1606358-1*

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Field ID:	754914 Sump
Lab ID:	1606358-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06/20/2016

Date Extracted: 06/22/2016

Date Analyzed: 06/23/2016

Prep Batch: TD160622-1

QCBatchID: TD160622-1-2

Run ID: TD160623-1A1

Cleanup: NONE

Basis: As Received

File Name: Manual Entry

Sample Aliquot: 50 ml

Final Volume: 50 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
10-33-3	TOTAL DISSOLVED SOLIDS	1900		1900		40	1	2	5

Data Package ID: *td1606358-1*

Date Printed: Tuesday, June 28, 2016

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Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: IC160621-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 21-Jun-16

Date Analyzed: 21-Jun-16

Prep Batch: IC160621-1

QCBatchID: IC160621-1-1

Run ID: IC160621-3A3

Cleanup: NONE

Basis: N/A

File Name: 160621ic3limsm

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: ic1606358-1

Date Printed: Tuesday, June 28, 2016

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Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1606358

Client Name: COGCC

ClientProject ID:

Lab ID: IC160621-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/21/2016

Date Analyzed: 06/21/2016

Prep Method: NONE

Prep Batch: IC160621-1

QCBatchID: IC160621-1-1

Run ID: IC160621-3A3

Cleanup: NONE

Basis: N/A

File Name: 160621ic3limsm

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	5	5.2	0.1		104	90 - 110%
16887-00-6	CHLORIDE	10	10.6	0.2		106	90 - 110%
14797-65-0	NITRITE AS N	5	5.25	0.1		105	90 - 110%
24959-67-9	BROMIDE	10	10.7	0.2		107	90 - 110%
14797-55-8	NITRATE AS N	10	10.5	0.2		105	90 - 110%
14265-44-2	ORTHOPHOSPHATE AS P	10	10.7	0.5		107	90 - 110%
14808-79-8	SULFATE	50	52.2	1		104	90 - 110%

Data Package ID: *ic1606358-1*

Date Printed: Tuesday, June 28, 2016

ALS Environmental -- FC

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Method EPA300.0 Revision 2.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1606358
Client Name: COGCC
ClientProject ID:

Field ID: 754914 Sump	Sample Matrix: WATER	Prep Batch: IC160621-1	Sample Aliquot: 5 ml
LabID: 1606358-1MS	% Moisture: N/A	QCBatchID: IC160621-1-1	Final Volume: 5 ml
	Date Collected: 20-Jun-16	Run ID: IC160621-3A3	Result Units: MG/L
	Date Extracted: 21-Jun-16	Cleanup: NONE	File Name: 160621ic3limsm
	Date Analyzed: 21-Jun-16	Basis: As Received	
	Prep Method: NONE		

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	2.5		58.2		2.5	50	111	85 - 115%
14797-55-8	NITRATE AS N	69		200		5	125	105	85 - 115%
14808-79-8	SULFATE	780		1240		25	500	92	85 - 115%

Field ID: 754914 Sump	Sample Matrix: WATER	Prep Batch: IC160621-1	Sample Aliquot: 5 ml
LabID: 1606358-1MSD	% Moisture: N/A	QCBatchID: IC160621-1-1	Final Volume: 5 ml
	Date Collected: 20-Jun-16	Run ID: IC160621-3A3	Result Units: MG/L
	Date Extracted: 21-Jun-16	Cleanup: NONE	File Name: 160621ic3limsm
	Date Analyzed: 21-Jun-16	Basis: As Received	
	Prep Method: NONE		

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16984-48-8	FLUORIDE	59.4		50	114	2.5	15	2
14797-55-8	NITRATE AS N	203		125	108	5	15	2
14808-79-8	SULFATE	1250		500	94	25	15	1

Data Package ID: *ic1606358-1*