

Telephone: 970.385.4528

Facsimile: 970.385.4638



November 1, 2017

State of Colorado Division of Reclamation, Mining & Safety 1313 Sherman Street, Room 215 Denver, Colorado 80203-2273

Attn: Rob Zuber

Re: Field Well Water Analysis; King I & King II

3rd Quarter 2017

Mr. Zuber:

Please find enclosed a copy of quarterly water analysis reports for the 3rd quarter of 2017 for the following water monitoring locations:

- Wiltse Well
- #1 Up-gradient Monitoring Well
- #2 Down-gradient Monitoring Well
- Hay Gulch Irrigation Ditch, Down-gradient
- Hay Gulch Irrigation Ditch, Up-gradient
- MW-1-A, MW-1-C
- MW-3-MI, MW-3-A, MW-3-C
- MW-4-MI, MW-4-A, MW-4-C
- MW-HGA-4

This quarter MW-99-MI was a blind duplicate for MW-3-MI.

Also enclosed are summary sheets for the above water monitoring locations which include field collection data.

Please call Tom Bird at (970) 385-4528 x 6503 if you have any questions or comments.

Sincerely

Tom Bird Manager, Coal Services GCC Energy, LLC



75 Suttle Street Durango, CO 81303 970.247.4220 Phone 970.247.4227 Fax www.greenanalytical.com

18 October 2017

Tom Bird GCC Energy, LLC 6473 CR 120 Hesperus, CO 81326

RE: GCC GW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 09/28/17 17:00. If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt

Reports Manager

Dellie Zufett

All accredited analytes contained in this report are denoted by an asterisk (\*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <a href="http://greenanalytical.com/certifications/">http://greenanalytical.com/certifications/</a>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



#### dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

#### www.GreenAnalytical.com

Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites
Hesperus CO, 81326 Project Manager: Tom Bird

Reported:

10/18/17 15:00

# ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Well #1 Upgradient	1709264-01	Water	09/28/17 14:50	09/28/17 17:00
MW-4-C	1709264-02	Water	09/28/17 10:50	09/28/17 17:00
MW-4-MI	1709264-03	Water	09/28/17 08:55	09/28/17 17:00
MW-4-A	1709264-04	Water	09/28/17 10:12	09/28/17 17:00
MW-3-C	1709264-05	Water	09/28/17 08:12	09/28/17 17:00
MW-3-MI	1709264-06	Water	09/28/17 07:15	09/28/17 17:00
MW-3-A	1709264-07	Water	09/28/17 07:55	09/28/17 17:00
Wiltse Well	1709264-08	Water	09/28/17 13:52	09/28/17 17:00
MW-99-MI	1709264-09	Water	09/28/17 07:25	09/28/17 17:00

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Deldie Zufett

Hesperus CO, 81326

6473 CR 120

#### dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

#### www.GreenAnalytical.com

Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# Well #1 Upgradient

#### 1709264-01 (Water)

		170	19204-01 (V	atti					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	670	10.0		mg/L	5	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	670	10.0		mg/L	5	10/09/17	2320 B		CMS
Chloride*	6.21	5.00	0.717	mg/L	5	10/11/17	EPA300.0		JDA
Fluoride*	< 0.500	0.500	0.0798	mg/L	5	10/11/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.400	0.400	0.219	mg/L	20	10/16/17	EPA353.2		LLG
pH*	7.66			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	705	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	74.0	5.00	0.782	mg/L	5	10/11/17	EPA300.0		JDA
Total Organic Carbon	2.84	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	41.6	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	215	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
Iron*	0.101	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	27.1	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	3.09	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	14.3	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	6.68	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	203	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	< 0.0005	0.0005	0.00008	mg/L	1	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/11/17	EPA200.8		JDA
Copper*	0.0030	0.0001	0.00003	mg/L	1	10/11/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/11/17	EPA200.8		JDA
Manganese*	0.202	0.0005	0.0003	mg/L	1	10/11/17	EPA200.8		JDA
Molybdenum*	< 0.0005	0.0005	0.00006	mg/L	1	10/11/17	EPA200.8		JDA
Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/11/17	EPA200.8		JDA
Uranium	0.0001	0.0001	0.00001	mg/L	1	10/11/17	EPA200.8		JDA
Zinc*	< 0.0020	0.0020	0.0009	mg/L	1	10/11/17	EPA200.8		JDA

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Dellie Zufett



#### www.GreenAnalytical.com

GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

**Reported:** 10/18/17 15:00

# Well #1 Upgradient

Project Manager: Tom Bird

## 1709264-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

## **MW-4-C**

#### 1709264-02 (Water)

		170	9204-02 (V	rateri					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	2780	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	2780	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	587	20.0	2.87	mg/L	20	10/12/17	EPA300.0		JDA
Fluoride*	2.17	1.00	0.160	mg/L	10	10/11/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.400	0.400	0.219	mg/L	20	10/16/17	EPA353.2	M5	LLG
pH*	7.79			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	3750	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	70.2	10.0	1.56	mg/L	10	10/11/17	EPA300.0		JDA
Total Organic Carbon	5.08	2.50	1.01	mg/L	5	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	9.15	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	38.9	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	3.90	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	6.07	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	12.9	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	6.02	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	1490	10.0	0.870	mg/L	10	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0128	0.0050	0.0008	mg/L	10	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0010	0.0010	0.0009	mg/L	10	10/11/17	EPA200.8		JDA
Copper*	0.0221	0.0010	0.0003	mg/L	10	10/11/17	EPA200.8		JDA
Lead*	< 0.0050	0.0050	0.0002	mg/L	10	10/11/17	EPA200.8		JDA
Manganese*	0.0554	0.0050	0.0027	mg/L	10	10/11/17	EPA200.8		JDA
Molybdenum*	0.0138	0.0050	0.0006	mg/L	10	10/11/17	EPA200.8		JDA
Selenium*	0.0214	0.0100	0.0015	mg/L	10	10/11/17	EPA200.8		JDA
Uranium	0.0984	0.0010	0.0001	mg/L	10	10/11/17	EPA200.8		JDA
Zinc*	< 0.0200	0.0200	0.0090	mg/L	10	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

Reported:

10/18/17 15:00

## **MW-4-C**

## 1709264-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# MW-4-MI

## 1709264-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
<b>General Chemistry</b>									
Alkalinity, Bicarbonate as CaCO3*	880	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	220	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	1100	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	8.78	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
Fluoride*	5.09	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
pH*	8.63			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1180	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	76.6	5.00	0.782	mg/L	5	10/12/17	EPA300.0		JDA
Total Organic Carbon	8.58	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	1.88	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	7.07	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	0.579	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	1.73	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	8.80	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	4.11	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	449	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0131	0.0025	0.0004	mg/L	5	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0005	0.0005	0.0005	mg/L	5	10/11/17	EPA200.8		JDA
Copper*	0.0071	0.0005	0.0002	mg/L	5	10/11/17	EPA200.8		JDA
Lead*	< 0.0025	0.0025	0.0001	mg/L	5	10/11/17	EPA200.8		JDA
Manganese*	0.0081	0.0025	0.0014	mg/L	5	10/11/17	EPA200.8		JDA
Molybdenum*	0.0127	0.0025	0.0003	mg/L	5	10/11/17	EPA200.8		JDA
Selenium*	< 0.0050	0.0050	0.0008	mg/L	5	10/11/17	EPA200.8		JDA
Uranium	0.0184	0.0005	0.00007	mg/L	5	10/11/17	EPA200.8		JDA
Zine*	< 0.0100	0.0100	0.0045	mg/L	5	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# MW-4-MI

## 1709264-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120

Hesperus CO, 81326

Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

## MW-4-A

## 1709264-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	590	10.0		mg/L	10	10/18/17	2320 B	НЗ	CMS
Alkalinity, Carbonate as CaCO3*	40.0	10.0		mg/L	10	10/18/17	2320 B	Н3	CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/18/17	2320 B	Н3	CMS
Alkalinity, Total as CaCO3*	630	10.0		mg/L	10	10/18/17	2320 B	Н3	CMS
Chloride*	10.3	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
Fluoride*	< 0.500	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
pH*	8.36			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1450	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	783	25.0	3.91	mg/L	25	10/13/17	EPA300.0		JDA
Total Organic Carbon	3.52	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	1.76	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	7.77	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
fron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	0.823	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	1.63	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	9.99	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	4.67	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	513	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	< 0.0025	0.0025	0.0004	mg/L	5	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0005	0.0005	0.0005	mg/L	5	10/11/17	EPA200.8		JDA
Copper*	0.0076	0.0005	0.0002	mg/L	5	10/11/17	EPA200.8		JDA
Lead*	< 0.0025	0.0025	0.0001	mg/L	5	10/11/17	EPA200.8		JDA
Manganese*	0.0044	0.0025	0.0014	mg/L	5	10/11/17	EPA200.8		JDA
Molybdenum*	< 0.0025	0.0025	0.0003	mg/L	5	10/11/17	EPA200.8		JDA
Selenium*	< 0.0050	0.0050	0.0008	mg/L	5	10/11/17	EPA200.8		JDA
Uranium	< 0.0005	0.0005	0.00007	mg/L	5	10/11/17	EPA200.8		JDA
Zinc*	< 0.0100	0.0100	0.0045	mg/L	5	10/11/17	EPA200.8		JDA

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Reported:

GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird 10/18/17 15:00

## MW-4-A

## 1709264-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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Deldie Zufett



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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

## **MW-3-C**

## 1709264-05 (Water)

		1.0	7204-03 ( N	acci,					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	1650	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	40.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	1690	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	477	10.0	1.43	mg/L	10	10/12/17	EPA300.0		JDA
Fluoride*	4.52	1.00	0.160	mg/L	10	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.400	0.400	0.219	mg/L	20	10/16/17	EPA353.2		LLG
рН*	8.35			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	3070	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	46.4	10.0	1.56	mg/L	10	10/12/17	EPA300.0		JDA
Total Organic Carbon	219	5.00	2.01	mg/L	10	10/13/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	3.50	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	15.1	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
ron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	1.55	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	4.01	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	9.16	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	4.28	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	1100	10.0	0.870	mg/L	10	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0098	0.0050	0.0008	mg/L	10	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0010	0.0010	0.0009	mg/L	10	10/11/17	EPA200.8		JDA
Copper*	0.0174	0.0010	0.0003	mg/L	10	10/11/17	EPA200.8		JDA
Lead*	< 0.0050	0.0050	0.0002	mg/L	10	10/11/17	EPA200.8		JDA
Manganese*	0.0178	0.0050	0.0027	mg/L	10	10/11/17	EPA200.8		JDA
Molybdenum*	0.0241	0.0050	0.0006	mg/L	10	10/11/17	EPA200.8		JDA
Selenium*	0.0149	0.0100	0.0015	mg/L	10	10/11/17	EPA200.8		JDA
Uranium	0.0137	0.0010	0.0001	mg/L	10	10/11/17	EPA200.8		JDA
Zinc*	< 0.0200	0.0200	0.0090	mg/L	10	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

Reported:

10/18/17 15:00

# MW-3-C

## 1709264-05 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# **MW-3-MI**

## 1709264-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	600	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	100	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	700	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	10.7	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
Fluoride*	1.26	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
pH*	8.72			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1140	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	247	10.0	1.56	mg/L	10	10/13/17	EPA300.0		JDA
Total Organic Carbon	10.9	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	2.34	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	9.02	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	0.775	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	1.93	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	9.05	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	4.23	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	440	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
<b>Dissolved Metals by ICPMS</b>									
Arsenic*	0.0131	0.0025	0.0004	mg/L	5	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0005	0.0005	0.0005	mg/L	5	10/11/17	EPA200.8		JDA
Copper*	0.0065	0.0005	0.0002	mg/L	5	10/11/17	EPA200.8		JDA
Lead*	< 0.0025	0.0025	0.0001	mg/L	5	10/11/17	EPA200.8		JDA
Manganese*	0.0033	0.0025	0.0014	mg/L	5	10/11/17	EPA200.8		JDA
Molybdenum*	0.0148	0.0025	0.0003	mg/L	5	10/11/17	EPA200.8		JDA
Selenium*	< 0.0050	0.0050	0.0008	mg/L	5	10/11/17	EPA200.8		JDA
Uranium	0.0140	0.0005	0.00007	mg/L	5	10/11/17	EPA200.8		JDA
Zinc*	< 0.0100	0.0100	0.0045	mg/L	5	10/11/17	EPA200.8		JDA

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Reported:

GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird 10/18/17 15:00

# **MW-3-MI**

## 1709264-06 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# MW-3-A

## 1709264-07 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	440	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	60.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	500	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	18.5	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
Fluoride*	0.535	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
pH*	8.53			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1630	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	840	25.0	3.91	mg/L	25	10/13/17	EPA300.0		JDA
Total Organic Carbon	7.26	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	3.63	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	12.6	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	0.859	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	2.04	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	11.6	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	5.41	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	589	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	< 0.0025	0.0025	0.0004	mg/L	5	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0005	0.0005	0.0005	mg/L	5	10/11/17	EPA200.8		JDA
Copper*	0.0080	0.0005	0.0002	mg/L	5	10/11/17	EPA200.8		JDA
Lead*	< 0.0025	0.0025	0.0001	mg/L	5	10/11/17	EPA200.8		JDA
Manganese*	0.0194	0.0025	0.0014	mg/L	5	10/11/17	EPA200.8		JDA
Molybdenum*	0.0091	0.0025	0.0003	mg/L	5	10/11/17	EPA200.8		JDA
Selenium*	< 0.0050	0.0050	0.0008	mg/L	5	10/11/17	EPA200.8		JDA
Uranium	0.0051	0.0005	0.00007	mg/L	5	10/11/17	EPA200.8		JDA
Zinc*	< 0.0100	0.0100	0.0045	mg/L	5	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

Reported:

10/18/17 15:00

# MW-3-A

## 1709264-07 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/18/17 15:00

## Wiltse Well

## 1709264-08 (Water)

		170	77204-00 ( Y	atti					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	510	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	510	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	68.7	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
Fluoride*	< 0.500	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	1.80	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
pH*	7.30			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1680	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	779	25.0	3.91	mg/L	25	10/13/17	EPA300.0		JDA
Total Organic Carbon	3.34	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	219	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Hardness as CaCO3	1140	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
fron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
Magnesium*	143	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
Potassium*	4.62	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
Silica (Si02)	16.1	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	7.54	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
Sodium*	80.7	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0005	0.0005	0.00008	mg/L	1	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/11/17	EPA200.8		JDA
Copper*	0.0025	0.0001	0.00003	mg/L	1	10/11/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/11/17	EPA200.8		JDA
Manganese*	0.881	0.0005	0.0003	mg/L	1	10/11/17	EPA200.8		JDA
Molybdenum*	0.0021	0.0005	0.00006	mg/L	1	10/11/17	EPA200.8		JDA
Selenium*	0.0016	0.0010	0.0002	mg/L	1	10/11/17	EPA200.8		JDA
Uranium	0.0021	0.0001	0.00001	mg/L	1	10/11/17	EPA200.8		JDA
Zinc*	0.0208	0.0020	0.0009	mg/L	1	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites
Project Manager: Tom Bird

Reported:

10/18/17 15:00

## Wiltse Well

## 1709264-08 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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Hesperus CO, 81326

Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# MW-99-MI

## 1709264-09 (Water)

			`						
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	640	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	140	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	780	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	10.7	5.00	0.717	mg/L	5	10/12/17	EPA300.0		JDA
luoride*	1.27	0.500	0.0798	mg/L	5	10/12/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	10/16/17	EPA353.2		LLG
Н*	8.65			pH Units	1	09/29/17	EPA150.1		CMS
Total Dissolved Solids*	1140	10.0		mg/L	1	10/03/17	EPA160.1		LLG
Sulfate*	258	10.0	1.56	mg/L	10	10/13/17	EPA300.0		JDA
otal Organic Carbon	10.8	0.500	0.201	mg/L	1	10/12/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/10/17	EPA200.7		JDA
Calcium*	2.27	0.100	0.036	mg/L	1	10/10/17	EPA200.7		JDA
Iardness as CaCO3	8.79	0.662	0.195	mg/L	1	10/10/17	2340 B		JDA
ron*	< 0.050	0.050	0.014	mg/L	1	10/10/17	EPA200.7		JDA
/agnesium*	0.756	0.100	0.026	mg/L	1	10/10/17	EPA200.7		JDA
otassium*	1.98	1.00	0.094	mg/L	1	10/10/17	EPA200.7		JDA
silica (Si02)	8.73	1.07	0.298	mg/L	1	10/10/17	Calculation		JDA
Silicon	4.08	0.500	0.139	mg/L	1	10/10/17	EPA200.7		JDA
odium*	424	1.00	0.087	mg/L	1	10/10/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0128	0.0025	0.0004	mg/L	5	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0005	0.0005	0.0005	mg/L	5	10/11/17	EPA200.8		JDA
Copper*	0.0054	0.0005	0.0002	mg/L	5	10/11/17	EPA200.8		JDA
ead*	< 0.0025	0.0025	0.0001	mg/L	5	10/11/17	EPA200.8		JDA
langanese*	0.0033	0.0025	0.0014	mg/L	5	10/11/17	EPA200.8		JDA
Iolybdenum*	0.0143	0.0025	0.0003	mg/L	5	10/11/17	EPA200.8		JDA
elenium*	< 0.0050	0.0050	0.0008	mg/L	5	10/11/17	EPA200.8		JDA
Jranium	0.0113	0.0005	0.00007	mg/L	5	10/11/17	EPA200.8		JDA
Linc*	< 0.0100	0.0100	0.0045	mg/L	5	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

**Reported:** 10/18/17 15:00

## MW-99-MI

Project Manager: Tom Bird

## 1709264-09 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites Hesperus CO, 81326 Project Manager: Tom Bird

Reported: 10/18/17 15:00

## **General Chemistry - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B709248 - General Prep - Wet Chem										
Duplicate (B709248-DUP1)	Sour	rce: 1709264-0	01 Prepa	ared & Anal	lyzed: 09/29	9/17				
pH	7.69		pH Units		7.66			0.391	20	
Reference (B709248-SRM1)			Prepa	ared & Anal	lyzed: 09/29	9/17				
pH	6.35		pH Units	6.39		99.4	96.9-103.1			
Batch B710017 - General Prep - Wet Chem										
Blank (B710017-BLK1)			Prepa	ared & Anal	lyzed: 10/03	3/17				
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B710017-DUP1)	Sou	rce: 1709248-0	01 Prepa	ared & Anal	lyzed: 10/03	3/17				
Total Dissolved Solids	615	10.0	mg/L		640			3.98	20	
Reference (B710017-SRM1)			Pren	ared & Anal	lvzed: 10/03	3/17				
Total Dissolved Solids	530	10.0	mg/L	550	19200. 10/02	96.4	85-115			
Batch B710076 - General Prep - Wet Chem			Ü							
Blank (B710076-BLK1)			Prepa	ared & Anal	lyzed: 10/09	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B710076-BS1)			Prepa	ared & Anal	lyzed: 10/09	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Total as CaCO3	108	10.0	mg/L	100		108	85-115			
LCS Dup (B710076-BSD1)			Prepa	ared & Anal	lyzed: 10/09	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Total as CaCO3	109	10.0	mg/L	100		109	85-115	0.922	20	
Batch B710086 - General Prep - Wet Chem										
Blank (B710086-BLK1)			Prepa	ared: 10/10/	17 Analyze	ed: 10/11/1	7			
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

Reported:

10/18/17 15:00

# General Chemistry - Quality Control (Continued)

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710086 - General Prep - Wet Chem	(Continued)									
LCS (B710086-BS1)			Prep	ared: 10/10/	/17 Analyze	ed: 10/11/1	7			
Chloride	23.7	1.00	mg/L	25.0		94.7	90-110			
Fluoride	2.39	0.100	mg/L	2.50		95.7	90-110			
Sulfate	23.5	1.00	mg/L	25.0		94.0	90-110			
LCS Dup (B710086-BSD1)			Prep	ared: 10/10/	/17 Analyze	ed: 10/11/1	7			
Chloride	23.8	1.00	mg/L	25.0		95.3	90-110	0.644	20	
Fluoride	2.41	0.100	mg/L	2.50		96.2	90-110	0.542	20	
Sulfate	23.6	1.00	mg/L	25.0		94.5	90-110	0.518	20	
Batch B710087 - General Prep - Wet Chem										
Blank (B710087-BLK1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Total Organic Carbon	ND	0.500	mg/L							
LCS (B710087-BS1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Total Organic Carbon	9.73	0.500	mg/L	10.0		97.3	85-115			
LCS Dup (B710087-BSD1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Total Organic Carbon	9.68	0.500	mg/L	10.0		96.8	85-115	0.494	20	
Batch B710110 - General Prep - Wet Chem										
Blank (B710110-BLK1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B710110-BS1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Chloride	24.2	1.00	mg/L	25.0		97.0	90-110			
Fluoride	2.45	0.100	mg/L	2.50		98.0	90-110			
Sulfate	23.9	1.00	mg/L	25.0		95.6	90-110			
LCS Dup (B710110-BSD1)			Prep	ared & Ana	lyzed: 10/12	2/17				
Chloride	24.4	1.00	mg/L	25.0		97.7	90-110	0.768	20	
Fluoride	2.44	0.100	mg/L	2.50		97.7	90-110	0.286	20	
Sulfate	23.8	1.00	mg/L	25.0		95.1	90-110	0.549	20	
Batch B710123 - General Prep - Wet Chem										
Blank (B710123-BLK1)			Prep	ared & Ana	lyzed: 10/16	5/17				
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B710123-BS1)			Prep	ared & Ana	lyzed: 10/16	6/17				
			· T							

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Deldie Zufett



Hesperus CO, 81326

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www.GreenAnalytical.com

Reported:

Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird 10/18/17 15:00

# General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B710123 - General Prep - Wet C	hem (Continued)									
LCS (B710123-BS1) (Continued)			Prep	ared & Ana	lyzed: 10/10	6/17				
Nitrate/Nitrite as N	0.958	0.020	mg/L	1.00		95.8	90-110			
LCS Dup (B710123-BSD1)			Prep	ared & Anal	lyzed: 10/10	6/17				
Nitrate/Nitrite as N	0.960	0.020	mg/L	1.00		96.0	90-110	0.229	20	
Batch B710155 - General Prep - Wet C	hem									
Blank (B710155-BLK1)			Prep	ared & Ana	lyzed: 10/18	8/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B710155-BS1)			Prep	ared & Anal	lyzed: 10/18	8/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Total as CaCO3	107	10.0	mg/L	100		107	85-115			
LCS Dup (B710155-BSD1)			Prep	ared & Anal	lyzed: 10/18	8/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Total as CaCO3	103	10.0	mg/L	100		103	85-115	3.81	20	

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites
Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

# **Dissolved Metals by ICP - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710083 - Diss. 200.7/200.8										
Blank (B710083-BLK1)			Prep	oared & Anal	yzed: 10/10	)/17				
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B710083-BS1)			Prep	ared & Anal	yzed: 10/10	)/17				
Aluminum	5.14	0.050	mg/L	5.00		103	85-115			
Calcium	4.99	0.100	mg/L	5.00		99.8	85-115			
Iron	5.13	0.050	mg/L	5.00		103	85-115			
Magnesium	26.1	0.100	mg/L	25.0		104	85-115			
Potassium	9.73	1.00	mg/L	10.0		97.3	85-115			
Silicon	4.95	0.500	mg/L	5.00		98.9	85-115			
Sodium	8.11	1.00	mg/L	8.10		100	85-115			
LCS Dup (B710083-BSD1)			Prep	oared & Anal	yzed: 10/10	)/17				
Aluminum	5.14	0.050	mg/L	5.00		103	85-115	0.0817	20	
Calcium	5.03	0.100	mg/L	5.00		101	85-115	0.704	20	
Iron	5.12	0.050	mg/L	5.00		102	85-115	0.143	20	
Magnesium	26.2	0.100	mg/L	25.0		105	85-115	0.510	20	
Potassium	9.80	1.00	mg/L	10.0		98.0	85-115	0.649	20	
Silicon	4.95	0.500	mg/L	5.00		99.0	85-115	0.119	20	
Sodium	8.15	1.00	mg/L	8.10		101	85-115	0.525	20	
			~							

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#### www.GreenAnalytical.com

Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites
Hesperus CO, 81326 Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

## **Dissolved Metals by ICPMS - Quality Control**

<b></b>		Reporting		Spike	Source	0.75	%REC	n	RPD	3-
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710041 - Diss. 200.7/200.8										
Blank (B710041-BLK1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zinc	ND	0.0020	mg/L							
LCS (B710041-BS1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	0.0472	0.0005	mg/L	0.0500		94.4	85-115			
Cadmium	0.0477	0.0001	mg/L	0.0500		95.5	85-115			
Copper	0.0474	0.0001	mg/L	0.0500		94.9	85-115			
Lead	0.0480	0.0005	mg/L	0.0500		95.9	85-115			
Manganese	0.0465	0.0005	mg/L	0.0500		93.1	85-115			
Molybdenum	0.0506	0.0005	mg/L	0.0500		101	85-115			
Selenium	0.242	0.0010	mg/L	0.250		96.9	85-115			
Uranium	0.0490	0.0001	mg/L	0.0500		98.0	85-115			
Zinc	0.0504	0.0020	mg/L	0.0500		101	85-115			
LCS Dup (B710041-BSD1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	0.0491	0.0005	mg/L	0.0500		98.2	85-115	3.98	20	
Cadmium	0.0480	0.0001	mg/L	0.0500		96.0	85-115	0.566	20	
Copper	0.0491	0.0001	mg/L	0.0500		98.2	85-115	3.46	20	
Lead	0.0491	0.0005	mg/L	0.0500		98.3	85-115	2.45	20	
Manganese	0.0485	0.0005	mg/L	0.0500		97.1	85-115	4.19	20	
Molybdenum	0.0514	0.0005	mg/L	0.0500		103	85-115	1.50	20	
Selenium	0.246	0.0010	mg/L	0.250		98.5	85-115	1.61	20	
Uranium	0.0495	0.0001	mg/L	0.0500		99.0	85-115	1.02	20	
Zinc	0.0506	0.0020	mg/L	0.0500		101	85-115	0.319	20	

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: GCC Energy Hay Gulch/Cluster Sites

Project Manager: Tom Bird

Reported:

10/18/17 15:00

## **Dissolved Mercury by CVAA - Quality Control**

Analysis	D14	Reporting Limit	T.I:4-	Spike	Source	%REC	%REC Limits	RPD	RPD Limit	N-4
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	KPD	Limit	Notes
Batch B710008 - EPA 245.1/7470										
Blank (B710008-BLK1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	ND	0.0002	mg/L							
LCS (B710008-BS1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	0.0021	0.0002	mg/L	0.00200		104	85-115			
LCS Dup (B710008-BSD1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	0.0021	0.0002	mg/L	0.00200		106	85-115	1.14	20	

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Project: GCC GW Baseline

6473 CR 120 Project Name / Number: GCC Energy Hay Gulch/Cluster Sites
Hesperus CO, 81326 Project Manager: Tom Bird

**Reported:** 10/18/17 15:00

**Notes and Definitions** 

M5 Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.

H3 Initial analysis performed within hold-time but not reportable due to QC failure or other issue. Sample was subsequently re-analyzed

past hold time specified by method.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

\*Results reported on as received basis unless designated as dry.

RPD Relative Percent Difference

LCS Laboratory Control Sample (Blank Spike)

RL Report Limit

MDL Method Detection Limit

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.

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service@greenanalytical.com or dzufelt@greenanalytical.co	220

rax. (5)	(0) 241-4221 15 Julie 31	t Durango, CO 81303		
Company Name: QU BIKWN LL		Bill to (if different):		ANALYSIS REQUEST
Project Manager: TDM PAYO	P.O. #:	#:		
Address: U475 C.P. P.O	Com	Company:		
City: HSDRYUS State: CO	Zip: 61320 Attn:			
Phone #: (470) 3654518 Email: 75470611	.(0)M Address:	ess:		
Additional Report To: LBCCLO TESONTE MAMOLO	Jody C-60M city:		,	
Project Name: ALL BULLY TIN GUICK (LINEW)	State:	Zip:	11	
Project Number:	Phone #:	le #:	liv	
Sampler Name (Print): 8551/A WWA & WICh	AL MOTAY WA Fax o	Fax or Email:	150	
FOR LAB USE ONLY	Collected Ma	Matrix (check one) # of containers		
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Lab I.D. Sample Name or Location	Time GROUNDW	WASTEWA' PRODUCEDN SOIL OTHER: No preservation HNO <sub>3</sub> HCI H <sub>2</sub> SO <sub>4</sub> Other: Other:	Other:	
1709-264-01 No.11#-1 UDDAPALLEMT	NWOS:17		(	
- 02 MW-4-C	X1105011X		×	
-03 MW-4-MI	1/28/14-8:55MIX	1 1 4	<b>X</b>	
1 04 MM 4- A	4/28/17 10:12AIII X		X	
-06 MW-3-MT	128/14 + 1.5MM		*>	
-6-MM -3-4	1 MMSG:441/82/16		×	
WITTE IN		-	<b>&gt;</b>	
- 64 - MW 60-	94-28-17 07:25	(-	×	Add perhandon Beck 9-29-17
T-LASE IV-LE; SALS labeling and clerits excusive emergy for any claim along write the contract or fort, small be limited us the amount, part by the clerit, for the arrayses. At claims including broken in claims write claims and any other claims write claims and any other claims are considered or excessors arising out of or related to the performance of services hereunder by GAL, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	s, including without limitation, business interruptions	loss of use, or loss of profits incurred by client, its subsidia	e and any other cause what ries, affiliates or successors	ĕ
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75 Suttle Street Durango, CO 81303 970.247.4220 Phone 970.247.4227 Fax www.greenanalytical.com

10 October 2017

Tom Bird GCC Energy, LLC 6473 CR 120 Hesperus, CO 81326

RE: GCC GW & SW Baseline

Dellie Zufett

Enclosed are the results of analyses for samples received by the laboratory on 09/21/17 16:40. If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt

Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (\*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <a href="http://greenanalytical.com/certifications/">http://greenanalytical.com/certifications/</a>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



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#### www.GreenAnalytical.com

Project: GCC GW & SW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/10/17 10:26

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Well #2 Downgradient	1709215-01	Water	09/21/17 00:00	09/21/17 16:40
Hay Gulch Ditch Downgradient	1709215-02	Water	09/21/17 00:00	09/21/17 16:40
Hay Gulch Ditch Upgradient	1709215-03	Water	09/21/17 00:00	09/21/17 16:40
MW-HGA-4	1709215-04	Water	09/21/17 00:00	09/21/17 16:40

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Hesperus CO, 81326

6473 CR 120

#### www.GreenAnalytical.com

Project: GCC GW & SW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/10/17 10:26

# Well #2 Downgradient

# 1709215-01 (Water)

Malalinity, Carbonate as CaCO3*   <10.0   10.0   mg/L   5   1005/17   2320 B   LLG	Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Malalinity, Bicarbonate as CaCO3*   10.0   10.0   mg/L   5   1005/17   2320 B   LLG	General Chemistry									
Mkalinity, Carbonate as CaCO3*   <10.0   10.0   mg/L   5   1005/17   2320 B   LLG	Alkalinity, Bicarbonate as CaCO3*	395	10.0		mg/L	5	10/05/17	2320 B		LLG
Mikalinity, Hydroxide as CaCO3*   305   10.0   10.0   mg/L   5   1005/17   2320 B   LLG	Alkalinity, Carbonate as CaCO3*				=	5	10/05/17	2320 B		LLG
Mallalinity, Total as CaCO3*   395   10.0   mg/L   5   1005/17   2320 B   LLG	Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	10/05/17	2320 B		LLG
Property	Alkalinity, Total as CaCO3*	395	10.0		mg/L	5	10/05/17	2320 B		LLG
Nitrate/Nitrite as N*	Chloride*	19.0	1.00	0.143	mg/L	1	09/30/17	EPA300.0		JDA
	Fluoride*	0.263	0.100	0.0160	mg/L	1	09/30/17	EPA300.0		JDA
Total Dissolved Solids*   525   10.0   mg/L   1   09/28/17   EPA160.1   LLG	Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	09/27/17	EPA353.2		LLG
Sulfate*   98.4   5.00   0.782   mg/L   5   09/30/17   EPA300.0   JDA	pH*	7.51			pH Units	1	09/25/17	EPA150.1	H4	CMS
Dissolved Metals by ICP   Sisolved Metals by ICP	Total Dissolved Solids*	525	10.0		mg/L	1	09/28/17	EPA160.1		LLG
Dissolved Metals by ICP	Sulfate*	98.4	5.00	0.782	mg/L	5	09/30/17	EPA300.0		JDA
Aluminum*	Total Organic Carbon	2.61	0.500	0.201	mg/L	1	09/27/17	5310C		JDA
Calcium*         64.8         0.100         0.036         mg/L         1         10/03/17         EPA200.7         JDA           Hardness as CaCO3         378         0.662         0.195         mg/L         1         10/03/17         2340 B         JDA           Iron*         <0.050         0.050         0.014         mg/L         1         10/03/17         EPA200.7         JDA           Magnesium*         52.6         0.100         0.026         mg/L         1         10/03/17         EPA200.7         JDA           Potassium*         1.64         1.00         0.094         mg/L         1         10/03/17         EPA200.7         JDA           Silico (Si02)         13.0         1.07         0.298         mg/L         1         10/03/17         EPA200.7         JDA           Silico (Si02)         13.0         1.07         0.298         mg/L         1         10/03/17         EPA200.7         JDA           Silico (Si02)         13.0         0.500         0.139         mg/L         1         10/03/17         EPA200.7         JDA           Silico (Si02)         13.0         0.500         0.087         mg/L         1         10/06/17         EPA200.7	Dissolved Metals by ICP									
Hardness as CaCO3 378 0.662 0.195 mg/L 1 10/03/17 2340 B JDA  Iron* < 0.050 0.050 0.050 0.014 mg/L 1 10/03/17 EPA200.7 JDA  Magnesium* 52.6 0.100 0.026 mg/L 1 10/03/17 EPA200.7 JDA  Potassium* 1.64 1.00 0.094 mg/L 1 10/03/17 EPA200.7 JDA  Silica (Si02) 13.0 1.07 0.298 mg/L 1 10/03/17 EPA200.7 JDA  Silicon 6.08 0.500 0.139 mg/L 1 10/03/17 EPA200.7 JDA  Sodium* 17.0 1.00 0.087 mg/L 1 10/03/17 EPA200.7 JDA  Sodium* 17.0 0.087 mg/L 1 10/03/17 EPA200.7 JDA  Cadmium* 0.0006 0.0005 0.0008 mg/L 1 10/03/17 EPA200.7 JDA  Cadmium* < 0.0001 0.0001 0.00009 mg/L 1 10/06/17 EPA200.8 JDA  Copper* 0.0004 0.0001 0.00003 mg/L 1 10/06/17 EPA200.8 JDA  Copper* 0.0005 0.0005 0.00002 mg/L 1 10/06/17 EPA200.8 JDA  Manganese* 0.307 0.0005 0.00002 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0021 0.0005 0.00006 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Selenium* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA  Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA	Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/03/17	EPA200.7		JDA
	Calcium*	64.8	0.100	0.036	mg/L	1	10/03/17	EPA200.7		JDA
Magnesium*         52.6         0.100         0.026         mg/L         1         10/03/17         EPA200.7         JDA           Potassium*         1.64         1.00         0.094         mg/L         1         10/03/17         EPA200.7         JDA           Silica (Si02)         13.0         1.07         0.298         mg/L         1         10/03/17         Calculation         JDA           Silicon         6.08         0.500         0.139         mg/L         1         10/03/17         EPA200.7         JDA           Dissolved Metals by ICPMS         JDA         JDA         Dissolved Metals by ICPMS         JDA         JDA         JDA         Dissolved Metals by ICPMS         JDA         JDA         JDA         DISSOlved Metals by ICPMS         JDA         JDA<	Hardness as CaCO3	378	0.662	0.195	mg/L	1	10/03/17	2340 B		JDA
Potassium* 1.64 1.00 0.094 mg/L 1 10/03/17 EPA200.7 JDA Silica (Si02) 13.0 1.07 0.298 mg/L 1 10/03/17 Calculation JDA Silicon 6.08 0.500 0.139 mg/L 1 10/03/17 EPA200.7 JDA Sodium* 17.0 1.00 0.087 mg/L 1 10/03/17 EPA200.7 JDA Sodium* 17.0 0.0006 0.0087 mg/L 1 10/03/17 EPA200.7 JDA DISSOIVED METALS by ICPMS  Arsenic* 0.0006 0.0005 0.00008 mg/L 1 10/06/17 EPA200.8 JDA Cadmium* <0.0001 0.0001 0.00009 mg/L 1 10/06/17 EPA200.8 JDA Copper* 0.0004 0.0001 0.00003 mg/L 1 10/06/17 EPA200.8 JDA Lead* 0.0005 0.0005 0.00002 mg/L 1 10/06/17 EPA200.8 JDA Manganese* 0.307 0.0005 0.0003 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0021 0.0005 0.0003 mg/L 1 10/06/17 EPA200.8 JDA Solenium* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Solenium* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Solenium* 0.0001 0.0001 0.0000 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Molybdenum* 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA Williamium 0.0001 0	Iron*	< 0.050	0.050	0.014	mg/L	1	10/03/17	EPA200.7		JDA
Silica (Si02)   13.0   1.07   0.298   mg/L   1   10/03/17   Calculation   JDA	Magnesium*	52.6	0.100	0.026	mg/L	1	10/03/17	EPA200.7		JDA
Solition	Potassium*	1.64	1.00	0.094	mg/L	1	10/03/17	EPA200.7		JDA
Dissolved Metals by ICPMS	Silica (Si02)	13.0	1.07	0.298	mg/L	1	10/03/17	Calculation		JDA
Dissolved Metals by ICPMS	Silicon	6.08	0.500	0.139	mg/L	1	10/03/17	EPA200.7		JDA
Arsenic*         0.0006         0.0005         0.00008         mg/L         1         10/06/17         EPA200.8         JDA           Cadmium*         <0.0001         0.0001         0.00009         mg/L         1         10/06/17         EPA200.8         JDA           Copper*         0.0004         0.0001         0.00003         mg/L         1         10/06/17         EPA200.8         JDA           Lead*         <0.0005         0.0005         0.00002         mg/L         1         10/06/17         EPA200.8         JDA           Manganese*         0.307         0.0005         0.0003         mg/L         1         10/06/17         EPA200.8         JDA           Molybdenum*         0.0021         0.0005         0.00006         mg/L         1         10/06/17         EPA200.8         JDA           Selenium*         0.0013         0.0011         0.0001         mg/L         1         10/06/17         EPA200.8         JDA	Sodium*	17.0	1.00	0.087	mg/L	1	10/03/17	EPA200.7		JDA
Cadmium*	Dissolved Metals by ICPMS									
Copper*         0.0004         0.0001         0.00003         mg/L         1         10/06/17         EPA200.8         JDA           Lead*         <0.0005         0.0005         0.00002         mg/L         1         10/06/17         EPA200.8         JDA           Manganese*         0.307         0.0005         0.0003         mg/L         1         10/06/17         EPA200.8         JDA           Molybdenum*         0.0021         0.0005         0.00006         mg/L         1         10/06/17         EPA200.8         JDA           Selenium*         <0.0010         0.0010         0.0002         mg/L         1         10/06/17         EPA200.8         JDA           Uranium         0.0013         0.0001         0.00001         mg/L         1         10/06/17         EPA200.8         JDA	Arsenic*	0.0006	0.0005	0.00008	mg/L	1	10/06/17	EPA200.8		JDA
Comparison   Com	Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/06/17	EPA200.8		JDA
Manganese*         0.307         0.0005         0.0003         mg/L         1         10/06/17         EPA200.8         JDA           Molybdenum*         0.0021         0.0005         0.00006         mg/L         1         10/06/17         EPA200.8         JDA           Selenium*         <0.0010         0.0010         0.0002         mg/L         1         10/06/17         EPA200.8         JDA           Uranium         0.0013         0.0001         0.00001         mg/L         1         10/06/17         EPA200.8         JDA	Copper*	0.0004	0.0001	0.00003	mg/L	1	10/06/17	EPA200.8		JDA
Wolybdenum*         0.0021         0.0005         0.00006         mg/L         1         10/06/17         EPA200.8         JDA           Selenium*         <0.0010         0.0010         0.0002         mg/L         1         10/06/17         EPA200.8         JDA           Uranium         0.0013         0.0001         0.00001         mg/L         1         10/06/17         EPA200.8         JDA	Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/06/17	EPA200.8		JDA
Selenium*         <0.0010         0.0010         0.0002         mg/L         1         10/06/17         EPA200.8         JDA           Uranium         0.0013         0.0001         0.00001         mg/L         1         10/06/17         EPA200.8         JDA	Manganese*	0.307	0.0005	0.0003	mg/L	1	10/06/17	EPA200.8		JDA
Uranium 0.0013 0.0001 0.00001 mg/L 1 10/06/17 EPA200.8 JDA	Molybdenum*	0.0021	0.0005	0.00006	mg/L	1	10/06/17	EPA200.8		JDA
<b>WOLD</b>	Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/06/17	EPA200.8		JDA
Zinc* <0.0040 0.0040 0.0009 mg/L 1 10/06/17 EPA200.8 JDA	Uranium	0.0013	0.0001	0.00001	mg/L	1	10/06/17	EPA200.8		JDA
	Zinc*	< 0.0040	0.0040	0.0009	mg/L	1	10/06/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW & SW Baseline

Project Name / Number: [none] Reported:

Project Manager: Tom Bird 10/10/17 10:26

# Well #2 Downgradient

## 1709215-01 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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#### www.GreenAnalytical.com

Project: GCC GW & SW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/10/17 10:26

# **Hay Gulch Ditch Downgradient**

## 1709215-02 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	85.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Total as CaCO3*	85.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Chloride*	1.54	1.00	0.143	mg/L	1	09/30/17	EPA300.0		JDA
Fluoride*	0.227	0.100	0.0160	mg/L	1	09/30/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	09/27/17	EPA353.2		LLG
Oil & Grease (HEM)	< 5.00	5.00	0.763	mg/L	1	09/29/17	EPA1664 A		CMS
pH*	7.98			pH Units	1	09/25/17	EPA150.1	H4	CMS
SAR	0.11			No Unit	1	10/10/17	Calculation		JDA
Total Dissolved Solids*	80.0	10.0		mg/L	1	09/28/17	EPA160.1		LLG
Total Suspended Solids*	< 0.500	0.500		mg/L	0.25	09/28/17	EPA160.2		LLG
Sulfate*	17.9	1.00	0.156	mg/L	1	09/30/17	EPA300.0		JDA
Total Organic Carbon	0.932	0.500	0.201	mg/L	1	09/27/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/03/17	EPA200.7		JDA
Calcium*	29.5	0.100	0.036	mg/L	1	10/03/17	EPA200.7		JDA
Hardness as CaCO3	91.4	0.662	0.195	mg/L	1	10/03/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/03/17	EPA200.7		JDA
Magnesium*	4.31	0.100	0.026	mg/L	1	10/03/17	EPA200.7		JDA
Potassium*	<1.00	1.00	0.094	mg/L	1	10/03/17	EPA200.7		JDA
Silica (Si02)	8.53	1.07	0.298	mg/L	1	10/03/17	Calculation		JDA
Silicon	3.99	0.500	0.139	mg/L	1	10/03/17	EPA200.7		JDA
Sodium*	2.37	1.00	0.087	mg/L	1	10/03/17	EPA200.7		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW & SW Baseline

Project Name / Number: [none]
Project Manager: Tom Bird

# **Hay Gulch Ditch Downgradient**

## 1709215-02 (Water)

A 1	D 1/	RL	MDI	T I:4-	D:1+:	A	Mada a d	Notes	A14
Analyte	Result	KL	MDL	Units	Dilution	Analyzed	Method	notes	Analyst
<b>Dissolved Metals by ICPMS</b>									
Arsenic*	0.0006	0.0005	0.00008	mg/L	1	10/06/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/06/17	EPA200.8		JDA
Copper*	0.0013	0.0001	0.00003	mg/L	1	10/06/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/06/17	EPA200.8		JDA
Manganese*	0.0010	0.0005	0.0003	mg/L	1	10/06/17	EPA200.8		JDA
Molybdenum*	0.0011	0.0005	0.00006	mg/L	1	10/06/17	EPA200.8		JDA
Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/06/17	EPA200.8		JDA
Uranium	0.0002	0.0001	0.00001	mg/L	1	10/06/17	EPA200.8		JDA
Zinc*	< 0.0040	0.0040	0.0009	mg/L	1	10/06/17	EPA200.8		JDA
Total Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00005	mg/L	1	09/26/17	EPA245.1	•	LLG

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Project: GCC GW & SW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/10/17 10:26

# **Hay Gulch Ditch Upgradient**

## 1709215-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	161	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	16.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	10/02/17	2320 B		CMS
Alkalinity, Total as CaCO3*	177	10.0		mg/L	1	10/02/17	2320 B		CMS
Chloride*	30.8	1.00	0.143	mg/L	1	09/30/17	EPA300.0		JDA
Fluoride*	0.265	0.100	0.0160	mg/L	1	09/30/17	EPA300.0		JDA
Nitrate/Nitrite as N*	0.045	0.020	0.011	mg/L	1	09/27/17	EPA353.2	M5	LLG
Oil & Grease (HEM)	< 5.00	5.00	0.763	mg/L	1	09/29/17	EPA1664 A		CMS
pH*	8.22			pH Units	1	09/25/17	EPA150.1	H4	CMS
SAR	0.34			No Unit	1	10/10/17	Calculation		JDA
Total Dissolved Solids*	390	10.0		mg/L	1	09/28/17	EPA160.1		LLG
Total Suspended Solids*	2.00	1.00		mg/L	0.5	09/28/17	EPA160.2		LLG
Sulfate*	99.0	5.00	0.782	mg/L	5	09/30/17	EPA300.0		JDA
Total Organic Carbon	1.90	0.500	0.201	mg/L	1	09/27/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/03/17	EPA200.7		JDA
Calcium*	64.9	0.100	0.036	mg/L	1	10/03/17	EPA200.7		JDA
Hardness as CaCO3	316	0.662	0.195	mg/L	1	10/03/17	2340 B		JDA
Iron*	< 0.050	0.050	0.014	mg/L	1	10/03/17	EPA200.7		JDA
Magnesium*	37.5	0.100	0.026	mg/L	1	10/03/17	EPA200.7		JDA
Potassium*	2.15	1.00	0.094	mg/L	1	10/03/17	EPA200.7		JDA
Silica (Si02)	9.45	1.07	0.298	mg/L	1	10/03/17	Calculation		JDA
Silicon	4.42	0.500	0.139	mg/L	1	10/03/17	EPA200.7		JDA
Sodium*	13.8	1.00	0.087	mg/L	1	10/03/17	EPA200.7		JDA

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GCC Energy, LLC Project: GCC GW & SW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/10/17 10:26

## **Hay Gulch Ditch Upgradient**

## 1709215-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Metals by ICPMS									
Arsenic*	0.0009	0.0005	0.00008	mg/L	1	10/06/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/06/17	EPA200.8		JDA
Copper*	0.0006	0.0001	0.00003	mg/L	1	10/06/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/06/17	EPA200.8		JDA
Manganese*	0.0098	0.0005	0.0003	mg/L	1	10/06/17	EPA200.8		JDA
Molybdenum*	0.0012	0.0005	0.00006	mg/L	1	10/06/17	EPA200.8		JDA
Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/06/17	EPA200.8		JDA
Uranium	0.0006	0.0001	0.00001	mg/L	1	10/06/17	EPA200.8		JDA
Zinc*	< 0.0040	0.0040	0.0009	mg/L	1	10/06/17	EPA200.8		JDA
Total Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00005	mg/L	1	09/26/17	EPA245.1		LLG

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Hesperus CO, 81326

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Project: GCC GW & SW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/10/17 10:26

## MW-HGA-4

## 1709215-04 (Water)

		170	7213-04 (1)	, utci j					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	465	10.0		mg/L	5	10/02/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	10/02/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	10/02/17	2320 B		CMS
Alkalinity, Total as CaCO3*	465	10.0		mg/L	5	10/02/17	2320 B		CMS
Chloride*	8.96	1.00	0.143	mg/L	1	09/30/17	EPA300.0		JDA
Fluoride*	0.517	0.100	0.0160	mg/L	1	09/30/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.020	0.020	0.011	mg/L	1	09/27/17	EPA353.2		LLG
р <b>Н</b> *	7.25			pH Units	1	09/25/17	EPA150.1	H4	CMS
Total Dissolved Solids*	750	10.0		mg/L	1	09/28/17	EPA160.1		LLG
Sulfate*	205	10.0	1.56	mg/L	10	09/30/17	EPA300.0		JDA
Total Organic Carbon	4.69	0.500	0.201	mg/L	1	09/27/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/03/17	EPA200.7		JDA
Calcium*	102	0.100	0.036	mg/L	1	10/03/17	EPA200.7		JDA
Hardness as CaCO3	522	0.662	0.195	mg/L	1	10/03/17	2340 B		JDA
(ron*	0.378	0.050	0.014	mg/L	1	10/03/17	EPA200.7		JDA
Magnesium*	64.9	0.100	0.026	mg/L	1	10/03/17	EPA200.7		JDA
Potassium*	1.75	1.00	0.094	mg/L	1	10/03/17	EPA200.7		JDA
Silica (Si02)	16.5	1.07	0.298	mg/L	1	10/03/17	Calculation		JDA
Silicon	7.72	0.500	0.139	mg/L	1	10/03/17	EPA200.7		JDA
Sodium*	24.9	1.00	0.087	mg/L	1	10/03/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	< 0.0005	0.0005	0.00008	mg/L	1	10/06/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/06/17	EPA200.8		JDA
Copper*	0.0004	0.0001	0.00003	mg/L	1	10/06/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/06/17	EPA200.8		JDA
Manganese*	2.03	0.0005	0.0003	mg/L	1	10/06/17	EPA200.8		JDA
Molybdenum*	0.0028	0.0005	0.00006	mg/L	1	10/06/17	EPA200.8		JDA
Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/06/17	EPA200.8		JDA
Uranium	0.0004	0.0001	0.00001	mg/L	1	10/06/17	EPA200.8		JDA
Zinc*	< 0.0040	0.0040	0.0009	mg/L	1	10/06/17	EPA200.8		JDA

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Project Name / Number: [none] Reported:

Project Manager: Tom Bird 10/10/17 10:26

## MW-HGA-4

## 1709215-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW & SW Baseline

Project Name / Number: [none]
Project Manager: Tom Bird

Reported:

10/10/17 10:26

## **General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B709131 - *** DEFAULT PREP ***		<u> </u>								
Blank (B709131-BLK1)			Prepa	red & Anal	lyzed: 09/1	8/17				
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B709131-BS1)			Prepa	red & Anal	lyzed: 09/1	8/17				
Oil & Grease (HEM)	37.7	5.00	mg/L	40.0		94.3	85-115			
LCS Dup (B709131-BSD1)			Prepa	red & Anal	lyzed: 09/1	8/17				
Oil & Grease (HEM)	38.4	5.00	mg/L	40.0		96.0	85-115	1.84	20	
Batch B709191 - General Prep - Wet Chem										
Duplicate (B709191-DUP2)	Sou	rce: 1709215	-02 Prepa	red & Anal	lyzed: 09/2:	5/17				
pH	7.98		pH Units		7.98			0.00	20	
Reference (B709191-SRM1)			Prepa	red & Anal	lyzed: 09/2:	5/17				
pH	8.92		pH Units	9.08		98.2	97.8-102.2			
Batch B709198 - General Prep - Wet Chem										
Blank (B709198-BLK1)			Prepa	red & Anal	lyzed: 09/2	6/17				
Total Organic Carbon	ND	0.500	mg/L							
LCS (B709198-BS1)			Prepa	red & Ana	lyzed: 09/2	6/17				
Total Organic Carbon	9.74	0.500	mg/L	10.0		97.4	85-115			
LCS Dup (B709198-BSD1)			Prepa	red & Anal	lyzed: 09/2	6/17				
Total Organic Carbon	9.91	0.500	mg/L	10.0		99.1	85-115	1.65	20	
Batch B709211 - General Prep - Wet Chem										
Blank (B709211-BLK1)			Prepa	red & Anal	lyzed: 09/2	7/17				
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B709211-BS1)			Prepa	red & Anal	lyzed: 09/2	7/17				
Nitrate/Nitrite as N	0.904	0.020	mg/L	1.00		90.4	90-110			
LCS Dup (B709211-BSD1)			Prena	ired & Anal	lyzed: 09/2	7/17				
Nitrate/Nitrite as N	0.900	0.020	mg/L	1.00	<i>J</i> · · -	90.0	90-110	0.477	20	
Batch B709225 - General Prep - Wet Chem										
Blank (B709225-BLK1)			Prepa	red: 09/28/	/17 Analyz	ed: 09/29/	17			
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							

Debbie Zufelt, Reports Manager

seldie Zufett



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GCC Energy, LLC Project: GCC GW & SW Baseline
6473 CR 120 Project Name / Number: [none]

6473 CR 120 Project Name / Number: [none] Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/10/17 10:26

# General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B709225 - General Prep - Wet Chem (										
LCS (B709225-BS1)			Prep	ared: 09/28/	/17 Analyz	ed: 09/29/1	7			
Chloride	24.3	1.00	mg/L	25.0		97.3	90-110			
Fluoride	2.60	0.100	mg/L	2.50		104	90-110			
Sulfate	25.7	1.00	mg/L	25.0		103	90-110			
LCS Dup (B709225-BSD1)			Prep	ared: 09/28/	17 Analyz	ed: 09/29/1	7			
Chloride	24.4	1.00	mg/L	25.0		97.6	90-110	0.312	20	
Fluoride	2.62	0.100	mg/L	2.50		105	90-110	0.805	20	
Sulfate	25.9	1.00	mg/L	25.0		103	90-110	0.450	20	
Batch B709228 - General Prep - Wet Chem										
Blank (B709228-BLK1)			Prep	ared & Ana	lyzed: 09/28	8/17				
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B709228-DUP1)	Sou	rce: 1709173-0	)1 Prep	ared & Ana	lyzed: 09/28	8/17				
Total Dissolved Solids	260	10.0	mg/L		275			5.63	20	
Reference (B709228-SRM1)			Prep	ared & Ana	lyzed: 09/28	3/17				
Total Dissolved Solids	535	10.0	mg/L	550		97.3	85-115			
Batch B709229 - General Prep - Wet Chem										
Blank (B709229-BLK1)			Prep	ared & Ana	lyzed: 09/28	8/17				
Total Suspended Solids	ND	2.00	mg/L		-					
Duplicate (B709229-DUP1)	Sou	rce: 1709204-0	1 Prep	ared & Ana	lyzed: 09/28	8/17				
Total Suspended Solids	38.0	1.00	mg/L		39.5			3.86	20	
Reference (B709229-SRM1)			Prep	ared & Ana	lyzed: 09/28	3/17				
Total Suspended Solids	94.0	2.00	mg/L	100	-	94.0	85-115			
Batch B710014 - General Prep - Wet Chem										
Blank (B710014-BLK1)			Prep	ared & Ana	lyzed: 10/02	2/17				
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B710014-BS1)			Prep	ared & Ana	lyzed: 10/02	2/17				
Alkalinity, Total as CaCO3	105	10.0	mg/L	100		105	85-115			
LCS Dup (B710014-BSD1)			Prep	ared & Ana	lyzed: 10/02	2/17				
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	6.90	20	
Batch B710050 - General Prep - Wet Chem										

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Seldie Zufett



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GCC Energy, LLC Project: GCC GW & SW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/10/17 10:26

# General Chemistry - Quality Control (Continued)

Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chem (Continued)									
		Prep	ared: 10/05/	17 Analyz	ed: 10/06/17	7			
ND	10.0	mg/L							
		Prep	ared: 10/05/	17 Analyz	ed: 10/06/17	7			
106	10.0	mg/L	100		106	85-115			
		Prep	ared: 10/05/	17 Analyz	ed: 10/06/17	7			
103	10.0	mg/L	100		103	85-115	2.87	20	
	ND 106	Result Limit  Chem (Continued)  ND 10.0  106 10.0	Result         Limit         Units           Chem (Continued)         Preparent           ND         10.0         mg/L           Preparent         106         10.0         mg/L           Preparent         Preparent         Preparent	Result         Limit         Units         Level           Chem (Continued)         Prepared: 10/05/           ND         10.0         mg/L           Prepared: 10/05/           106         10.0         mg/L         100           Prepared: 10/05/           Prepared: 10/05/	Result         Limit         Units         Level         Result           Chem (Continued)         Prepared: 10/05/17 Analyza           ND         10.0         mg/L           Prepared: 10/05/17 Analyza         Prepared: 10/05/17 Analyza           106         10.0         mg/L           Prepared: 10/05/17 Analyza	Result         Limit         Units         Level         Result         %REC           Chem (Continued)           Prepared: 10/05/17 Analyzed: 10/06/17           ND         10.0         mg/L           Prepared: 10/05/17 Analyzed: 10/06/17           106         10.0         mg/L           Prepared: 10/05/17 Analyzed: 10/06/17	Result         Limit         Units         Level         Result         %REC         Limits           Chem (Continued)           Prepared: 10/05/17 Analyzed: 10/06/17           ND         10.0         mg/L           Prepared: 10/05/17 Analyzed: 10/06/17           106         10.0         mg/L         100         106         85-115           Prepared: 10/05/17 Analyzed: 10/06/17	Result         Limit         Units         Level         Result         %REC         Limits         RPD           Chem (Continued)           Prepared: 10/05/17 Analyzed: 10/06/17           ND         10.0         mg/L         Prepared: 10/05/17 Analyzed: 10/06/17           106         10.0         mg/L         100         106         85-115           Prepared: 10/05/17 Analyzed: 10/06/17	Result         Limit         Units         Level         Result         %REC         Limits         RPD         Limit           Chem (Continued)           Prepared: 10/05/17 Analyzed: 10/06/17           ND         10.0         mg/L           Prepared: 10/05/17 Analyzed: 10/06/17           106         10.0         mg/L         100         106         85-115           Prepared: 10/05/17 Analyzed: 10/06/17

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GCC Energy, LLC Project: GCC GW & SW Baseline

6473 CR 120 Project Name / Number: [none] Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/10/17 10:26

## **Dissolved Metals by ICP - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
atch B710020 - Diss. 200.7/200.8										
Blank (B710020-BLK1)			Prep	ared & Ana	lyzed: 10/03	3/17				
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
CS (B710020-BS1)			Prep	ared & Ana	lyzed: 10/03	3/17				
Aluminum	4.88	0.050	mg/L	5.00		97.6	85-115			
Calcium	4.91	0.100	mg/L	5.00		98.3	85-115			
Iron	4.85	0.050	mg/L	5.00		97.1	85-115			
Magnesium	24.6	0.100	mg/L	25.0		98.5	85-115			
Potassium	9.73	1.00	mg/L	10.0		97.3	85-115			
Silicon	4.84	0.500	mg/L	5.00		96.8	85-115			
Sodium	8.02	1.00	mg/L	8.10		99.0	85-115			
CS Dup (B710020-BSD1)			Prep	ared & Anal	lyzed: 10/03	3/17				
Aluminum	4.89	0.050	mg/L	5.00		97.8	85-115	0.172	20	
Calcium	4.91	0.100	mg/L	5.00		98.2	85-115	0.110	20	
Iron	4.86	0.050	mg/L	5.00		97.3	85-115	0.198	20	
Magnesium	24.7	0.100	mg/L	25.0		98.8	85-115	0.347	20	
Potassium	9.77	1.00	mg/L	10.0		97.7	85-115	0.459	20	
Silicon	4.87	0.500	mg/L	5.00		97.4	85-115	0.605	20	
Sodium	8.00	1.00	mg/L	8.10		98.7	85-115	0.247	20	
Batch B710021 - Diss. 200.7/200.8										
Blank (B710021-BLK1)			Prep	ared & Anal	lyzed: 10/03	3/17				
Aluminum	ND	0.050	mg/L		-					
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
.CS (B710021-BS1)			Prep	ared & Ana	lyzed: 10/03	3/17				
Aluminum	4.81	0.050	mg/L	5.00		96.3	85-115			
Calcium	4.84	0.100	mg/L	5.00		96.9	85-115			
Iron	4.77	0.050	mg/L	5.00		95.4	85-115			

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GCC Energy, LLC Project: GCC GW & SW Baseline

6473 CR 120 Project Name / Number: [none] Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/10/17 10:26

# Dissolved Metals by ICP - Quality Control (Continued)

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710021 - Diss. 200.7/200.8 (Con	ntinued)									
LCS (B710021-BS1) (Continued)			Prep	ared & Anal	lyzed: 10/03	3/17				
Magnesium	24.2	0.100	mg/L	25.0		96.8	85-115			
Potassium	9.47	1.00	mg/L	10.0		94.7	85-115			
Silicon	4.73	0.500	mg/L	5.00		94.6	85-115			
Sodium	7.97	1.00	mg/L	8.10		98.4	85-115			
LCS Dup (B710021-BSD1)			Prep	ared & Anal	lyzed: 10/03	3/17				
Aluminum	4.86	0.050	mg/L	5.00		97.1	85-115	0.854	20	
Calcium	4.88	0.100	mg/L	5.00		97.6	85-115	0.700	20	
Iron	4.79	0.050	mg/L	5.00		95.9	85-115	0.512	20	
Magnesium	24.5	0.100	mg/L	25.0		97.9	85-115	1.10	20	
Potassium	9.65	1.00	mg/L	10.0		96.5	85-115	1.90	20	
Silicon	4.78	0.500	mg/L	5.00		95.5	85-115	0.946	20	
Sodium	8.01	1.00	mg/L	8.10		98.9	85-115	0.516	20	

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Project: GCC GW & SW Baseline

6473 CR 120 Project Name / Number: [none] Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/10/17 10:26

## **Dissolved Metals by ICPMS - Quality Control**

		Reporting		Spike	Source		%REC	222	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710033 - Diss. 200.7/200.8										
Blank (B710033-BLK1)			Prep	pared: 10/04/1	7 Analyze	ed: 10/06/1	7			
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zine	0.0037	0.0020	mg/L							E
LCS (B710033-BS1)			Prep	oared: 10/04/1	7 Analyze	ed: 10/06/1	7			
Arsenic	0.0499	0.0005	mg/L	0.0500		99.9	85-115			
Cadmium	0.0482	0.0001	mg/L	0.0500		96.4	85-115			
Copper	0.0502	0.0001	mg/L	0.0500		100	85-115			
Lead	0.0476	0.0005	mg/L	0.0500		95.2	85-115			
Manganese	0.0493	0.0005	mg/L	0.0500		98.6	85-115			
Molybdenum	0.0498	0.0005	mg/L	0.0500		99.6	85-115			
Selenium	0.247	0.0010	mg/L	0.250		98.8	85-115			
Uranium	0.0480	0.0001	mg/L	0.0500		96.0	85-115			
Zine	0.0495	0.0020	mg/L	0.0500		99.0	85-115			
LCS Dup (B710033-BSD1)			Prep	oared: 10/04/1	7 Analyze	ed: 10/06/1	7			
Arsenic	0.0500	0.0005	mg/L	0.0500		99.9	85-115	0.0670	20	
Cadmium	0.0489	0.0001	mg/L	0.0500		97.7	85-115	1.34	20	
Copper	0.0506	0.0001	mg/L	0.0500		101	85-115	0.773	20	
Lead	0.0490	0.0005	mg/L	0.0500		97.9	85-115	2.79	20	
Manganese	0.0493	0.0005	mg/L	0.0500		98.5	85-115	0.0791	20	
Molybdenum	0.0491	0.0005	mg/L	0.0500		98.1	85-115	1.51	20	
Selenium	0.246	0.0010	mg/L	0.250		98.5	85-115	0.253	20	
Uranium	0.0496	0.0001	mg/L	0.0500		99.3	85-115	3.33	20	
Zinc	0.0495	0.0020	mg/L	0.0500		98.9	85-115	0.0834	20	

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW & SW Baseline

Project Name / Number: [none] Project Manager: Tom Bird

Reported: 10/10/17 10:26

## **Total Mercury by CVAA - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B709179 - EPA 245.1/7470										
Blank (B709179-BLK1)			Prep	oared: 09/25/1	17 Analyz	ed: 09/26/1	7			
Mercury	ND	0.0002	mg/L							
LCS (B709179-BS1)			Prep	oared: 09/25/1	17 Analyz	ed: 09/26/1	7			
Mercury	0.0020	0.0002	mg/L	0.00200		99.6	85-115			
LCS Dup (B709179-BSD1)			Prep	oared: 09/25/1	17 Analyz	ed: 09/26/1	7			
Mercury	0.0020	0.0002	mg/L	0.00200		102	85-115	2.68	20	

#### **Dissolved Mercury by CVAA - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B710005 - EPA 245.1/7470										
Blank (B710005-BLK1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	ND	0.0002	mg/L							
LCS (B710005-BS1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	0.0021	0.0002	mg/L	0.00200		107	85-115			
LCS Dup (B710005-BSD1)			Prep	pared: 10/02/1	7 Analyz	ed: 10/05/1	7			
Mercury	0.0022	0.0002	mg/L	0.00200		108	85-115	0.557	20	

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GCC Energy, LLC

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Project: GCC GW & SW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/10/17 10:26

#### **Notes and Definitions**

M5 Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.

H4 pH analysis perfored more than 48 hours after sampling.

B3 Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

\*Results reported on as received basis unless designated as dry.

RPD Relative Percent Difference

LCS Laboratory Control Sample (Blank Spike)

RL Report Limit

MDL Method Detection Limit

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mpany Name: ACC EMVAN ,LLC		Bill to (if different):	ANALYSIS REQUEST
oject Manager: TOM BIVE		P.O. #:	
idress: W473 C.P. 120		Company:	
A HESDICANS	State: (0 Zip: 8 324	Attn:	
1000 #: (970) 355-4578 Email: 78410 AU. 10M	TRIPIPO SULLING	Address:	

/ 11 //win/r. /	- Common of the state of the st	
Company Name: ALL TITLY W	Bill to (if different):	ANALYSIS REQUEST
Address: V++3 C.P. 120	Company:	
techcrus.	Attn:	
10 #: (9/10) 585-4528 Email: T	Address:	
REPORT TO: LIBECK CANSON RUNNING	City:	
Project Name:	State: Zip:	4
Project Number:	Phone #:	lin
Sampler Name (Print): WSXIA LIMA / MICMAN MONTH OF	Fax or Email:	14 51
1	Matrix (check one) # of containers	31
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PLEASE NOTE: CAL's liability and client's exclusive remody for any claim arising wither based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waved unless made in writing and receive by GAL, regardless of whether such claim is based upon any of the above stated reasons or otherwise.  Rellinquished By:    Clircle    Chircle    Clircle    Clircle	ness interruptions, loss of use, or loss of profits incurred by cilent, its subsidiaries, affiliates or succ	rtose for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received y client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder ADDITIONAL REMARKS:  Report to State? (Circle)  Yes No
Date: Time:	And Juland PUSM	PUSM TOCH 5-day TAT
Relinquished By: Parting Date: 9-21-17 Received By: Will Alphan Delling	Suffer & Without DI M	+ +5+ 65
	CHECKED BY	1911/my 254/258)



75 Suttle Street Durango, CO 81303 970.247.4220 Phone 970.247.4227 Fax www.greenanalytical.com

24 October 2017

Tom Bird GCC Energy, LLC 6473 CR 120 Hesperus, CO 81326

RE: GCC GW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 09/27/17 12:15. If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt

Reports Manager

Dellie Zufett

All accredited analytes contained in this report are denoted by an asterisk (\*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <a href="http://greenanalytical.com/certifications/">http://greenanalytical.com/certifications/</a>

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none]
Project Manager: Tom Bird

**Reported:** 10/24/17 16:33

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-A	1709259-03	Water	09/26/17 13:20	09/27/17 12:15
MW-1-C	1709259-04	Water	09/26/17 14:00	09/27/17 12:15

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none]
Project Manager: Tom Bird

Reported:

10/24/17 16:33

## MW-1-A

## 1709259-03 (Water)

			17237-03 ( T						
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	450	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	450	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	2.16	1.00	0.143	mg/L	1	10/11/17	EPA300.0		JDA
Fluoride*	0.245	0.100	0.0160	mg/L	1	10/11/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.400	0.400	0.219	mg/L	20	10/16/17	EPA353.2		LLG
pH*	7.35			pH Units	1	09/28/17	EPA150.1		CMS
Total Dissolved Solids*	1080	10.0		mg/L	1	10/02/17	EPA160.1		LLG
Sulfate*	432	25.0	3.91	mg/L	25	10/13/17	EPA300.0		JDA
Total Organic Carbon	1.36	0.500	0.201	mg/L	1	10/10/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/06/17	EPA200.7		JDA
Calcium*	25.8	0.100	0.036	mg/L	1	10/06/17	EPA200.7		JDA
Hardness as CaCO3	133	0.662	0.195	mg/L	1	10/06/17	2340 B		JDA
ron*	0.367	0.050	0.014	mg/L	1	10/06/17	EPA200.7		JDA
Magnesium*	16.7	0.100	0.026	mg/L	1	10/06/17	EPA200.7		JDA
Potassium*	2.02	1.00	0.094	mg/L	1	10/06/17	EPA200.7		JDA
Silica (Si02)	11.9	1.07	0.298	mg/L	1	10/06/17	Calculation		JDA
Silicon	5.56	0.500	0.139	mg/L	1	10/06/17	EPA200.7		JDA
Sodium*	329	1.00	0.087	mg/L	1	10/06/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	< 0.0005	0.0005	0.00008	mg/L	1	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/11/17	EPA200.8		JDA
Copper*	0.0057	0.0001	0.00003	mg/L	1	10/11/17	EPA200.8		JDA
_ead*	< 0.0005	0.0005	0.00002	mg/L	1	10/11/17	EPA200.8		JDA
Manganese*	0.0218	0.0005	0.0003	mg/L	1	10/11/17	EPA200.8		JDA
Molybdenum*	0.0010	0.0005	0.00006	mg/L	1	10/11/17	EPA200.8		JDA
Selenium*	< 0.0010	0.0010	0.0002	mg/L	1	10/11/17	EPA200.8		JDA
Uranium	0.0002	0.0001	0.00001	mg/L	1	10/11/17	EPA200.8		JDA
Zinc*	0.0088	0.0020	0.0009	mg/L	1	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/24/17 16:33

MW-1-A

## 1709259-03 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none]
Project Manager: Tom Bird

**Reported:** 10/24/17 16:33

## MW-1-C

## 1709259-04 (Water)

		170	17237-04 ( T	atti					
Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analys
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	700	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	10/09/17	2320 B		CMS
Alkalinity, Total as CaCO3*	700	10.0		mg/L	10	10/09/17	2320 B		CMS
Chloride*	6.97	1.00	0.143	mg/L	1	10/11/17	EPA300.0		JDA
Fluoride*	0.864	0.100	0.0160	mg/L	1	10/11/17	EPA300.0		JDA
Nitrate/Nitrite as N*	< 0.400	0.400	0.219	mg/L	20	10/16/17	EPA353.2		LLG
pH*	7.36			pH Units	1	09/28/17	EPA150.1		CMS
Total Dissolved Solids*	2440	10.0		mg/L	1	10/02/17	EPA160.1		LLG
Sulfate*	1350	50.0	7.82	mg/L	50	10/12/17	EPA300.0		JDA
Total Organic Carbon	2.84	0.500	0.201	mg/L	1	10/10/17	5310C		JDA
Dissolved Metals by ICP									
Aluminum*	< 0.050	0.050	0.020	mg/L	1	10/06/17	EPA200.7		JDA
Calcium*	234	0.100	0.036	mg/L	1	10/06/17	EPA200.7		JDA
Hardness as CaCO3	1290	0.662	0.195	mg/L	1	10/06/17	2340 B		JDA
fron*	< 0.050	0.050	0.014	mg/L	1	10/06/17	EPA200.7		JDA
Magnesium*	172	0.100	0.026	mg/L	1	10/06/17	EPA200.7		JDA
Potassium*	3.81	1.00	0.094	mg/L	1	10/06/17	EPA200.7		JDA
Silica (Si02)	16.6	1.07	0.298	mg/L	1	10/06/17	Calculation		JDA
Silicon	7.77	0.500	0.139	mg/L	1	10/06/17	EPA200.7		JDA
Sodium*	242	1.00	0.087	mg/L	1	10/06/17	EPA200.7		JDA
Dissolved Metals by ICPMS									
Arsenic*	0.0016	0.0005	0.00008	mg/L	1	10/11/17	EPA200.8		JDA
Cadmium*	< 0.0001	0.0001	0.00009	mg/L	1	10/11/17	EPA200.8		JDA
Copper*	0.0085	0.0001	0.00003	mg/L	1	10/11/17	EPA200.8		JDA
Lead*	< 0.0005	0.0005	0.00002	mg/L	1	10/11/17	EPA200.8		JDA
Manganese*	0.0853	0.0005	0.0003	mg/L	1	10/11/17	EPA200.8		JDA
Molybdenum*	0.0049	0.0005	0.00006	mg/L	1	10/11/17	EPA200.8		JDA
Selenium*	0.0012	0.0010	0.0002	mg/L	1	10/11/17	EPA200.8		JDA
Uranium	0.0044	0.0001	0.00001	mg/L	1	10/11/17	EPA200.8		JDA
Zinc*	0.0294	0.0020	0.0009	mg/L	1	10/11/17	EPA200.8		JDA

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/24/17 16:33

## MW-1-C

## 1709259-04 (Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	< 0.0002	0.0002	0.00009	mg/L	1	10/05/17	EPA245.1		LLG

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none] Reported:

Project Manager: Tom Bird 10/24/17 16:33

## **General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B709238 - General Prep - Wet Chem		· ·							-	
<del></del>		1500252.0	)2 D	J 0- A	1 1- 00/2	0/17				
Duplicate (B709238-DUP2)		rce: 1709252-0		ired & Ana	lyzed: 09/2	5/1/		1.44	20	
pH	7.59		pH Units		7.70			1.44	20	
Reference (B709238-SRM1)			Prepa	red & Ana	lyzed: 09/2	8/17				
pH	6.39		pH Units	6.39		100	96.9-103.1			
Batch B710003 - General Prep - Wet Chem										
Blank (B710003-BLK1)			Prepa	ared & Ana	lyzed: 10/0:	2/17				
Total Dissolved Solids	ND	10.0	mg/L							
Dunlicate (P710002 DUD1)	Sou	rce: 1709234-0	11 Drans	arad & Ana	lyzad: 10/0	2/17				
Duplicate (B710003-DUP1) Total Dissolved Solids	455	10.0	mg/L	ucu & Aila	lyzed: 10/0: 460	<i>∟</i> / 1 /		1.08	20	
Total Dissolved Bolids	733	10.0						1.00	20	
Reference (B710003-SRM1)			Prepa		lyzed: 10/0					
Total Dissolved Solids	535	10.0	mg/L	550		97.3	85-115			
Batch B710046 - General Prep - Wet Chem										
Blank (B710046-BLK1)			Prepa	ared & Ana	lyzed: 10/0	9/17				
Total Organic Carbon	ND	0.500	mg/L							
LCS (B710046-BS1)			Prepa	red & Ana	lyzed: 10/0	9/17				
Total Organic Carbon	9.95	0.500	mg/L	10.0		99.5	85-115			
LCS Dup (B710046-BSD1)			Prena	ared & Ana	lyzed: 10/0	9/17				
Total Organic Carbon	9.92	0.500	mg/L	10.0	19200. 10/0	99.2	85-115	0.262	20	
_			Č							
Batch B710076 - General Prep - Wet Chem										
Blank (B710076-BLK1)			Prepa	red & Ana	lyzed: 10/0	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L							
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L							
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B710076-BS1)			Prepa	ared & Ana	lyzed: 10/0	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115			
Alkalinity, Total as CaCO3	108	10.0	mg/L	100		108	85-115			
LCS Dup (B710076-BSD1)			Prepa	red & Ana	lyzed: 10/0	9/17				
Alkalinity, Bicarbonate as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Carbonate as CaCO3	ND	10.0	mg/L				85-115		20	

Debbie Zufelt, Reports Manager

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GCC Energy, LLC Project: GCC GW Baseline

6473 CR 120 Project Name / Number: [none] Reported:

Hesperus CO, 81326 Project Manager: Tom Bird 10/24/17 16:33

# General Chemistry - Quality Control (Continued)

		ъ .:		G 1			A/DEC		DDD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B710076 - General Prep - Wet Cher	n (Continued)									
LCS Dup (B710076-BSD1) (Continued)			Prep	ared & Anal	lyzed: 10/09	9/17				
Alkalinity, Hydroxide as CaCO3	ND	10.0	mg/L				85-115		20	
Alkalinity, Total as CaCO3	109	10.0	mg/L	100		109	85-115	0.922	20	
Batch B710086 - General Prep - Wet Cher	n									
Blank (B710086-BLK1)			Prep	ared: 10/10/	17 Analyz	ed: 10/11/1	7			
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B710086-BS1)			Prep	ared: 10/10/	17 Analyz	ed: 10/11/1′	7			
Chloride	23.7	1.00	mg/L	25.0		94.7	90-110			
Fluoride	2.39	0.100	mg/L	2.50		95.7	90-110			
Sulfate	23.5	1.00	mg/L	25.0		94.0	90-110			
LCS Dup (B710086-BSD1)			Prep	ared: 10/10/	17 Analyz	ed: 10/11/1′	7			
Chloride	23.8	1.00	mg/L	25.0		95.3	90-110	0.644	20	
Fluoride	2.41	0.100	mg/L	2.50		96.2	90-110	0.542	20	
Sulfate	23.6	1.00	mg/L	25.0		94.5	90-110	0.518	20	
Batch B710123 - General Prep - Wet Cher	n									
Blank (B710123-BLK1)			Prep	ared & Anal	lyzed: 10/16	5/17				
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B710123-BS1)			Prep	ared & Anal	lyzed: 10/16	5/17				
Nitrate/Nitrite as N	0.958	0.020	mg/L	1.00		95.8	90-110			
LCS Dup (B710123-BSD1)			Prep	ared & Anal	lyzed: 10/16	5/17				
Nitrate/Nitrite as N	0.960	0.020	mg/L	1.00		96.0	90-110	0.229	20	

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GCC Energy, LLC Project: GCC GW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/24/17 16:33

## **Dissolved Metals by ICP - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710040 - Diss. 200.7/200.8										
Blank (B710040-BLK1)			Prep	ared: 10/05/	17 Analyze	ed: 10/06/1	7			
Aluminum	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Silicon	ND	0.500	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B710040-BS1)			Prep	ared: 10/05/	17 Analyze	ed: 10/06/1	7			
Aluminum	5.03	0.050	mg/L	5.00		101	85-115			
Calcium	4.99	0.100	mg/L	5.00		99.8	85-115			
Iron	5.00	0.050	mg/L	5.00		100	85-115			
Magnesium	25.7	0.100	mg/L	25.0		103	85-115			
Potassium	10.1	1.00	mg/L	10.0		101	85-115			
Silicon	4.77	0.500	mg/L	5.00		95.5	85-115			
Sodium	8.21	1.00	mg/L	8.10		101	85-115			
LCS Dup (B710040-BSD1)			Prep	ared: 10/05/	17 Analyze	ed: 10/06/1	7			
Aluminum	5.10	0.050	mg/L	5.00		102	85-115	1.26	20	
Calcium	5.08	0.100	mg/L	5.00		102	85-115	1.75	20	
Iron	5.07	0.050	mg/L	5.00		101	85-115	1.40	20	
Magnesium	26.1	0.100	mg/L	25.0		105	85-115	1.55	20	
Potassium	10.2	1.00	mg/L	10.0		102	85-115	0.361	20	
Silicon	4.84	0.500	mg/L	5.00		96.9	85-115	1.42	20	
Sodium	8.29	1.00	mg/L	8.10		102	85-115	0.964	20	

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Project: GCC GW Baseline

6473 CR 120 Project Name / Number: [none] Reported:
Hesperus CO, 81326 Project Manager: Tom Bird 10/24/17 16:33

## **Dissolved Metals by ICPMS - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B710041 - Diss. 200.7/200.8										
Blank (B710041-BLK1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	ND	0.0005	mg/L							
Cadmium	ND	0.0001	mg/L							
Copper	ND	0.0001	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0005	mg/L							
Molybdenum	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Uranium	ND	0.0001	mg/L							
Zinc	ND	0.0020	mg/L							
CS (B710041-BS1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	0.0472	0.0005	mg/L	0.0500		94.4	85-115			
Cadmium	0.0477	0.0001	mg/L	0.0500		95.5	85-115			
Copper	0.0474	0.0001	mg/L	0.0500		94.9	85-115			
Lead	0.0480	0.0005	mg/L	0.0500		95.9	85-115			
Manganese	0.0465	0.0005	mg/L	0.0500		93.1	85-115			
Molybdenum	0.0506	0.0005	mg/L	0.0500		101	85-115			
Selenium	0.242	0.0010	mg/L	0.250		96.9	85-115			
Uranium	0.0490	0.0001	mg/L	0.0500		98.0	85-115			
Zinc	0.0504	0.0020	mg/L	0.0500		101	85-115			
LCS Dup (B710041-BSD1)			Prep	ared: 10/05/	17 Analyze	ed: 10/11/1	7			
Arsenic	0.0491	0.0005	mg/L	0.0500		98.2	85-115	3.98	20	
Cadmium	0.0480	0.0001	mg/L	0.0500		96.0	85-115	0.566	20	
Copper	0.0491	0.0001	mg/L	0.0500		98.2	85-115	3.46	20	
Lead	0.0491	0.0005	mg/L	0.0500		98.3	85-115	2.45	20	
Manganese	0.0485	0.0005	mg/L	0.0500		97.1	85-115	4.19	20	
Molybdenum	0.0514	0.0005	mg/L	0.0500		103	85-115	1.50	20	
Selenium	0.246	0.0010	mg/L	0.250		98.5	85-115	1.61	20	
Uranium	0.0495	0.0001	mg/L	0.0500		99.0	85-115	1.02	20	
Zinc	0.0506	0.0020	mg/L	0.0500		101	85-115	0.319	20	

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GCC Energy, LLC 6473 CR 120 Hesperus CO, 81326 Project: GCC GW Baseline

Project Name / Number: [none] Reported:
Project Manager: Tom Bird 10/24/17 16:33

## **Dissolved Mercury by CVAA - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B710008 - EPA 245.1/7470										
Blank (B710008-BLK1)			Prep	pared: 10/02/1	7 Analyze	ed: 10/05/17	7			
Mercury	ND	0.0002	mg/L							
LCS (B710008-BS1)			Prep	pared: 10/02/1	7 Analyze	ed: 10/05/17	7			
Mercury	0.0021	0.0002	mg/L	0.00200		104	85-115			
LCS Dup (B710008-BSD1)			Prep	pared: 10/02/1	7 Analyze	ed: 10/05/17	7			
Mercury	0.0021	0.0002	mg/L	0.00200		106	85-115	1.14	20	

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Project: GCC GW Baseline

 6473 CR 120
 Project Name / Number: [none]
 Reported:

 Hesperus CO, 81326
 Project Manager: Tom Bird
 10/24/17 16:33

## **Notes and Definitions**

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

GCC Energy, LLC

dry Sample results reported on a dry weight basis

\*Results reported on as received basis unless designated as dry.

RPD Relative Percent Difference

LCS Laboratory Control Sample (Blank Spike)

RL Report Limit

MDL Method Detection Limit

Green Analytical Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.

Seldie Zufett



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006

COC - Revision 5.0

service@greenanalytical.com or dzufelt@greenanalytical.com 75 Suttle St Durango, CO 81303

(970) 247-4220 Fax: (970) 247-4227

Company or Client: 6-66 Energy		Bill to (if different):	ANALYSIS REQUEST	
Address: 6473 CRIZO		P.O. #:		
State: CO	Zip: 81326	Company:		
385 4528		Attn:	)	
Contact Person: Tom Bind		Address:	i no	
Email Report to: TBIRD @ 6-6 400 1 LBECK @ resource hydrogaclogic -c way	Tiestadestogic	· C feity:	e la	
Project Name(optional):		State: Zip:	250	
		Phone #:	В	
Sampler Name (Print): Landon Beat / Jessica	Lung	Email:	)	
	Collected	Matrix (check one) # of containers		
For Lab Use Sample Name or Location	Date Time	GROUNDWATER SURFACEWATER WASTEWATER PRODUCEDWATER SOIL DRINKING WATER OTHER: No preservation (general) HNO <sub>3</sub> HCI	H <sub>2</sub> SO <sub>4</sub> Other: Other:	
1709-259-01 MW-5-MI	0501 61/96/6	X		
-02 MW-5-C	11/26/17 1230	×	X	
-03 MW-1-A	0681 61/78/16	×	X	
- 04 W M-1-C	3041 61/92/1	×	×	
PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatoever shall be deemed waived unless made in writing and receiver that are a contracted to the shall be deemed waived unless made in writing and receiver.	tort, shall be limited to the amount pe	ad by the client for the analyses. All claims including those for ne	gligence and any other cause whatsoever shall be deemed waived unless made in writing	ing and received
by Since while the subsidiaries affiliates or successors arising out of or related to the enformance of services hereinder by Since Services arising with the subsidiaries of successors arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services hereinder by Since Services arising out of or related to the enformance of services are services arising out of or related to the enformance of the enforce of th	s, including without limitation, busines	is interruptions, loss of use, or loss of profits incurred by client, its s	subsidiaries, affliates or successors arising out of or related to the performance of service	van haraundar

† GAL cannot always accept verbal changes. Please fax or email written change requests.

\* Chain of Custody must be signed in "Reliquished By;" as an acceptance of services and all applicable charges.

Relinquished By:

Date: Time: Date: Time: Date:

Received By:

9210

#1020

Received By:

2

(0)

Relinquished By:

Relinquished By:

Time: Wis

ADDITIONAL REMARKS:

Standard TAT

Yes

Report to State?

(Circle)

Received By:

Just Click Printing Form #17-0301

					Н	ay Gulcl	n Ditch l	Jpgradie	nt									
	Year					20	16					2017						
	Quarter	Q1		Q2			Q3			Q4			Q1		Q2	Q3		
	Month	3	4	5	6	7	8	9	10	11	12	1	2	3	6	9		
San	nple Date	3/31	4/22	5/26	6/23	7/20	8/25	9/21	10/19	11/29	12/13	1/26	2/27	3/22	6/28	9/21		
Lab Anal	ysis (Y/N)	Υ	Ν	N	Υ	Ν	N	Υ	Υ	Υ	Ν	N	N	Υ	Υ	Υ		
						Fie	ld Parame	ters:										
	cfs	0.70	0.99	1.22	1.56	0.99	0.99	1.07	0.95	NM	1.02	NM	0.82	0.28	2.69	NM		
	deg C	9.8	20.9	11.3	21.1	20.8	16.8	14.93	16.39	5.86	6.97	1.52	4.73	10.69	20.21	19.72		
<u>'</u>	SU	7.75	8.27	7.95	8.15	8.24	8.26	8.47	8.19	8.79	8.58	8.2	8.69	8.77	8.88	8.39		
Specific Conductance	μS/cm	247	323	197	141	189	207	233.2	210.2	257.9	233.7	686.6	455	453.5	106.2	549.4		
Oxygen Reduction	mV	76.4	114.7	97.2	51.6	53.6	82.8	72.5	105.9	92.4	116.3	66.3	-12	-10.6	23.8	86.1		
Potential																		
Dissolved Oxygen	mg/L	8.12	6.35	8.03	5.96	6.48	6.86	7.2	4.73	6.71	6.1	10.59	8.96	6.89	4.79	6.73		
						Lab A	nalytical R			ı			1		1			
	mg/L	128			80.9			119		152				257	69.2	316		
pH (Lab)	SU	8.17			8.04			8.16		8.19				8.06	8.06	8.22		
Total Dissolved Solids (Lab)	mg/L	170			75			165		180				285	65.0	390		
Total Suspended Solids	mg/L	30.0			117			17.0		4.8				2.50	63.5	2.00		
Calcium	mg/L	33.5			24			33.0		38.4				53.6	20.8	64.9		
Magnesium	mg/L	10.9			5.08			9.01		13.7				29.8	4.21	37.5		
Sodium	mg/L	4.46			2.19			3.90		6				10.9	1.97	13.8		
Potassium	mg/L	<1			<1			1.35		<1.00				<1.00	1.75	2.15		
Alkalinity, Total	mg/L	160			65			98.0		118				185	55.0	177		
Alkalinity, Bicarbonate	mg/L	160			65			94.0		118				185	55.0	161		
Alkalinity, Carbonate	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	16.0		
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	<10.0		
Chloride	mg/L	5.77			2.07			4.32		7.92				22.7	1.76	30.8		
Fluoride	mg/L	0.213			0.208			0.223		0.208				0.215	0.195	0.265		
Sulfate as SO4	mg/L	42.1			17.7			29.0		45.3				87.7	15.0	99.0		
Total Organic Carbon (TOC)		1.41			1.6			2.21		1.14				2.49	1.15	1.90		
Oil & Grease	mg/L	<5			<5			<5		<5.00				<5.00	<5.00	<5.00		
	mg/L	<0.02			0.028			<0.020		<0.020				0.053	<0.020	0.045		
Sodium Adsorption Ratio	no unit	0.17			0.1			0.16		0.21				0.30	0.10	0.34		
· · · ·	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		
	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				0.0005	<0.0005	0.0009		
	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001		
	mg/L	0.0006			0.0011			0.0011		0.0005				0.0008	0.0013	0.0006		
	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		
	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005		
	mg/L	0.0059			0.0035			0.0043		0.0047				0.0070	0.0024	0.0098		
	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002		
	mg/L	<0.0005			0.0009			0.0007		0.0008				0.0006	0.0009	0.0012		
•	mg/L	<0.001			<0.001			<0.001		<0.0010				0.0023	<0.0010	<0.0010		
	mg/L	7.78			8.23			10.5		9.71				9.04	7.71	9.45		
· · ·	mg/L	3.64			3.85			4.89		4.54				4.23	3.60	4.42		
	mg/L	0.0002			0.0001			0.0002		0.0003				0.0003	0.0001	0.0006		
	mg/L	<0.001			<0.001			<0.001		<0.0010				0.0022	<0.0020	<0.0040		
	pCi/L	<0.4			NA			NA		NA				NA	NA	NA		
	pCi/L	<0.8			NA			NA		NA				NA NA	NA NA	NA		
NUUIUIII 220	pci/L	\U.ŏ			IVA			IVA		IVA				INA	INA	IVA		

## Notes & Definitions:

Y/N yes or no
gpm gallons per minute
deg C degrees Celsius
SU standard pH units
μS/cm microsiemens per centimeter
mV millivolts

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

- 1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
- 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Hay Gulch Ditch Downgradient																
Year							16							2017		
Quarter		Q1		Q2			Q3			Q4			Q1		Q2	Q3
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9
Sample Date		3/31	4/22	5/26	6/23	7/20	8/25	9/21	10/19	11/29	12/13	1/26	2/27	3/22	6/28	9/21
Lab Analysis (Y/N)		Υ	N	N	Υ	N	N	Υ	N	Υ	N	N	N	Υ	Υ	Υ
-	•					Fiel	d Parame	ters:		•				<b>'</b>		
Flow Rate	cfs	1.05	1.16	1.13	NM	1.06	1.14	NM	0.76	NM	NM	NM	0.79	0.25	0.341	NM
Temperature	deg C	11.8	17.6	10.9	21.9	21.3	18.8	16.11	11.79	7.02	6.59	7.17	5.01	12.7	17.63	18.72
pH	SU	8.57	8.55	8.14	8.14	8.55	8.37	8.3	8.36	8.64	8.06	7.28	8.06	9.00	8.53	8.66
Specific Conductance	μS/cm	429	530	297	116	308	257	1182.9	420.1	421.4	727.7	677.9	987.4	16.9	114.3	163.5
Oxygen Reduction		57.F	405.0	22.2	22.5	60.6	20.4	40.7	00.6	447.5	455.2	447.6	45.5	427.0	405.2	40
Potential	mV	57.5	105.9	33.2	32.5	68.6	38.4	18.7	88.6	117.5	155.2	147.6	-15.5	137.8	185.3	48
Dissolved Oxygen	mg/L	7.85	7.65	8.71	5.99	6.73	5.56	6.81	7.09	6.54	7.21	7.62	9.82	5.58	6.44	7.13
, (						Lab A	nalytical R	Results:		•		•				
Hardness as CaCO3	mg/L	226			67.8			480		267				503	59.1	91.4
pH (Lab)	SU	8.42			8.13			8.25		8.24				8.15	7.98	7.98
Total Dissolved Solids (Lab)	mg/L	270			55			630		320				615	65.0	80.0
Total Suspended Solids	mg/L	27.3			18			4.20		12.4				12.7	3.00	<0.500
Calcium	mg/L	55.5			21.9			94.7		65.5				112	19.0	29.5
Magnesium	mg/L	21.1			3.15			59.1		25.2				54.6	2.86	4.31
Sodium	mg/L	8.69			1.57			16.8		10.7				22.5	1.49	2.37
Potassium	mg/L	1.49			<1			4.48		1.46				2.33	<1.00	<1.00
Alkalinity, Total	mg/L	220			59			220		225				320	47.0	85.0
Alkalinity, Bicarbonate	mg/L	220			59			140		155				320	47.0	85.0
Alkalinity, Carbonate	mg/L	<10			<10			80.0		70				<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10.0	<10.0
Chloride	mg/L	9.40			1.26			97.9		12				31.9	<1.00	1.54
Fluoride	mg/L	0.244			0.195			0.244		0.227				0.224	0.290	0.227
Sulfate as SO4	mg/L	68.1			13.5			144		89.5				204	11.3	17.9
Total Organic Carbon (TOC)		1.53			1.4			3.48		1.65				2.31	2.16	0.932
Oil & Grease	mg/L	<5			<5			<5		<5.00				<5.00	<5.00	<5.00
Nitrate/Nitrite as N	mg/L	<0.02			0.026			0.027		<0.020				<0.020	<0.020	<0.020
Sodium Adsorption Ratio	g/ L															
(SAR)	no unit	0.25			0.03			0.33		0.28				0.44	0.08	0.11
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050
Arsenic	mg/L	0.0005			<0.0005			0.0015		0.0006				0.0006	0.0005	0.0006
Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001
Copper	mg/L	0.0004			0.0016			0.0012		0.0005				0.0004	0.0020	0.0013
Iron	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050
Lead	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005
Manganese	mg/L	0.0039			0.0044			0.0059		0.0063				0.0112	0.0009	0.0010
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	<0.0005			0.0008			0.0013		0.0007				<0.0005	0.0009	0.0011
Selenium	mg/L	<0.001			<0.001			0.0026		<0.0010				0.0022	<0.0010	<0.0010
Silica (Si02)	mg/L	8.96			7.48			11.8		10.9				12.2	6.80	8.53
Silicon	mg/L	4.19			3.5			5.51		5.11				5.70	3.18	3.99
Uranium	mg/L	0.0004			0.0001			0.0006		0.0006				0.0009	0.0001	0.0002
Zinc	mg/L	<0.001			0.0021			0.0013		0.0012				<0.0020	<0.0020	<0.0040
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA

## Notes & Definitions:

gpm gallons per minute
deg C degrees Celsius
SU standard pH units

µS/cm microsiemens per centimeter
mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)

not analyzed (lab)

Y/N yes or no

NA

1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

- **2.** Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Month Sample Date Lab Analysis (Y/N)  Purge Flow Rate Total Purged gal Depth to Water Temperature gpm Total SU Specific Conductance Oxygen Reduction Potential  Hardness as CaCO3 pH (Lab) Total Dissolved Solids (Lab) Magnesium  Sympt Specific Conductance mg/L Addition Month Signature Agametic Su Magnesium  Agametic Su Ma	13 4 30 4/ Y N .5 7 .6 52 40 5. .8 13 .77 7. .24 11 .3.1 -16	9 7 9 7 12 87 07 4.6 .1 11. 57 7.4 99 128	6 6/23 Y 5.8 0 297 0 4.95 9 14.2 6 7.6 4 1246	7 7/19 N Fi 7.1 280 5.55 14.1 7.69	Q3	9 9/21 Y eters: 6.83 288 6.03	10 10/24 N 7.47 300	Q4 11 11/30 Y 9.26 280	12 12/14 N	1 1/18 N	Q1 2 2/27 N	3 3/22 Y	Q2 6 6/28 Y	Q3 9 9/28 Y
Month Sample Date Lab Analysis (Y/N)  Purge Flow Rate Total Purged gal Depth to Water ft bgs Temperature deg C pH SU Specific Conductance US/cm Oxygen Reduction Potential  Hardness as CaCO3 pH (Lab) Total Dissolved Solids (Lab) Magnesium  Month Square gpm 1 1 2 4 3 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	30 4/ Y	9 7.3 22 87 07 4.6 .1 11.	6 6/23 Y 5.8 0 297 0 4.95 9 14.2 6 7.6 4 1246	7/19 N Fi 7.1 280 5.55 14.1 7.69	8 8/24 N <b>eld Parame</b> 7.4 284 6.30	9/21 Y **ters: 6.83 288	10/24 N 7.47	11 11/30 Y	12/14 N 7.52	1/18 N	2 2/27 N	3/22 Y	6 6/28 Y	9 9/28
Sample Date Lab Analysis (Y/N)  Purge Flow Rate gpm 1 Total Purged gal 3 Depth to Water ft bgs 4. Temperature deg C pH SU 7. Specific Conductance µS/cm 12 Oxygen Reduction Potential mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	30 4/ Y 1 .5 7 .6 52 40 5. .8 13 .77 7. .24 11 .3.1 -16	9 7 9 7 12 87 07 4.6 .1 11. 57 7.4 99 128	5.8 297 0 4.95 9 14.2 6 7.6 4 1246	7/19 N Fi 7.1 280 5.55 14.1 7.69	8/24 N eld Parame 7.4 284 6.30	9/21 Y **ters: 6.83 288	10/24 N 7.47	11/30 Y 9.26	12/14 N 7.52	1/18 N	2/27 N	3/22 Y	6/28 Y	9/28
Lab Analysis (Y/N)         Purge Flow Rate       gpm       1         Total Purged       gal       3         Depth to Water       ft bgs       4         Temperature       deg C       8         pH       SU       7         Specific Conductance       μS/cm       12         Oxygen Reduction       mV       -12         Potential       sU       7         Hardness as CaCO3       mg/L       2         pH (Lab)       SU       7         Total Dissolved Solids (Lab)       mg/L       7         Calcium       mg/L       4         Magnesium       mg/L       2	7	9 7.3 22 87 07 4.6 .1 11. 57 7.4 99 128	Y 5.8 297 0 4.95 9 14.2 6 7.6 4 1246	7.1 280 5.55 14.1 7.69	N 7.4 284 6.30	Y 6.83 288	7.47	9.26	7.52	7.7	N	Υ	Υ	-
Purge Flow Rate gpm 1 Total Purged gal 3 Depth to Water ft bgs 4. Temperature deg C 8 pH SU 7. Specific Conductance µS/cm 12 Oxygen Reduction Potential mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	.5 7 06 52 40 5. .8 13 77 7. .24 11 .3.1 -16	9 7.3 22 87 07 4.6 .1 11. 57 7.4 99 128	5.8 0 297 0 4.95 9 14.2 6 7.6 4 1246	7.1 280 5.55 14.1 7.69	7.4 284 6.30	6.83 288	7.47	9.26	7.52	7.7		·		Υ
Total Purged gal 3 Depth to Water ft bgs 4. Temperature deg C 8 pH SU 7. Specific Conductance µS/cm 12 Oxygen Reduction mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	06 52 40 5. .8 13 77 7. .24 11 .3.1 -16	22 87 07 4.6 .1 11. 57 7.4 99 128	297 0 4.95 9 14.2 6 7.6 4 1246	7.1 280 5.55 14.1 7.69	7.4 284 6.30	6.83 288					7.54	Q 16		
Total Purged gal 3 Depth to Water ft bgs 4. Temperature deg C 8 pH SU 7. Specific Conductance µS/cm 12 Oxygen Reduction mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	06 52 40 5. .8 13 77 7. .24 11 .3.1 -16	22 87 07 4.6 .1 11. 57 7.4 99 128	297 0 4.95 9 14.2 6 7.6 4 1246	280 5.55 14.1 7.69	284 6.30	288					7.54	8 16		
Depth to Water       ft bgs       4.         Temperature       deg C       8         pH       SU       7.         Specific Conductance       μS/cm       12         Oxygen Reduction       mV       -12         Potential       su       7.         Hardness as CaCO3       mg/L       2         pH (Lab)       SU       7.         Total Dissolved Solids (Lab)       mg/L       7         Calcium       mg/L       4.         Magnesium       mg/L       2.	40 5. .8 13 77 7. .24 11 .3.1 -16	07 4.6 .1 11. 57 7.4 99 128	0 4.95 9 14.2 6 7.6 4 1246	5.55 14.1 7.69	6.30		300	200				0.10	6.95	7.08
Temperature deg C pH SU 7. Specific Conductance μS/cm 12 Oxygen Reduction mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	.8 13 77 7. 24 11 3.1 -16	.1 11. 57 7.4 99 128	9 14.2 6 7.6 4 1246	14.1 7.69	_	6.03	300	280	295	298	297	291	286	258.83
Temperature deg C pH SU 7. Specific Conductance μS/cm 12 Oxygen Reduction mV -12 Hardness as CaCO3 mg/L 2 pH (Lab) SU 7. Total Dissolved Solids (Lab) mg/L 7 Calcium mg/L 44 Magnesium mg/L 29	77 7. 24 11 3.1 -16	57 7.4 99 128	6 7.6 4 1246	7.69	12.7	5.55	5.73	5.69	5.08	4.3	3.8	3.82	4.5	5.51
pH       SU       7.         Specific Conductance       μS/cm       12         Oxygen Reduction       mV       -12         Potential       -12         Hardness as CaCO3       mg/L       2         pH (Lab)       SU       7.         Total Dissolved Solids (Lab)       mg/L       7         Calcium       mg/L       44         Magnesium       mg/L       29	24 11 3.1 -16	99 128	4 1246			12.54	12.58	10.64	11.27	10.9	10.41	11.24	11.85	11.84
Oxygen Reduction Potential  Hardness as CaCO3 mg/L 2 pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44 Magnesium mg/L 29	3.1 -16				7.59	7.67	7.77	7.72	7.68	7.6	7.67	7.67	7.59	7.6
Potential  Hardness as CaCO3 mg/L 2 pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44 Magnesium mg/L 29	30	2.2 -142	.5 -185.4	1226	1143	1175.5	1223.4	1279.6	1304.9	1391.5	1415.3	1351.2	1158.6	1162.3
Hardness as CaCO3 mg/L 2 pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44  Magnesium mg/L 29	30	2.2 -142	.5   -185.4	4=0.0	1000			1500			107.6	100.0	224	.=
pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44  Magnesium mg/L 29				-156.6	-196.8	-140.6	-148.9	-152.9	-141	-143.6	-125.6	-132.2	-201	-176.9
pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44  Magnesium mg/L 29				Lab	Analytical I	Results:								
pH (Lab) SU 7.  Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44  Magnesium mg/L 29			306			216		271				391	277	215
Total Dissolved Solids (Lab) mg/L 7  Calcium mg/L 44  Magnesium mg/L 29			7.57			7.58		7.59				7.46	7.74	7.66
Magnesium mg/L 29	60		745			735		725				775	725	705
Magnesium mg/L 29	1.0		59.7			42.4		51.7				75.7	54.0	41.6
	9.1		38.2			26.7		34.5				49.1	34.6	27.1
	99		196			210		189				167	189	203
	00		3.15			3.01		3.01				3.30	3.00	3.09
	10		660			620		615				640	585	670
	70		660			620		615				640	585	670
	0.0		<10			<10		<10.0				<10.0	<10.0	<10.0
	10		<10			<10		<10.0				<10.0	<10.0	<10.0
	33		6.12			4.30		4.44				4.53	4.32	6.21
	347		<0.5			0.353		0.337				0.337	0.362	<0.500
<u> </u>	).1		108			83.8		117				156	97.4	74.0
	54		3.3			2.8		3.18				3.84	5.82	2.84
Nitrate/Nitrite as N mg/L <0	.02		<0.02			<0.02		<0.200				<0.020	<0.400	<0.400
	.05		<0.05			<0.05		<0.050				<0.050	<0.050	<0.050
	0005		<0.000	5		<0.0005		<0.0005				0.0009	<0.0005	<0.0005
	0001		<0.000	1		<0.0001		<0.0001				<0.0001	<0.0001	<0.0001
	035		0.003			0.0021		0.0041				0.0020	0.0020	0.0030
	20		1.51			0.946		1.64				2.01	1.34	0.101
	0005		<0.000	5		<0.0005		<0.0005				<0.0005	<0.0005	<0.0005
	267		0.344			0.221		0.312				0.491	0.315	0.202
3.	0002		<0.000			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002
	0005		<0.000			<0.0005		0.0005				<0.0005	<0.0005	<0.0005
	001		<0.001			<0.001		<0.0010				0.0245	<0.0010	<0.0010
	3.8		15.2			14.8		12.9				14.2	14.9	14.3
, ,	45		7.12			6.94		6.05				6.64	6.94	6.68
	0001		0.0022			<0.0001		0.0002				0.0002	0.0001	0.0001
	001		<0.001		1	0.0023		0.0301				<0.0020	<0.0020	<0.0020
	).4		NA		1	NA		NA				NA	NA	NA
Radium 228 pCi/L <			NA		-						1	IVA	14/1	IVA

Y/N yes or no

gpm gallons per minute

deg C degrees Celsius

SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts

mg/L milligram per liter

pCi/L picocuries per liter

NM not measured (field)
NA not analyzed (lab)

- 1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
- 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Section   Sect	Well #2 Downgradient																
Company		Voor							Stautent						2017		
Month   3			01		02						04			01	02	02	
Sample Date   3/10   4/21   5/25   6/23   7/19   8/24   9/20   10/19   11/30   12/14   3/26   2/27   3/22   6/13   9/2		,		1		6	7		0	10	T	12	1		2		9
Lab Analysis (Y/W)	Can			•	_		,		_		<b>.</b>		_				9/21
Field Parameters   Field Param			-			-		-		•	-				-	-	9/21 Y
Parge Flow Rate   gpm	Lab Analy	ysis (Y/IV)	Y	IN	IN	Y				IN	Ť	IN	IN	I IN	Y	į ř	Y
Total Purged gol 7, 6, 7, 7, 6, 6, 6, 6, 6, 6, 6, 6, 8, 8, 8, 6, 8, 8, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	Durana Flavo Barta	 	0.5	0.5	0.5	0.5				NIN 4	7.2		NIN 4	L NIN 4	NIN 4	l NINA	NINA
Depth to Worker	•																NM 8
Tempesture			-														
St	•										<u> </u>			ł			
Specific Conductance	•																
Daylor   Protected   Protect																	7.66
Potential   MV	•	μѕ/ст	899	867	804	600	369	815	8/6.5	881.1	903.8	8/1.9	907.5	1193.3	920.5	633.4	851.8
Lab Analytical Results:   Hardness as CaCO3   mg/L   444   314   452   432   432   485   352   37	, •	mV	-9.4	-13.7	-35.7	-66.9	-112.1	-76.3	-88.3	-82	-72.7	-81.1	-66.8	-55.7	-67	-54.3	-53.7
Hardness as CaCO3   mg/L   444   314   452   432   432   488   352   33     mg/L   7.63   7.66   7.48   7.55   7.72   7.6     Total Dissolved Solids (tab)   mg/L   685   470   525   495   635   415   55     Calcium   mg/L   72   549   759   72.7   81.0   60.9   64     Magnesium   mg/L   63.9   43.1   63.8   60.8   68.7   48.5   55     Sodium   mg/L   22.2   16.5   19.8   20.7   21.8   16.1   17     Potassium   mg/L   20.4   2.1   2.16   2.05   1.194   2.22   1.     Alkolinity, Total   mg/L   338   280   380   380   375   285   38     Alkolinity, Bicorbonate   mg/L   318   280   380   380   375   285   38     Alkolinity, Bicorbonate   mg/L   410   410   410   410   410   410   410   410     Chloride   mg/L   35.8   6.8   27.4   26.2   23.3   7.11   15     Fluoride   mg/L   33.3   41   4   2.64   3.4   3.52   3.56   2.5     Total Organic Carbon (FOC)   mg/L   3.34   14   2.64   3.4   3.52   3.56   2.5     Alkiminum   mg/L   0.002   4.005   4.000   4.00	rotential						l elle A	n advetice d	0001/40								
PH (Lab)   SU   7.63   7.66   7.48   7.55   7.72   7.6   7.   Total Dissolved Solids (Lab)   mg/L   685   470   525   495   635   415   5.   Calcium   mg/L   7.2.2   5.4.9   75.9   72.7   81.0   60.9   63.5   415   5.   Solium   mg/L   63.9   43.1   63.8   60.8   66.8   66.7   48.5   5.   Solium   mg/L   2.2.2   16.5   19.8   20.7   21.8   16.1   17.   Potassium   mg/L   2.0.4   2.1   2.16   2.05   1.194   2.22   1.   Alkalinity, Total   mg/L   342   280   380   380   375   285   33.   Alkalinity, Electroante   mg/L   338   280   380   380   375   285   33.   Alkalinity, Electroante   mg/L   4.10   4.1	Handrage CCC2		0.0.0			244	Lab A	патутісат К Г			422				405	252	270
Total Dissolved Solids (Lab)   mg/L   685											<u> </u>						378
Calcium         mg/L         72.2         54.9         75.9         72.7         81.0         60.9         66           Magnesium         mg/L         63.9         43.1         63.8         60.8         68.7         48.5         52           Sodium         mg/L         22.2         16.5         19.8         20.7         21.8         16.1         17           Potossium         mg/L         2.04         2.1         2.16         2.05         19.4         2.22         1.1           Alkalinity, Isoal         mg/L         342         280         380         380         380         375         285         33           Alkalinity, Isoal         mg/L         <10	рн (Lab)	SU	7.63			7.66			7.48		7.55				1.12	7.6	7.51
Magnesium         mg/L         63.9         43.1         63.8         60.8         68.7         48.5         52           Sodium         mg/L         20.4         22.2         16.5         19.8         20.7         21.8         16.1         17           Potossium         mg/L         2.04         2.1         2.16         2.05         1.194         22.2         1.1           Alkalinity, Total         mg/L         342         280         380         380         380         375         285         33           Alkalinity, Garbonate         mg/L         410         <10	Total Dissolved Solids (Lab)	mg/L															525
Sodium   mg/L   22.2   16.5   19.8   20.7   21.8   16.1   17	Calcium	mg/L	72.2						75.9		72.7				81.0	60.9	64.8
Potassium	Magnesium	mg/L	63.9			43.1			63.8		60.8				68.7	48.5	52.6
Alkalinity, Total         mg/L         342         280         380         380         380         375         285         38           Alkalinity, Bicarbonate         mg/L         338         280         380         380         380         375         285         38           Alkalinity, Carbonate         mg/L         <10         <10         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <1	Sodium	mg/L	22.2			16.5			19.8		20.7				21.8	16.1	17.0
Alkalinity, Bicarbonate         mg/L         338         280         380         380         375         285         38           Alkalinity, Carbonate         mg/L         <10         <10         <10         <10         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <11.1         <11.1         <11.5         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0         <10.0	Potassium	mg/L	2.04			2.1			2.16		2.05				1.94	2.22	1.64
Alkalinity, Carbonate         mg/L         <10	Alkalinity, Total	mg/L	342			280			380		380				375	285	395
Alkalinity, Hydroxide         mg/L         <10	Alkalinity, Bicarbonate	mg/L	338			280			380		380				375	285	395
Chloride         mg/L         35.8         6.8         27.4         26.2         23.3         7.11         15           Fluoride         mg/L         0.230         0.298         0.272         0.256         0.228         0.313         0.2           Sulfate as SO4         mg/L         129         70         114         117         153         75.2         98           Total Organic Carbon (TOC)         mg/L         3.34         14         2.64         3.4         3.52         3.56         2.           Nitrate/Nitrite as N         mg/L         0.042         <0.02	Alkalinity, Carbonate	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0
Fluoride	Alkalinity, Hydroxide	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0
Sulfate as SO4   mg/L   129   70   114   117   153   75.2   98	Chloride	mg/L	35.8			6.8			27.4		26.2				23.3	7.11	19.0
Total Organic Carbon (TOC)   mg/L   3.34	Fluoride	mg/L	0.230			0.298			0.272		0.256				0.228	0.313	0.263
Total Organic Carbon (TOC)   mg/L   3.34   14   2.64   3.4   3.52   3.56   2.0	Sulfate as SO4	mg/L	129			70			114		117				153	75.2	98.4
Aluminum         mg/L         0.156         <0.05			3.34			14			2.64		3.4				3.52	3.56	2.61
Arsenic         mg/L         0.0008         0.0015         0.0010         0.0013         0.0009         0.017         0.00           Cadmium         mg/L         <0.0001	Nitrate/Nitrite as N	mg/L	0.042			<0.02			<0.02		0.089				<0.020	<0.02	<0.020
Arsenic         mg/L         0.0008         0.0015         0.0010         0.0013         0.0009         0.017         0.00           Cadmium         mg/L         <0.0001	Aluminum	mg/L	0.156			<0.05			<0.05		<0.050				<0.050	<0.05	<0.050
Cadmium         mg/L         < 0.0001	Arsenic	mg/L	0.0008			0.0015			0.0010		0.0013				0.0009	0.0017	0.0006
Iron         mg/L         0.081         0.085         0.118         <0.050	Cadmium	mg/L	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001
Iron         mg/L         0.081         0.085         0.118         <0.050	Copper	mg/L	0.0004			0.0005			0.0003		0.0051				0.0007	0.0002	0.0004
Lead         mg/L         <0.0005		mg/L	0.081			0.085			0.118		<0.050				0.213	<0.05	<0.050
Manganese         mg/L         0.497         0.54         0.354         0.359         0.384         0.259         0.3           Mercury         mg/L         <0.0002	Lead		<0.0005			<0.0005			<0.0005		0.0078				<0.0005	<0.0005	<0.0005
Mercury         mg/L         <0.0002	Manganese		0.497			0.54			0.354		0.359				0.384	0.259	0.307
Molybdenum         mg/L         0.0014         0.0022         0.0024         0.0025         0.0025         0.0021         0.0025         0.00           Selenium         mg/L         <0.001	Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002
Selenium         mg/L         <0.001	Molybdenum		0.0014			0.0022			0.0024		0.0025				0.0021	0.0025	0.0021
Silica (Si02)         mg/L         11.6         14.7         12.8         11.9         10.9         15.5         13           Silicon         mg/L         5.42         6.89         5.97         5.55         5.12         7.23         6.0           Uranium         mg/L         0.0013         0.0007         0.0015         0.0016         0.0014         0.0008         0.0           Zinc         mg/L         0.0034         <0.001			<0.001			<0.001			<0.001		0.0011				0.0045	<0.001	<0.0010
Silicon         mg/L         5.42         6.89         5.97         5.55         5.12         7.23         6.00           Uranium         mg/L         0.0013         0.0007         0.0015         0.0016         0.0014         0.0008         0.00           Zinc         mg/L         0.0034         <0.001			11.6						12.8						10.9		13.0
Uranium         mg/L         0.0013         0.0007         0.0015         0.0016         0.0014         0.0008         0.00           Zinc         mg/L         0.0034         <0.001	•																6.08
Zinc mg/L 0.0034 <0.001 0.0010 0.0311 <0.0020 <0.002 <0.002																	0.0013
																	<0.0040
																	NA
																	NA

Y/N yes or no

gpm gallons per minute

deg C degrees Celsius

SU standard pH units

 $\mu \text{S/cm} \quad \text{microsiemens per centimeter}$ 

mV millivolts

mg/L milligram per liter

pCi/L picocuries per liter

NM not measured (field)
NA not analyzed (lab)

- 1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
- 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Wiltse Well																
	Year						16							2017		
	Quarter	Q1		Q2			Q3			Q4			Q1	2017	Q2	Q3
	Month	3	4	5	6	7	8	9	10	11	12	1	2	3	6	9
San	nple Date	3/31	4/27	5/25	6/23	7/19	8/24	9/20	10/24	11/29	12/13	1/18	2/27	3/21	6/13	9/28
	ysis (Y/N)	Υ	N	N	γ	N	N N	γ	N	Υ	N	N	_,_,_, N	γ	Υ Υ	γ
23.27	, 5.65 (17.17)	·			· .		ld Parame	ters:						·	· ·	
Purge Flow Rate	gpm	150	38.5	23.4	18.6	19.9	17.3	15.8	16.95	10.64	18.05	39.53	39.59	39.59	NM	18.32
	gal	5850	4228	4229	3686	2844	2979	2637	2724	2992	2916	3595	3580	3560	2980	2712.36
	ft bgs	0.35	0.00	0.85	2.15	2.99	2.6	3.32	6.85	1.9	1.95	0.3	0	0	2.05	3.4
	deg C	6.7	8.8	10.4	10.7	11.5	12.1	11.47	10.95	9.11	8.79	7.56	7.2	7.53	10.34	11.29
	SU	7.22	7.32	7.34	7.26	7.26	7.24	7.22	7.22	7.32	7.29	7.2	7.17	7.12	7.41	7.27
Specific Conductance	μS/cm	2043	1633	1805	1768	1478	1602	1941.1	1937.3	2013.6	2035.6	2261.5	2276.3	2085.2	1869	2074.2
Oxygen Reduction														_		
Potential Potential	mV	105.6	17.9	20.1	38.5	26.9	20	28.6	21.6	13.7	20.9	3.2	18.3	6	13.3	19.5
						Lab A	nalytical R	Results:								
Hardness as CaCO3	mg/L	990			1050			1030		963				1040	1060	1140
	SU	7.22			7.34			7.29		7.36				7.22	7.46	7.30
Total Dissolved Solids (Lab)	mg/L	1580			1480			1520		1520				1480	1510	1680
Calcium	mg/L	197			208			206		186				205	211	219
	mg/L	121			128			126		121				128	129	143
Sodium	mg/L	95.9			75.2			80.7		82.4				110	87.5	80.7
Potassium	mg/L	4.64			4.56			4.90		4.42				4.61	4.79	4.62
	mg/L	460			500			470		450				410	445	510
, ·	mg/L	440			500			470		450				410	445	510
	mg/L	20.0			<10			<10		<10.0				<10.0	<10	<10.0
	mg/L	<10			<10			<10		<10.0				<10.0	<10	<10.0
Chloride	mg/L	81.0			76.3			62.3		70.1				72.5	72.5	68.7
Fluoride	mg/L	0.285			<0.5			<0.5		0.3				<0.500	0.332	<0.500
	mg/L	671			595			656		676				731	702	779
Total Organic Carbon (TOC)		3.54			4.1			3.15		3.02				3.40	3.54	3.34
Nitrate/Nitrite as N	mg/L	0.456			0.891			1.08		0.965				0.492	1.07	1.80
	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.1	<0.050
Arsenic	mg/L	<0.0025			<0.0025			0.0005		0.0008				0.0009	0.0006	0.0005
Cadmium	mg/L	<0.0005			<0.0005			<0.0005		<0.0001				<0.0001	<0.0001	<0.0001
Copper	mg/L	0.0018			0.0024			0.0020		0.0038				0.0023	0.0019	0.0025
Iron	mg/L	0.100			<0.05			0.060		0.136				0.286	0.161	<0.050
Lead	mg/L	<0.0025			<0.0025			<0.0025		<0.0005				<0.0005	<0.0005	<0.0005
Manganese	mg/L	0.673			0.857			0.756		0.608				0.440	0.797	0.881
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	<0.0025			<0.0025			0.0017		0.0016				0.0016	0.0021	0.0021
	mg/L	<0.005			<0.005			0.0013		0.0023				0.0027	0.0019	0.0016
	mg/L	13.9			16.1			16.4		14.3				14.7	15.5	16.1
	mg/L	6.51			7.53			7.67		6.69				6.85	7.22	7.54
Uranium	mg/L	0.0029			0.0021			0.0023		0.0026				0.0024	0.0021	0.0021
Zinc	mg/L	0.0156			0.0364			0.0301		0.0269				0.0194	0.026	0.0208
Radium 226	pCi/L	0.7 +/- 0.1			NA			NA		NA				NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA

## Y/N yes or no

gpm gallons per minute

deg C degrees Celsius

SU standard pH units μS/cm microsiemens per centimeter

mV millivolts

mg/L milligram per liter

pCi/L picocuries per liter

NM not measured (field)
NA not analyzed (lab)

- 1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
- **2.** Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Vear   Vear   Quarter   Q4
Quarter   Month   12
No.   No.
Sample Date   12/12   1/26   2/28   3/22   4/27   5/31   6/13   7/27   8/16   9/2
No.   No.
Purge Flow Rate   gpm   0.5   NM   NM   NM   NM   NM   NM   NM   N
Purge Flow Rate   gpm   0.5   NM   NM   NM   NM   NM   NM   NM   N
Total Purged   gal   21   3   3   21   21   21   19.5   20   20   21   22   23   24   24   25   25   25   25   25   25
Total Purged   gal
Depth to Water
Temperature
pH         SU         7.29         7.36         7.4         7.41         7.33         7.36         7.4         7.35         7.36         7.35         7.35           Specific Conductance         µS/cm         1284.3         1256.5         1201         1155.3         1152.7         1112.6         1055.1         1098.7         1049.7         112.0           Oxygen Reduction         mV         -72.1         -86.6         -105.1         -104.4         -74.5         -91.3         -134.7         -137.6         -131         -138           Hardness as CaCO3         mg/L         724         611         616         52         52           PH (Lab)         SU         7.30         7.17         7.31         7.31         7.2           Total Dissolved Solids (Lab)         mg/L         855         710         715         7.31         7.2           Total Dissolved Solids (Lab)         mg/L         855         710         715         7.31         7.3           Total Dissolved Solids (Lab)         mg/L         855         710         118         121         10         10           Total Dissolved Solids (Lab)         mg/L
Now seed need to composite the property of t
No.   No.
Potential
Hardness as CaCO3   mg/L   724   611   616   52     pH (Lab)   SU   7.30   7.17   7.31   7.31   7.2     Total Dissolved Solids (Lab)   mg/L   855   710   715   75     Calcium   mg/L   147   118   121   10     Magnesium   mg/L   86.7   76.7   76.6   64     Sodium   mg/L   19.5   27.4   28.6   24     Potassium   mg/L   2.02   2.13   2.11   1.7     Alkalinity, Total   mg/L   545   465   415   46     Alkalinity, Carbonate   mg/L   ND   410.0   410   410     Alkalinity, Hydroxide   mg/L   10.9   8.75   7.95   8.9     Fluoride   mg/L   240   229   192   20     Catalory   Total Organic Carbon (TOC)   mg/L   ND   4.54   4.54   4.35   4.6     Nitrate/Nitrite as N   mg/L   0.030   0.0029   0.0028   4.00     Cadmium   mg/L   0.0030   0.0029   0.0028   4.00     Cadmium   mg/L   ND   4.0001   4.0001   4.0001   4.0001     Cadmium   mg/L   0.0030   0.0029   0.0028   4.0001   4.0001     Cadmium   mg/L   ND   4.0001   4.0001   4.0001   4.0001   4.0001     Cadmium   mg/L   0.0030   0.0029   0.0028   4.0001   4.0
Hardness as CaCO3
Description
Total Dissolved Solids (Lab)   mg/L   855   710   715   75   75   75   75   75   75   7
Calcium         mg/L         147         118         121         10           Magnesium         mg/L         86.7         76.7         76.6         64.           Sodium         mg/L         19.5         27.4         28.6         24.           Potassium         mg/L         2.02         2.13         2.11         1.7           Alkalinity, Total         mg/L         545         465         415         46           Alkalinity, Bicarbonate         mg/L         ND         465         415         46           Alkalinity, Carbonate         mg/L         ND         <10.0
Magnesium         mg/L         86.7         76.7         76.6         64.           Sodium         mg/L         19.5         27.4         28.6         24.           Potassium         mg/L         2.02         2.13         2.11         1.7           Alkalinity, Total         mg/L         545         465         415         46           Alkalinity, Bicarbonate         mg/L         ND         <10.0
Magnesium         mg/L         86.7         76.7         76.6         64.           Sodium         mg/L         19.5         27.4         28.6         24.           Potassium         mg/L         2.02         2.13         2.11         1.7           Alkalinity, Total         mg/L         545         465         415         46           Alkalinity, Bicarbonate         mg/L         ND         <10.0
Sodium         mg/L         19.5         27.4         28.6         24.           Potassium         mg/L         2.02         2.13         2.11         1.7           Alkalinity, Total         mg/L         545         465         415         46           Alkalinity, Bicarbonate         mg/L         ND         <10.0
Potassium   mg/L   2.02   2.13   2.11   1.7     Alkalinity, Total   mg/L   545   465   415   465     Alkalinity, Bicarbonate   mg/L   545   465   415   465     Alkalinity, Carbonate   mg/L   ND   <10.0   <10   <10     Alkalinity, Hydroxide   mg/L   ND   <10.0   <10   <10     Chloride   mg/L   10.9   8.75   7.95   8.9     Fluoride   mg/L   240   229   192   20     Total Organic Carbon (TOC)   mg/L   ND   <0.020   <0.02   <0.00     Aluminum   mg/L   0.423   <0.050   <0.002   <0.00     Cadmium   mg/L   ND   <0.0001   <0.0001   <0.001     Cadmium   mg/L   ND   <0.0001   <0.0001   <0.0001     Cadmium   Carbon (Toc)   Carbon (
Alkalinity, Total         mg/L         545         465         415         46           Alkalinity, Bicarbonate         mg/L         545         465         415         46           Alkalinity, Carbonate         mg/L         ND         <10.0
Alkalinity, Bicarbonate         mg/L         545         465         415         46           Alkalinity, Carbonate         mg/L         ND         <10.0
Alkalinity, Carbonate         mg/L         ND         <10.0
Alkalinity, Hydroxide         mg/L         ND         <10.0
Chloride         mg/L         10.9         8.75         7.95         8.9           Fluoride         mg/L         0.577         0.485         0.506         0.53           Sulfate as SO4         mg/L         240         229         192         20           Total Organic Carbon (TOC)         mg/L         ND         <0.020
Fluoride   mg/L   0.577   0.485   0.506   0.505     Sulfate as SO4   mg/L   240   229   192   20     Total Organic Carbon (TOC)   mg/L   ND   <0.020   <0.02   <0.02     Aluminum   mg/L   0.423   <0.050   <0.05   <0.05   <0.06     Arsenic   mg/L   ND   <0.0029   0.0028   <0.006     Cadmium   mg/L   ND   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.00001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001   <0.0001
Sulfate as SO4         mg/L         240         229         192         20           Total Organic Carbon (TOC)         mg/L         4.54         4.35         4.6           Nitrate/Nitrite as N         mg/L         ND         <0.020         <0.02         <0.02           Aluminum         mg/L         0.423         <0.050         <0.05         <0.05           Arsenic         mg/L         0.0030         0.0029         0.0028         <0.000           Cadmium         mg/L         ND         <0.0001         <0.0001         <0.0001
Activities   Total Organic Carbon (TOC)   mg/L   ND     4.54   4.35   4.66
Aluminum         mg/L         0.423         <0.050
Arsenic         mg/L         0.0030         0.0029         0.0028         <0.00
Cadmium         mg/L         ND         <0.0001
Copper         mg/L         0.0006         0.0008         0.0002         0.00
Iron mg/L 3.71 7.29 7.32 0.33
Lead mg/L ND <0.0005 <0.0005 <0.0005
Manganese         mg/L         4.07         2.78         2.37         2.0
Mercury         mg/L         ND         <0.0002
Molybdenum         mg/L         0.0013         0.0024         0.0027         0.0027
Selenium         mg/L         ND         0.0030         <0.001
Silica (Si02) mg/L 22.3 16.8 18 16.
Silicon         mg/L         10.4         7.86         8.41         7.7
<i>Uranium mg/L</i> 0.0010 0.0004 0.0004 0.0004 0.000
<b>Zinc</b>   mg/L   0.0039   0.0046   <0.002   <0.00
Radium 226         pCi/L         NA         NA         NA         NA
Radium 228         pCi/L         NA         NA         NA         NA

## Y/N yes or no

gpm gallons per minute

deg C degrees Celsius

SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts

mg/L milligram per liter

pCi/L picocuries per liter

NM not measured (field)
NA not analyzed (lab)

- 1. "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.
- 2. Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.
- **3.** Industry standard Quality Assurance/Quality Control (QA/QC) protocol are followed for this hydrologic monitoring program by both GCC Energy and the contracted environmental water quality analytical laboratories. QA/QC results are not shown in this table.

Year         2017           Quarter         Q2         Q3           Month         6         7         8         9         9           Sample Date         6/7         7/18         8/23         9/7         9/26
Month         6         7         8         9         9           Sample Date         6/7         7/18         8/23         9/7         9/26
Sample Date         6/7         7/18         8/23         9/7         9/26
1.1.4.1.2.1.4.1.111 \
Lab Analysis (Y/N) Y N N N Y
Field Para
Purge Flow Rate gpm NM NM
Total Purged gal 13 NM NM
Depth to Water         ft bgs         215.42         215.54         216.3
Temperature         deg C         17.72         10.74         9.73
pH
Specific Conductance $\mu$ S/cm 1362.4 wait on wait on 1554.6 1563.
Oxygen Reduction Potential new new pump pump -54.7 -46.5
Potential pullip pullip
Dissolved Oxygen mg/L NM NM NM
Lab Analytica
Hardness as CaCO3 mg/L 124 133
<b>pH (Lab) SU</b> 7.74 7.35
Total Dissolved Solids mg/L 975
(Lab)
Calcium         mg/L         24.7         25.8           Magnesium         mg/L         15.1
Magnesium         mg/L         15.1         16.7           Sodium         mg/L         324         329
5.
Potassium         mg/L         1.98         2.02           Alkalinity, Total         mg/L         375         450
Alkalinity, Bicarbonatemg/L375450Alkalinity, Carbonatemg/L<10.0<10.0
Alkalinity, Carbonate Ing/L <10.0 <10.0  Alkalinity, Hydroxide mg/L <10.0 <10.0
Chloride         mg/L         2.75         2.16
Fluoride         mg/L         0.268         0.249
Sulfate as SO4         mg/L         427         432
Total Organic Carbon (TOC)         mg/L         427         432           1.36         5.03         1.36
Nitrate/Nitrite as N mg/L <0.200 <0.40
Aluminum         mg/L         <0.050         <0.05
Arsenic mg/L <0.0005 <0.000
Cadmium         mg/L         <0.0001         <0.000
Copper         mg/L         0.0043         0.005
Iron mg/L 0.128 0.36
Lead mg/L <0.0005 <0.000
Manganese         mg/L         0.0260         0.021
Mercury mg/L <0.0002 <0.000
Molybdenum         mg/L         0.0007         0.001
Selenium         mg/L         <0.0010         <0.001
Silica (Si02) mg/L 12.3 11.9
Silicon         mg/L         5.74         5.56
Uranium         mg/L         0.0004         0.000
<b>Zinc</b>   mg/L   0.0270   0.008
Radium 226 PCi/L NA NA
Radium 228 PCi/L NA NA

## **Notes & Definitions:**

gpm	gallons per minute	
deg C	degrees Celsius	
SU	standard pH units	2.

millivolts m۷ milligram per liter mg/L

Y/N yes or no

pCi/L picocuries per liter not measured (field) NM

NA not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an μS/cm microsiemens per centimeter equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

						MW-1-MI
	Year		20	17		
	Quarter	Q2		Q3		
	Month	6	7	8	9	
Sai	mple Date	6/7	7/18	8/23	9/26	
Lab Anal	lysis (Y/N)	Υ	N	N	N	
				_	Fiel	ld Parameters:
Purge Flow Rate	gpm	NM		NM	NM	
Total Purged	gal	20		NM	NM	
Depth to Water	ft bgs	259.99		258.29	258.34	
Temperature	deg C	15.8	NM -	11.83	21.73	
рН	SU	8	wait on	7.94	7.86	
Specific Conductance	μS/cm	2031.5	new	2137.1	2119.4	
Oxygen Reduction Potential	mV	160.5	pump	65.7	61.4	
Dissolved Oxygen	mg/L	NM	1	NM	NM	
	] J/ =					ı nalytical Results:
Hardness as CaCO3	mg/L	231	Ì	ĺ		
pH (Lab)	SU	8.14				1
Total Dissolved Solids	mg/L	1520				
(Lab) Calcium		46.7				
	mg/L	27.9				
Magnesium Sodium	mg/L	470				
Potassium	mg/L	2.55				
Alkalinity, Total	mg/L mg/L	600				
Alkalinity, Bicarbonate	mg/L	600				
Alkalinity, Carbonate	mg/L	<10.0				
Alkalinity, Hydroxide	mg/L	<10.0				
Chloride	mg/L	7.69				
Fluoride	mg/L	1.14				
Sulfate as SO4	mg/L	739				
Total Organic Carbon (TOC)	mg/L	5.14				
Nitrate/Nitrite as N	mg/L	0.103				1
Aluminum	mg/L	<0.050				1
Arsenic	mg/L	0.0029				1
Cadmium	mg/L	<0.0001				
Copper	mg/L	0.0067				1
Iron	mg/L	<0.050				1
Lead	mg/L	0.0010				
Manganese	mg/L	0.0445				
Mercury	mg/L	<0.0002				
Molybdenum	mg/L	0.0796				
Selenium	mg/L	0.0028				
Silica (Si02)	mg/L	11.6				
Silicon	mg/L	5.44				
Uranium	mg/L	0.0505				
Zinc	mg/L	1.52				
Radium 226	pCi/L	NA				
Radium 228	pCi/L	NA				

## **Notes & Definitions:**

gpiii	galions per minute	
deg C	degrees Celsius	
SU	standard pH units	2.
μS/cm	microsiemens per cen	timeter

mV millivolts

mg/L milligram per liter

Y/N yes or no

pCi/L picocuries per liter not measured (field) NM

NA not analyzed (lab) "<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

						MW-1-0
	Year			2017		
	Quarter	Q2			)3	
	Month	6	7	8	9	9
Sai	mple Date	6/7	7/18	8/23	9/7	9/26
	lysis (Y/N)		N	N	N	Y
					Fiel	d Parame
Purge Flow Rate	gpm	NM			NM	NM
Total Purged	gal	5			NM	NM
Depth to Water	ft bgs	216.5			216.95	216.59
Temperature	deg C	15.96	NM -	NM -	37.22	12.86
рН	SU	7.52	wait on	wait on	7.77	7.17
Specific Conductance	μS/cm	2446.3	new	new	0	2724.9
Oxygen Reduction	m1/	74.2	pump	pump	61.4	77.4
Potential	mV	74.3	1 1		61.4	77.4
Dissolved Oxygen	mg/L	NM			NM	NM
					Lab A	nalytical R
Hardness as CaCO3	mg/L	498				1290
pH (Lab)	SU	8.35				7.36
Total Dissolved Solids	ma/l					2440
(Lab)	mg/L	2020				2440
Calcium	mg/L	96.0				234
Magnesium	mg/L	62.8				172
Sodium	mg/L	506				242
Potassium	mg/L	11.4				3.81
Alkalinity, Total	mg/L	530				700
Alkalinity, Bicarbonate	mg/L	530				700
Alkalinity, Carbonate	mg/L	<10.0				<10.0
Alkalinity, Hydroxide	mg/L	<10.0				<10.0
Chloride	mg/L	24.2				6.97
Fluoride	mg/L	1.59				0.864
Sulfate as SO4	mg/L	1090				1350
Total Organic Carbon (TOC)	mg/L	4.56				2.84
Nitrate/Nitrite as N	mg/L	<2.00				<0.400
Aluminum	mg/L	<0.050				<0.050
Arsenic	mg/L	0.0029				0.0016
Cadmium	mg/L	<0.0001				<0.0001
Copper	mg/L	0.0088				0.0085
Iron	mg/L	<0.050				<0.050
Lead	mg/L	<0.0005				<0.0005
Manganese	mg/L	0.0744			1	0.0853
Mercury	mg/L	<0.0002				<0.0002
Molybdenum	mg/L	0.0164				0.0049
Selenium	mg/L	0.0136				0.0043
Silica (Si02)	mg/L	10.6			1	16.6
Silicon	mg/L	4.94				7.77
Uranium	mg/L	0.0500				0.0044
Zinc	mg/L	0.0300				0.0044
Radium 226	pCi/L	0.0293 NA				0.0294 NA
Radium 228	pCi/L	NA				NA

## **Notes & Definitions:**

gallons per minute deg C degrees Celsius SU

standard pH units

millivolts m۷ milligram per liter mg/L

Y/N yes or no

picocuries per liter pCi/L not measured (field) NM

NA not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an μS/cm microsiemens per centimeter equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

						MW-2-A
	Year		20	17		
	Quarter	Q1	Q2		Q3	
	Month	3	6	7	8	
Sar	nple Date		6/7	7/18	8/23	
	ysis (Y/N)		N	N	N	
	,,,,,					Field Parameters:
Purge Flow Rate	gpm			I		
Total Purged	gal					
Depth to Water	ft bgs					
Temperature	deg C					
рН	SU	dry	dry	dry	dry	
Specific Conductance	μS/cm	,	,	,	,	
Oxygen Reduction						
Potential	mV					
Dissolved Oxygen	mg/L					
	- 3, -					Lab Analytical Results:
Hardness as CaCO3	mg/L					,
pH (Lab)	SU SU			<u> </u>		
Total Dissolved Solids (Lab)						
Calcium						
	mg/L					
Magnesium	mg/L					
Sodium	mg/L					
Potassium	mg/L					
Alkalinity, Total	mg/L					
Alkalinity, Bicarbonate	mg/L					
	mg/L					
	mg/L					
Chloride	mg/L					
Fluoride	mg/L					
Sulfate as SO4  Total Organic Carbon (TOC)	mg/L					
	mg/L					
Aluminum	mg/L			<del> </del>		
Arsenic	mg/L			<del> </del>		
Cadmium	mg/L			<del> </del>		
Copper	mg/L			<del> </del>		
Iron	mg/L			<del> </del>		
Lead	mg/L			<del> </del>		
Manganese	mg/L					
Mercury	mg/L			<del> </del>		
Molybdenum	mg/L			<del> </del>		
Selenium	mg/L			<del> </del>		
Silica (SiO2)	mg/L					
Silicon	mg/L					
Uranium	mg/L			<del> </del>		
Zinc	mg/L					
Radium 226	pCi/L					
				-		
Radium 228	pCi/L					

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

"<" values denote that the quantification of that analyte is below the reporting level for the analytical laboratory, acceptable by environmental water quality laboratory industry standards.

Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

						MW-2-MI
Year 2017						
Quarter		Q1	Q2	Q3		
	Month	3	6	7	8	
Sample Date		3/30	6/7	7/18	8/23	
	ysis (Y/N)		N	N	N	
						Field Parameters:
Purge Flow Rate	gpm					
Total Purged	gal					
Depth to Water	ft bgs					
Temperature	deg C					
	SU	dry	dry	dry	dry	
Specific Conductance	μS/cm					
Oxygen Reduction						
Potential	mV					
	mg/L					
						Lab Analytical Results:
Hardness as CaCO3	mg/L					
	SU					
Total Dissolved Solids (Lab)	mg/L					
Calcium	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
Total Organic Carbon (TOC)						
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	mg/L					
	pCi/L					
Radium 228	pCi/L					

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

						MW-2-C
	Year		20	17		
Quarter		Q1	Q2		Q3	
Month		3	6	7	8	
Sar	nple Date	3/30	6/7	7/18	8/23	
	ysis (Y/N)		N	N	N	
	, , , ,					Field Parameters:
Purge Flow Rate	gpm					
Total Purged	gal					
Depth to Water	ft bgs					
Temperature	deg C					
рH	SU	dry	dry	dry	dry	
Specific Conductance	μS/cm	,	,	,	,	
Oxygen Reduction						
Potential	mV					
Dissolved Oxygen	mg/L					
/5	, ,,					Lab Analytical Results:
Hardness as CaCO3	mg/L					
pH (Lab)	SU					
Total Dissolved Solids (Lab)						
Calcium	mg/L					
Magnesium Sodium	mg/L					
	mg/L					
Potassium	mg/L					
Alkalinity, Total	mg/L					
Alkalinity, Bicarbonate	mg/L					
Alkalinity, Carbonate	mg/L					
Alkalinity, Hydroxide Chloride	mg/L					
Fluoride	mg/L					
Sulfate as SO4	mg/L					
Total Organic Carbon (TOC)	mg/L ma/L					
				-		
Nitrate/Nitrite as N	mg/L			-		
Aluminum	mg/L			-		
Arsenic	mg/L					
Cadmium	mg/L			<u> </u>		
Copper	mg/L					
Iron	mg/L					
Lead	mg/L					
Manganese	mg/L					
Mercury	mg/L					
Molybdenum	mg/L					
Selenium	mg/L					
Silica (SiO2)	mg/L					
Silicon	mg/L					
Uranium	mg/L			-		
Zinc	mg/L					
Radium 226	pCi/L					
Radium 228	pCi/L					

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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	Year			2017						
	Quarter	Q1	Q2		Q3					
	Month	3	6	7	8	9				
San	nple Date	3/27	6/30	7/18	8/24	9/28				
	ysis (Y/N)	Υ	Υ	N	N	Υ				
Field Parameters:										
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM				
Total Purged	gal	30	2	NM	NM	NM				
Depth to Water	ft bgs	297.35	298.24	297.45	298.24	298.11				
Temperature	deg C	11.72	13.17	19.46	12.57	12.32				
	SU	8.82	8.75	8.56	8.67	8.72				
Specific Conductance	μS/cm	2535	2446	2115.4	2523.8	2469.5				
Oxygen Reduction	mV	-269	-101.5	-55.3	-87.4	-142.3				
Potential										
Dissolved Oxygen	mg/L	2.49	NM	NM	NM	NM				
	- 1				1	Lab A				
Hardness as CaCO3	mg/L	7.53	12.6			12.6				
pH (Lab)	SU	8.63	8.69			8.53				
Total Dissolved Solids (Lab)	ma/L	1630	1670			1630				
	mg/L	2.00	3.67			3.63				
Magnesium	mg/L	0.616	0.823			0.859				
Sodium	mg/L	566	585			589				
Potassium	mg/L	1.72	2.02			2.04				
	mg/L	530	470			500				
Alkalinity, Bicarbonate	mg/L	380	470			440				
	mg/L	150	<10.0			60.0				
	mg/L	<10.0	<10.0			<10.0				
Chloride	mg/L	16.1	17.4			18.5				
Fluoride	mg/L	0.464	0.488			0.535				
Sulfate as SO4	mg/L	729	802			840				
Total Organic Carbon (TOC)	ma/I	3.52	10.0			7.26				
Nitrate/Nitrite as N	mg/L	<0.100	<0.100			<0.020				
Aluminum	mg/L	<0.050	<0.050			<0.050				
Arsenic	mg/L	0.0025	<0.0025			<0.0025				
Cadmium	mg/L	<0.0001	<0.0005			<0.0005				
Copper	mg/L	0.0061	0.0081			0.0080				
Iron	mg/L	<0.050	<0.050			<0.050				
Lead	mg/L	<0.0005	<0.0025			<0.0025				
Manganese	mg/L	0.0042	0.0251			0.0194				
Mercury	mg/L	<0.0002	<0.0002			<0.0002				
Molybdenum	mg/L	0.0005	0.0274			0.0091				
	mg/L	0.0577	<0.0050			<0.0050				
	mg/L	10.1	10.9			11.6				
Silicon	mg/L	4.70	5.10			5.41				
Uranium	mg/L	0.0002	0.0040			0.0051				
Zinc	mg/L	0.0031	<0.0100			<0.0100				
Radium 226	pCi/L	NA	NA			NA				
Radium 228	pCi/L	NA	NA		<u> </u>	NA				
	P = -/ =	1473	1473		1	1473				

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
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NA not analyzed (lab)

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Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

							MW-3-MI
	Voar			2017		141144-9-1411	
	Year Quarter	Q1	Q2	201/	Q3		1
	Month	3	6	7	8	9	1
Can	nple Date	3/27	6/30	7/18	8/16	9/28	1
	ysis (Y/N)		V	7/18 N	N	9/26 Y	
Lab Anai	ysis ( 1 / IV)	T	T	IN	I IN	'	ld Parameters:
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	la Parameters.
Total Purged	gal	19	2	NM	NM	NM	
	ft bgs	304.49	241.15	240.46	240.53	240.46	
Temperature	deg C	10.03	12.55	22.02	12.88	11.04	
рН	SU	9.34	8.94	8.46	8.9	8.74	
Specific Conductance	μS/cm	1907	1698.6	1402.3	1598	1736.6	
Oxygen Reduction	μος στι	1307	1030.0	1702.3	1090	1730.0	
Potential	mV	-87	-54.5	-26.4	-108.2	-107.3	
Dissolved Oxygen	mg/L	7.68	NM	NM	NM	NM	
- Joseph Grander	y/ <b>-</b>	,.00	14141	14141	14141		I Inalytical Results:
Hardness as CaCO3	mg/L	4.85	8.73			9.02	
pH (Lab)	SU	8.95	8.75			8.72	1
							1
Total Dissolved Solids (Lab)	mg/L	1550	1120			1140	
Calcium	mg/L	1.32	2.32			2.34	1
Magnesium	mg/L	0.374	0.714			0.775	1
Sodium	mg/L	420	430			440	1
Potassium	mg/L	2.15	2.21			1.93	1
Alkalinity, Total	mg/L	740	675			700	1
•	mg/L	510	555			600	1
•	mg/L	230	120			100	1
•	mg/L	<10.0	<10.0			<10.0	1
Chloride	mg/L	8.66	10.1			10.7	1
Fluoride	mg/L	0.952	1.34			1.26	1
	mg/L	165	241			247	1
Total Organic Carbon (TOC)		8.34	14.8			10.9	
Nitrate/Nitrite as N	mg/L	<0.020	<0.020			<0.020	1
Aluminum	mg/L	<0.050	0.102			<0.050	1
Arsenic	mg/L	0.0134	0.0167			0.0131	1
Cadmium	mg/L	<0.0001	<0.0005			<0.0005	1
Copper	mg/L	0.0055	0.0058			0.0065	1
Iron	mg/L	<0.050	<0.100			<0.050	1
Lead	mg/L	0.0024	<0.0025			<0.0025	1
Manganese	mg/L	0.0022	0.0058			0.0033	1
Mercury	mg/L	<0.0002	<0.0002			<0.0002	1
Molybdenum	mg/L	0.0061	0.0211			0.0148	1
Selenium	mg/L	0.0013	<0.0050			<0.0050	1
Silica (Si02)	mg/L	7.97	8.18			9.05	1
Silicon	mg/L	3.73	3.82			4.23	1
Uranium	mg/L	0.0049	0.0084			0.0140	1
Zinc	mg/L	0.0405	<0.0100			<0.0100	1
Radium 226	pCi/L	NA	NA			NA	1
Radium 228	pCi/L	NA	NA			NA	1
	P C./ L	14/1	1771		<u>i</u>	14/1	1

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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Total alkalinity is measured by titration with hydrochloric acid to a set pH point, reporting this value as an equivalent amount of calcium carbonate. This value is then partitioned into bicarbonate, carbonate and hydroxide depending on the initial pH of the sample solution, each components reported as equivalent CaCO3.

	Year			2017		
Quarter		Q1	Q2		Q3	
	Month	3	6	7	8	9
Sam	ple Date	3/27	6/30	7/27	8/24	9/28
Lab Analysis (Y/N)		Υ	Υ	N	N	Υ
						Fie
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM
Total Purged	gal	20	2	NM	NM	NM
Depth to Water	ft bgs	304.21	296.3	296.93	296.87	297.43
Temperature	deg C	10.45	12.85	13.13	12.51	11.8
рН	SU	8.61	8.57	8.51	8.46	8.44
Specific Conductance	μS/cm	3549	3587.5	3814.8	4112.2	4350.8
Oxygen Reduction	mV	-129	-87.2	-137.5	-128.8	-149.9
Potential	IIIV	-129	-07.2	-137.3	-120.0	-145.5
Dissolved Oxygen	mg/L	2.54	NM	NM	NM	NM
						Lab A
Hardness as CaCO3	mg/L	14.4	11.8			15.1
pH (Lab)	SU	8.5	8.48			8.35
Total Dissolved Solids (Lab)	ma/I	2130	2360			3070
Total Dissolved Solids (Lub)	IIIg/L	2130	2300			3070
Calcium	mg/L	3.60	2.87			3.50
Magnesium	mg/L	1.31	1.12			1.55
Sodium	mg/L	796	890			1100
Potassium	mg/L	3.47	3.24			4.01
Alkalinity, Total	mg/L	1490	1570			1690
Alkalinity, Bicarbonate	mg/L	1360	1480			1650
	mg/L	130	90.0			40.0
- 1	mg/L	<10.0	<10.0			<10.0
	mg/L	182	330			477
	mg/L	4.89	4.94			4.52
	mg/L	73.4	73.5			46.4
Total Organic Carbon (TOC)		10.6	58.5			219
Nitrate/Nitrite as N	mg/L	<0.020	<0.400			<0.400
Aluminum	mg/L	<0.050	<0.100			<0.050
Arsenic	mg/L	0.0115	0.0088			0.0098
	mg/L	<0.0001	<0.0010			<0.0010
	mg/L	0.0109	0.0147			0.0174
	mg/L	<0.050	<0.050			<0.050
	mg/L	0.0085	<0.0050			<0.0050
	mg/L	0.0091	0.0188			0.0178
	mg/L	<0.0002	<0.0002			<0.0002
	mg/L	0.0143	0.0291			0.0241
	mg/L	0.0233	0.0121			0.0149
	mg/L	7.82	8.86			9.16
	mg/L	3.66	4.14			4.28
	mg/L	0.0091	0.0102			0.0137
	mg/L	0.375	<0.0200			<0.0200
	pCi/L	0.373 NA	NA			NA
Radium 228	pCi/L	NA	NA			NA

## Notes & Definitions

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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							NAVA A
	Year			2017			MW-4-A
	01	02	2017	02			
	Quarter	Q1	Q2	7	Q3		
	Month	3 /20	6	7	8	9	
	nple Date	3/29	6/30	7/19	8/23	9/28	
Lab Anal	ysis (Y/N)	Υ	Υ	N	N	Y	
Durana Flavo Darta	I ava us	NIN 4	NIN 4	NIN 4	l NINA		ld Parameters:
Purge Flow Rate	gpm	NM 10	NM	NM 4.5	NM	NM	
Total Purged	gal	19	2	1.5	n/a	>1	
Depth to Water	ft bgs	338.6	334.96	335.59	334.79	334.81	
Temperature	deg C	15.61	16.83	25.5	17.63	11.91	
oH	SU	8.61	8.29	8.55	7.98	8.41	
Specific Conductance	μS/cm	2162.6	2052.9	1876.3	2095.6	2180.1	
Oxygen Reduction Potential	mV	28.6	54	60.2	61.7	-8.6	
Dissolved Oxygen	mg/L	NM	NM	NM	NM	NM	
						Lab A	nalytical Results:
Hardness as CaCO3	mg/L	9.16	9.85			7.77	
оН (Lab)	SU	8.2	8.40			8.36	
Total Dissolved Solids (Lab)	mg/L	1470	1470			1450	
Calcium	mg/L	2.23	2.43			1.76	
Magnesium	mg/L	0.871	0.916			0.823	
Sodium	mg/L	515	537			513	
Potassium	mg/L	1.57	1.75			1.63	
Alkalinity, Total	mg/L	635	560			630	
Alkalinity, Bicarbonate	mg/L	635	560			590	
Alkalinity, Carbonate	mg/L	<10.0	<10.0			40.0	
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0	
Chloride	mg/L	9.56	9.66			10.3	
Fluoride	mg/L	<0.400	<0.400			<0.500	
Sulfate as SO4	mg/L	594	588			783	
Total Organic Carbon (TOC)		6.63	11.7			3.52	
Nitrate/Nitrite as N	mg/L	0.035	<0.020			<0.020	
Aluminum	mg/L	<0.050	<0.050			<0.050	
Arsenic	mg/L	0.0016	<0.0025			<0.0025	
Cadmium	mg/L	<0.0010	<0.0025			<0.0025	
Copper	mg/L	0.0053	0.0093			0.0076	
ron	mg/L	<0.050	<0.050			<0.050	
Lead	mg/L	0.0014	<0.0025			<0.0025	
Manganese	mg/L	0.0014	0.0023			0.0023	
Mercury	mg/L	<0.0002	<0.0003			<0.0002	
Molybdenum	mg/L	0.0002	0.0002			<0.0025	
Selenium	mg/L	0.0009	<0.0050			<0.0023	
Silica (Si02)	mg/L	10.2	10.6			9.99	
Silicon	mg/L	4.75	4.97			4.67	
Uranium	mg/L	0.0016	<0.0005			<0.0005	
Zinc	mg/L mg/L	0.269	0.0003			<0.0003	
Zinc Radium 226	pCi/L	0.269 NA	0.0319 NA			NA	
Radium 228	pCi/L	NA	NA			NA	

## Notes & Definition

Y/N yes or no gpm gallons per minute deg C degrees Celsius SU standard pH units μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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	Year			2017						
	Quarter	Q1	Q2		Q3					
	Month	3	6	7	8	9				
San	ple Date	3/30	6/16	7/27	8/23	9/28				
Lab Analysis (Y/N)		Υ	Υ	N	N	Υ				
Field Parameters:										
	gpm	NM	NM	NM	NM	NM				
	gal	1	6.5	NM	NM	>1				
•	ft bgs	378.2	330.15	330.94	330.85	330.81				
	deg C	14.97	14.64	12.86	12.5	11.37				
<u> </u>	SU	9.08	8.91	8.78	8.79	8.76				
	μS/cm	1581.2	1667.9	1731.3	1708.4	1784.2				
Oxygen Reduction	mV	155.2	64.7	9.8	35.2	-29.6				
Potential										
Dissolved Oxygen	mg/L	NM	NM	NM	NM	NM				
	. 11				ı	Lab A				
	mg/L	5.43	8.71			7.07				
pH (Lab)	SU	8.83	8.59			8.63				
Total Dissolved Solids (Lab)	mg/L	1160	1170			1180				
	mg/L	1.53	2.32			1.88				
	mg/L	0.392	0.707			0.579				
	mg/L	408	458			449				
	mg/L	1.46	<2.00			1.73				
	mg/L	965	915			1100				
	mg/L	775	825			880				
	mg/L	190	90.0			220				
	mg/L	<10.0	<10.0			<10.0				
	mg/L	2.18	7.50			8.78				
	mg/L	4.72	5.02			5.09				
Sulfate as SO4	mg/L	17.4	64.7			76.6				
Total Organic Carbon (TOC)	mg/L	2.64	6.49			8.58				
		.0.020	.0.020			.0.020				
	mg/L	<0.020	<0.020			<0.020				
	mg/L	<0.050	<0.100			<0.050				
	mg/L	0.0099	0.0220			0.0131				
	mg/L	<0.0001	<0.0001			<0.0005				
	mg/L	0.0059	0.0058			0.0071				
	mg/L	<0.050	<0.100			<0.050				
	mg/L	0.0010	<0.0005			<0.0025				
	mg/L	0.0020	0.0066		1	0.0081				
	mg/L	<0.0002	<0.0002			<0.0002				
	mg/L	0.0020	0.0160			0.0127				
	mg/L	<0.0010	0.0012			<0.0050				
	mg/L	7.27	8.01			8.80				
	mg/L	3.40	3.75			4.11				
	mg/L	0.0043	0.0126			0.0184				
	mg/L	0.113	0.0697			<0.0100				
Radium 226	pCi/L pCi/L	NA	NA			NA				
Radium 228		NA	NA		•	NA				

Y/N yes or no gpm gallons per minute deg C degrees Celsius standard pH units SU

μS/cm microsiemens per centimeter

mV millivolts mg/L milligram per liter pCi/L picocuries per liter NM not measured (field) NA not analyzed (lab)

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MW-4-C									
	Year			2017					
	Quarter	Q1	Q2		Q3				
	Month	3	6	7	8	9			
Sar	nple Date	3/30	6/16	7/27	8/23	9/28			
Lab Anal	ysis (Y/N)	Υ	Υ	N	Ν	Υ			
		_				Fiel	d Parameters:		
Purge Flow Rate	gpm	NM	NM	NM	NM	NM			
Total Purged	gal	7	1.5	NM	NM	NM			
Depth to Water	ft bgs	328.33	314.05	309.87	306.86	303.96			
Temperature	deg C	13.31	17.4	12.67	12.03	13.86			
pН	SU	8.33	7.62	7.68	7.7	7.69			
Specific Conductance	μS/cm	3791.7	5943.5	5996.7	5884.6	5813.3			
Oxygen Reduction Potential	mV	57.3	20.3	-101.5	-111.2	-103.7			
Dissolved Oxygen	mg/L	NM	NM	NM	NM	NM			
						Lab A	nalytical Results:		
Hardness as CaCO3	mg/L	46.3	55.9			38.9			
pH (Lab)	SU	7.61	7.77			7.79			
Total Dissolved Solids (Lab)	mg/L	3230	4050			3750			
Calcium	mg/L	13.6	13.7			9.15			
Magnesium	mg/L	2.99	5.26			3.90			
Sodium	mg/L	908	1510			1490			
Potassium	mg/L	4.38	5.71			6.07			
Alkalinity, Total	mg/L	1250	2360			2780			
Alkalinity, Bicarbonate	mg/L	1250	2360			2780			
Alkalinity, Carbonate	mg/L	<10.0	<10.0			<10.0			
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0			
Chloride	mg/L	181	550			587			
Fluoride	mg/L	1.29	2.04			2.17			
Sulfate as SO4	mg/L	534	487			70.2			
Total Organic Carbon (TOC)		30	6.42			5.08			
Nitrate/Nitrite as N	mg/L	<2.00	<0.500			<0.400			
Aluminum	mg/L	<0.050	<0.050			<0.050			
Arsenic	mg/L	0.0059	0.0119			0.0128			
Cadmium	mg/L	<0.0001	<0.0010			<0.0010			
Copper	mg/L	0.0125	0.0243			0.0221			
Iron	mg/L	<0.050	<0.050			<0.050			
Lead	mg/L	<0.0005	<0.0050			<0.0050			
Manganese	mg/L	0.0269	0.0772			0.0554			
Mercury	mg/L	<0.0002	<0.0002			<0.0002			
Molybdenum	mg/L	0.0526	0.115			0.0138			
Selenium	mg/L	0.0248	0.0231			0.0214			
Silica (Si02)	mg/L	9.85	12.6			12.9			
Silicon	mg/L	4.61	5.88			6.02			
Uranium	mg/L	0.0297	0.121			0.0984			
Zinc	mg/L	0.0156	0.0265			<0.0200			
Radium 226	pCi/L	NA	NA			NA			
Radium 228	pCi/L	NA	NA			NA			

## Notes & Definitions

gpm gallons per minute deg C degrees Celsius SU standard pH units

Y/N yes or no

μS/cm microsiemens per centimeter

mV millivolts
mg/L milligram per liter
pCi/L picocuries per liter
NM not measured (field)
NA not analyzed (lab)

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