GCC Energy

"Safety as a Value"

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GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326

December 16, 2019

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

Attn: Janet Binns

Re: Field Well Water Analysis; King I & King II
4th Quarter 2019

Ms. Binns:

Please find enclosed a copy of quarterly water analysis reports for the 4th quarter of 2019 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
- MW-6-A, MW-6-MI, MW-6-LM
- MW-7-EAA & Blind Duplicate MW-99-A
- MW-8-EAA, MW-8-MI, MW-8-LM, MW-8-PL

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

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Upgradient

		2016										2017						2018				2019			
Year																									
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	11	2	5	8	11
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	11/28	2/22	5/14	8/9	11/8	2/28	5/23	8/16	11/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																									
Flow Rate	***cfs***	0.7	1.0	1.2	1.6	1.0	1.0	1.1	1.0	NM	1.0	NM	0.8	0.3	2.7	NM	NM	NM	0.6	0.7	0.7	0.3	3.6	1.2	NM
Temperature	***deg C***	9.8	20.9	11.3	21.1	20.8	16.8	14.9	16.4	5.9	7.0	1.5	4.7	10.7	20.2	19.7	8.8	4.7	11.3	22.1	1.1	5.9	5.9	16.9	5.7
pH	***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	7.60	7.9	7.58	9.07	7.16	6.4	7.53	8.03	7.33
Specific Conductance	***µS/cm***	247	323	197	141	189	207	233	210	258	234	687	455	454	106	549	868	1041	304	307	307	752	306	275	682
Oxygen Reduction Potential	***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	95.10	-164.1	111.4	-181.3	13.9	103.7	-24.0	24.4	-22.4
Dissolved Oxygen	***mg/L***	8.1	6.4	8.0	6.0	6.5	6.9	7.2	4.7	6.7	6.1	10.6	9.0	6.9	4.8	6.7	9.3	9.4	8.5	6.4	10.2	8.0	8.9	7.8	7.9
Lab Analytical Results:																									
Hardness as CaCO3	***mg/L***	128			80.9			119		152				257	69.2	316	456	489	101	153	149	393	136	125	372
pH (Lab)	***SU***	8.17			8.04			8.16		8.19				8.06	8.06	8.22	8.31	8.39	7.99	9.07	7.86	7.45	7.69	7.83	7.40
Total Dissolved Solids (Lab)	***mg/L***	170			75			165		180				285	65.0	390	650	700	140	215	175	535	205	225	635
Total Suspended Solids	***mg/L***	30.0			117			17.0		4.8				2.50	63.5	2.00	5.75	6.01	106	6.25	14.8	22.0	113	20.0	5.38
Calcium	***mg/L***	33.5			24			33.0		38.4				53.6	20.8	64.9	86.6	87.3	26.3	39.1	40.3	79.8	34.6	32.4	79.3
Magnesium	***mg/L***	10.9			5.08			9.01		13.7				29.8	4.21	37.5	58.3	65.9	8.61	13.5	11.9	47.0	12.1	10.8	42.2
Sodium	***mg/L***	4.46			2.19			3.90		6				10.9	1.97	13.8	27.1	34.6	3.31	5.33	5.00	19.1	7.24	5.81	25.4
Potassium	***mg/L***	<1			<1			1.35		<1.00				<1.00	1.75	2.15	3.05	3.52	1.18	1.24	<1.00	3.89	1.57	1.07	3.25
Alkalinity, Total	***mg/L***	160			65			98.0		118				185	55.0	177	305	244	67	111	120	260	390	103	233
Alkalinity, Bicarbonate	***mg/L***	160			65			94.0		118				185	55.0	161	285	244	67	107	120	260	390	103	233
Alkalinity, Carbonate	***mg/L***	<10			<10			<10		<10.0				<10.0	<10.0	16.0	20.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<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
Chloride	***mg/L***	5.77			2.07			4.32		7.92				22.7	1.76	30.8	48.2	46.7	3.12	6.70	5.58	48.1	7.75	6.04	22.8
Fluoride	***mg/L***	0.213			0.208			0.223		0.208				0.215	0.195	0.265	0.283	0.285	0.224	0.272	0.224	0.252	0.208	0.214	<0.500
Sulfate as SO4	***mg/L***	42.1			17.7			29.0		45.3				87.7	15.0	99.0	179	229	34	49.7	45.0	128	47.2	35.6	107
Total Organic Carbon (TOC)	***mg/L***	1.41			1.6			2.21		1.14				2.49	1.15	1.90	1.99	1.81	2.31	1.61	1.09	4.94	3.08	1.84	4.54
Oil & Grease	***mg/L***	<5			<5			<5		<5.00				<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Nitrate/Nitrite as N	***mg/L***	<0.02			0.028			<0.020		<0.020				0.053	<0.020	0.045	0.088	0.105	0.026	<0.020	<0.020	0.263	0.050	0.072	0.104
Sodium Adsorption Ratio (SAR)	***no unit***	0.17			0.1			0.16		0.21				0.30	0.10	0.34	0.55	0.68	0.14	0.18	0.16	0.42	0.26	0.22	0.55
Ammonia as N ^	***mg/L***																								<0.100
Ortho-Phosphate as P ^	***mg/L***																								<0.0500
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0005				0.0005	<0.0005	0.0009	0.0007	<0.0025	<0.0005	0.0009	<0.0005	0.0007	0.0006	0.0007	0.0005
Cadmium	***mg/L***	<0.0001			<0.0001			<0.0001		<0.0001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper	***mg/L***	0.0006			0.0011			0.0011		0.0005				0.0008	0.0013	0.0006	0.0005	0.0007	0.0011	0.0011	0.0013	0.0026	0.0013	0.0012	0.0005
Iron	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	0.255	0.055	<0.050	0.316
Lead	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	***mg/L***	0.0059			0.0035			0.0043		0.0047				0.0070	0.0024	0.0098	0.0049	0.0049	0.0093	0.0016	0.0043	0.127	0.0349	0.0096	0.113
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Molybdenum	***mg/L***	<0.0005			0.0009			0.0007		0.0008				0.0006	0.0009	0.0012	0.0008	<0.0025	0.001	0.0012	0.0009	0.0011	0.0009	0.0011	0.0007
Selenium	***mg/L***	<0.001			<0.001			<0.001		<0.0010				0.0023	<0.0010	<0.0010	0.0010	<0.0050	<0.001	<0.001	<0.001	0.0017	<0.0010	<0.0010	<0.0010
Silica (Si02)	***mg/L***	7.78			8.23			10.5		9.71				9.04	7.71	9.45	10.1	11.0	8.4	8.64	8.31	11.3	8.55	9.17	13.4
Silicon	***mg/L***	3.64			3.85			4.89		4.54				4.23	3.60	4.42	4.71	5.14	3.93	4.04	3.88	5.29	3.99	4.29	6.25
Uranium	***mg/L***	0.0002			0.0001			0.0002		0.0003				0.0003	0.0001	0.0006	0.0009	0.0013	0.0001	0.0002	0.0003	0.0009	0.0003	0.0004	0.0007
Zinc	***mg/L***	<0.001			<0.001			<0.001		<0.0010				0.0022	<0.0020	<0.0040	<0.0020	<0.0100	<0.002	0.0033	<0.002	0.0044	<0.0020	<0.0020	0.0033
Radium 226	***pCi/L***	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

Hay Gulch Ditch Downgradient

Year		2016										2017						2018				2019			
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	11	2	5	8	11
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	11/28	2/22	5/7	8/9	11/7	2/28	5/23	8/16	11/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																									
Flow Rate	***cfs***	1.1	1.2	1.1	NM	1.1	1.1	NM	0.8	NM	NM	NM	0.8	0.3	0.3	NM	dry	NM	NM	NM	0.5	0.25	0.3	1.05	NM
Temperature	***deg C***	11.8	17.6	10.9	21.9	21.3	18.8	16.1	11.8	7.0	6.6	7.2	5.0	12.7	17.6	18.7		6.3	11.3	20.6	4.7	6.88	8.23	15.15	3.51
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		8.33	7.58	7.43	7.48	6.42	7.77	7.61	8.38
Specific Conductance	***µS/cm***	429	530	297	116	308	257	1183	420	421	728	678	987	17	114	164		742	304	356	309	577	202	295	554
Oxygen Reduction 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		51.6	111.4	-10	-88.9	125.6	50.6	111.6	-108.13
Dissolved Oxygen	***mg/L***	7.9	7.7	8.7	6.0	6.7	5.6	6.8	7.1	6.5	7.2	7.6	9.8	5.6	6.4	7.1		9.8	8.5	6.3	9.1	7.6	8.8	7.2	9.6
Lab Analytical Results:																									
Hardness as CaCO3	***mg/L***	226			67.8			480		267				503	59.1	91.4		329	140	182	167	281	91.9	137	295
pH (Lab)	***SU***	8.42			8.13			8.25		8.24				8.15	7.98	7.98		8.17	8.05	8.09	7.95	7.84	7.68	7.73	7.73
Total Dissolved Solids (Lab)	***mg/L***	270			55			630		320				615	65.0	80.0		420	220	260	185	390	185	195	355
Total Suspended Solids	***mg/L***	27.3			18			4.20		12.4				12.7	3.00	<0.500		49.5	<2	5.67	4.40	18.4	153	22.5	<4.00
Calcium	***mg/L***	55.5			21.9			94.7		65.5				112	19.0	29.5		75.4	37.5	49.0	44.7	61.6	26.0	34.5	67.2
Magnesium	***mg/L***	21.1			3.15			59.1		25.2				54.6	2.86	4.31		34.2	11.2	14.4	13.4	31	6.54	12.3	30.8
Sodium	***mg/L***	8.69			1.57			16.8		10.7				22.5	1.49	2.37		18.1	5.42	6.49	5.15	16.5	5.03	6.62	17.0
Potassium	***mg/L***	1.49			<1			4.48		1.46				2.33	<1.00	<1.00		2.84	1.14	1.58	1.34	3.13	1.31	1.27	2.60
Alkalinity, Total	***mg/L***	220			59			220		225				320	47.0	85.0		265	112	170	140	150	340	140	194
Alkalinity, Bicarbonate	***mg/L***	220			59			140		155				320	47.0	85.0		259	104	170	140	150	340	140	188
Alkalinity, Carbonate	***mg/L***	<10			<10			80.0		70				<10.0	<10.0	<10.0		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<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
Chloride	***mg/L***	9.40			1.26			97.9		12				31.9	<1.00	1.54		23.1	7.54	7.47	5.69	40.2	16.9	7.65	14.8
Fluoride	***mg/L***	0.244			0.195			0.244		0.227				0.224	0.290	0.227		0.308	0.228	0.295	0.228	0.232	0.205	0.218	0.252
Sulfate as SO4	***mg/L***	68.1			13.5			144		89.5				204	11.3	17.9		86.5	40.2	46.8	45.0	91.4	18.5	42.7	83.3
Total Organic Carbon (TOC)	***mg/L***	1.53			1.4			3.48		1.65				2.31	2.16	0.932		1.56	1.28	1.33	1.76	2.90	2.37	2.10	3.26
Oil & Grease	***mg/L***	<5			<5			<5		<5.00				<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	<5.00	<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		<0.020	<0.020	<0.020	<0.020	0.17	0.146	0.090	<0.020
Sodium Adsorption Ratio (SAR)	***no unit***	0.25			0.03			0.33		0.28				0.44	0.08	0.11		0.43	0.2	0.20	0.17	0.43	0.22	0.24	0.41
Ammonia as N ^	***mg/L***																								<0.100
Ortho-Phosphate as P ^	***mg/L***																								<0.0500
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<0.050	<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		0.0005	0.0005	0.0008	<0.0005	0.0006	0.0006	0.0006	0.0005
Cadmium	***mg/L***	<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
Copper	***mg/L***	0.0004			0.0016			0.0012		0.0005				0.0004	0.0020	0.0013		0.0005	0.0008	0.0008	0.0008	<0.0010	0.0021	0.0009	0.0007
Iron	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<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		<0.0005	<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		0.0962	0.0038	0.0445	0.0102	0.048	0.0125	0.0033	0.0102
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Molybdenum	***mg/L***	<0.0005			0.0008			0.0013		0.0007				<0.0005	0.0009	0.0011		0.0010	0.0011	0.0012	0.0010	0.001	0.0011	0.0012	0.0007
Selenium	***mg/L***	<0.001			<0.001			0.0026		<0.0010				0.0022	<0.0010	<0.0010		0.0011	<0.0010	<0.0010	<0.001	0.0012	<0.0010	<0.0010	<0.0010
Silica (Si02)	***mg/L***	8.96			7.48			11.8		10.9				12.2	6.80	8.53		10.7	8.41	8.77	8.66	8.46	5.70	8.86	11.8
Silicon	***mg/L***	4.19			3.5			5.51		5.11				5.70	3.18	3.99		5.01	3.93	4.10	4.05	3.95	2.67	4.14	5.50
Uranium	***mg/L***	0.0004			0.0001			0.0006		0.0006				0.0009	0.0001	0.0002		0.0012	0.0004	0.0005	0.0003	0.0009	0.0002	0.0004	0.0007
Zinc	***mg/L***	<0.001			0.0021			0.0013		0.0012				<0.0020	<0.0020	<0.0040		<0.0020	0.0074	0.0048	0.0035	0.0022	<0.0020	<0.0020	<0.0020
Radium 226	***pCi/L***	<0.4			NA			NA		NA				NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

Well #1 Upgradient

Year		2016										2017						2018				2019			
Quarter		Q1	Q2			Q3			Q4			Q1			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	11	2	5	8	11
Sample Date		3/30	4/27	5/26	6/23	7/19	8/24	9/21	10/24	11/30	12/14	1/18	2/27	3/22	6/28	9/28	11/29	2/22	5/14	8/9	11/7	2/25	5/23	8/16	11/14
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																									
Purge Flow Rate	gpm	1.5	7.9	7.1	5.8	7.1	7.4	6.8	7.5	9.3	7.5	7.7	7.5	8.2	7.0	7.1	7.5	7.2	7.2	10	7.2	10.0	8.3	11.0	6.5
Total Purged	gal	306	522	870	297	280	284	288	300	280	295	298	297	291	286	259	287	268	280	267	305	300	321	327	293
Depth to Water	ft bgs	4.40	5.07	4.60	4.95	5.55	6.30	6.03	5.73	5.69	5.08	4.30	3.80	3.82	4.50	5.51	5.50	5.40	5.77	5.65	6.50	5.98	4.50	5.68	6.08
Temperature	deg C	8.8	13.1	11.9	14.2	14.1	12.7	12.5	12.6	10.6	11.3	10.9	10.4	11.2	11.9	11.8	11.6	11.5	11.7	12.0	12.5	11.7	11.47	11.81	12.88
pH	SU	7.77	7.57	7.46	7.6	7.69	7.59	7.67	7.77	7.72	7.68	7.6	7.67	7.67	7.59	7.6	7.58	7.56	7.49	7.35	7.34	7.44	7.39	7.37	7.32
Specific Conductance	µS/cm	1224	1199	1284	1246	1226	1143	1176	1223	1280	1305	1392	1415	1351	1159	1162	1241	1278	1218	1289	1204	1234.7	1307.5	1253	1232.1
Oxygen Reduction Potential	mV	-123.1	-162.2	-142.5	-185.4	-156.6	-196.8	-140.6	-148.9	-152.9	-141.0	-143.6	-125.6	-132.2	-201	-176.9	-213.20	-185.3	-219.3	-251.6	-273.0	-232.0	-194.0	-192.0	-159.9
Lab Analytical Results:																									
Hardness as CaCO3	mg/L	230			306			216		271				391	277	215	280	274	275	369	287	252	350	303	263
pH (Lab)	SU	7.73			7.57			7.58		7.59				7.46	7.74	7.66	7.56	7.75	7.95	7.48	7.50	7.77	7.56	7.23	7.35
Total Dissolved Solids (Lab)	mg/L	760			745			735		725				775	725	705	790	745	770	835	730	735	860	780	705
Calcium	mg/L	44.0			59.7			42.4		51.7				75.7	54.0	41.6	55.6	53.4	53.8	71.5	56.7	49.1	67.8	58.2	51.5
Magnesium	mg/L	29.1			38.2			26.7		34.5				49.1	34.6	27.1	34.4	34.2	34.1	46.4	35.4	31.4	43.8	38.3	32.7
Sodium	mg/L	199			196			210		189				167	189	203	195	183	191	154	212	196	172	167	198
Potassium	mg/L	3.00			3.15			3.01		3.01				3.30	3.00	3.09	2.99	3.09	3.03	3.16	3.15	3.01	3.32	3.01	3.01
Alkalinity, Total	mg/L	610			660			620		615				640	585	670	625	620	595	630	640	610	615	615	590
Alkalinity, Bicarbonate	mg/L	570			660			620		615				640	585	670	625	620	595	630	640	610	615	615	590
Alkalinity, Carbonate	mg/L	40.0			<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
Alkalinity, Hydroxide	mg/L	<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
Chloride	mg/L	4.33			6.12			4.30		4.44				4.53	4.32	6.21	4.39	4.30	4.35	4.34	4.23	4.35	4.59	4.36	6.19
Fluoride	mg/L	0.347			<0.5			0.353		0.337				0.337	0.362	<0.500	0.358	0.354	0.335	0.390	0.359	0.355	0.349	0.335	<0.500
Sulfate as SO4	mg/L	90.1			108			83.8		117				156	97.4	74.0	101	106	97.2	147	89.9	91.4	131	112	92.1
Total Organic Carbon (TOC)	mg/L	2.54			3.3			2.80		3.18				3.84	5.82	2.84	3.33	3.37	3.5	3.94	3.35	3.31	3.70	3.53	3.14
Nitrate/Nitrite as N	mg/L	<0.02			<0.02			<0.02		<0.200				<0.020	<0.400	<0.400	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																								0.931
Ortho-Phosphate as P ^	mg/L																								0.0590
Aluminum	mg/L	<0.05			<0.05			<0.05		<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100
Arsenic	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				0.0009	<0.0005	<0.0005	<0.0005	0.0005	0.0005	0.0005	<0.0005	0.0005	0.0005	<0.0005	<0.0010
Cadmium	mg/L	<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	<0.0002
Copper	mg/L	0.0035			0.003			0.0021		0.0041				0.0020	0.0020	0.0030	0.0027	0.0035	0.003	0.0022	0.0025	0.0042	0.0015	0.0019	0.0012
Iron	mg/L	1.20			1.51			0.946		1.64				2.01	1.34	0.101	1.44	1.44	1.39	1.98	1.52	1.26	1.74	1.58	1.41
Lead	mg/L	<0.0005			<0.0005			<0.0005		<0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
Manganese	mg/L	0.267			0.344			0.221		0.312				0.491	0.315	0.202	0.311	0.307	0.306	0.498	0.286	0.355	0.439	0.428	0.354
Mercury	mg/L	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	mg/L	<0.0005			<0.0005			<0.0005		0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	0.0005	<0.0005	<0.0005	<0.0010
Selenium	mg/L	<0.001			<0.001			<0.001		<0.0010				0.0245	<0.0010	<0.0010	<0.0010	<0.0010	0.0171	0.0120	0.0022	0.0032	0.0024	<0.0010	<0.0020
Silica (Si02)	mg/L	13.8			15.2			14.8		12.9				14.2	14.9	14.3	14.7	13.4	14.6	13.8	13.7	13.5	13.1	13.1	14.3
Silicon	mg/L	6.45			7.12			6.94		6.05				6.64	6.94	6.68	6.86	6.27	6.81	6.45	6.41	6.3	6.13	6.11	6.68
Uranium	mg/L	<0.0001			0.0021			<0.0001		0.0002				0.0002	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	<0.0002
Zinc	mg/L	<0.001			<0.001			0.0023		0.0301				<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0040
Radium 226	pCi/L	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	pCi/L	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

Well #2 Downgradient																										
Year		2016										2017						2018					2019			
Quarter		Q1	Q2			Q3			Q4			Q1		Q2	Q3	Q4		Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	8	11	2	5	8	11
Sample Date		3/30	4/21	5/25	6/23	7/19	8/24	9/20	10/19	11/30	12/14	1/26	2/27	3/22	6/13	9/21	11/28	2/22	5/7	8/8	8/9	11/7	2/27	5/22	8/16	11/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																										
Purge Flow Rate	***gpm***	0.5	0.5	0.5	0.5	0.5	0.5	0.5	NM	7.2	2	NM	NM	NM	NM	NM	NM	0.1	1	0.1	1	0.5	0.3	0.5	0.3	0.5
Total Purged	***gal***	7	6	7	7	6	6	6	6	6	6	8	8	6	8	8	6	6	11	2	6.5	7.5	13	10	9	7.5
Depth to Water	***ft bgs***	3.69	3.17	4.25	1.42	4.17	4.17	5.50	6.4	4.7	5	3.95	2.74	6.35	0.95	4.85	5.68	6.68	7.4	6.65	6.59	5.17	5.85	0.92	3.60	5.20
Temperature	***deg C***	6.3	10.1	13.5	18.4	19.8	14	14.1	13.3	10.4	12.4	7.0	4.4	8.4	17.1	12.1	11.7	9.8	8.9	14.0	11.1	11.9	9.14	8.14	10.54	11.48
pH	***SU***	7.58	7.6	7.6	7.64	7.68	7.73	7.53	7.66	7.66	7.71	7.57	7.68	7.78	7.56	7.66	7.52	7.59	7.48	7.84	7.20	7.15	7.41	7.34	7.23	7.19
Specific Conductance	***µS/cm***	899	867	804	600	369	815	877	881	904	872	908	1193	921	633	852	879	887	847	828	895	955	960	1091	1051	1083
Oxygen Reduction Potential	***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	-63.70	-44.9	-34	-75.6	-127	-91.9	48.4	-57.8	-30.1	-5.48
Lab Analytical Results:																										
Hardness as CaCO3	***mg/L***	444			314			452		432				485	352	378	449	412	415	422	415	465	488	537	513	603
pH (Lab)	***SU***	7.63			7.66			7.48		7.55				7.72	7.6	7.51	7.51	7.62	7.6	7.61	7.45	7.50	7.5	7.4	7.04	7.12
Total Dissolved Solids (Lab)	***mg/L***	685			470			525		495				635	415	525	540	515	545	545	575	550	575	695	655	690
Calcium	***mg/L***	72.2			54.9			75.9		72.7				81.0	60.9	64.8	78.0	70.1	70.2	72.7	70.4	78.7	81.3	87.1	83.3	99.4
Magnesium	***mg/L***	63.9			43.1			63.8		60.8				68.7	48.5	52.6	61.8	57.4	58.2	58.4	58.2	65.2	69.2	77.6	74.0	86.3
Sodium	***mg/L***	22.2			16.5			19.8		20.7				21.8	16.1	17.0	20.1	19.4	19.2	19.6	19.1	21.3	22.1	23.4	21.4	25.5
Potassium	***mg/L***	2.04			2.1			2.16		2.05				1.94	2.22	1.64	2.19	1.76	1.68	2.00	1.82	2.08	1.97	1.94	2.06	2.40
Alkalinity, Total	***mg/L***	342			280			380		380				375	285	395	375	333	350	380	328	340	395	460	365	348
Alkalinity, Bicarbonate	***mg/L***	338			280			380		380				375	285	395	375	333	350	380	328	340	395	460	365	348
Alkalinity, Carbonate	***mg/L***	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	***mg/L***	35.8			6.8			27.4		26.2				23.3	7.11	19.0	23.4	24.7	27.2	34.5	34.1	39.3	40.1	42.9	45.2	47.2
Fluoride	***mg/L***	0.230			0.298			0.272		0.256				0.228	0.313	0.263	0.246	0.244	0.224	0.259	0.281	0.263	0.244	0.246	0.221	<0.500
Sulfate as SO4	***mg/L***	129			70			114		117				153	75.2	98.4	94.7	104	102	112	111	137	138	196	189	182
Total Organic Carbon (TOC)	***mg/L***	3.34			14			2.64		3.4				3.52	3.56	2.61	2.25	2.10	2.02	2.06	1.93	2.08	1.87	2.69	2.28	1.99
Nitrate/Nitrite as N	***mg/L***	0.042			<0.02			<0.02		0.089				<0.020	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	***mg/L***																									<0.100
Ortho-Phosphate as P ^	***mg/L***																									<0.0500
Aluminum	***mg/L***	0.156			<0.05			<0.05		<0.050				<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	***mg/L***	0.0008			0.0015			0.0010		0.0013				0.0009	0.0017	0.0006	0.0011	0.0010	0.0009	0.0012	0.0012	0.0010	0.0012	0.0011	0.0012	0.0012
Cadmium	***mg/L***	<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
Copper	***mg/L***	0.0004			0.0005			0.0003		0.0051				0.0007	0.0002	0.0004	0.0001	0.0056	0.0002	0.0006	0.0004	0.0003	0.001	0.0016	0.0003	0.0002
Iron	***mg/L***	0.081			0.085			0.118		<0.050				0.213	<0.05	<0.050	0.074	0.060	0.073	0.089	0.163	0.082	0.062	0.116	0.105	0.119
Lead	***mg/L***	<0.0005			<0.0005			<0.0005		0.0078				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	***mg/L***	0.497			0.54			0.354		0.359				0.384	0.259	0.307	0.309	0.304	0.306	0.349	0.375	0.320	0.423	0.504	0.404	0.427
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	***mg/L***	0.0014			0.0022			0.0024		0.0025				0.0021	0.0025	0.0021	0.0020	0.0024	0.0022	0.0024	0.0029	0.0024	0.0029	0.0026	0.0019	0.0024
Selenium	***mg/L***	<0.001			<0.001			<0.001		0.0011				0.0045	<0.001	<0.0010	<0.0010	0.0012	<0.001	0.0012	0.0015	0.0013	0.0021	0.001	0.0011	0.0011
Silica (Si02)	***mg/L***	11.6			14.7			12.8		11.9				10.9	15.5	13.0	13.3	11.1	11.5	11.4	11.5	11.0	11.2	10.5	11.6	12.8
Silicon	***mg/L***	5.42			6.89			5.97		5.55				5.12	7.23	6.08	6.20	5.19	5.39	5.34	5.38	5.15	5.26	4.93	5.44	5.99
Uranium	***mg/L***	0.0013			0.0007			0.0015		0.0016				0.0014	0.0008	0.0013	0.0013	0.0013	0.0013	0.0013	0.0015	0.0014	0.0019	0.0016	0.0012	0.0015
Zinc	***mg/L***	0.0034			<0.001			0.0010		0.0311				<0.0020	<0.002	<0.0040	<0.0020	0.0053	0.0022	0.0028	<0.0020	<0.0020	0.0025	<0.002	<0.0020	<0.0020
Radium 226	***pCi/L***	<0.4			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

Wiltse Well

		2016										2017						2018				2019			
Year																									
Quarter		Q1	Q2			Q3			Q4			Q1		Q2		Q3		Q4				Q1		Q2		Q3		Q4	
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	6	9	11	2	5	8	11	2	5	8	11
Sample 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	11/28	2/22	5/16	8/9	11/8	2/28	5/23	8/19	11/11
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																									
Purge Flow Rate	***gpm***	150.0	38.5	23.4	18.6	19.9	17.3	15.8	17.0	10.6	18.1	39.5	39.6	39.6	NM	18.3	23.5	11.9	12.0	18.5	12.3	28.0	38.0	18.0	17.0
Total Purged	***gal***	5850	4228	4229	3686	2844	2979	2637	2724	2992	2916	3595	3580	3560	2980	2712	2423	2700	2890	2783	2747	3017	3200	3010	3058
Depth to Water	***ft bgs***	0.35	0.00	0.85	2.15	2.99	2.60	3.32	6.85	1.90	1.95	0.30	0.00	0.00	2.05	3.40	3.40	3.35	3.93	4.13	3.78	2.40	0.05	2.47	2.68
Temperature	***deg C***	6.7	8.8	10.4	10.7	11.5	12.1	11.5	11.0	9.1	8.8	7.6	7.2	7.5	10.3	11.3	9.7	8.0	10.2	11.7	10.4	8.0	9.3	10.7	9.9
pH	***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	7.30	7.26	7.13	7.04	7.07	7.17	7.08	7.09	7.09
Specific Conductance	***µS/cm***	2043	1633	1805	1768	1478	1602	1941	1937	2014	2036	2262	2276	2085	1869	2074	2190	2232	2144	2072	2167	2170	2151	1964	1970
Oxygen Reduction Potential	***mV***	105.6	17.9	20.1	38.5	26.9	20.0	28.6	21.6	13.7	20.9	3.2	18.3	6.0	13.3	19.5	19.2	14.3	29.9	-52.7	-18.8	22.7	-10.6	-23.7	51.9
Lab Analytical Results:																									
Hardness as CaCO3	***mg/L***	990			1050			1030		963				1040	1060	1140	1150	1090	1160	1130	1180	1150	1080	1080	1060
pH (Lab)	***SU***	7.22			7.34			7.29		7.36				7.22	7.46	7.30	7.33	7.70	8.35	7.22	7.42	7.38	7.35	7.11	7.09
Total Dissolved Solids (Lab)	***mg/L***	1580			1480			1520		1520				1480	1510	1680	1740	1740	1740	1750	1720	1710	1670	1520	1480
Calcium	***mg/L***	197			208			206		186				205	211	219	226	211	216	221	230	226	214	214	208
Magnesium	***mg/L***	121			128			126		121				128	129	143	142	136	150	139	147	143	132	132	132
Sodium	***mg/L***	95.9			75.2			80.7		82.4				110	87.5	80.7	83.4	80.4	82.3	79.1	81.2	83.2	89.4	72.4	67.3
Potassium	***mg/L***	4.64			4.56			4.90		4.42				4.61	4.79	4.62	<5.00	4.73	4.98	5.01	5.00	5.01	4.77	4.92	4.85
Alkalinity, Total	***mg/L***	460			500			470		450				410	445	510	475	445	435	463	505	515	469	474	460
Alkalinity, Bicarbonate	***mg/L***	440			500			470		450				410	445	510	475	445	435	463	505	515	469	474	460
Alkalinity, Carbonate	***mg/L***	20.0			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<10			<10			<10		<10.0				<10.0	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	***mg/L***	81.0			76.3			62.3		70.1				72.5	72.5	68.7	68.9	66.7	60	57.2	57.5	67.2	67.8	49.9	48.2
Fluoride	***mg/L***	0.285			<0.5			<0.5		0.3				<0.500	0.332	<0.500	<0.500	<0.500	<0.500	<0.500	0.298	0.324	0.306	<0.500	<0.500
Sulfate as SO4	***mg/L***	671			595			656		676				731	702	779	772	832	714	733	741	801	709	627	627
Total Organic Carbon (TOC)	***mg/L***	3.54			4.1			3.15		3.02				3.40	3.54	3.34	3.26	3.37	3.5	3.51	3.63	3.82	4.87	4.27	3.30
Nitrate/Nitrite as N	***mg/L***	0.456			0.891			1.08		0.965				0.492	1.07	1.80	1.94	2.26	2.48	2.26	1.99	1.95	0.651	0.896	1.31
Ammonia as N ^	***mg/L***																								<0.100
Ortho-Phosphate as P ^	***mg/L***																								<0.0500
Aluminum	***mg/L***	<0.05			<0.05			<0.05		<0.050				<0.050	<0.1	<0.050	<0.250	<0.100	<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.100
Arsenic	***mg/L***	<0.0025			<0.0025			0.0005		0.0008				0.0009	0.0006	0.0005	0.0029	0.0009	0.0006	<0.0025	<0.001	<0.0010	0.0006	<0.0010	<0.0010
Cadmium	***mg/L***	<0.0005			<0.0005			<0.0005		<0.0001				<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002
Copper	***mg/L***	0.0018			0.0024			0.0020		0.0038				0.0023	0.0019	0.0025	0.0097	0.0020	0.0019	0.0018	0.0030	0.002	0.0021	0.0021	0.0012
Iron	***mg/L***	0.100			<0.05			0.060		0.136				0.286	0.161	<0.050	<0.250	0.132	0.151	0.125	0.121	0.151	0.379	0.287	0.209
Lead	***mg/L***	<0.0025			<0.0025			<0.0025		<0.0005				<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0005	<0.0005	<0.001	<0.0010	<0.0005	<0.0010	<0.0010
Manganese	***mg/L***	0.673			0.857			0.756		0.608				0.440	0.797	0.881	4.50	0.845	0.997	1.37	1.08	0.937	0.357	0.902	0.892
Mercury	***mg/L***	<0.0002			<0.0002			<0.0002		<0.0002				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<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	0.0093	0.0020	0.002	0.002	0.0019	0.0017	0.0014	0.0020	0.0017
Selenium	***mg/L***	<0.005			<0.005			0.0013		0.0023				0.0027	0.0019	0.0016	0.0087	0.0027	0.0025	0.0025	<0.002	0.0025	0.0016	<0.0020	<0.0020
Silica (Si02)	***mg/L***	13.9			16.1			16.4		14.3				14.7	15.5	16.1	13.4	14.1	15.9	16.2	15.9	14.1	13.2	15.4	14.9
Silicon	***mg/L***	6.51			7.53			7.67		6.69				6.85	7.22	7.54	6.29	6.58	7.42	7.58	7.44	6.6	6.19	7.20	6.96
Uranium	***mg/L***	0.0029			0.0021			0.0023		0.0026				0.0024	0.0021	0.0021	0.0110	0.0025	0.0024	0.0024	0.0032	0.0036	0.0044	0.0029	0.0023
Zinc	***mg/L***	0.0156			0.0364			0.0301		0.0269				0.0194	0.026	0.0208	0.0855	0.0216	0.0225	0.0214	0.0172	0.0175	0.0128	0.0138	0.0108
Radium 226	***pCi/L***	0.7 +/- 0.1			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radium 228	***pCi/L***	<0.8			NA			NA		NA				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-HGA-4																						
Year		2016	2017												2018					2019			
Quarter		Q4	Q1			Q2			Q3			Q4			Q1		Q2	Q3	Q4	Q1	Q2	Q3	Q4
Month		12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	5	8	11	2	5	8	11
Sample Date		12/12	1/26	2/28	3/22	4/27	5/31	6/13	7/27	8/16	9/21	10/27	11/28	12/12	1/3	2/22	5/15	8/9	11/8	2/28	5/23	8/16	11/13
Lab Analysis (Y/N)		Y	N	N	Y	N	N	Y	N	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																							
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.4	NM	0.1	1.5	2.0	1.0	1.1	1.0	1.0	0.3
Total Purged	gal	21	21	21	21	21	21	19.5	20	20	21	21	21	24	19	21	21	19	21	24	22	21	21
Depth to Water	ft bgs	0.73	0.57	0.60	0.83	0.94	2.06	2.53	3.25	2.65	3.31	3.31	1.76	4.31	1.37	0.55	2.60	3.98	1.90	0.49	0.42	1.95	1.15
Temperature	deg C	7.3	4.8	6.4	8.1	7.2	9.9	8.4	8.6	8.8	9.0	9.2	9.0	9.3	8.8	7.8	8.1	8.7	8.8	7.6	7.7	8.5	8.8
pH	SU	7.29	7.36	7.40	7.41	7.33	7.36	7.40	7.36	7.35	7.33	7.31	7.27	7.27	7.33	7.30	7.18	7.27	7.05	7.15	7.18	7.16	7.09
Specific Conductance	µS/cm	1284	1257	1201	1155	1153	1113	1055	1099	1050	1124	1072	1171	1160	1141	1154	1098	1057	1167	1183	1102	1083	1127
Oxygen Reduction Potential	mV	-72.1	-86.6	-105.1	-104.4	-74.5	-91.3	-134.7	-137.6	-131.0	-139.5	-77.3	-157.9	-70.1	-96.6	-157.3	-130.9	-230.8	-190.9	-128.3	-140.7	-130.9	-104.9
Lab Analytical Results:																							
Hardness as CaCO3	mg/L	724			611			616			522		595			561	555	524	625	613	563	544	624
pH (Lab)	SU	7.30			7.17			7.31			7.25		7.21			7.58	8.15	7.33	7.12	7.2	8.17	6.95	6.88
Total Dissolved Solids (Lab)	mg/L	855			710			715			750		775			740	730	695	770	795	695	695	715
Calcium	mg/L	147			118			121			102		118			110	108	102	124	122	110	106	123
Magnesium	mg/L	86.7			76.7			76.6			64.9		72.8			69.3	69	65.4	76.5	74.7	70.3	67.9	76.8
Sodium	mg/L	19.5			27.4			28.6			24.9		27.2			26.5	30.4	29.9	27.6	27	28.6	28.3	31.9
Potassium	mg/L	2.02			2.13			2.11			1.75		2.21			2.17	2.22	2.33	2.13	2.16	2.00	2.10	2.38
Alkalinity, Total	mg/L	545			465			415			465		475			460	425	410	460	455	445	455	432
Alkalinity, Bicarbonate	mg/L	545			465			415			465		475			460	425	410	460	455	445	455	432
Alkalinity, Carbonate	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	ND			<10.0			<10			<10.0		<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	10.9			8.75			7.95			8.96		8.74			8.43	7.57	6.47	9.40	10.5	8.06	8.44	9.46
Fluoride	mg/L	0.577			0.485			0.506			0.517		0.495			0.496	0.459	0.482	0.487	0.484	0.456	0.443	0.520
Sulfate as SO4	mg/L	240			229			192			205		204			222	190	169	201	221	186	212	190
Total Organic Carbon (TOC)	mg/L	NA			4.54			4.35			4.69		4.79			4.56	4.57	4.30	4.72	4.82	4.45	4.58	4.35
Nitrate/Nitrite as N	mg/L	<0.020			<0.020			<0.02			<0.020		<0.100			<0.020	<0.020	<0.020	<0.020	0.173	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																						0.528
Ortho-Phosphate as P ^	mg/L																						<0.0500
Aluminum	mg/L	0.423			<0.050			<0.05			<0.050		<0.050			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Arsenic	mg/L	0.0030			0.0029			0.0028			<0.0005		0.0035			0.0037	0.0034	0.0036	0.0032	0.0031	0.0029	0.0028	0.0033
Cadmium	mg/L	<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
Copper	mg/L	0.0006			0.0008			0.0002			0.0004		0.0002			0.0006	0.0008	0.0004	0.0008	<0.0010	0.0003	0.0004	0.0002
Iron	mg/L	3.71			7.29			7.32			0.378		7.84			7.60	7.92	8.55	8.44	8.35	7.98	8.38	9.76
Lead	mg/L	<0.0005			<0.0005			<0.0005			<0.0005		<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese	mg/L	4.07			2.78			2.37			2.03		2.11			1.99	1.81	1.58	2.13	2.56	2.12	1.84	1.78
Mercury	mg/L	ND			<0.0002			<0.0002			<0.0002		<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	mg/L	0.0013			0.0024			0.0027			0.0028		0.0027			0.0030	0.0031	0.0038	0.0029	0.0026	0.0027	0.0029	0.0031
Selenium	mg/L	<0.001			0.0030			<0.001			<0.0010		<0.0010			<0.0010	0.002	0.0016	<0.001	0.001	<0.0010	<0.0010	<0.0010
Silica (Si02)	mg/L	22.3			16.8			18			16.5		17.9			15.8	16.4	15.7	17.3	15.9	14.9	14.9	16.5
Silicon	mg/L	10.4			7.86			8.41			7.72		8.35			7.37	7.67	7.34	8.10	7.46	6.96	6.96	7.69
Uranium	mg/L	0.0010			0.0004			0.0004			0.0004		0.0004			0.0004	0.0004	0.0003	0.0005	0.0005	0.0004	0.0004	0.0003
Zinc	mg/L	0.0039			0.0046			<0.002			<0.0040		<0.0020			<0.002	<0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020	<0.0020

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-1-A																						
Year		2017								2018									2019			
Quarter		Q2	Q3				Q4			Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4
Month		6	7	8	9	9	10	11	12	1	2	3	4	5	6	7	8	11	2	5	8	11
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9	3/22	4/11	5/10	--	7/23	8/7	11/1	2/20	5/30	8/14	11/5
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y
Field Parameters:																						
Purge Flow Rate	*gpm*	NM	NM*	NM*	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	***	0.1	0.1	0.1	0.12	0.1	0.1	0.3
Total Purged	*gal*	12.8	NM*	NM*	NM	NM	2	2	1	1.5	2	1.5	1	1.3		1.5	1.5	1.6	1.0	1.5	1.12	1.5
Depth to Water	*ft bgs*	215.42	NM*	215.92	215.54	216.33	216.31	216.47	216.58	216.21	216.47	216.47	216.54	216.54		216.63	216.63	216.65	216.55	216.43	216.33	216.13
Temperature	*deg C*	17.7	NM*	NM*	10.7	9.7	9.1	9.1	8.7	9.5	9.0	8.7	9.6	9.2		9.9	10.0	8.9	7.5	10.3	9.6	9.7
pH	*SU*	7.78	NM*	NM*	7.35	7.38	7.29	7.28	7.25	7.19	7.37	7.28	6.8	6.97		6.99	7.05	7.01	7.13	6.96	7.05	7.00
Specific Conductance	*µS/cm*	1362	NM*	NM*	1555	1563	1616	1650	1693	1700	1723	1735	1647	1761		1734	1815	1781	1776	1681	1757	1737
Oxygen Reduction Potential	*mV*	-34.6	NM*	NM*	-54.7	-46.5	-50	-48.3	-49.6	-44.6	-52.8	-37.5	142.4	0.4		-26.4	-33.2	101.4	-11.8	25.4	-18.71	3.59
Lab Analytical Results:																						
Hardness as CaCO3	*mg/L*	124				133		130			159			156			160	174	159	153	148	150
pH (Lab)	*SU*	7.74				7.35		7.33			7.22			7.45			7.17	7.27	7.13	7.03	7.14	6.92
Total Dissolved Solids (Lab)	*mg/L*	975				1080		1120			1100			1150			1040	1130	1160	1150	1150	1140
Calcium	*mg/L*	24.7				25.8		24.9			30.5			29.7			30.9	34.0	31.2	29.8	27.9	29.0
Magnesium	*mg/L*	15.1				16.7		16.6			20.1			19.9			20.1	21.5	19.7	19.1	18.9	18.8
Sodium	*mg/L*	324				329		325			348			327			333	358	357	319	348	333
Potassium	*mg/L*	1.98				2.02		<5.00			<5.00			2.12			2.23	2.47	2.34	2.18	2.29	2.12
Alkalinity, Total	*mg/L*	375				450		380			415			353			385	395	375	355	368	420
Alkalinity, Bicarbonate	*mg/L*	375				450		380			415			353			385	395	375	355	368	420
Alkalinity, Carbonate	*mg/L*	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10	<10.0	<10	<10.0	<10.0
Alkalinity, Hydroxide	*mg/L*	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10	<10.0	<10	<10.0	<10.0
Chloride	*mg/L*	2.75				2.16		<5.00			2.19			<5			2.12	2.20	2.74	2.33	2.72	2.66
Fluoride	*mg/L*	0.268				0.245		<0.500			0.240			<0.5			0.260	0.240	0.266	0.242	0.252	0.246
Sulfate as SO4	*mg/L*	427				432		511			518			522			515	511	508	494	537	495
Total Organic Carbon (TOC)	*mg/L*	5.03				1.36		1.58			1.51			1.54			1.60	1.75	1.61	1.67	1.59	1.50
Nitrate/Nitrite as N	*mg/L*	<0.200				<0.400		<0.100			<0.020			<0.02			<0.02	0.028	<0.020	<0.02	<0.020	0.020
Ammonia as N ^	*mg/L*																					0.387
Ortho-Phosphate as P ^	*mg/L*																					<0.0500
Aluminum	*mg/L*	<0.050				<0.050		<0.250			<0.250			<0.05			<0.05	<0.1	<0.100	<0.05	<0.050	<0.050
Arsenic	*mg/L*	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
Cadmium	*mg/L*	<0.0001				<0.0001		<0.0005			<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001
Copper	*mg/L*	0.0043				0.0057		0.0045			0.0066			0.0041			0.0048	0.0048	0.0075	0.0064	0.0040	0.0147
Iron	*mg/L*	0.128				0.367		<0.250			0.590			0.614			0.644	0.647	0.581	0.589	0.613	0.510
Lead	*mg/L*	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
Manganese	*mg/L*	0.0260				0.0218		0.0259			0.0279			0.026			0.0242	0.0282	0.0281	0.0235	0.0270	0.0248
Mercury	*mg/L*	<0.0002				<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	*mg/L*	0.0007				0.0010		<0.0025			<0.0025			0.0009			0.0008	0.0007	<0.0010	<0.0005	<0.0005	<0.0005
Selenium	*mg/L*	<0.0010				<0.0010		<0.0050			<0.0050			<0.001			<0.001	<0.001	<0.0020	<0.001	<0.0010	<0.0010
Silica (Si02)	*mg/L*	12.3				11.9		8.27			11.2			11.2			11.4	12.0	11.1	11.2	11.6	11.0
Silicon	*mg/L*	5.74				5.56		3.87			5.24			5.25			5.31	5.62	5.2	5.23	5.43	5.13
Uranium	*mg/L*	0.0004				0.0002		<0.0005			<0.0005			0.0003			0.0002	0.0003	0.0002	0.0001	0.0001	0.0001
Zinc	*mg/L*	0.0270				0.0088		<0.0100			<0.0100			0.0051			<0.0100	<0.002	<0.0040	0.0022	<0.0040	0.0020

Notes & Definitions:

*** *La Plata County stage 3 fire restrictions prevented sampling activity*

^ one-time analysis

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.*

GCC Energy Hydrologic Monitoring Data

MW-1-MI																				
Year		2017							2018								2019			
Quarter		Q2	Q3			Q4			Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4
Month		6	7	8	9	10	11	12	**1**	2	3	4	5	6	7	8	11	2	5	8	11
Sample Date		6/7	7/18	8/23	9/26	10/26	11/16	12/5	**1/2**	2/9	3/22	4/11	5/10	--	7/23	8/7	11/1	2/20	5/30	8/14	11/5
Lab Analysis (Y/N)		Y	N	N	N	N	N	N	**N**	N	N	N	N	N	N	Y	N	N	N	N	N
Field Parameters:																					
Purge Flow Rate	*gpm*	NM	NM*	NM	NM																NM#
Total Purged	*gal*	19.5	NM*	<0.5	NM																NM#
Depth to Water	*ft bgs*	259.99	NM*	258.29	258.34																259.35
Temperature	*deg C*	15.8	NM*	11.8	21.7	dry	dry	dry	dry	dry	dry	dry	dry	***	dry	dry	dry	dry	dry	dry	NM#
pH	*SU*	8	NM*	7.94	7.86																NM#
Specific Conductance	*µS/cm*	2032	NM*	2137	2119																NM#
Oxygen Reduction Potential	*mV*	160.5	NM*	65.7	61.4																NM#
Lab Analytical Results:																					
Hardness as CaCO3	*mg/L*	231																			
pH (Lab)	*SU*	8.14																			
Total Dissolved Solids (Lab)	*mg/L*	1520																			
Calcium	*mg/L*	46.7																			
Magnesium	*mg/L*	27.9																			
Sodium	*mg/L*	470																			
Potassium	*mg/L*	2.55																			
Alkalinity, Total	*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																			
Ammonia as N ^	*mg/L*																				
Ortho-Phosphate as P ^	*mg/L*																				
Aluminum	*mg/L*	<0.050																			
Arsenic	*mg/L*	0.0029																			
Cadmium	*mg/L*	<0.0001																			
Copper	*mg/L*	0.0067																			
Iron	*mg/L*	<0.050																			
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																			

Notes & Definitions:

***Pump removed after two years of water level being measured below top of pump and no water produced to surface. The original pump installation placed the intake 1 foot off bottom of well at 260.55 feet below ground surface. The pump is 3 feet long with intake at the bottom so there was not enough water volume to make it to surface.***

******* ***La Plata County stage 3 fire restrictions prevented sampling activity***

^ **one-time analysis**

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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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.*

GCC Energy Hydrologic Monitoring Data

MW-1-C

Year		2017								2018									2019			
Quarter		Q2	Q3			Q4				Q1			Q2		Q3			Q4	Q1	Q2	Q3	Q4
Month		6	7	8	9	9	10	11	12	1	2	3	4	5	6	7	8	11	2	5	8	11
Sample Date		6/7	7/18	8/23	9/7	9/26	10/26	11/16	12/5	1/2	2/9	3/22	4/11	5/10	--	7/23	8/7	11/18	2/20	5/30	8/14	11/5
Lab Analysis (Y/N)		Y	N	N	N	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y
Field Parameters:																						
Purge Flow Rate	gpm	NM	NM*	NM*	NM	NM	NM	NM	NM	MM	0.1	NM	0.1	0.1	***	0.05	0.1	0.1	0.06	0.02	0.03	0.01
Total Purged	gal	5	NM*	NM*	NM	NM	1.00	1	1	1	1	1	1	1.25		1	1	1.1	1	1.1	1	1
Depth to Water	ft bgs	216.5	NM*	216.91	216.95	216.59	216.52	216.48	216.52	216.38	216.38	216.37	216.35	216.41		216.41	216.05	216.04	216.41	216.20	216.02	216.04
Temperature	deg C	16.0	NM*	NM*	NM	12.9	11.7	10.6	7.0	9.7	9.6	6.7	9.2	10.5		20.0	14.1	9.7	5.4	9.8	10.4	11.1
pH	SU	7.52	NM*	NM*	NM	7.17	7.16	7.15	7.17	7.11	7.19	7.32	7.03	7.05		6.91	6.97	6.93	7.09	6.80	6.65	6.70
Specific Conductance	µS/cm	2446	NM*	NM*	NM	2725	2738	2739	2778	2778	2738	2751	2700	2749		2693	2675	2751	2621	3139	3172	3080
Oxygen Reduction Potential	mV	74.3	NM*	NM*	NM	77.4	31.7	23.9	13.0	6.2	-4.3	-29.6	-15.3	-42.3		-41.8	-32.5	-110.0	-23.4	27.6	10.5	51.0
Lab Analytical Results:																						
Hardness as CaCO3	mg/L	498				1290		1180			1190			1130			1120	1180	1010	1820	1840	1700
pH (Lab)	SU	8.35				7.36		7.34			7.22			7.2			7.20	7.02	7.24	6.93	6.67	6.63
Total Dissolved Solids (Lab)	mg/L	2020				2440		2360			2360			2340			2170	2200	1960	2880	2890	2750
Calcium	mg/L	96.0				234		216			219			203			203	219	188	340	342	318
Magnesium	mg/L	62.8				172		155			156			150			148	154	131	237	240	219
Sodium	mg/L	506				242		253			260			239			239	255	265	146	119	119
Potassium	mg/L	11.4				3.81		<5.00			<5.00			3.07			3.04	2.65	3.13	<5	<5.00	<5.00
Alkalinity, Total	mg/L	530				700		540			570			580			560	410	525	530	518	505
Alkalinity, Bicarbonate	mg/L	530				700		540			570			580			560	410	525	530	518	505
Alkalinity, Carbonate	mg/L	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10.0	<10.0	<10	<10.0	<10.0
Alkalinity, Hydroxide	mg/L	<10.0				<10.0		<10.0			<10.0			<10.0			<10.0	<10.0	<10.0	<10	<10.0	<10.0
Chloride	mg/L	24.2				6.97		8.03			7.78			7.75			5.97	6.22	6.36	10.2	9.31	8.78
Fluoride	mg/L	1.59				0.864		0.955			1.03			0.96			0.888	0.924	0.975	0.67	0.525	0.565
Sulfate as SO4	mg/L	1090				1350		1230			1160			1210			1090	1080	1070	1630	1730	1520
Total Organic Carbon (TOC)	mg/L	4.56				2.84		2.12			2.21			2.2			2.35	2.37	2.32	2.62	2.52	2.30
Nitrate/Nitrite as N	mg/L	<2.00				<0.400		<0.100			<0.020			<0.02			0.036	<0.02	<0.020	<0.02	<0.020	<0.020
Ammonia as N ^	mg/L																					0.140
Ortho-Phosphate as P ^	mg/L																					<0.0500
Aluminum	mg/L	<0.050				<0.050		<0.250			<0.250			<0.05			<0.05	<0.10	<0.100	<0.25	<0.250	<0.250
Arsenic	mg/L	0.0029				0.0016		<0.0025			<0.0025			0.0051			0.0052	0.0035	0.0038	0.0048	0.0034	<0.0025
Cadmium	mg/L	<0.0001				<0.0001		<0.0005			<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0002	<0.0005
Copper	mg/L	0.0088				0.0085		0.0036			0.0052			0.003			0.0049	0.0033	0.0054	0.0057	0.0014	0.0096
Iron	mg/L	<0.050				<0.050		<0.250			<0.250			0.643			1.01	1.12	0.988	2.3	0.819	0.543
Lead	mg/L	<0.0005				<0.0005		<0.0025			<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025
Manganese	mg/L	0.0744				0.0853		0.0959			0.0989			0.153			0.140	0.106	0.0807	0.075	0.0562	0.0512
Mercury	mg/L	<0.0002				<0.0002		<0.0002			<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.0164				0.0049		<0.0025			<0.0025			0.0006			<0.0025	<0.0005	<0.0010	<0.0005	<0.0010	<0.0025
Selenium	mg/L	0.0136				0.0012		<0.0050			<0.0050			<0.001			<0.0050	0.0011	<0.0020	0.0016	0.0023	<0.0050
Silica (Si02)	mg/L	10.6				16.6		13.2			14.8			15.2			14.7	14.5	14	16.6	17.3	16.4
Silicon	mg/L	4.94				7.77		6.16			6.94			7.09			6.87	6.78	6.55	7.75	8.07	7.65
Uranium	mg/L	0.0500				0.0044		0.0028			0.0024			0.0025			0.0022	0.0021	0.0016	0.002	0.0025	0.0023
Zinc	mg/L	0.0293				0.0294		<0.0100			<0.0100			0.0062			<0.0100	0.0055	<0.0040	0.0085	0.0077	<0.0100

Notes & Definitions:

*** *La Plata County stage 3 fire restrictions prevented sampling activity*

^ one-time analysis

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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GCC Energy Hydrologic Monitoring Data

MW-2-A																			
Year		2017							2018							2019			
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Field Parameters:																			
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal																		
Depth to Water	ft bgs																		
Temperature	deg C																		
pH	SU																		
Specific Conductance	µS/cm																		
Oxygen Reduction Potential	mV																		
Lab Analytical Results:																			
Hardness as CaCO3	mg/L																		
pH (Lab)	SU																		
Total Dissolved Solids (Lab)	mg/L																		
Calcium	mg/L																		
Magnesium	mg/L																		
Sodium	mg/L																		
Potassium	mg/L																		
Alkalinity, Total	mg/L																		
Alkalinity, Bicarbonate	mg/L																		
Alkalinity, Carbonate	mg/L																		
Alkalinity, Hydroxide	mg/L																		
Chloride	mg/L																		
Fluoride	mg/L																		
Sulfate as SO4	mg/L																		
Total Organic Carbon (TOC)	mg/L																		
Nitrate/Nitrite as N	mg/L																		
Ammonia as N ^	mg/L																		
Ortho-Phosphate as P ^	mg/L																		
Aluminum	mg/L																		
Arsenic	mg/L																		
Cadmium	mg/L																		
Copper	mg/L																		
Iron	mg/L																		
Lead	mg/L																		
Manganese	mg/L																		
Mercury	mg/L																		
Molybdenum	mg/L																		
Selenium	mg/L																		
Silica (Si02)	mg/L																		
Silicon	mg/L																		
Uranium	mg/L																		
Zinc	mg/L																		

Notes & Definitions:

^	one-time analysis
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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GCC Energy Hydrologic Monitoring Data

MW-2-MI

Year		2017							2018							2019			
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Field Parameters:																			
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal																		
Depth to Water	ft bgs																		
Temperature	deg C																		
pH	SU																		
Specific Conductance	µS/cm																		
Oxygen Reduction Potential	mV																		
Lab Analytical Results:																			
Hardness as CaCO3	mg/L																		
pH (Lab)	SU																		
Total Dissolved Solids (Lab)	mg/L																		
Calcium	mg/L																		
Magnesium	mg/L																		
Sodium	mg/L																		
Potassium	mg/L																		
Alkalinity, Total	mg/L																		
Alkalinity, Bicarbonate	mg/L																		
Alkalinity, Carbonate	mg/L																		
Alkalinity, Hydroxide	mg/L																		
Chloride	mg/L																		
Fluoride	mg/L																		
Sulfate as SO4	mg/L																		
Total Organic Carbon (TOC)	mg/L																		
Nitrate/Nitrite as N	mg/L																		
Ammonia as N ^	mg/L																		
Ortho-Phosphate as P ^	mg/L																		
Aluminum	mg/L																		
Arsenic	mg/L																		
Cadmium	mg/L																		
Copper	mg/L																		
Iron	mg/L																		
Lead	mg/L																		
Manganese	mg/L																		
Mercury	mg/L																		
Molybdenum	mg/L																		
Selenium	mg/L																		
Silica (Si02)	mg/L																		
Silicon	mg/L																		
Uranium	mg/L																		
Zinc	mg/L																		

Notes & Definitions:

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Y/N	yes or no
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GCC Energy Hydrologic Monitoring Data

MW-2-C																			
Year		2017							2018							2019			
Quarter		Q1	Q2	Q3		Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/30	6/7	7/18	8/23	10/30	11/16	12/5	1/2	2/9	3/22	4/11	5/10	8/7	11/1	2/20	5/29	8/14	11/6
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Field Parameters:																			
Purge Flow Rate	*gpm*	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	*gal*																		
Depth to Water	*ft bgs*																		
Temperature	*deg C*																		
pH	*SU*																		
Specific Conductance	*µS/cm*																		
Oxygen Reduction Potential	*mV*																		
Lab Analytical Results:																			
Hardness as CaCO3	*mg/L*																		
pH (Lab)	*SU*																		
Total Dissolved Solids (Lab)	*mg/L*																		
Calcium	*mg/L*													`					
Magnesium	*mg/L*																		
Sodium	*mg/L*																		
Potassium	*mg/L*																		
Alkalinity, Total	*mg/L*																		
Alkalinity, Bicarbonate	*mg/L*																		
Alkalinity, Carbonate	*mg/L*																		
Alkalinity, Hydroxide	*mg/L*																		
Chloride	*mg/L*																		
Fluoride	*mg/L*																		
Sulfate as SO4	*mg/L*																		
Total Organic Carbon (TOC)	*mg/L*																		
Nitrate/Nitrite as N	*mg/L*																		
Ammonia as N ^	*mg/L*																		
Ortho-Phosphate as P ^	*mg/L*																		
Aluminum	*mg/L*																		
Arsenic	*mg/L*																		
Cadmium	*mg/L*																		
Copper	*mg/L*																		
Iron	*mg/L*																		
Lead	*mg/L*																		
Manganese	*mg/L*																		
Mercury	*mg/L*																		
Molybdenum	*mg/L*																		
Selenium	*mg/L*																		
Silica (Si02)	*mg/L*																		
Silicon	*mg/L*																		
Uranium	*mg/L*																		
Zinc	*mg/L*																		

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-3-A																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/27	6/30	7/18	8/24	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/14	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	***gpm***	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3
Total Purged	***gal***	30	2.0	NM	NM	NM	1.0	1.0	1.0	1.3	1.5	1.5	1	1.25	1	1.1	1.5	1.3	1.3	1.5
Depth to Water	***ft bgs***	297.35	298.24	297.45	298.24	298.11	298.12	298.01	298.05	298.37	298.04	297.86	297.76	298.17	298.55	298.27	297.85	296.79	297.27	297.33
Temperature	***deg C***	11.7	13.2	19.5	12.6	12.3	12.5	11.7	12.0	11.8	11.7	12.2	11.9	13.5	13.5	11.9	11.8	12.1	NM	13.1
pH	***SU***	8.82	8.75	8.56	8.67	8.72	8.64	8.61	8.57	8.54	8.52	8.61	8.21	8.38	8.30	8.31	8.28	8.31	8.13	8.51
Specific Conductance	***µS/cm***	2535	2446	2115	2524	2470	2430	2483	2494	2528	2506	2458	2415	2253	2336	2391	2355	2309	NM	2204
Oxygen Reduction Potential	***mV***	-269.0	-101.5	-55.3	-87.4	-142.3	-124.5	-125.6	-146.8	-120.3	-125.2	-181.6	-135.8	-138.2	-155.8	-164.6	-145.9	-132.3	-138.6	-120.1
Lab Analytical Results:																				
Hardness as CaCO3	***mg/L***	7.53	12.6			12.6		10.4			11.5			11.2	12.6	14.1	11.9	10.7	10.4	11.1
pH (Lab)	***SU***	8.63	8.69			8.53		8.29			8.45			8.36	8.37	8.24	8.28	8.29	8.27	8.39
Total Dissolved Solids (Lab)	***mg/L***	1630	1670			1630		1690			1680			1670	1600	1540	1500	1530	1520	1510
Calcium	***mg/L***	2.00	3.67			3.63		3.27			3.33			3.2	3.71	4.15	3.55	3.16	3.08	3.34
Magnesium	***mg/L***	0.616	0.823			0.859		0.550			0.776			0.774	0.811	0.913	0.739	0.692	0.655	0.680
Sodium	***mg/L***	566	585			589		551			562			542	562	605	543	525	553	528
Potassium	***mg/L***	1.72	2.02			2.04		<5.00			<2.00			1.8	<2.00	2.17	<2.00	1.92	<2.00	<5.00
Alkalinity, Total	***mg/L***	530	470			500		490			430			480	480	475	540	450	459	420
Alkalinity, Bicarbonate	***mg/L***	380	470			440		460			360			480	420	385	330	430	423	420
Alkalinity, Carbonate	***mg/L***	150	<10.0			60.0		30.0			70.0			<10.0	60.0	90.0	210	20	36.0	<10.0
Alkalinity, Hydroxide	***mg/L***	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10	<10.0	<10.0
Chloride	***mg/L***	16.1	17.4			18.5		16.9			16.4			16.1	15.1	16.0	15.2	15	15.0	14.7
Fluoride	***mg/L***	0.464	0.488			0.535		<0.500			<0.500			<0.5	NA	0.383	0.406	0.404	0.396	<0.500
Sulfate as SO4	***mg/L***	729	802			840		730			812			756	706	682	716	699	724	633
Total Organic Carbon (TOC)	***mg/L***	3.52	10.0			7.26		6.07			5.32			4.7	4.62	4.52	4.15	4.10	3.84	3.81
Nitrate/Nitrite as N	***mg/L***	<0.100	<0.100			<0.020		<0.020			<0.020			<0.02	<0.02	<0.02	0.266	<0.02	<0.020	<0.020
Ammonia as N ^	***mg/L***																			0.354
Ortho-Phosphate as P ^	***mg/L***																			0.0730
Aluminum	***mg/L***	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.10	<0.100	<0.05	<0.100	<0.250
Arsenic	***mg/L***	0.0025	<0.0025			<0.0025		<0.0025			<0.0025			0.0006	<0.0025	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010
Cadmium	***mg/L***	<0.0001	<0.0005			<0.0005		<0.0005			<0.0005			<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Copper	***mg/L***	0.0061	0.0081			0.0080		0.0079			0.0236			0.0063	0.0117	0.0086	0.0137	0.0078	0.0067	0.0039
Iron	***mg/L***	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.05	<0.100	<0.250
Lead	***mg/L***	<0.0005	<0.0025			<0.0025		<0.0025			<0.0025			<0.0005	<0.0005	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010
Manganese	***mg/L***	0.0042	0.0251			0.0194		0.0269			0.0232			0.018	0.0222	0.0187	0.0172	0.0185	0.0166	0.0140
Mercury	***mg/L***	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	***mg/L***	0.0005	0.0274			0.0091		0.0078			0.0065			0.0046	0.0043	0.0033	0.003	0.003	0.0018	0.0027
Selenium	***mg/L***	0.0577	<0.0050			<0.0050		<0.0050			<0.0050			0.0109	<0.0050	0.0028	0.0039	<0.005	0.0020	<0.0020
Silica (Si02)	***mg/L***	10.1	10.9			11.6		7.66			11.1			11	12.0	12.8	11.7	11	12.7	11.8
Silicon	***mg/L***	4.70	5.10			5.41		3.58			5.18			5.17	5.62	5.97	5.46	5.16	5.95	5.53
Uranium	***mg/L***	0.0002	0.0040			0.0051		0.0036			0.0030			0.0026	0.0026	0.0027	0.0018	0.0014	0.0012	0.0011
Zinc	***mg/L***	0.0031	<0.0100			<0.0100		<0.0100			<0.0100			<0.002	<0.002	<0.0040	<0.0040	<0.01	<0.0080	<0.0040

Notes & Definitions:

^	**one-time analysis**
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.*

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GCC Energy Hydrologic Monitoring Data

MW-3-MI																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/27	6/30	7/18	8/16	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	8/21	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.12	0.12	0.06	0.25
Total Purged	gal	19.0	2.0	NM	NM	NM	1.0	1.0	1.0	1.3	1.5	1.5	1.0	1.3	1.0	1.1	1.5	1.3	2.0	1.0
Depth to Water	ft bgs	304.49	241.15	240.46	240.53	240.46	240.44	240.44	240.58	240.73	240.55	240.65	240.84	241.04	241.97	242.13	242.15	242.32	246.55	243.07
Temperature	deg C	10.0	12.6	22.0	12.9	11.0	12.1	11.7	11.7	11.9	11.3	11.9	11.8	12.6	13.0	12.4	11.6	11.3	13.2	12.3
pH	SU	9.34	8.94	8.46	8.9	8.74	8.9	8.86	8.86	8.84	8.83	8.84	8.51	8.48	8.49	8.46	8.51	8.55	8.71	8.75
Specific Conductance	µS/cm	1907	1699	1402	1598	1737	1729	1745	1786	1790	1810	1771	1772	1727	1709	1746	1753	1739	1691	1739
Oxygen Reduction Potential	mV	-87	-54.5	-26.4	-108.2	-107.3	-113.8	-124.2	-163.1	-136	-131.4	-160.7	-99.9	-103.9	-127.8	-176.5	-113	-84.5	43.87	-130.83
Lab Analytical Results:																				
Hardness as CaCO3	mg/L	4.85	8.73			9.02		7.75			9.92			8.65	8.63	8.88	7.63	6.84	7.98	6.64
pH (Lab)	SU	8.95	8.75			8.72		8.72			8.66			8.56	8.58	8.34	8.5	8.45	8.58	8.62
Total Dissolved Solids (Lab)	mg/L	1550	1120			1140		1080			1170			1210	1110	1120	1120	1170	1010	1130
Calcium	mg/L	1.32	2.32			2.34		2.06			2.22			1.91	1.95	2.03	1.87	1.7	2.04	1.73
Magnesium	mg/L	0.374	0.714			0.775		0.632			1.07			0.945	0.911	0.926	0.715	0.629	0.703	0.561
Sodium	mg/L	420	430			440		411			459			417	446	476	434	419	454	437
Potassium	mg/L	2.15	2.21			1.93		<5.00			<2.00			1.63	<2.00	<2.00	1.39	1.65	<2.00	<5.00
Alkalinity, Total	mg/L	740	675			700		660			700			680	730	720	685	755	720	690
Alkalinity, Bicarbonate	mg/L	510	555			600		570			600			500	630	610	485	605	590	610
Alkalinity, Carbonate	mg/L	230	120			100		90.0			100			180	100	110	200	150	130	80.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	8.66	10.1			10.7		10.6			10.7			10.7	8.54	8.83	9.21	9.25	10.2	9.13
Fluoride	mg/L	0.952	1.34			1.26		1.26			1.30			1.2	1.16	1.19	1.21	1.22	1.19	1.19
Sulfate as SO4	mg/L	165	241			247		254			245			250	226	230	232	229	236	224
Total Organic Carbon (TOC)	mg/L	8.34	14.8			10.9		10.3			9.24			8.67	7.83	7.28	6.73	6.56	6.17	5.78
Nitrate/Nitrite as N	mg/L	<0.020	<0.020			<0.020		<0.020			<0.020			<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.317
Ortho-Phosphate as P ^	mg/L																			0.3480
Aluminum	mg/L	<0.050	0.102			<0.050		<0.250			<0.100			<0.05	<0.05	<0.10	<0.050	<0.050	0.167	<0.250
Arsenic	mg/L	0.0134	0.0167			0.0131		0.0135			0.0160			0.0152	0.0127	0.0104	0.0149	0.0107	0.0142	0.0099
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0005	<0.0001	<0.0002
Copper	mg/L	0.0055	0.0058			0.0065		0.0059			0.0122			0.0048	0.0071	0.0073	0.0068	0.0063	0.0049	0.0037
Iron	mg/L	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.05	<0.1	<0.050	<0.050	<0.100	<0.250
Lead	mg/L	0.0024	<0.0025			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.001	<0.0005	<0.0025	<0.0005	<0.0010
Manganese	mg/L	0.0022	0.0058			0.0033		0.0045			0.0049			0.006	0.0054	0.0072	0.0078	0.0082	0.0079	0.0099
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	mg/L	0.0061	0.0211			0.0148		0.0152			0.0170			0.016	0.0149	0.0158	0.0157	0.0167	0.0277	0.0372
Selenium	mg/L	0.0013	<0.0050			<0.0050		<0.0050			0.0010			0.0019	<0.0050	<0.002	0.0034	<0.005	<0.0010	<0.0020
Silica (Si02)	mg/L	7.97	8.18			9.05		5.35			9.33			8.83	9.49	10.2	8.95	8.85	9.73	9.46
Silicon	mg/L	3.73	3.82			4.23		2.50			4.36			4.13	4.44	4.76	4.18	4.14	4.55	4.42
Uranium	mg/L	0.0049	0.0084			0.0140		0.0124			0.0125			0.0126	0.0111	0.0110	0.011	0.0085	0.0080	0.0070
Zinc	mg/L	0.0405	<0.0100			<0.0100		<0.0100			<0.0020			0.0023	0.0023	<0.0040	0.0028	<0.01	0.0070	<0.0040

Notes & Definitions:

^	one-time analysis
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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GCC Energy Hydrologic Monitoring Data

MW-3-C																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	9	11
Sample Date		3/27	6/30	7/27	8/24	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/7	8/8	11/6	2/27	5/21	9/17	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	gpm	0.5	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.10	0.06	0.06	0.13	0.13
Total Purged	gal	20	2	NM	NM	NM	1	1	1	1.5	1.5	1.5	1	1.3	1.3	1.1	1.25	1.5	10	1.5
Depth to Water	ft bgs	304.21	296.3	296.93	296.87	297.43	297.46	297.43	297.35	297.01	296.66	296.57	296.62	296.78	297.12	296.8	296.39	295.56	295.7	295.5
Temperature	deg C	10.5	12.9	13.1	12.5	11.8	12.7	11.5	11.7	11.7	11.4	11.6	12.2	13.0	13.3	11.5	11.0	11.4	13.5	12.5
pH	SU	8.61	8.57	8.51	8.46	8.44	8.48	8.41	8.48	8.43	8.43	8.45	8.25	8.28	8.26	8.17	8.28	8.29	8.31	8.20
Specific Conductance	µS/cm	3549	3588	3815	4112	4351	4412	4659	4596	4923	4864	5063	5019	4916	4953	5127	5155	5184	5144	5144
Oxygen Reduction Potential	mV	-129.0	-87.2	-137.5	-128.8	-149.9	-198.3	-200.7	-222.2	-187.9	-183.5	-155.4	-154.7	-161.4	-180.5	-217.6	-185.4	-188.5	-151.8	-184.4
Lab Analytical Results:																				
Hardness as CaCO3	mg/L	14.4	11.8			15.1		14.9			16.1			40.3	17.9	21.7	17.3	16.8	18.6	18.6
pH (Lab)	SU	8.5	8.48			8.35		8.28			8.35			8.34	8.31	8.24	8.2	8.23	8.31	8.12
Total Dissolved Solids (Lab)	mg/L	2130	2360			3070		3310			3540			3610	3520	3360	3300	3440	3500	3390
Calcium	mg/L	3.60	2.87			3.50		3.58			3.81			7.28	4.01	4.70	4.05	3.74	4.30	4.23
Magnesium	mg/L	1.31	1.12			1.55		1.44			1.59			5.38	1.92	2.41	1.75	1.8	1.91	1.94
Sodium	mg/L	796	890			1100		1130			1200			1350	1220	1460	1270	1100	1360	1300
Potassium	mg/L	3.47	3.24			4.01		<5.00			<10.0			<5.00	<5.00	<5.00	<5.00	5.24	<5.00	<10.0
Alkalinity, Total	mg/L	1490	1570			1690		1880			1910			1760	1730	2050	2000	2110	2190	2130
Alkalinity, Bicarbonate	mg/L	1360	1480			1650		1830			1810			1600	1670	1900	1830	2000	2020	2070
Alkalinity, Carbonate	mg/L	130	90.0			40.0		50.0			100			160	60.0	150	170	110	170	60.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10	NA	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	mg/L	182	330			477		506			549			544	524	561	577	575	620	542
Fluoride	mg/L	4.89	4.94			4.52		4.34			4.15			3.52	3.84	4.04	4.04	3.91	3.78	3.66
Sulfate as SO4	mg/L	73.4	73.5			46.4		24.5			<10.0			<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Total Organic Carbon (TOC)	mg/L	10.6	58.5			219		251			337			343	306	141	122	129	132	107
Nitrate/Nitrite as N	mg/L	<0.020	<0.400			<0.400		<0.020			<0.020			<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.500
Ortho-Phosphate as P ^	mg/L																			0.2120
Aluminum	mg/L	<0.050	<0.100			<0.050		<0.250			<0.500			1.47	<0.500	<0.250	<0.250	<0.500	<0.250	<0.500
Arsenic	mg/L	0.0115	0.0088			0.0098		0.0091			0.0194			0.0168	0.0148	0.0155	0.0218	0.0171	0.0192	0.0188
Cadmium	mg/L	<0.0001	<0.0010			<0.0010		<0.0005			<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005
Copper	mg/L	0.0109	0.0147			0.0174		0.0160			0.0409			0.0183	0.0257	0.0227	0.0223	0.0168	0.0102	0.0109
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.500			0.252	<0.500	<0.250	<0.250	0.344	0.328	<0.500
Lead	mg/L	0.0085	<0.0050			<0.0050		<0.0025			<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025
Manganese	mg/L	0.0091	0.0188			0.0178		0.0202			0.0307			0.0275	0.0243	0.0252	0.0483	0.063	0.0378	0.0266
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	mg/L	0.0143	0.0291			0.0241		0.0241			0.0221			0.0189	0.0155	0.0140	0.0134	0.0121	0.0081	0.0075
Selenium	mg/L	0.0233	0.0121			0.0149		0.0240			0.0383			0.0268	0.0232	0.0261	0.0464	0.0203	0.0203	0.0173
Silica (Si02)	mg/L	7.82	8.86			9.16		6.01			<10.7			9.69	8.68	10.7	8.24	8.35	9.06	<10.7
Silicon	mg/L	3.66	4.14			4.28		2.81			<5.00			4.53	4.06	5.01	3.85	3.9	4.24	<5.00
Uranium	mg/L	0.0091	0.0102			0.0137		0.0100			0.0091			0.0087	0.0089	0.0113	0.0077	0.0046	0.0053	0.0034
Zinc	mg/L	0.375	<0.0200			<0.0200		<0.0100			<0.0100			<0.01	0.0664	0.0814	0.123	0.128	0.0567	0.0886

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-4-A																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/29	6/30	7/19	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	gpm	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.06	0.06	0.06	0.13
Total Purged	gal	19	2	1.5	0.5	1	1	1	1	1.3	1.5	1.5	1	1.5	1.5	1.1	1.5	1.25	1.125	1
Depth to Water	ft bgs	338.6	334.96	335.59	334.79	334.81	334.86	332.29	334.09	334.31	334.73	334.81	335.07	335.58	336.06	336.73	335.6	335.07	335.21	335.16
Temperature	deg C	15.6	16.8	25.5	17.6	11.9	11.6	10.8	10.1	10.9	9.8	11.4	10.9	17.8	12.9	11.6	11.1	10.4	13.6	11.6
pH	SU	8.61	8.29	8.55	7.98	8.41	8.32	8.38	8.32	8.33	8.37	8.41	8.19	8.2	8.1	8.12	8.15	8.08	8.02	8.11
Specific Conductance	µS/cm	2163	2053	1876	2096	2180	2165	2186	2261	2259	2267	2207	2214	2183	2192	2246	2205	2237	2201	2211
Oxygen Reduction Potential	mV	28.6	54	60.2	61.7	-8.6	-27	-12.3	-51.8	-35.2	-75.9	-117.3	-77.9	-81.8	-137.5	-157.6	-92.3	-89.3	-54.33	-19.81
Lab Analytical Results:																				
Hardness as CaCO3	mg/L	9.16	9.85			7.77		7.11			7.73			7.84	7.69	8.81	7.76	7.31	8.62	8.00
pH (Lab)	SU	8.2	8.40			8.36		8.40			8.28			8.31	8.21	8.24	8.05	8.08	8.15	8.02
Total Dissolved Solids (Lab)	mg/L	1470	1470			1450		1500			1490			1470	1430	1350	1450	1410	1540	1490
Calcium	mg/L	2.23	2.43			1.76		1.87			1.81			1.75	1.71	1.92	1.77	1.68	1.94	1.82
Magnesium	mg/L	0.871	0.916			0.823		0.591			0.778			0.846	0.832	0.973	0.809	0.756	0.914	0.837
Sodium	mg/L	515	537			513		511			507			528	531	568	535	515	548	529
Potassium	mg/L	1.57	1.75			1.63		<5.00			<2.00			1.5	<2.00	<2.00	<2.00	<2.00	4.75	<5.00
Alkalinity, Total	mg/L	635	560			630		590			530			560	575	575	545	565	575	544
Alkalinity, Bicarbonate	mg/L	635	560			590		560			490			560	555	575	505	544	535	528
Alkalinity, Carbonate	mg/L	<10.0	<10.0			40.0		30.0			40.0			<10.0	20.0	<10.0	40	32	40.0	16.0
Alkalinity, Hydroxide	mg/L	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10	<10.0	<10.0
Chloride	mg/L	9.56	9.66			10.3		10.3			10.0			9.94	9.55	8.60	8.93	8.99	8.91	8.76
Fluoride	mg/L	<0.400	<0.400			<0.500		<0.500			<0.500			<0.5	<0.5	0.143	<0.200	<0.2	<0.200	<0.200
Sulfate as SO4	mg/L	594	588			783		594			579			561	522	450	567	584	615	559
Total Organic Carbon (TOC)	mg/L	6.63	11.7			3.52		3.27			3.46			3.59	3.60	3.59	3.47	3.40	3.33	3.25
Nitrate/Nitrite as N	mg/L	0.035	<0.020			<0.020		<0.020			<0.020			<0.02	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	mg/L																			0.312
Ortho-Phosphate as P ^	mg/L																			<0.0500
Aluminum	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.250
Arsenic	mg/L	0.0016	<0.0025			<0.0025		<0.0025			0.0019			0.0005	<0.0025	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010
Cadmium	mg/L	<0.0001	<0.0005			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002
Copper	mg/L	0.0053	0.0093			0.0076		0.0073			0.0124			0.0077	0.0105	0.0084	0.0081	0.0061	0.0120	0.0037
Iron	mg/L	<0.050	<0.050			<0.050		<0.250			<0.100			<0.05	<0.05	<0.100	<0.100	<0.100	<0.100	<0.250
Lead	mg/L	0.0014	<0.0025			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010
Manganese	mg/L	0.0044	0.0063			0.0044		0.0040			0.0035			0.0033	<0.0075	0.0034	0.0032	0.0031	0.0026	0.0016
Mercury	mg/L	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	mg/L	0.0009	0.0275			<0.0025		<0.0025			0.0005			<0.0005	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010
Selenium	mg/L	0.0016	<0.0050			<0.0050		<0.0050			0.0014			0.0025	<0.0050	<0.0020	0.0036	<0.001	<0.0010	<0.0020
Silica (Si02)	mg/L	10.2	10.6			9.99		6.85			9.47			10	10.2	11.2	9.65	9.81	11.0	10.5
Silicon	mg/L	4.75	4.97			4.67		3.20			4.43			4.7	4.77	5.22	4.51	4.59	5.14	4.89
Uranium	mg/L	0.0016	<0.0005			<0.0005		0.0005			0.0003			<0.0001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002
Zinc	mg/L	0.269	0.0319			<0.0100		<0.0100			0.0022			0.0024	<0.0100	<0.0040	<0.0040	0.0033	<0.0020	<0.0040

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-4-MI																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	***gpm***	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.1	0.06	0.06	0.125	0.25
Total Purged	***gal***	0.5	6.5	NM	NM	1	1	1	1	1.3	1.5	1.5	1	1.3	1.8	1.6	2	1.25	1.125	1
Depth to Water	***ft bgs***	378.2	330.15	330.94	330.85	330.81	330.80	330.74	330.67	330.52	330.42	330.53	330.5	329.62	331.1	336.57	331.10	331.06	331.92	332.10
Temperature	***deg C***	15.0	14.6	12.9	12.5	11.4	10.7	11.3	11.4	11.2	11.0	10.5	10.9	10.1	11.8	11.3	11.1	10.8	13.3	11.6
pH	***SU***	9.08	8.91	8.78	8.79	8.76	8.76	8.73	8.67	8.62	8.48	8.53	8.01	8.5	8.14	8.25	8.38	8.23	8.14	8.26
Specific Conductance	***µS/cm***	1581	1668	1731	1708	1784	1794	1804	1833	1848	1856	1841	1816	1739	1756	1808	1716	1800	1830	1776
Oxygen Reduction Potential	***mV***	155.2	64.7	9.8	35.2	-29.6	-37.3	-111.5	-89.2	-112.5	-151.3	-145.7	-117.7	-130	-178.2	-202.3	-140.4	-154.7	-127.32	-76.8
Lab Analytical Results:																				
Hardness as CaCO3	***mg/L***	5.43	8.71			7.07		4.20			6.01			5.88	6.06	6.39	5.35	4.93	5.65	3.31
pH (Lab)	***SU***	8.83	8.59			8.63		8.51			8.47			8.48	8.31	8.47	8.35	8.3	8.44	8.08
Total Dissolved Solids (Lab)	***mg/L***	1160	1170			1180		1180			1220			1140	1120	1100	1130	1130	1140	1120
Calcium	***mg/L***	1.53	2.32			1.88		1.68			1.64			1.55	1.56	1.60	1.44	1.3	1.51	1.32
Magnesium	***mg/L***	0.392	0.707			0.579		<0.500			0.465			0.49	0.524	0.580	0.428	0.408	0.458	<0.500
Sodium	***mg/L***	408	458			449		452			447			471	470	500	462	458	496	477
Potassium	***mg/L***	1.46	<2.00			1.73		<5.00			<2.00			1.39	<2.00	<2.00	1.43	1.77	2.03	<5.00
Alkalinity, Total	***mg/L***	965	915			1100		985			965			955	968	995	510	890	970	978
Alkalinity, Bicarbonate	***mg/L***	775	825			880		885			875			865	896	885	420	650	880	886
Alkalinity, Carbonate	***mg/L***	190	90.0			220		100			90.0			90	72.0	110	90	240	90.0	92.0
Alkalinity, Hydroxide	***mg/L***	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	***mg/L***	2.18	7.50			8.78		9.11			8.74			7.99	5.68	5.38	5.98	5.98	5.83	5.47
Fluoride	***mg/L***	4.72	5.02			5.09		5.10			5.02			4.82	4.84	4.94	5.49	5.44	5.38	5.31
Sulfate as SO4	***mg/L***	17.4	64.7			76.6		77.5			68.6			54.4	48.3	47.6	38.7	34.4	31.9	28.2
Total Organic Carbon (TOC)	***mg/L***	2.64	6.49			8.58		9.53			9.54			9.25	8.94	8.48	8.37	8.25	7.81	6.42
Nitrate/Nitrite as N	***mg/L***	<0.020	<0.020			<0.020		<0.020			<0.020			<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ammonia as N ^	***mg/L***																			0.240
Ortho-Phosphate as P ^	***mg/L***																			0.2800
Aluminum	***mg/L***	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250
Arsenic	***mg/L***	0.0099	0.0220			0.0131		0.0122			0.0139			0.0153	0.014	0.0119	0.0164	0.0111	0.0116	0.0107
Cadmium	***mg/L***	<0.0001	<0.0001			<0.0005		<0.0005			<0.0001			<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002
Copper	***mg/L***	0.0059	0.0058			0.0071		0.0070			0.0079			0.0063	0.0071	0.0078	0.0087	0.0153	0.0051	0.0027
Iron	***mg/L***	<0.050	<0.100			<0.050		<0.250			<0.100			<0.05	<0.100	<0.100	<0.050	<0.050	<0.100	<0.250
Lead	***mg/L***	0.0010	<0.0005			<0.0025		<0.0025			<0.0005			<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010
Manganese	***mg/L***	0.0020	0.0066			0.0081		0.0124			0.0080			0.007	0.0068	0.0084	0.0091	0.0084	0.0084	0.0073
Mercury	***mg/L***	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	***mg/L***	0.0020	0.0160			0.0127		0.0134			0.0151			0.0119	0.0115	0.0129	0.0121	0.0119	0.0108	0.0101
Selenium	***mg/L***	<0.0010	0.0012			<0.0050		<0.0050			<0.0010			0.0022	0.0113	<0.0020	0.002	<0.001	<0.0010	<0.0020
Silica (Si02)	***mg/L***	7.27	8.01			8.80		<5.35			8.30			8.9	9.29	10.3	8.86	9.06	10.2	9.51
Silicon	***mg/L***	3.40	3.75			4.11		2.50			3.88			4.16	4.34	4.81	4.14	4.24	4.76	4.45
Uranium	***mg/L***	0.0043	0.0126			0.0184		0.0169			0.0183			0.0173	0.0151	0.0191	0.0269	0.0176	0.0168	0.0145
Zinc	***mg/L***	0.113	0.0697			<0.0100		<0.0100			<0.0020			<0.002	<0.002	<0.0040	<0.0020	<0.002	<0.0100	<0.0040

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-4-C																				
Year		2017								2018							2019			
Quarter		Q1	Q2	Q3			Q4			Q1			Q2		Q3	Q4	Q1	Q2	Q3	Q4
Month		3	6	7	8	9	10	11	12	1	2	3	4	5	8	11	2	5	8	11
Sample Date		3/30	6/16	7/27	8/23	9/28	10/27	11/17	12/7	1/3	2/21	3/23	4/12	5/14	8/8	11/5	2/27	5/22	8/15	11/12
Lab Analysis (Y/N)		Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Field Parameters:																				
Purge Flow Rate	*gpm*	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.1	NM	0.1	0.1	0.1	0.2	0.12	0.06	0.13	0.13
Total Purged	*gal*	7	1.5	NM	NM	1	1	1	1	1.5	1.5	1.5	1	1.5	1	1.3	1.50	1.25	1.13	1.00
Depth to Water	*ft bgs*	328.33	314.05	309.87	306.86	303.96	303.80	302.47	304.80	282.35	281.30	303.30	304.05	NM	302.55	302.17	302.45	303.93	304.93	305.73
Temperature	*deg C*	13.3	17.4	12.7	12.0	13.9	11.8	11.2	11.0	11.7	10.8	12.5	11.4	12.4	12.9	11.5	11.3	11.2	12.5	11.7
pH	*SU*	8.33	7.62	7.68	7.7	7.69	7.75	7.72	7.79	7.8	7.88	7.94	7.75	7.79	7.76	7.79	7.87	7.86	7.81	7.85
Specific Conductance	*µS/cm*	3792	5944	5997	5885	5813	5721	5782	5604	5834	5903	5628	5792	5592	5583	5775	5710	5712	5930	5636
Oxygen Reduction Potential	*mV*	57.3	20.3	-101.5	-111.2	-103.7	-117.4	-109.0	-120.1	-123.8	-154.3	-131.3	-134.9	-129.3	-157.6	-209.0	-160.1	-180.1	-156.8	-148.7
Lab Analytical Results:																				
Hardness as CaCO3	*mg/L*	46.3	55.9			38.9		30.0			26.5			26.2	25.9	28.6	23.6	22.5	25.2	24.4
pH (Lab)	*SU*	7.61	7.77			7.79		7.98			7.84			7.97	7.96	8.27	7.9	7.92	7.95	7.85
Total Dissolved Solids (Lab)	*mg/L*	3230	4050			3750		3780			3730			3660	3650	3590	3580	3590	3610	3610
Calcium	*mg/L*	13.6	13.7			9.15		7.45			6.32			6.15	5.90	6.60	5.5	5.21	5.83	5.61
Magnesium	*mg/L*	2.99	5.26			3.90		2.76			2.61			2.62	2.72	2.94	2.39	2.3	2.57	2.53
Sodium	*mg/L*	908	1510			1490		1400			1410			1400	1410	1590	1410	1370	1440	1430
Potassium	*mg/L*	4.38	5.71			6.07		<10.0			<10.0			<5	<5	5.36	<5.00	<5.00	5.42	<10.0
Alkalinity, Total	*mg/L*	1250	2360			2780		2680			2600			2410	2480	2450	2470	2550	2500	2470
Alkalinity, Bicarbonate	*mg/L*	1250	2360			2780		2640			2600			2330	2480	2450	2470	2350	2390	2410
Alkalinity, Carbonate	*mg/L*	<10.0	<10.0			<10.0		40.0			<10.0			80	<10.0	<10.0	<10.0	200	110	60.0
Alkalinity, Hydroxide	*mg/L*	<10.0	<10.0			<10.0		<10.0			<10.0			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chloride	*mg/L*	181	550			587		608			592			573	533	590	575	554	580	525
Fluoride	*mg/L*	1.29	2.04			2.17		2.43			2.53			2.52	2.48	2.54	2.64	2.62	2.59	2.51
Sulfate as SO4	*mg/L*	534	487			70.2		26.0			34.5			27	18.7	11.2	5.07	<5.00	<5.00	<5.00
Total Organic Carbon (TOC)	*mg/L*	30	6.42			5.08		3.64			3.23			3.23	2.80	3.46	3.24	2.62	2.63	4.18
Nitrate/Nitrite as N	*mg/L*	<2.00	<0.500			<0.400		<0.100			<0.020			<0.02	<0.02	<0.020	0.061	<0.020	<0.020	<0.020
Ammonia as N ^	*mg/L*																			0.424
Ortho-Phosphate as P ^	*mg/L*																			0.1820
Aluminum	*mg/L*	<0.050	<0.050			<0.050		<0.500			<0.500			<0.25	<0.25	<0.250	<0.250	<0.250	<0.250	<0.500
Arsenic	*mg/L*	0.0059	0.0119			0.0128		0.0152			0.0246			0.0195	0.0202	0.0164	0.0211	0.0171	0.0178	0.0179
Cadmium	*mg/L*	<0.0001	<0.0010			<0.0010		<0.0010			<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0005
Copper	*mg/L*	0.0125	0.0243			0.0221		0.0208			0.0482			0.0389	0.0280	0.0230	0.0249	0.0382	0.0198	0.0107
Iron	*mg/L*	<0.050	<0.050			<0.050		<0.500			<0.500			0.373	0.397	0.474	0.279	0.391	0.522	0.619
Lead	*mg/L*	<0.0005	<0.0050			<0.0050		<0.0050			<0.0025			<0.0025	<0.0025	<0.0025	<0.0025	<0.0005	<0.0025	<0.0025
Manganese	*mg/L*	0.0269	0.0772			0.0554		0.0571			0.0647			0.0529	0.0381	0.0283	0.0268	0.0174	0.0162	0.0096
Mercury	*mg/L*	<0.0002	<0.0002			<0.0002		<0.0002			<0.0002			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0050
Molybdenum	*mg/L*	0.0526	0.115			0.0138		0.0106			0.0086			0.0072	0.0071	0.0057	0.0074	0.007	0.0056	0.0047
Selenium	*mg/L*	0.0248	0.0231			0.0214		0.0269			0.0378			0.0317	0.0260	0.0211	0.0339	0.0195	0.0195	0.0156
Silica (Si02)	*mg/L*	9.85	12.6			12.9		<10.7			<10.7			11	11.2	12.8	10.1	10.5	11.3	11.0
Silicon	*mg/L*	4.61	5.88			6.02		<5.00			<5.00			5.16	5.24	6.00	4.7	4.89	5.29	5.14
Uranium	*mg/L*	0.0297	0.121			0.0984		0.0545			0.0311			0.0311	0.0277	0.0246	0.0215	0.0154	0.0086	0.0073
Zinc	*mg/L*	0.0156	0.0265			<0.0200		<0.0200			<0.0100			<0.01	<0.01	<0.0100	<0.0100	0.0038	<0.0100	<0.0100

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-6-A													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/28	1/31	2/21	3/21	4/23	5/20	6/19	7/23	8/15	9/24	10/28	11/7
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	gpm	NM	NM	0.10	2.00	0.03	0.03	0.03	0.06	0.03	0.02	0.06	0.01
Total Purged	gal	36.3	0.5	0.5	2.0	2.0	1.3	1.0	1.3	1.1	1.3	1.5	1.5
Depth to Water	ft bgs	304.33	306.41	307.40	309.60	311.05	312.50	314.20	315.75	316.43	NM	318.34	318.70
Temperature	deg C	7.4	10.7	8.1	7.5	9.6	7.3	12.5	12.3	11.9	10.4	9.5	10.4
pH	SU	7.32	6.64	6.66	6.74	6.65	6.73	6.76	6.75	6.76	6.80	6.77	6.79
Specific Conductance	µS/cm	6573	6053	6072	6107	6012	6057	5725	5598	5562	5451	5137	5108
Oxygen Reduction Potential	mV	-22.8	19.4	24.6	12.6	11.8	34.8	86.6	25.8	6.5	29.2	22.8	20.5
Lab Analytical Results:													
Hardness as CaCO3	mg/L	4360		4190			3920			3540			3070
pH (Lab)	SU	7.10		6.85			6.77			6.85			6.87
Total Dissolved Solids (Lab)	mg/L	6520		6520			120*			6080			5210
Calcium	mg/L	615		559			553			492			431
Magnesium	mg/L	687		678			617			560			484
Sodium	mg/L	294		283			296			304			276
Potassium	mg/L	15.0		14.4			12.4			12.8			11.1
Alkalinity, Total	mg/L	160		160			143			183			220
Alkalinity, Bicarbonate	mg/L	160		160			143			183			220
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	mg/L	97.4		28.6			27.3			29.9			29.6
Fluoride	mg/L	2.83		<0.500			<0.500			<0.500			<0.500
Sulfate as SO4	mg/L	205		4300			4280			4260			3460
Total Organic Carbon (TOC)	mg/L	3.45		3.08			2.91			3.57			3.10
Ammonia as N ^	mg/L												2.720
Ortho-Phosphate as P ^	mg/L												<0.0500
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020
Aluminum	mg/L	<0.500		<0.250			<0.250			<0.250			<0.250
Arsenic	mg/L	<0.0025		<0.0025			0.0009			<0.0025			<0.0025
Cadmium	mg/L	<0.0005		<0.0005			0.0001			<0.0005			<0.0005
Copper	mg/L	0.0116		0.0081			0.0035			0.0039			0.0017
Iron	mg/L	1.37		3.75			3.93			3.22			2.72
Lead	mg/L	<0.0025		<0.0025			<0.0005			<0.0025			<0.0025
Manganese	mg/L	0.788		0.802			0.724			0.690			0.585
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	mg/L	<0.0025		<0.0025			<0.0005			<0.0025			<0.0025
Selenium	mg/L	<0.0050		<0.0050			0.0028			<0.0050			<0.0050
Silica (Si02)	mg/L	12.3		11.9			14.3			13.4			12.5
Silicon	mg/L	5.77		5.57			6.69			6.28			5.83
Uranium	mg/L	<0.0005		<0.0005			<0.0001			<0.0005			<0.0005
Zinc	mg/L	0.0689		<0.0100			0.0082			0.0108			0.0117

Notes & Definitions:

*	Anomalous value under review
^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-6-C													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/24	1/30	2/21	3/21	4/23	5/20	6/19	7/23	8/15	9/24	10/28	11/7
Lab Analysis (Y/N)		N	N	N	N	N	N	N	N	N	N	N	N
Field Parameters:													
Purge Flow Rate	gpm	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal												
Depth to Water	ft bgs												
Temperature	deg C												
pH	SU												
Specific Conductance	µS/cm												
Oxygen Reduction Potential	mV												
Lab Analytical Results:													
Hardness as CaCO3	mg/L												
pH (Lab)	SU												
Total Dissolved Solids (Lab)	mg/L												
Calcium	mg/L												
Magnesium	mg/L												
Sodium	mg/L												
Potassium	mg/L												
Alkalinity, Total	mg/L												
Alkalinity, Bicarbonate	mg/L												
Alkalinity, Carbonate	mg/L												
Alkalinity, Hydroxide	mg/L												
Chloride	mg/L												
Fluoride	mg/L												
Sulfate as SO4	mg/L												
Total Organic Carbon (TOC)	mg/L												
Nitrate/Nitrite as N	mg/L												
Ammonia as N ^	mg/L												
Ortho-Phosphate as P ^	mg/L												
Aluminum	mg/L												
Arsenic	mg/L												
Cadmium	mg/L												
Copper	mg/L												
Iron	mg/L												
Lead	mg/L												
Manganese	mg/L												
Mercury	mg/L												
Molybdenum	mg/L												
Selenium	mg/L												
Silica (Si02)	mg/L												
Silicon	mg/L												
Uranium	mg/L												
Zinc	mg/L												

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-6-MI														
Year		2018	2019											
Quarter		Q4	Q1			Q2				Q3			Q4	
Month		12	1	2	3	4	5	5	6	7	8	9	10	11
Sample Date		12/29	1/31	2/25	3/21	4/19	5/20	5/30	6/19	7/23	8/15	9/24	10/28	11/7
Lab Analysis (Y/N)		Y	N	Y	N	N	N#	N	N	N	N	N	N	N
Field Parameters:														
Purge Flow Rate	gpm	NM	NM	NM	0.5	0.1	0.015	dry	dry	dry	dry	dry	dry	dry
Total Purged	gal	11.3	0.5	1.5	0.5	1.0	0.9							
Depth to Water	ft bgs	374.49	368.09	367.92	370.49	369.50	371.00							
Temperature	deg C	14.3	13.6	10.8	9.7	16.7	3.9							
pH	SU	8.26	7.43	7.21	7.55	7.97	7.84							
Specific Conductance	µS/cm	3390	3620	3132	2619	2202	2527							
Oxygen Reduction Potential	mV	103.0	-80.2	77.6	59.8	38.3	64.9							
Lab Analytical Results:														
Hardness as CaCO3	mg/L	679		147										
pH (Lab)	SU	8.18		8.35										
Total Dissolved Solids (Lab)	mg/L	2480		1880										
Calcium	mg/L	104		23.4										
Magnesium	mg/L	102		21.6										
Sodium	mg/L	646		565										
Potassium	mg/L	12.0		5.30										
Alkalinity, Total	mg/L	395		615										
Alkalinity, Bicarbonate	mg/L	345		615										
Alkalinity, Carbonate	mg/L	50.0		<10.0										
Alkalinity, Hydroxide	mg/L	<10.0		<10.0										
Chloride	mg/L	175		178										
Fluoride	mg/L	2.06		2.46										
Sulfate as SO4	mg/L	1210		585										
Total Organic Carbon (TOC)	mg/L	3.63		4.55										
Nitrate/Nitrite as N	mg/L	0.023		<0.020										
Ammonia as N ^	mg/L													
Ortho-Phosphate as P ^	mg/L													
Aluminum	mg/L	<0.100		<0.100										
Arsenic	mg/L	0.0084		0.0144										
Cadmium	mg/L	<0.0001		<0.0002										
Copper	mg/L	0.0113		0.0112										
Iron	mg/L	<0.100		<0.100										
Lead	mg/L	<0.0005		<0.0010										
Manganese	mg/L	0.0500		0.0224										
Mercury	mg/L	<0.0002		<0.0002										
Molybdenum	mg/L	0.0558		0.0690										
Selenium	mg/L	0.0098		0.0127										
Silica (Si02)	mg/L	9.93		9.05										
Silicon	mg/L	4.64		4.23										
Uranium	mg/L	0.0200		0.0118										
Zinc	mg/L	0.0092		0.0143										

Notes & Definitions:

#	**No sample collected, due to low yield, insufficient volume for lab sample after field parameters we measured**
^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-6-LM													
Year		**2018**	**2019**										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/30	1/31	2/25	3/21	4/23	5/20	6/19	7/23	8/15	9/24	10/28	11/7
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	*gpm*	NM	NM	0.06	2.00	0.03	0.03	0.10	0.06	0.03	0.02	0.01	0.03
Total Purged	*gal*	0.5	0.5	1.5	2.0	2.0	2.3	1.3	1.3	1.8	2.0	1.5	2.0
Depth to Water	*ft bgs*	535.72	538.73	539.34	540.64	539.98	537.58	540.00	540.35	540.24	540.17	539.80	540.18
Temperature	*deg C*	7.9	14.3	7.8	8.1	9.1	9.3	11.7	14.0	13.4	11.6	10.1	12.4
pH	*SU*	7.64	7.38	7.51	7.54	7.49	7.54	7.67	7.80	7.65	7.43	7.45	7.37
Specific Conductance	*µS/cm*	6011	3784	3503	1461	1164	1296	1400	1272	1532	2104	2267	2113
Oxygen Reduction Potential	*mV*	185.3	10.7	40.9	-32.8	-35.8	-111.0	-194.5	-163.6	-67.2	6.4	-48.0	19.9
Lab Analytical Results:													
Hardness as CaCO3	*mg/L*	2260		1270			431			621			843
pH (Lab)	*SU*	7.60		7.52			7.47			7.59			7.32
Total Dissolved Solids (Lab)	*mg/L*	5100		2840			875			1150			1630
Calcium	*mg/L*	367		216			75.9			103			136
Magnesium	*mg/L*	325		177			58.7			88.3			122
Sodium	*mg/L*	459		248			129			153			172
Potassium	*mg/L*	173		64.5			14.0			13.7			11.3
Alkalinity, Total	*mg/L*	205		315			371			381			355
Alkalinity, Bicarbonate	*mg/L*	205		315			371			381			355
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	*mg/L*	256		43.7			5.73			8.70			11.4
Fluoride	*mg/L*	0.530		<0.500			0.324			<0.500			<0.500
Sulfate as SO4	*mg/L*	3050		1790			338			492			830
Total Organic Carbon (TOC)	*mg/L*	3.46		2.61			1.57			1.78			1.85
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	*mg/L*												1.990
Ortho-Phosphate as P ^	*mg/L*												<0.0500
Aluminum	*mg/L*	<0.250		<0.250			<0.050			<0.050			<0.100
Arsenic	*mg/L*	0.0039		0.0049			0.0036			0.0038			0.0035
Cadmium	*mg/L*	<0.0005		<0.0005			<0.0001			<0.0001			<0.0002
Copper	*mg/L*	0.0135		0.0064			0.0017			0.0018			0.0069
Iron	*mg/L*	<0.250		<0.250			<0.050			<0.050			<0.100
Lead	*mg/L*	<0.0025		<0.0025			<0.0005			<0.0005			<0.0010
Manganese	*mg/L*	0.383		0.223			0.0692			0.148			0.166
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	*mg/L*	0.0490		0.0169			0.0037			0.0025			0.0022
Selenium	*mg/L*	0.0080		<0.0050			<0.0010			<0.0010			<0.0020
Silica (Si02)	*mg/L*	10.5		13.5			17.0			17.4			15.9
Silicon	*mg/L*	4.91		6.29			7.96			8.12			7.43
Uranium	*mg/L*	0.0230		0.0075			0.0039			0.0054			0.0047
Zinc	*mg/L*	0.0323		<0.0100			<0.0020			<0.0040			<0.0040

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-7-EAA													
Year		**2018**	**2019**										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	*gpm*	1.10	1.10	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Purged	*gal*	15.0	18.0	15.0	3.0	15.0	16.0	15.3	15.3	17.0	15.0	15.0	15.0
Depth to Water	*ft bgs*	36.13	36.27	36.45	36.52	36.70	36.25	36.22	36.48	36.49	36.88	36.85	36.85
Temperature	*deg C*	10.0	10.0	10.0	9.9	10.1	10.4	10.4	10.6	10.5	10.3	10.4	10.6
pH	*SU*	6.99	7.01	7.04	6.93	7.00	7.06	7.07	6.28	6.95	7.06	7.03	7.06
Specific Conductance	*µS/cm*	2001	1910	1910	1926	1912	1767	1836	1885	1890	1913	1936	1922
Oxygen Reduction Potential	*mV*	-68.0	-36.7	-41.4	-38.1	-48.8	14.1	-13.8	-33.9	-37.8	-29.5	-25.6	21.3
Lab Analytical Results:													
Hardness as CaCO3	*mg/L*	936		1030			982			997			997
pH (Lab)	*SU*	7.2		7.37			7.17			7.09			7.05
Total Dissolved Solids (Lab)	*mg/L*	1460		1480			1490			1480			1530
Calcium	*mg/L*	170		179			171			173			171
Magnesium	*mg/L*	124		142			135			137			144
Sodium	*mg/L*	75.3		81.3			75.0			75.2			74.9
Potassium	*mg/L*	3.87		3.9			<5.00			3.74			3.85
Alkalinity, Total	*mg/L*	380		367			405			392			350
Alkalinity, Bicarbonate	*mg/L*	380		367			405			392			350
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	*mg/L*	11.9		10.7			10.8			10.9			11.6
Fluoride	*mg/L*	<0.500		0.332			0.322			0.322			<0.500
Sulfate as SO4	*mg/L*	732		736			733			844			746
Total Organic Carbon (TOC)	*mg/L*	3.72		3.57			3.73			3.70			3.45
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	*mg/L*												0.182
Ortho-Phosphate as P ^	*mg/L*												<0.0500
Aluminum	*mg/L*	<0.050		<0.100			<0.250			<0.100			<0.050
Arsenic	*mg/L*	0.0014		0.0015			0.0013			0.0016			0.0014
Cadmium	*mg/L*	<0.0001		<0.0002			<0.0001			<0.0001			<0.0002
Copper	*mg/L*	0.0003		0.0018			0.0011			0.0008			0.0005
Iron	*mg/L*	1.82		1.95			1.81			2.12			2.09
Lead	*mg/L*	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010
Manganese	*mg/L*	3.72		4.49			4.01			4.22			5.11
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	*mg/L*	0.0008		0.0011			0.0007			0.0009			<0.0010
Selenium	*mg/L*	<0.0020		<0.0020			<0.0010			0.0011			<0.0020
Silica (Si02)	*mg/L*	16.6		16.1			16.1			16.9			16.8
Silicon	*mg/L*	7.75		7.52			7.55			7.90			7.61
Uranium	*mg/L*	0.0021		0.0018			0.0017			0.0018			0.0020
Zinc	*mg/L*	<0.0050		<0.0040			0.0021			0.0020			<0.0040

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-8-EAA													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	gpm	0.85	1.10	0.50	3.00	0.50	0.75	1.00	1.00	0.75	0.50	1.00	0.25
Total Purged	gal	18.0	14.0	15.0	3.0	15.0	17.0	15.3	15.3	18.0	15.3	15.5	15.0
Depth to Water	ft bgs	40.00	39.95	40.10	43.45	40.44	40.05	39.94	40.10	40.08	40.25	40.31	40.22
Temperature	deg C	10.3	10.2	10.0	9.9	10.3	10.5	10.6	10.5	10.6	10.3	10.2	11.2
pH	SU	7.12	7.09	7.13	7.17	7.09	7.02	7.17	7.09	7.05	7.03	6.99	6.99
Specific Conductance	µS/cm	1781	1696	1720	1725	1729	1628	1676	1699	172	1739	1774	1739
Oxygen Reduction Potential	mV	-65	-52.8	-51.8	-53.0	-59.7	11.0	-29.5	-46.6	-44.8	-33.5	-38.8	-39.2
Lab Analytical Results:													
Hardness as CaCO3	mg/L	870		861			864			883			867
pH (Lab)	SU	7.28		7.36			7.13			7.05			7.01
Total Dissolved Solids (Lab)	mg/L	1220		1290			1240			1280			1380
Calcium	mg/L	152		151			148			154			143
Magnesium	mg/L	119		118			120			121			124
Sodium	mg/L	81.7		82.6			77.2			78.6			77.1
Potassium	mg/L	3.80		3.27			3.55			3.18			3.52
Alkalinity, Total	mg/L	400		435			450			431			445
Alkalinity, Bicarbonate	mg/L	400		435			450			431			445
Alkalinity, Carbonate	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	mg/L	9.83		10.5			10.3			11.1			11.0
Fluoride	mg/L	0.380		0.370			0.338			0.342			<0.500
Sulfate as SO4	mg/L	533		559			606			643			577
Total Organic Carbon (TOC)	mg/L	3.77		3.59			3.77			3.68			3.52
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	mg/L												0.216
Ortho-Phosphate as P ^	mg/L												<0.0500
Aluminum	mg/L	<0.100		<0.100			<0.050			<0.100			<0.050
Arsenic	mg/L	0.0020		0.0018			0.0018			0.0021			0.0018
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001
Copper	mg/L	0.0004		0.0024			0.0023			0.0008			0.0010
Iron	mg/L	2.12		2.13			2.42			2.46			2.30
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005
Manganese	mg/L	3.17		3.52			3.06			3.37			3.39
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	mg/L	0.0009		0.0011			0.0008			0.0011			0.0008
Selenium	mg/L	<0.0020		<0.0020			0.0010			0.0013			<0.0010
Silica (Si02)	mg/L	16.3		15.3			15.7			16.1			15.9
Silicon	mg/L	7.63		7.15			7.32			7.52			7.42
Uranium	mg/L	0.0021		0.0017			0.0016			0.0018			0.0019
Zinc	mg/L	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020

Notes & Definitions:

^	one-time analysis
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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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.*

GCC Energy Hydrologic Monitoring Data

MW-8-MI													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/23	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	*gpm*	1.10	1.00	0.50	3.00	0.50	0.50	0.25	0.50	0.75	0.50	1.00	0.25
Total Purged	*gal*	27.5	18.0	1.0	3.0	1.5	2.5	2.5	2.3	3.0	2.0	2.5	1.0
Depth to Water	*ft bgs*	45.75	43.48	43.50	44.30	44.47	44.10	44.24	44.45	44.59	44.90	45.12	45.10
Temperature	*deg C*	10.8	10.8	10.6	11.2	10.4	11.1	11.4	11.0	11.4	10.9	10.3	11.4
pH	*SU*	7.57	7.50	7.48	7.47	7.34	7.31	7.48	7.42	7.38	7.30	7.23	7.15
Specific Conductance	*µS/cm*	1786	1667	1651	1658	1643	1595	1639	1645	1658	1637	1689	1642
Oxygen Reduction Potential	*mV*	-84.4	-177.1	-122.1	-113.3	-87.2	-54.4	-97.1	-116.4	-119.4	-88.4	82.0	-59.3
Lab Analytical Results:													
Hardness as CaCO3	*mg/L*	167		249			273			253			267
pH (Lab)	*SU*	7.73		7.54			7.24			7.46			7.44
Total Dissolved Solids (Lab)	*mg/L*	1050		1030			1100			1110			1050
Calcium	*mg/L*	34.0		48.5			52.4			49.7			51.3
Magnesium	*mg/L*	19.9		31.0			34.5			31.4			33.8
Sodium	*mg/L*	344		312			289			289			275
Potassium	*mg/L*	4.47		5.25			<5.00			4.55			5.07
Alkalinity, Total	*mg/L*	500		565			560			573			585
Alkalinity, Bicarbonate	*mg/L*	500		565			560			573			585
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	*mg/L*	12.7		10.0			9.33			9.06			9.66
Fluoride	*mg/L*	<0.500		<0.200			<0.200			<0.200			<0.500
Sulfate as SO4	*mg/L*	347		353			343			366			317
Total Organic Carbon (TOC)	*mg/L*	2.73		2.83			2.81			2.74			2.65
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	*mg/L*												1.310
Ortho-Phosphate as P ^	*mg/L*												<0.0500
Aluminum	*mg/L*	<0.050		<0.100			<0.250			<0.100			<0.050
Arsenic	*mg/L*	0.0008		<0.0010			0.0006			0.0005			0.0005
Cadmium	*mg/L*	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001
Copper	*mg/L*	0.0031		0.0066			0.0036			0.0035			0.0037
Iron	*mg/L*	0.137		0.162			<0.250			0.129			0.130
Lead	*mg/L*	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005
Manganese	*mg/L*	0.0495		0.0383			0.0327			0.0351			0.0377
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	*mg/L*	0.0005		<0.0010			<0.0005			<0.0005			<0.0005
Selenium	*mg/L*	<0.0020		<0.0020			0.0010			0.0010			<0.0010
Silica (Si02)	*mg/L*	12.1		12.4			12.8			12.5			12.6
Silicon	*mg/L*	5.65		5.78			5.99			5.83			5.88
Uranium	*mg/L*	0.0002		0.0002			0.0002			0.0001			0.0001
Zinc	*mg/L*	<0.0050		<0.0040			<0.0020			<0.0020			<0.0020

Notes & Definitions:

^	**one-time analysis**
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.*

GCC Energy Hydrologic Monitoring Data

MW-8-LM													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/28	1/29	2/19	3/21	4/16	5/29	6/18	7/24	8/13	9/27	10/24	11/6
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	gpm	NM	1.00	0.25	1.00	0.50	0.10	0.25	0.25	0.50	0.25	0.12	0.25
Total Purged	gal	30	4.0	1.5	1.0	2.0	1.3	6.8	2.0	2.0	1.0	1.0	1.5
Depth to Water	ft bgs	136.39	130.52	134.30	144.03	140.03	137.48	142.23	144.15	138.06	137.50	137.60	137.34
Temperature	deg C	4.1	13.9	13.2	8.7	13.6	13.9	12.8	13.7	13.4	13.0	11.7	13.3
pH	SU	8.37	8.70	8.71	8.41	8.70	8.50	8.66	8.64	8.58	8.44	8.44	8.47
Specific Conductance	µS/cm	2306	1274	1265	1310	1262	1234	1264	1226	1269	1252	1299	1255
Oxygen Reduction Potential	mV	37.5	-114.3	112.8	77.0	-36.2	33.2	-63.9	-93.5	-103.0	-115.9	-94.4	-47.4
Lab Analytical Results:													
Hardness as CaCO3	mg/L	45.0		7.29			16.9			6.67			6.38
pH (Lab)	SU	8.57		8.63			8.02			8.56			8.52
Total Dissolved Solids (Lab)	mg/L	1420		770			780			785			780
Calcium	mg/L	10.8		1.93			3.84			1.78			1.68
Magnesium	mg/L	4.39		0.600			1.77			0.541			0.528
Sodium	mg/L	382		341			317			306			305
Potassium	mg/L	45.7		3.49			<5.00			2.27			2.18
Alkalinity, Total	mg/L	615		720			745			731			745
Alkalinity, Bicarbonate	mg/L	535		610			645			645			685
Alkalinity, Carbonate	mg/L	80.0		110			100			86.0			60.0
Alkalinity, Hydroxide	mg/L	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	mg/L	175		5.11			6.80			2.63			2.48
Fluoride	mg/L	2.06		3.91			3.95			3.97			3.88
Sulfate as SO4	mg/L	190		3.79			9.58			1.02			<1.00
Total Organic Carbon (TOC)	mg/L	2.80		1.80			3.33			1.94			1.69
Nitrate/Nitrite as N	mg/L	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	mg/L												0.282
Ortho-Phosphate as P ^	mg/L												<0.0500
Aluminum	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050
Arsenic	mg/L	0.0106		<0.0010			0.0006			0.0007			0.0006
Cadmium	mg/L	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001
Copper	mg/L	0.0337		0.0077			0.0047			0.0041			0.0051
Iron	mg/L	<0.050		<0.100			<0.250			<0.050			<0.050
Lead	mg/L	<0.0005		<0.0010			<0.0005			<0.0005			<0.0010
Manganese	mg/L	0.0258		0.0038			0.0150			0.0020			0.0026
Mercury	mg/L	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	mg/L	0.0142		<0.0010			0.0009			<0.0005			<0.0005
Selenium	mg/L	0.0020		<0.0020			<0.0010			<0.0010			<0.0010
Silica (Si02)	mg/L	9.09		8.45			8.68			8.28			7.77
Silicon	mg/L	4.25		3.95			4.06			3.87			3.63
Uranium	mg/L	0.0044		<0.0002			0.0001			0.0001			<0.0002
Zinc	mg/L	0.0080		<0.0040			0.0023			<0.0020			<0.0020

Notes & Definitions:

^	one-time analysis
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.*

GCC Energy Hydrologic Monitoring Data

MW-8-PL													
Year		2018	2019										
Quarter		Q4	Q1			Q2			Q3			Q4	
Month		12	1	2	3	4	5	6	7	8	9	10	11
Sample Date		12/27	1/29	2/19	3/20	4/16	5/29	6/20	7/24	8/13	9/27	10/24	11/6
Lab Analysis (Y/N)		Y	N	Y	N	N	Y	N	N	Y	N	N	Y
Field Parameters:													
Purge Flow Rate	*gpm*	0.25	1.00	0.50	3.00	0.50	0.25	0.50	1.00	0.50	0.50	0.75	0.25
Total Purged	*gal*	20.0	5.0	2.0	3.0	2.0	3.0	2.5	2.3	2.5	2.0	2.5	1.3
Depth to Water	*ft bgs*	125.97	126.29	126.40	127.10	126.98	126.70	126.82	127.25	127.38	127.42	127.48	127.59
Temperature	*deg C*	10.3	14.2	13.4	12.9	13.2	14.2	14.8	14.7	14.9	14.0	13.2	14.9
pH	*SU*	7.50	7.30	7.49	7.30	7.29	7.31	7.57	7.56	7.52	7.45	7.47	7.52
Specific Conductance	*µS/cm*	1690	1531	1571	1558	1554	1411	1326	1165	1083	947	940	900
Oxygen Reduction Potential	*mV*	30.2	-116.5	97.9	-108.7	-110.6	34.2	-57.6	-74.0	-79.5	-51.3	-52.5	-30.8
Lab Analytical Results:													
Hardness as CaCO3	*mg/L*	617		644			596			411			294
pH (Lab)	*SU*	7.28		7.40			7.26			7.22			7.39
Total Dissolved Solids (Lab)	*mg/L*	1150		1090			995			705			620
Calcium	*mg/L*	112		120			105			73.1			52.1
Magnesium	*mg/L*	82.1		83.8			81.4			55.4			39.7
Sodium	*mg/L*	106		124			102			91.7			83.3
Potassium	*mg/L*	5.14		5.62			<5.00			2.80			2.35
Alkalinity, Total	*mg/L*	370		415			435			393			390
Alkalinity, Bicarbonate	*mg/L*	370		415			435			393			390
Alkalinity, Carbonate	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Alkalinity, Hydroxide	*mg/L*	<10.0		<10.0			<10.0			<10.0			<10.0
Chloride	*mg/L*	18.8		18.5			9.03			5.61			5.66
Fluoride	*mg/L*	0.505		0.474			0.290			0.291			<0.500
Sulfate as SO4	*mg/L*	478		471			390			232			127
Total Organic Carbon (TOC)	*mg/L*	4.17		4.02			2.92			2.21			1.75
Nitrate/Nitrite as N	*mg/L*	<0.020		<0.020			<0.020			<0.020			<0.020
Ammonia as N ^	*mg/L*												0.199
Ortho-Phosphate as P ^	*mg/L*												<0.0500
Aluminum	*mg/L*	<0.050		<0.100			<0.250			<0.050			<0.050
Arsenic	*mg/L*	0.0074		0.0124			0.0190			0.0156			0.0104
Cadmium	*mg/L*	<0.0001		<0.0002			<0.0001			<0.0001			<0.0001
Copper	*mg/L*	0.0016		0.0025			0.0017			0.0011			0.0004
Iron	*mg/L*	<0.050		0.352			<0.250			0.129			0.075
Lead	*mg/L*	<0.0005		<0.0010			<0.0005			<0.0005			<0.0005
Manganese	*mg/L*	1.31		1.22			0.697			0.505			0.313
Mercury	*mg/L*	<0.0002		<0.0002			<0.0002			<0.0002			<0.0002
Molybdenum	*mg/L*	0.0090		0.0068			0.0020			0.0021			0.0017
Selenium	*mg/L*	0.0012		<0.0020			<0.0010			<0.0010			<0.0010
Silica (Si02)	*mg/L*	14.1		16.3			17.7			18.5			18.0
Silicon	*mg/L*	6.58		7.64			8.28			8.67			8.42
Uranium	*mg/L*	0.0052		0.0040			0.0010			0.0009			0.0004
Zinc	*mg/L*	0.0344		<0.0040			<0.0020			<0.0080			<0.0020

Notes & Definitions:

^	**one-time analysis**
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**
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NM	**not measured (field)**
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12 December 2019

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 11/14/19 16:15. This data replaces the previous report (See case narrative). 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 http://greenanalytical.com/certifications/

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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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Well #1 Upgradient	1911171-01	Water	11/14/19 11:33	11/14/19 16:15	

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GCC Energy, LLC	Project:	GCC GW Baseline	
6473 CR 120	Project Name / Number:	GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager:	Tom Bird	12/12/19 13:14

The TOC was re-analyzed at a lower diltion. This RE report is revised and replaces the original report dated 12/02/19.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Well #1 Upgradient

1911171-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**590**	10.0		mg/L	5	11/20/19 08:40	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/20/19 08:40	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/20/19 08:40	2320 B		VJL
Alkalinity, Total as CaCO3*	**590**	10.0	3.06	mg/L	5	11/20/19 08:40	2320 B		VJL
Ammonia as N	**0.931**	0.100	0.0450	mg NH3-N/L	1	11/21/19 16:37	EPA350.1		LLG
Chloride*	**6.19**	5.00	0.964	mg/L	5	11/23/19 01:18	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/23/19 01:18	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 15:12	EPA353.2		LLG
Ortho-Phosphate as P	**0.0590**	0.0500	0.0240	mg/L	1	11/15/19 08:24	EPA365.3		AES
pH*	**7.35**			pH Units	1	11/15/19 08:25	EPA150.1		FGH
Total Dissolved Solids*	**705**	10.0		mg/L	1	11/21/19 14:55	EPA160.1		VJL
Sulfate*	**92.1**	5.00	1.48	mg/L	5	11/23/19 01:18	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.050	mg/L	2	11/26/19 16:56	EPA200.7		AES
Calcium*	**51.5**	0.200	0.026	mg/L	2	11/26/19 16:56	EPA200.7		AES
Hardness as CaCO3	**263**	1.32	0.219	mg/L	2	11/26/19 16:56	2340 B		AES
Iron*	**1.41**	0.100	0.055	mg/L	2	11/26/19 16:56	EPA200.7		AES
Magnesium*	**32.7**	0.200	0.038	mg/L	2	11/26/19 16:56	EPA200.7		AES
Potassium*	**3.01**	2.00	0.191	mg/L	2	11/26/19 16:56	EPA200.7		AES
Silica (Si02)	**14.3**	2.14	0.114	mg/L	2	11/26/19 16:56	Calculation		AES
Silicon	**6.68**	1.00	0.053	mg/L	2	11/26/19 16:56	EPA200.7		AES
Sodium*	**198**	2.00	0.734	mg/L	2	11/26/19 16:56	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0004	mg/L	2	11/21/19 14:55	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/21/19 14:55	EPA200.8		AES
Copper*	**0.0012**	0.0002	0.0002	mg/L	2	11/21/19 14:55	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/21/19 14:55	EPA200.8		AES
Manganese*	**0.354**	0.0010	0.0002	mg/L	2	11/21/19 14:55	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0001	mg/L	2	11/21/19 14:55	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/21/19 14:55	EPA200.8		AES
Uranium	<0.0002	0.0002	0.0002	mg/L	2	11/21/19 14:55	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/21/19 14:55	EPA200.8		AES

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Well #1 Upgradient

1911171-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Well #1 Upgradient

1911171-01RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**3.14**	0.500	0.0670	mg/L	1	12/11/19 16:39	5310C		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911157 - General Prep - Wet Chem										
Blank (B911157-BLK1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911157-BS1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	0.235	0.0500	mg/L	0.250		94.0	85-115			
LCS Dup (B911157-BSD1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	0.249	0.0500	mg/L	0.250		99.6	85-115	5.79	20	
Batch B911163 - General Prep - Wet Chem										
Duplicate (B911163-DUP1)			**Source: 1911164-01**	Prepared & Analyzed: 11/15/19						
pH	7.30		pH Units		7.33			0.410	20	
Reference (B911163-SRM1)				Prepared & Analyzed: 11/15/19						
pH	6.98		pH Units	7.00		99.7	98.5-101.4			
Batch B911172 - General Prep - Wet Chem										
Blank (B911172-BLK1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911172-BS1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B911172-BSD1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110	0.152	20	
Batch B911189 - General Prep - Wet Chem										
Blank (B911189-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B911189-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	101	10.0	mg/L	100		101	85-115			
LCS Dup (B911189-BSD1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.02	20	
Batch B911203 - General Prep - Wet Chem										
Blank (B911203-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911203-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	2.68	0.100	mg NH3-N/L	2.50		107	90-110			
LCS Dup (B911203-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	2.67	0.100	mg NH3-N/L	2.50		107	90-110	0.273	20	
Batch B911219 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (B911219-BLK1)				Prepared & Analyzed: 11/21/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B911219-DUP1)		**Source: 1911164-01**		Prepared & Analyzed: 11/21/19						
Total Dissolved Solids	220	10.0	mg/L		235			6.58	20	
Reference (B911219-SRM1)				Prepared & Analyzed: 11/21/19						
Total Dissolved Solids	530	10.0	mg/L	600		88.3	85-115			
Batch B911234 - General Prep - Wet Chem										
Blank (B911234-BLK1)				Prepared & Analyzed: 11/22/19						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911234-BS1)				Prepared & Analyzed: 11/22/19						
Chloride	24.7	1.00	mg/L	25.0		98.7	90-110			
Fluoride	2.57	0.100	mg/L	2.50		103	90-110			
Sulfate	25.6	1.00	mg/L	25.0		102	90-110			
LCS Dup (B911234-BSD1)				Prepared & Analyzed: 11/22/19						
Chloride	24.5	1.00	mg/L	25.0		98.0	90-110	0.635	20	
Fluoride	2.60	0.100	mg/L	2.50		104	90-110	0.967	20	
Sulfate	25.5	1.00	mg/L	25.0		102	90-110	0.447	20	
Batch B912072 - General Prep - Wet Chem										
Blank (B912072-BLK1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B912072-BS1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	9.71	0.500	mg/L	10.0		97.1	85-115			
LCS Dup (B912072-BSD1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	4.23	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911210 - Diss. 200.7/200.8										
Blank (B911210-BLK1)				Prepared: 11/21/19 Analyzed: 11/26/19						
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 (B911210-BS1)				Prepared: 11/21/19 Analyzed: 11/26/19						
Aluminum	5.06	0.050	mg/L	5.00		101	85-115			
Calcium	5.07	0.100	mg/L	5.00		101	85-115			
Iron	5.13	0.050	mg/L	5.00		103	85-115			
Magnesium	25.5	0.100	mg/L	25.0		102	85-115			
Potassium	10.3	1.00	mg/L	10.0		103	85-115			
Silicon	5.22	0.500	mg/L	5.00		104	85-115			
Sodium	4.21	1.00	mg/L	4.05		104	85-115			
LCS Dup (B911210-BSD1)				Prepared: 11/21/19 Analyzed: 11/26/19						
Aluminum	5.05	0.050	mg/L	5.00		101	85-115	0.122	20	
Calcium	5.05	0.100	mg/L	5.00		101	85-115	0.506	20	
Iron	5.12	0.050	mg/L	5.00		102	85-115	0.160	20	
Magnesium	25.4	0.100	mg/L	25.0		101	85-115	0.421	20	
Potassium	10.4	1.00	mg/L	10.0		104	85-115	1.22	20	
Silicon	5.14	0.500	mg/L	5.00		103	85-115	1.52	20	
Sodium	4.16	1.00	mg/L	4.05		103	85-115	1.20	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911211 - Diss. 200.7/200.8										
Blank (B911211-BLK1)				Prepared & Analyzed: 11/21/19						
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 (B911211-BS1)				Prepared & Analyzed: 11/21/19						
Arsenic	0.0478	0.0005	mg/L	0.0500		95.6	85-115			
Cadmium	0.0489	0.0001	mg/L	0.0500		97.7	85-115			
Copper	0.0506	0.0001	mg/L	0.0500		101	85-115			
Lead	0.0500	0.0005	mg/L	0.0500		100	85-115			
Manganese	0.0500	0.0005	mg/L	0.0500		99.9	85-115			
Molybdenum	0.0498	0.0005	mg/L	0.0500		99.6	85-115			
Selenium	0.245	0.0010	mg/L	0.250		98.1	85-115			
Uranium	0.0496	0.0001	mg/L	0.0500		99.2	85-115			
Zinc	0.0481	0.0020	mg/L	0.0500		96.3	85-115			
LCS Dup (B911211-BSD1)				Prepared & Analyzed: 11/21/19						
Arsenic	0.0425	0.0005	mg/L	0.0500		85.1	85-115	11.6	20	
Cadmium	0.0444	0.0001	mg/L	0.0500		88.9	85-115	9.50	20	
Copper	0.0472	0.0001	mg/L	0.0500		94.5	85-115	6.93	20	
Lead	0.0473	0.0005	mg/L	0.0500		94.7	85-115	5.49	20	
Manganese	0.0477	0.0005	mg/L	0.0500		95.4	85-115	4.63	20	
Molybdenum	0.0464	0.0005	mg/L	0.0500		92.8	85-115	7.08	20	
Selenium	0.225	0.0010	mg/L	0.250		89.9	85-115	8.72	20	
Uranium	0.0478	0.0001	mg/L	0.0500		95.5	85-115	3.75	20	
Zinc	0.0452	0.0020	mg/L	0.0500		90.5	85-115	6.22	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911165 - EPA 245.1/7470										
Blank (B911165-BLK1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0004	0.0002	mg/L							B3
LCS (B911165-BS1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0054	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911165-BSD1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0053	0.0002	mg/L	0.00500		106	85-115	2.40	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 13:14

Notes and Definitions

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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC
Address: 6473 CR 120
City: HESPERUS State: CO Zip: 81326
Phone #: 970 385 4528
Contact Person: TOM BIRD / TBIRD@GCC.COM
Email Report to: LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Name(optional): GCC BASELINE
Sampler Name (Print): MICHAEL G. MCFARLAND

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one)	# of containers	ANALYSIS REQUEST
1911-171-01	WELL #1 UPGRADIENT	11-14-19	1133	GROUNDWATER +	1 1 4	X X X
-02	SEEP #1	11-14-19	1358	GROUNDWATER +	1 1 4	X X X

Matrix columns: GROUNDWATER, SURFACEWATER, WASTEWATER, PRODUCEDWATER, SOIL, DRINKING WATER, OTHER :
# of containers columns: No preservation (general), HNO_3, HCl, H_2SO_4, Other:, Other:
ANALYSIS REQUEST columns: GCC GW BASELINE, AMMONIA, ORTHO PHOSPHATE

Relinquished By:	Date: / Time:	Received By:
Michael McFarland	11-14-19 / 1533	
Relinquished By:	Date: 16 15 / Time: 11/14/19	Received By: Debbie Zufelt
Relinquished By:	Date: / Time:	Received By:
Relinquished By:	Date: / Time:	Received By:

ADDITIONAL REMARKS: Report to State? (Circle) Yes No

#1 On Ice

Temperature at receipt: 2.9 | 2.7 °C
CHECKED BY: DZ

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Project Information

Printed: 11/13/2019 8:37 am

GCC Energy, LLC

6473 CR 120
Hesperus, CO 81326
Laboratory PM: Debbie Zufelt

King Coal
Phone: (970) 385-4528
Fax: (970) 385-4638

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

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12 December 2019

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

RE: GCC GW & SW Baseline

Enclosed are the results of analyses for samples received by the laboratory on 11/13/19 15:53. This data replaces the previous report (See case narrative). 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 http://greenanalytical.com/certifications/

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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GCC Energy, LLC	Project: GCC GW & SW Baseline	
6473 CR 120	Project Name / Number: [none]	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Hay Gulch Ditch Downgradient	1911150-01	Water	11/13/19 08:24	11/13/19 15:53	
Well #2 Downgradient	1911150-02	Water	11/13/19 09:24	11/13/19 15:53	
MW-HGA-4	1911150-03	Water	11/13/19 10:58	11/13/19 15:53	
Hay Gulch Ditch Upgradient	1911150-04	Water	11/13/19 10:40	11/13/19 15:53	

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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	12/12/19 12:43

TOC was re-analyzed at a lower dilution for samples 1911150-01, 02, 03 & 04.This RE report is revised and replaces the original report dated 11/25/19

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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	12/12/19 12:43

Hay Gulch Ditch Downgradient

1911150-01 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**188**	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**194**	10.0	3.06	mg/L	1	11/18/19 13:20	2320 B		VJL
Ammonia as N	<0.100	0.100	0.0450	mg NH3-N/L	1	11/14/19 11:13	EPA350.1		LLG
Chloride*	**14.8**	2.00	0.386	mg/L	2	11/21/19 01:05	EPA300.0		AES
Fluoride*	**0.252**	0.200	0.0510	mg/L	2	11/21/19 01:05	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:55	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	1.16	mg/L	1	11/19/19 08:30	EPA1664 A		VJL
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/15/19 08:24	EPA365.3		AES
pH*	**7.73**			pH Units	1	11/14/19 09:35	EPA150.1		FGH
SAR	**0.41**			No Unit	1	11/22/19 10:46	Calculation		AES
Total Dissolved Solids*	**355**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Total Suspended Solids*	<4.00	4.00		mg/L	1	11/19/19 15:15	EPA160.2		VJL
Sulfate*	**83.3**	2.00	0.591	mg/L	2	11/21/19 01:05	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/18/19 16:14	EPA200.7		AES
Calcium*	**67.2**	0.100	0.013	mg/L	1	11/18/19 16:14	EPA200.7		AES
Hardness as CaCO3	**295**	0.662	0.109	mg/L	1	11/18/19 16:14	2340 B		AES
Iron*	<0.050	0.050	0.028	mg/L	1	11/18/19 16:14	EPA200.7		AES
Magnesium*	**30.8**	0.100	0.019	mg/L	1	11/18/19 16:14	EPA200.7		AES
Potassium*	**2.60**	1.00	0.096	mg/L	1	11/18/19 16:14	EPA200.7		AES
Silica (Si02)	**11.8**	1.07	0.0572	mg/L	1	11/18/19 16:14	Calculation		AES
Silicon	**5.50**	0.500	0.027	mg/L	1	11/18/19 16:14	EPA200.7		AES
Sodium*	**17.0**	1.00	0.367	mg/L	1	11/18/19 16:14	EPA200.7		AES

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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	12/12/19 12:43

Hay Gulch Ditch Downgradient

1911150-01 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Metals by ICPMS									
Arsenic*	**0.0005**	0.0005	0.0002	mg/L	1	11/19/19 17:26	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/19/19 17:26	EPA200.8		AES
Copper*	**0.0007**	0.0001	0.0001	mg/L	1	11/19/19 17:26	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/19/19 17:26	EPA200.8		AES
Manganese*	**0.0102**	0.0005	0.00009	mg/L	1	11/19/19 17:26	EPA200.8		AES
Molybdenum*	**0.0007**	0.0005	0.00007	mg/L	1	11/19/19 17:26	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/19/19 17:26	EPA200.8		AES
Uranium	**0.0007**	0.0001	0.00008	mg/L	1	11/19/19 17:26	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/19/19 17:26	EPA200.8		AES
Total Mercury by CVAA									
Mercury*	<0.0005	0.0005	0.00003	mg/L	1	11/19/19 11:39	EPA245.1		LLG

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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	12/12/19 12:43

Hay Gulch Ditch Downgradient

1911150-01RE1 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**3.26**	0.500	0.0670	mg/L	1	12/11/19 15:01	5310C		LLG

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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	12/12/19 12:43

Well #2 Downgradient

1911150-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**348**	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**348**	10.0	3.06	mg/L	1	11/18/19 13:20	2320 B		VJL
Ammonia as N	<0.100	0.100	0.0450	mg NH3-N/L	1	11/14/19 11:14	EPA350.1		LLG
Chloride*	**47.2**	5.00	0.964	mg/L	5	11/21/19 01:23	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/21/19 01:23	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:59	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/15/19 08:24	EPA365.3		AES
pH*	**7.12**			pH Units	1	11/14/19 09:35	EPA150.1		FGH
Total Dissolved Solids*	**690**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**182**	5.00	1.48	mg/L	5	11/21/19 01:23	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/18/19 16:16	EPA200.7		AES
Calcium*	**99.4**	0.100	0.013	mg/L	1	11/18/19 16:16	EPA200.7		AES
Hardness as CaCO3	**603**	0.662	0.109	mg/L	1	11/18/19 16:16	2340 B		AES
Iron*	**0.119**	0.050	0.028	mg/L	1	11/18/19 16:16	EPA200.7		AES
Magnesium*	**86.3**	0.100	0.019	mg/L	1	11/18/19 16:16	EPA200.7		AES
Potassium*	**2.40**	1.00	0.096	mg/L	1	11/18/19 16:16	EPA200.7		AES
Silica (Si02)	**12.8**	1.07	0.0572	mg/L	1	11/18/19 16:16	Calculation		AES
Silicon	**5.99**	0.500	0.027	mg/L	1	11/18/19 16:16	EPA200.7		AES
Sodium*	**25.5**	1.00	0.367	mg/L	1	11/18/19 16:16	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0012**	0.0005	0.0002	mg/L	1	11/19/19 17:37	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/19/19 17:37	EPA200.8		AES
Copper*	**0.0002**	0.0001	0.0001	mg/L	1	11/19/19 17:37	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/19/19 17:37	EPA200.8		AES
Manganese*	**0.427**	0.0005	0.00009	mg/L	1	11/19/19 17:37	EPA200.8		AES
Molybdenum*	**0.0024**	0.0005	0.00007	mg/L	1	11/19/19 17:37	EPA200.8		AES
Selenium*	**0.0011**	0.0010	0.0006	mg/L	1	11/19/19 17:37	EPA200.8		AES
Uranium	**0.0015**	0.0001	0.00008	mg/L	1	11/19/19 17:37	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/19/19 17:37	EPA200.8		AES

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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	12/12/19 12:43

Well #2 Downgradient

1911150-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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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	12/12/19 12:43

Well #2 Downgradient

1911150-02RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**1.99**	0.500	0.0670	mg/L	1	12/11/19 15:50	5310C		LLG

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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	12/12/19 12:43

MW-HGA-4

1911150-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**432**	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Total as CaCO3*	**432**	10.0	3.06	mg/L	1	11/20/19 08:40	2320 B		VJL
Ammonia as N	**0.528**	0.100	0.0450	mg NH3-N/L	1	11/14/19 11:15	EPA350.1		LLG
Chloride*	**9.46**	5.00	0.964	mg/L	5	11/21/19 01:41	EPA300.0		AES
Fluoride*	**0.520**	0.500	0.128	mg/L	5	11/21/19 01:41	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 15:00	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/15/19 08:24	EPA365.3		AES
pH*	**6.88**			pH Units	1	11/14/19 09:35	EPA150.1		FGH
Total Dissolved Solids*	**715**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**190**	5.00	1.48	mg/L	5	11/21/19 01:41	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/18/19 16:19	EPA200.7		AES
Calcium*	**123**	0.100	0.013	mg/L	1	11/18/19 16:19	EPA200.7		AES
Hardness as CaCO3	**624**	0.662	0.109	mg/L	1	11/18/19 16:19	2340 B		AES
Iron*	**9.76**	0.050	0.028	mg/L	1	11/18/19 16:19	EPA200.7		AES
Magnesium*	**76.8**	0.100	0.019	mg/L	1	11/18/19 16:19	EPA200.7		AES
Potassium*	**2.38**	1.00	0.096	mg/L	1	11/18/19 16:19	EPA200.7		AES
Silica (Si02)	**16.5**	1.07	0.0572	mg/L	1	11/18/19 16:19	Calculation		AES
Silicon	**7.69**	0.500	0.027	mg/L	1	11/18/19 16:19	EPA200.7		AES
Sodium*	**31.9**	1.00	0.367	mg/L	1	11/18/19 16:19	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0033**	0.0005	0.0002	mg/L	1	11/19/19 17:47	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/19/19 17:47	EPA200.8		AES
Copper*	**0.0002**	0.0001	0.0001	mg/L	1	11/19/19 17:47	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/19/19 17:47	EPA200.8		AES
Manganese*	**1.78**	0.0005	0.00009	mg/L	1	11/19/19 17:47	EPA200.8		AES
Molybdenum*	**0.0031**	0.0005	0.00007	mg/L	1	11/19/19 17:47	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/19/19 17:47	EPA200.8		AES
Uranium	**0.0003**	0.0001	0.00008	mg/L	1	11/19/19 17:47	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/19/19 17:47	EPA200.8		AES

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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	12/12/19 12:43

MW-HGA-4

1911150-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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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	12/12/19 12:43

MW-HGA-4

1911150-03RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**4.35**	0.500	0.0670	mg/L	1	12/11/19 16:06	5310C		LLG

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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	12/12/19 12:43

Hay Gulch Ditch Upgradient

1911150-04 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**233**	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	1	11/20/19 08:40	2320 B		VJL
Alkalinity, Total as CaCO3*	**233**	10.0	3.06	mg/L	1	11/20/19 08:40	2320 B		VJL
Ammonia as N	<0.100	0.100	0.0450	mg NH3-N/L	1	11/14/19 11:17	EPA350.1		LLG
Chloride*	**22.8**	5.00	0.964	mg/L	5	11/21/19 01:59	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/21/19 01:59	EPA300.0		AES
Nitrate/Nitrite as N*	**0.104**	0.020	0.006	mg/L as N	1	11/18/19 15:03	EPA353.2		LLG
Oil & Grease (HEM)	<5.00	5.00	1.16	mg/L	1	11/19/19 08:30	EPA1664 A		VJL
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/15/19 08:24	EPA365.3		AES
pH*	**7.40**			pH Units	1	11/14/19 09:35	EPA150.1		FGH
SAR	**0.55**			No Unit	1	11/22/19 10:48	Calculation		AES
Total Dissolved Solids*	**635**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Total Suspended Solids*	**5.38**	4.00		mg/L	1	11/19/19 15:15	EPA160.2		VJL
Sulfate*	**107**	5.00	1.48	mg/L	5	11/21/19 01:59	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/18/19 16:22	EPA200.7		AES
Calcium*	**79.3**	0.100	0.013	mg/L	1	11/18/19 16:21	EPA200.7		AES
Hardness as CaCO3	**372**	0.662	0.109	mg/L	1	11/18/19 16:21	2340 B		AES
Iron*	**0.316**	0.050	0.028	mg/L	1	11/18/19 16:22	EPA200.7		AES
Magnesium*	**42.2**	0.100	0.019	mg/L	1	11/18/19 16:21	EPA200.7		AES
Potassium*	**3.25**	1.00	0.096	mg/L	1	11/18/19 16:21	EPA200.7		AES
Silica (Si02)	**13.4**	1.07	0.0572	mg/L	1	11/18/19 16:21	Calculation		AES
Silicon	**6.25**	0.500	0.027	mg/L	1	11/18/19 16:21	EPA200.7		AES
Sodium*	**25.4**	1.00	0.367	mg/L	1	11/18/19 16:21	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0005**	0.0005	0.0002	mg/L	1	11/19/19 17:51	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/19/19 17:51	EPA200.8		AES
Copper*	**0.0005**	0.0001	0.0001	mg/L	1	11/19/19 17:51	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/19/19 17:51	EPA200.8		AES
Manganese*	**0.113**	0.0005	0.00009	mg/L	1	11/19/19 17:51	EPA200.8		AES
Molybdenum*	**0.0007**	0.0005	0.00007	mg/L	1	11/19/19 17:51	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/19/19 17:51	EPA200.8		AES
Uranium	**0.0007**	0.0001	0.00008	mg/L	1	11/19/19 17:51	EPA200.8		AES
Zinc*	**0.0033**	0.0020	0.0004	mg/L	1	11/19/19 17:51	EPA200.8		AES

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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	12/12/19 12:43

Hay Gulch Ditch Upgradient

1911150-04 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Mercury by CVAA									
Mercury*	<0.0005	0.0005	0.00003	mg/L	1	11/19/19 11:39	EPA245.1		LLG

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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	12/12/19 12:43

Hay Gulch Ditch Upgradient

1911150-04RE1 (Surface Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**4.54**	0.500	0.0670	mg/L	1	12/11/19 16:23	5310C		LLG

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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	12/12/19 12:43

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911134 - General Prep - Wet Chem										
Blank (B911134-BLK1)				Prepared & Analyzed: 11/14/19						
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911134-BS1)				Prepared & Analyzed: 11/14/19						
Ammonia as N	2.72	0.100	mg NH3-N/L	2.50		109	90-110			
LCS Dup (B911134-BSD1)				Prepared & Analyzed: 11/14/19						
Ammonia as N	2.69	0.100	mg NH3-N/L	2.50		108	90-110	0.891	20	
Batch B911149 - General Prep - Wet Chem										
Blank (B911149-BLK1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B911149-BS1)				Prepared: 11/14/19 Analyzed: 11/18/19						
Oil & Grease (HEM)	37.7	5.00	mg/L	40.0		94.3	85-115			
LCS Dup (B911149-BSD1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Oil & Grease (HEM)	36.1	5.00	mg/L	40.0		90.3	85-115	4.34	20	
Batch B911155 - General Prep - Wet Chem										
Duplicate (B911155-DUP1)		**Source: 1911150-01**		Prepared & Analyzed: 11/14/19						
pH	7.78		pH Units		7.73			0.645	20	
Reference (B911155-SRM1)				Prepared & Analyzed: 11/14/19						
pH	7.00		pH Units	7.00		100	98.5-101.4			
Batch B911157 - General Prep - Wet Chem										
Blank (B911157-BLK1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911157-BS1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	0.235	0.0500	mg/L	0.250		94.0	85-115			
LCS Dup (B911157-BSD1)				Prepared & Analyzed: 11/15/19						
Ortho-Phosphate as P	0.249	0.0500	mg/L	0.250		99.6	85-115	5.79	20	
Batch B911167 - General Prep - Wet Chem										
Blank (B911167-BLK1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B911167-DUP1)		**Source: 1911108-01**		Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	230	10.0	mg/L		225			2.22	20	
Reference (B911167-SRM1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	595	10.0	mg/L	600		99.2	85-115			
Batch B911168 - General Prep - Wet Chem										

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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	12/12/19 12:43

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (B911168-BLK1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B911168-BS1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B911168-BSD1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	106	10.0	mg/L	100		106	85-115	8.87	20	
Batch B911172 - General Prep - Wet Chem										
Blank (B911172-BLK1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911172-BS1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B911172-BSD1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110	0.152	20	
Batch B911183 - General Prep - Wet Chem										
Blank (B911183-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911183-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	23.6	1.00	mg/L	25.0		94.3	90-110			
Fluoride	2.63	0.100	mg/L	2.50		105	90-110			
Sulfate	24.0	1.00	mg/L	25.0		96.1	90-110			
LCS Dup (B911183-BSD1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	23.7	1.00	mg/L	25.0		94.8	90-110	0.575	20	
Fluoride	2.62	0.100	mg/L	2.50		105	90-110	0.381	20	
Sulfate	24.0	1.00	mg/L	25.0		96.0	90-110	0.117	20	
Batch B911188 - General Prep - Wet Chem										
Blank (B911188-BLK1)				Prepared & Analyzed: 11/19/19						
Total Suspended Solids	ND	4.00	mg/L							
Duplicate (B911188-DUP1)		**Source: 1911132-01**		Prepared & Analyzed: 11/19/19						
Total Suspended Solids	3.75	4.00	mg/L		4.00			6.45	20	
Reference (B911188-SRM1)				Prepared & Analyzed: 11/19/19						
Total Suspended Solids	105	4.00	mg/L	100		105	85-115			
Batch B911189 - General Prep - Wet Chem										

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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	12/12/19 12:43

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911189 - General Prep - Wet Chem (Continued)										
Blank (B911189-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B911189-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	101	10.0	mg/L	100		101	85-115			
LCS Dup (B911189-BSD1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Alkalinity, Total as CaCO3	98.0	10.0	mg/L	100		98.0	85-115	3.02	20	
Batch B912072 - General Prep - Wet Chem										
Blank (B912072-BLK1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B912072-BS1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	9.71	0.500	mg/L	10.0		97.1	85-115			
LCS Dup (B912072-BSD1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	4.23	20	

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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	12/12/19 12:43

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911141 - Diss. 200.7/200.8										
Blank (B911141-BLK1)				Prepared: 11/14/19 Analyzed: 11/15/19						
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 (B911141-BS1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.60	0.050	mg/L	5.00		112	85-115			
Calcium	5.32	0.100	mg/L	5.00		106	85-115			
Iron	5.44	0.050	mg/L	5.00		109	85-115			
Magnesium	26.9	0.100	mg/L	25.0		108	85-115			
Potassium	11.0	1.00	mg/L	10.0		110	85-115			
Silicon	5.74	0.500	mg/L	5.00		115	85-115			
Sodium	4.36	1.00	mg/L	4.05		108	85-115			
LCS Dup (B911141-BSD1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.26	0.050	mg/L	5.00		105	85-115	6.17	20	
Calcium	5.05	0.100	mg/L	5.00		101	85-115	5.08	20	
Iron	5.08	0.050	mg/L	5.00		102	85-115	6.97	20	
Magnesium	25.7	0.100	mg/L	25.0		103	85-115	4.65	20	
Potassium	10.3	1.00	mg/L	10.0		103	85-115	6.54	20	
Silicon	5.46	0.500	mg/L	5.00		109	85-115	4.97	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	5.47	20	

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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	12/12/19 12:43

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911142 - Diss. 200.7/200.8										
Blank (B911142-BLK1)				Prepared: 11/14/19 Analyzed: 11/19/19						
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 (B911142-BS1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0462	0.0005	mg/L	0.0500		92.4	85-115			
Cadmium	0.0481	0.0001	mg/L	0.0500		96.1	85-115			
Copper	0.0467	0.0001	mg/L	0.0500		93.3	85-115			
Lead	0.0484	0.0005	mg/L	0.0500		96.8	85-115			
Manganese	0.0484	0.0005	mg/L	0.0500		96.9	85-115			
Molybdenum	0.0506	0.0005	mg/L	0.0500		101	85-115			
Selenium	0.234	0.0010	mg/L	0.250		93.7	85-115			
Uranium	0.0460	0.0001	mg/L	0.0500		92.1	85-115			
Zinc	0.0454	0.0020	mg/L	0.0500		90.7	85-115			
LCS Dup (B911142-BSD1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0445	0.0005	mg/L	0.0500		89.0	85-115	3.82	20	
Cadmium	0.0477	0.0001	mg/L	0.0500		95.4	85-115	0.703	20	
Copper	0.0465	0.0001	mg/L	0.0500		93.1	85-115	0.295	20	
Lead	0.0486	0.0005	mg/L	0.0500		97.3	85-115	0.455	20	
Manganese	0.0475	0.0005	mg/L	0.0500		95.0	85-115	1.92	20	
Molybdenum	0.0487	0.0005	mg/L	0.0500		97.4	85-115	3.82	20	
Selenium	0.232	0.0010	mg/L	0.250		92.9	85-115	0.872	20	
Uranium	0.0480	0.0001	mg/L	0.0500		96.0	85-115	4.20	20	
Zinc	0.0444	0.0020	mg/L	0.0500		88.8	85-115	2.12	20	

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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	12/12/19 12:43

Total Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911166 - EPA 245.1/7470										
Blank (B911166-BLK1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0002	0.0002	mg/L							B3
LCS (B911166-BS1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0051	0.0002	mg/L	0.00500		103	85-115			
LCS Dup (B911166-BSD1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0051	0.0002	mg/L	0.00500		102	85-115	0.370	20	

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911165 - EPA 245.1/7470										
Blank (B911165-BLK1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0004	0.0002	mg/L							B3
LCS (B911165-BS1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0054	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911165-BSD1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0053	0.0002	mg/L	0.00500		106	85-115	2.40	20	

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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	12/12/19 12:43

Notes and Definitions

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

Green Analytical Laboratories

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC
Address: 6473 CR 120
City: HESPERUS State: CO Zip: 81326
Phone #: 970 385 4528
Contact Person: TOM BIRD / TBIRD@GCC.COM
Email Report to: ~~LBECK@HYDRORE~~ MGM
Project Name(optional): LBECK@RESOURCEHYDROGEOLOGIC.COM
Sampler Name (Print): MICHAEL G. MCFARLAND

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER:	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE	GCCE SW BASELINE	AMMONIA	ORTHO PHOSPHATE
1911-150-01	HAY GULCH DITCH DOWN GRADIENT	11-13-19	0824	†							2	~~1~~	1	~~1~~			~~X~~		4	4
-02	WELL #2 DOWN GRADIENT	11-13-19	0924	†							1	(1g)		4			†		4	4
-03	MW-HGA-4	11-13-19	1058	†							1	1		4			†		4	4
-04	HAY GULCH DITCH UP GRADIENT	11-13-19	1040	†							2	1	1	~~1~~			~~X~~ MGM	X	4	4

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 whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors 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.

Relinquished By:	Date:	Time:	Received By:
Michael McFarland	11-13-19	1200	
Relinquished By:	11/13/19	3:53 pm	Received By: Dublin Zufelt
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS: Report to State? (Circle) Yes No

#1 On Ice

3.9/3.7°C Temperature at receipt: CHECKED BY DZ

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Project Information

Printed: 11/13/2019 4:12 pm

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: Debbie Zufelt

King Coal
Phone: (970) 385-4528
Fax: (970) 385-4638

Project Name: GCC SW Baseline
Project Number: GCC SW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Total by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
Oil & Grease	
pH	
Potassium Dissolved by ICP	
SAR	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Solids, Total Suspended (TSS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

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12 December 2019

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 11/11/19 15:45. This data replaces the previous report (See case narrative). If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt

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 http://greenanalytical.com/certifications/

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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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Wiltse Well	1911113-01	Water	11/11/19 12:37	11/11/19 15:45	

Green Analytical Laboratories

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GCC Energy, LLC	Project:	GCC GW Baseline	
6473 CR 120	Project Name / Number:	GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager:	Tom Bird	12/12/19 11:37

TOC for the attached sample was re-analyzed at a lower dilution.This RE report is revised and replaces the original report dated 11/22/19.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Wiltse Well

1911113-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**460**	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**460**	10.0	3.06	mg/L	2	11/18/19 13:20	2320 B		VJL
Ammonia as N	<0.100	0.100	0.0450	mg NH3-N/L	1	11/21/19 16:32	EPA350.1		LLG
Chloride*	**48.2**	5.00	0.964	mg/L	5	11/18/19 23:52	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/18/19 23:52	EPA300.0		AES
Nitrate/Nitrite as N*	**1.31**	0.020	0.006	mg/L as N	1	11/18/19 14:10	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/12/19 15:45	EPA365.3		AES
pH*	**7.09**			pH Units	1	11/12/19 10:10	EPA150.1		FGH
Total Dissolved Solids*	**1480**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**627**	25.0	7.38	mg/L	25	11/19/19 00:10	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.050	mg/L	2	11/15/19 16:11	EPA200.7		AES
Calcium*	**208**	0.200	0.026	mg/L	2	11/15/19 16:11	EPA200.7		AES
Hardness as CaCO3	**1060**	1.32	0.219	mg/L	2	11/15/19 16:11	2340 B		AES
Iron*	**0.209**	0.100	0.055	mg/L	2	11/15/19 16:11	EPA200.7		AES
Magnesium*	**132**	0.200	0.038	mg/L	2	11/15/19 16:11	EPA200.7		AES
Potassium*	**4.85**	2.00	0.191	mg/L	2	11/15/19 16:11	EPA200.7		AES
Silica (Si02)	**14.9**	2.14	0.114	mg/L	2	11/15/19 16:11	Calculation		AES
Silicon	**6.96**	1.00	0.053	mg/L	2	11/15/19 16:11	EPA200.7		AES
Sodium*	**67.3**	2.00	0.734	mg/L	2	11/15/19 16:11	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0004	mg/L	2	11/19/19 16:48	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/19/19 16:48	EPA200.8		AES
Copper*	**0.0012**	0.0002	0.0002	mg/L	2	11/19/19 16:48	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/19/19 16:48	EPA200.8		AES
Manganese*	**0.892**	0.0010	0.0002	mg/L	2	11/19/19 16:48	EPA200.8		AES
Molybdenum*	**0.0017**	0.0010	0.0001	mg/L	2	11/19/19 16:48	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/19/19 16:48	EPA200.8		AES
Uranium	**0.0023**	0.0002	0.0002	mg/L	2	11/19/19 16:48	EPA200.8		AES
Zinc*	**0.0108**	0.0040	0.0007	mg/L	2	11/19/19 16:48	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Wiltse Well

1911113-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Wiltse Well

1911113-01RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**3.30**	0.500	0.0670	mg/L	1	12/11/19 13:01	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911120 - General Prep - Wet Chem										
Blank (B911120-BLK1)				Prepared & Analyzed: 11/12/19						
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911120-BS1)				Prepared & Analyzed: 11/12/19						
Ortho-Phosphate as P	0.253	0.0500	mg/L	0.250		101	85-115			
LCS Dup (B911120-BSD1)				Prepared & Analyzed: 11/12/19						
Ortho-Phosphate as P	0.256	0.0500	mg/L	0.250		102	85-115	1.18	20	
Batch B911121 - General Prep - Wet Chem										
Duplicate (B911121-DUP1)			**Source: 1911108-01**	Prepared & Analyzed: 11/12/19						
pH	7.70		pH Units		7.63			0.913	20	
Reference (B911121-SRM1)				Prepared & Analyzed: 11/12/19						
pH	6.99		pH Units	7.00		99.9	98.5-101.4			
Batch B911143 - General Prep - Wet Chem										
Blank (B911143-BLK1)				Prepared: 11/14/19 Analyzed: 11/18/19						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911143-BS1)				Prepared: 11/14/19 Analyzed: 11/18/19						
Chloride	23.0	1.00	mg/L	25.0		92.0	90-110			
Fluoride	2.59	0.100	mg/L	2.50		103	90-110			
Sulfate	23.1	1.00	mg/L	25.0		92.4	90-110			
LCS Dup (B911143-BSD1)				Prepared: 11/14/19 Analyzed: 11/18/19						
Chloride	23.2	1.00	mg/L	25.0		92.7	90-110	0.832	20	
Fluoride	2.60	0.100	mg/L	2.50		104	90-110	0.655	20	
Sulfate	23.3	1.00	mg/L	25.0		93.2	90-110	0.845	20	
Batch B911167 - General Prep - Wet Chem										
Blank (B911167-BLK1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B911167-DUP1)			**Source: 1911108-01**	Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	230	10.0	mg/L		225			2.22	20	
Reference (B911167-SRM1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	595	10.0	mg/L	600		99.2	85-115			
Batch B911168 - General Prep - Wet Chem										
Blank (B911168-BLK1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911168 - General Prep - Wet Chem (Continued)										
LCS (B911168-BS1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B911168-BSD1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	106	10.0	mg/L	100		106	85-115	8.87	20	
Batch B911171 - General Prep - Wet Chem										
Blank (B911171-BLK1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911171-BS1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.03	0.020	mg/L as N	1.00		103	90-110			
LCS Dup (B911171-BSD1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.562	20	
Batch B911203 - General Prep - Wet Chem										
Blank (B911203-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911203-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	2.68	0.100	mg NH3-N/L	2.50		107	90-110			
LCS Dup (B911203-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Ammonia as N	2.67	0.100	mg NH3-N/L	2.50		107	90-110	0.273	20	
Batch B912072 - General Prep - Wet Chem										
Blank (B912072-BLK1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B912072-BS1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	9.71	0.500	mg/L	10.0		97.1	85-115			
LCS Dup (B912072-BSD1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	4.23	20	

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911141 - Diss. 200.7/200.8										
Blank (B911141-BLK1)				Prepared: 11/14/19 Analyzed: 11/15/19						
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 (B911141-BS1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.60	0.050	mg/L	5.00		112	85-115			
Calcium	5.32	0.100	mg/L	5.00		106	85-115			
Iron	5.44	0.050	mg/L	5.00		109	85-115			
Magnesium	26.9	0.100	mg/L	25.0		108	85-115			
Potassium	11.0	1.00	mg/L	10.0		110	85-115			
Silicon	5.74	0.500	mg/L	5.00		115	85-115			
Sodium	4.36	1.00	mg/L	4.05		108	85-115			
LCS Dup (B911141-BSD1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.26	0.050	mg/L	5.00		105	85-115	6.17	20	
Calcium	5.05	0.100	mg/L	5.00		101	85-115	5.08	20	
Iron	5.08	0.050	mg/L	5.00		102	85-115	6.97	20	
Magnesium	25.7	0.100	mg/L	25.0		103	85-115	4.65	20	
Potassium	10.3	1.00	mg/L	10.0		103	85-115	6.54	20	
Silicon	5.46	0.500	mg/L	5.00		109	85-115	4.97	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	5.47	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911142 - Diss. 200.7/200.8										
Blank (B911142-BLK1)				Prepared: 11/14/19 Analyzed: 11/19/19						
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 (B911142-BS1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0462	0.0005	mg/L	0.0500		92.4	85-115			
Cadmium	0.0481	0.0001	mg/L	0.0500		96.1	85-115			
Copper	0.0467	0.0001	mg/L	0.0500		93.3	85-115			
Lead	0.0484	0.0005	mg/L	0.0500		96.8	85-115			
Manganese	0.0484	0.0005	mg/L	0.0500		96.9	85-115			
Molybdenum	0.0506	0.0005	mg/L	0.0500		101	85-115			
Selenium	0.234	0.0010	mg/L	0.250		93.7	85-115			
Uranium	0.0460	0.0001	mg/L	0.0500		92.1	85-115			
Zinc	0.0454	0.0020	mg/L	0.0500		90.7	85-115			
LCS Dup (B911142-BSD1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0445	0.0005	mg/L	0.0500		89.0	85-115	3.82	20	
Cadmium	0.0477	0.0001	mg/L	0.0500		95.4	85-115	0.703	20	
Copper	0.0465	0.0001	mg/L	0.0500		93.1	85-115	0.295	20	
Lead	0.0486	0.0005	mg/L	0.0500		97.3	85-115	0.455	20	
Manganese	0.0475	0.0005	mg/L	0.0500		95.0	85-115	1.92	20	
Molybdenum	0.0487	0.0005	mg/L	0.0500		97.4	85-115	3.82	20	
Selenium	0.232	0.0010	mg/L	0.250		92.9	85-115	0.872	20	
Uranium	0.0480	0.0001	mg/L	0.0500		96.0	85-115	4.20	20	
Zinc	0.0444	0.0020	mg/L	0.0500		88.8	85-115	2.12	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 11:37

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911110 - EPA 245.1/7470										
Blank (B911110-BLK1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	ND	0.0002	mg/L							
LCS (B911110-BS1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911110-BSD1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115	0.220	20	

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GCC Energy, LLC	Project:	GCC GW Baseline	
6473 CR 120	Project Name / Number:	GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager:	Tom Bird	12/12/19 11:37

Notes and Definitions

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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client: GCC ENERGY LLC	Bill to (if different):
Address: 6473 C.R. 120	P.O. #:
City: HESPERUS **State:** CO **Zip:** 81326	Company:
Phone #: 970 385 4528	Attn:
Contact Person: TOM BIRD; TBIRD@GCC.COM	Address:
Email Report to: LBECK@RESOURCEHYDROGEOLOGIC.COM	City:
Project Name(optional): GCC BASELINE	State: Zip:
	Phone #:
Sampler Name (Print): MICHAEL G. MCFARLAND	Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE	AMMONIA	ORTHOPHOSPHATE
1911-113-01	WILTSE WELL	11-11-19	1237	X							1	1		4			X	X	X

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 whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors 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.

Relinquished By:	Date:	Time:	Received By:
Michael G. McFarland	11-11-19	1346	
Relinquished By:	Date:	Time:	Received By:
X	11/11/19	1545	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS:

Report to State? (Circle) Yes No

#1 on ice

4.9 | 4.7°C Temperature at receipt:

CHECKED BY

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

* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

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15 November 2019

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 11/05/19 16:25.
If you need any further assistance, please feel free to contact me.

Sincerely,

Jeremy D Allen For 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 http://greenanalytical.com/certifications/

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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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-A	1911053-01	Water	11/05/19 11:05	11/05/19 16:25	
MW-1-C	1911053-02	Water	11/05/19 12:31	11/05/19 16:25	

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

MW-1-A

1911053-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**420**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**420**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.387**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:30	EPA350.1		LLG
Chloride*	**2.66**	2.00	0.386	mg/L	2	11/11/19 16:53	EPA300.0		AES
Fluoride*	**0.246**	0.200	0.0510	mg/L	2	11/11/19 16:53	EPA300.0		AES
Nitrate/Nitrite as N*	**0.020**	0.020	0.006	mg/L as N	1	11/12/19 14:22	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/07/19 04:20	EPA300.0	BS1	AES
pH*	**6.92**			pH Units	1	11/06/19 08:10	EPA150.1		FGH
Total Dissolved Solids*	**1140**	10.0		mg/L	1	11/07/19 14:18	EPA160.1		VJL
Sulfate*	**495**	20.0	5.91	mg/L	20	11/11/19 17:11	EPA300.0		AES
Total Organic Carbon*	**1.50**	0.500	0.0670	mg/L	1	11/11/19 23:06	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 20:09	EPA200.7		AES
Calcium*	**29.0**	0.100	0.013	mg/L	1	11/08/19 20:09	EPA200.7		AES
Hardness as CaCO3	**150**	0.662	0.109	mg/L	1	11/08/19 20:09	2340 B		AES
Iron*	**0.510**	0.050	0.028	mg/L	1	11/08/19 20:09	EPA200.7		AES
Magnesium*	**18.8**	0.100	0.019	mg/L	1	11/08/19 20:09	EPA200.7		AES
Potassium*	**2.12**	1.00	0.096	mg/L	1	11/08/19 20:09	EPA200.7		AES
Silica (Si02)	**11.0**			mg/L	1	11/08/19 20:09	Calculation		AES
Silicon	**5.13**	0.500	0.027	mg/L	1	11/08/19 20:09	EPA200.7		AES
Sodium*	**333**	1.00	0.367	mg/L	1	11/08/19 20:09	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0005	0.0005	0.0002	mg/L	1	11/08/19 17:35	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/08/19 17:35	EPA200.8		AES
Copper*	**0.0147**	0.0001	0.0001	mg/L	1	11/08/19 17:35	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/13/19 14:02	EPA200.8		AES
Manganese*	**0.0248**	0.0005	0.00009	mg/L	1	11/08/19 17:35	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.00007	mg/L	1	11/08/19 17:35	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/08/19 17:35	EPA200.8		AES
Uranium	**0.0001**	0.0001	0.00008	mg/L	1	11/13/19 14:02	EPA200.8		AES
Zinc*	**0.0020**	0.0020	0.0004	mg/L	1	11/08/19 17:35	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

MW-1-A

1911053-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

MW-1-C

1911053-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**505**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**505**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.140**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:33	EPA350.1	M5	LLG
Chloride*	**8.78**	5.00	0.964	mg/L	5	11/11/19 18:05	EPA300.0		AES
Fluoride*	**0.565**	0.500	0.128	mg/L	5	11/11/19 18:05	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:23	EPA353.2		LLG
Ortho-Phosphate as P	<0.100	0.100	0.0183	mg/L	2	11/07/19 04:38	EPA300.0	BS1	AES
pH*	**6.63**			pH Units	1	11/06/19 08:10	EPA150.1		FGH
Total Dissolved Solids*	**2750**	10.0		mg/L	1	11/07/19 14:20	EPA160.1		VJL
Sulfate*	**1520**	50.0	14.8	mg/L	50	11/11/19 18:23	EPA300.0		AES
Total Organic Carbon*	**2.30**	0.500	0.0670	mg/L	1	11/11/19 23:26	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/08/19 20:20	EPA200.7		AES
Calcium*	**318**	0.500	0.064	mg/L	5	11/08/19 20:20	EPA200.7		AES
Hardness as CaCO3	**1700**	3.31	0.546	mg/L	5	11/08/19 20:20	2340 B		AES
Iron*	**0.543**	0.250	0.138	mg/L	5	11/08/19 20:20	EPA200.7		AES
Magnesium*	**219**	0.500	0.094	mg/L	5	11/08/19 20:20	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	11/08/19 20:20	EPA200.7		AES
Silica (Si02)	**16.4**			mg/L	5	11/08/19 20:20	Calculation		AES
Silicon	**7.65**	2.50	0.134	mg/L	5	11/08/19 20:20	EPA200.7		AES
Sodium*	**119**	5.00	1.83	mg/L	5	11/08/19 20:20	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0011	mg/L	5	11/08/19 17:39	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0002	mg/L	5	11/08/19 17:39	EPA200.8		AES
Copper*	**0.0096**	0.0005	0.0005	mg/L	5	11/08/19 17:39	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0005	mg/L	5	11/13/19 14:05	EPA200.8		AES
Manganese*	**0.0512**	0.0025	0.0004	mg/L	5	11/08/19 17:39	EPA200.8		AES
Molybdenum*	<0.0025	0.0025	0.0003	mg/L	5	11/08/19 17:39	EPA200.8		AES
Selenium*	<0.0050	0.0050	0.0032	mg/L	5	11/08/19 17:39	EPA200.8		AES
Uranium	**0.0023**	0.0005	0.0004	mg/L	5	11/13/19 14:05	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0018	mg/L	5	11/08/19 17:39	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

MW-1-C

1911053-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

Green Analytical Laboratories

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911064 - General Prep - Wet Chem										
Blank (B911064-BLK1)			Prepared: 11/06/19 Analyzed: 11/08/19							
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911064-BS1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ortho-Phosphate as P	1.13	0.0500	mg/L	1.00		113	90-110			BS1
LCS Dup (B911064-BSD1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ortho-Phosphate as P	1.15	0.0500	mg/L	1.00		115	90-110	1.95	20	BS1
Batch B911066 - General Prep - Wet Chem										
Reference (B911066-SRM1)			Prepared & Analyzed: 11/06/19							
pH	6.98		pH Units	7.00		99.7	98.5-101.4			
Batch B911068 - General Prep - Wet Chem										
Blank (B911068-BLK1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911068-BS1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ammonia as N	2.60	0.100	mg NH3-N/L	2.50		104	90-110			
LCS Dup (B911068-BSD1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ammonia as N	2.59	0.100	mg NH3-N/L	2.50		104	90-110	0.554	20	
Batch B911074 - General Prep - Wet Chem										
Blank (B911074-BLK1)			Prepared & Analyzed: 11/07/19							
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B911074-SRM1)			Prepared & Analyzed: 11/07/19							
Total Dissolved Solids	545	10.0	mg/L	600		90.8	85-115			
Batch B911075 - General Prep - Wet Chem										
Blank (B911075-BLK1)			Prepared & Analyzed: 11/07/19							
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 (B911075-BS1)			Prepared & Analyzed: 11/07/19							
Alkalinity, Bicarbonate as CaCO3	95.0	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	95.0	10.0	mg/L	100		95.0	85-115			

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911075 - General Prep - Wet Chem (Continued)										
LCS Dup (B911075-BSD1)			Prepared & Analyzed: 11/07/19							
Alkalinity, Bicarbonate as CaCO3	102	10.0	mg/L				85-115	7.11	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	102	10.0	mg/L	100		102	85-115	7.11	20	
Batch B911095 - General Prep - Wet Chem										
Blank (B911095-BLK1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B911095-BS1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B911095-BSD1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.197	20	
Batch B911097 - General Prep - Wet Chem										
Blank (B911097-BLK1)			Prepared & Analyzed: 11/11/19							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911097-BS1)			Prepared & Analyzed: 11/11/19							
Chloride	23.0	1.00	mg/L	25.0		91.8	90-110			
Fluoride	2.56	0.100	mg/L	2.50		103	90-110			
Sulfate	23.5	1.00	mg/L	25.0		94.1	90-110			
LCS Dup (B911097-BSD1)			Prepared & Analyzed: 11/11/19							
Chloride	22.5	1.00	mg/L	25.0		90.0	90-110	1.98	20	
Fluoride	2.56	0.100	mg/L	2.50		103	90-110	0.00	20	
Sulfate	23.1	1.00	mg/L	25.0		92.2	90-110	1.98	20	
Batch B911106 - General Prep - Wet Chem										
Blank (B911106-BLK1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911106-BS1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110			
LCS Dup (B911106-BSD1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	1.05	0.020	mg/L as N	1.00		105	90-110	0.238	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911084 - Diss. 200.7/200.8										
Blank (B911084-BLK1)				Prepared & Analyzed: 11/08/19						
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 (B911084-BS1)				Prepared & Analyzed: 11/08/19						
Aluminum	4.84	0.050	mg/L	5.00		96.9	85-115			
Calcium	4.67	0.100	mg/L	5.00		93.4	85-115			
Iron	4.76	0.050	mg/L	5.00		95.3	85-115			
Magnesium	23.5	0.100	mg/L	25.0		93.9	85-115			
Potassium	9.53	1.00	mg/L	10.0		95.3	85-115			
Silicon	4.96	0.500	mg/L	5.00		99.3	85-115			
Sodium	3.86	1.00	mg/L	4.05		95.3	85-115			
LCS Dup (B911084-BSD1)				Prepared & Analyzed: 11/08/19						
Aluminum	4.73	0.050	mg/L	5.00		94.5	85-115	2.44	20	
Calcium	4.67	0.100	mg/L	5.00		93.3	85-115	0.0872	20	
Iron	4.65	0.050	mg/L	5.00		93.1	85-115	2.32	20	
Magnesium	23.5	0.100	mg/L	25.0		94.1	85-115	0.176	20	
Potassium	9.51	1.00	mg/L	10.0		95.1	85-115	0.223	20	
Silicon	4.90	0.500	mg/L	5.00		98.0	85-115	1.27	20	
Sodium	3.84	1.00	mg/L	4.05		94.9	85-115	0.417	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911085 - Diss. 200.7/200.8										
Blank (B911085-BLK1)				Prepared & Analyzed: 11/08/19						
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 (B911085-BS1)				Prepared & Analyzed: 11/08/19						
Arsenic	0.0505	0.0005	mg/L	0.0500		101	85-115			
Cadmium	0.0517	0.0001	mg/L	0.0500		103	85-115			
Copper	0.0487	0.0001	mg/L	0.0500		97.3	85-115			
Lead	0.0503	0.0005	mg/L	0.0500		101	85-115			
Manganese	0.0482	0.0005	mg/L	0.0500		96.4	85-115			
Molybdenum	0.0494	0.0005	mg/L	0.0500		98.8	85-115			
Selenium	0.250	0.0010	mg/L	0.250		99.8	85-115			
Uranium	0.0495	0.0001	mg/L	0.0500		99.0	85-115			
Zinc	0.0490	0.0020	mg/L	0.0500		98.1	85-115			
LCS Dup (B911085-BSD1)				Prepared & Analyzed: 11/08/19						
Arsenic	0.0489	0.0005	mg/L	0.0500		97.8	85-115	3.26	20	
Cadmium	0.0495	0.0001	mg/L	0.0500		99.1	85-115	4.23	20	
Copper	0.0478	0.0001	mg/L	0.0500		95.6	85-115	1.78	20	
Lead	0.0506	0.0005	mg/L	0.0500		101	85-115	0.426	20	
Manganese	0.0485	0.0005	mg/L	0.0500		97.0	85-115	0.612	20	
Molybdenum	0.0486	0.0005	mg/L	0.0500		97.2	85-115	1.62	20	
Selenium	0.241	0.0010	mg/L	0.250		96.4	85-115	3.50	20	
Uranium	0.0488	0.0001	mg/L	0.0500		97.5	85-115	1.52	20	
Zinc	0.0449	0.0020	mg/L	0.0500		89.8	85-115	8.81	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911110 - EPA 245.1/7470										
Blank (B911110-BLK1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	ND	0.0002	mg/L							
LCS (B911110-BS1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911110-BSD1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115	0.220	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:38

Notes and Definitions

M5	Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
BS1	Laboratory control sample recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Company Name: GCC ENERGY LLC
Project Manager: TOM BIRD
Address: 6473 CR 120
City: HESPERUS State: CO Zip: 81326
Phone #: Email:
Additional Report To: TBIRD@GCC.COM; LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Name:
Project Number:
Sampler Name (Print): MICHAEL G McFARLAND

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
State: Zip:
Phone #:
Fax or Email:

FOR LAB USE ONLY Lab I.D.	Sample Name or Location	Collected Date MGM	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER:	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	Other:	ANALYSIS REQUEST: GCC GW BASELINE	AMMONIA	ORTHOPHOSPHATE
1911-053-01	MW-1-A	11-6-19	1105 AM	X						1	1		4				X	X	X
-02	MW-1C	11-6-19 MGM	1231 AM	X						1	1		4				X	X	X

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 whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors 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.

Relinquished By:	Date: 11-5-19	Time: 1625	Received By:
Michael McFarland			Dallin Zufelt
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS:
Report to State? (Circle) Yes No

Delivered By: (Circle One)
Sampler - UPS - FedEx - Kangaroo - Other:

Temperature at reciept: 4.0 / 3.8 °C
CHECKED BY: DZ

#1 On Ice

† 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.

Project Information

Printed: 11/06/2019 8:22 am

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: Debbie Zufelt

King Coal
Phone: (970) 385-4528
Fax: (970) 385-4638

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

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12 December 2019

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 11/12/19 15:54. This data replaces the previous report (See case narrative). If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt

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 http://greenanalytical.com/certifications/

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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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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-4-MI	1911126-01	Water	11/12/19 08:50	11/12/19 15:54	
MW-4-A	1911126-02	Water	11/12/19 09:34	11/12/19 15:54	
MW-4-C	1911126-03	Water	11/12/19 10:10	11/12/19 15:54	
MW-3-MI	1911126-04	Water	11/12/19 10:58	11/12/19 15:54	
MW-3-A	1911126-05	Water	11/12/19 11:56	11/12/19 15:54	
MW-3-C	1911126-06	Water	11/12/19 13:15	11/12/19 15:54	

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GCC Energy, LLC	Project:	GCC GW Baseline	
6473 CR 120	Project Name / Number:	GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager:	Tom Bird	12/12/19 12:06

TOC was re-analyzed at a lower dilution for samples 1911126-01, 02, 03, 04 & 05. The Silica calculation was revised for sample 1911126-06 to show <RL instead of zero. This RE report is revised and replaces the original report dated 11/22/19.

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-MI

1911126-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**886**	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**92.0**	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**978**	10.0	3.06	mg/L	2	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.240**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:43	EPA350.1		LLG
Chloride*	**5.47**	2.00	0.386	mg/L	2	11/20/19 20:00	EPA300.0		AES
Fluoride*	**5.31**	0.200	0.0510	mg/L	2	11/20/19 20:00	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:14	EPA353.2		LLG
Ortho-Phosphate as P	**0.280**	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**8.08**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**1120**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**28.2**	2.00	0.591	mg/L	2	11/20/19 20:00	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/18/19 14:15	EPA200.7		AES
Calcium*	**1.32**	0.500	0.064	mg/L	5	11/18/19 14:15	EPA200.7		AES
Hardness as CaCO3	**3.31**	3.31	0.546	mg/L	5	11/18/19 14:15	2340 B		AES
Iron*	<0.250	0.250	0.138	mg/L	5	11/18/19 14:15	EPA200.7		AES
Magnesium*	<0.500	0.500	0.094	mg/L	5	11/18/19 14:15	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	11/18/19 14:14	EPA200.7		AES
Silica (Si02)	**9.51**	5.35	0.286	mg/L	5	11/18/19 14:15	Calculation		AES
Silicon	**4.45**	2.50	0.134	mg/L	5	11/18/19 14:15	EPA200.7		AES
Sodium*	**477**	5.00	1.83	mg/L	5	11/18/19 14:14	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0107**	0.0010	0.0004	mg/L	2	11/19/19 16:51	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/19/19 16:51	EPA200.8		AES
Copper*	**0.0027**	0.0002	0.0002	mg/L	2	11/19/19 16:51	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/19/19 16:51	EPA200.8		AES
Manganese*	**0.0073**	0.0010	0.0002	mg/L	2	11/19/19 16:51	EPA200.8		AES
Molybdenum*	**0.0101**	0.0010	0.0001	mg/L	2	11/19/19 16:51	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/19/19 16:51	EPA200.8		AES
Uranium	**0.0145**	0.0002	0.0002	mg/L	2	11/19/19 16:51	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/19/19 16:51	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-MI

1911126-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-MI

1911126-01RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**6.42**	0.500	0.0670	mg/L	1	12/11/19 13:26	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-A

1911126-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**528**	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**16.0**	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	2	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**544**	10.0	3.06	mg/L	2	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.312**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:44	EPA350.1		LLG
Chloride*	**8.76**	2.00	0.386	mg/L	2	11/20/19 20:18	EPA300.0		AES
Fluoride*	<0.200	0.200	0.0510	mg/L	2	11/20/19 20:18	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:15	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**8.02**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**1490**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**559**	20.0	5.91	mg/L	20	11/21/19 09:01	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/18/19 14:17	EPA200.7		AES
Calcium*	**1.82**	0.500	0.064	mg/L	5	11/18/19 14:17	EPA200.7		AES
Hardness as CaCO3	**8.00**	3.31	0.546	mg/L	5	11/18/19 14:17	2340 B		AES
Iron*	<0.250	0.250	0.138	mg/L	5	11/18/19 14:17	EPA200.7		AES
Magnesium*	**0.837**	0.500	0.094	mg/L	5	11/18/19 14:17	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	11/18/19 14:17	EPA200.7		AES
Silica (Si02)	**10.5**	5.35	0.286	mg/L	5	11/18/19 14:17	Calculation		AES
Silicon	**4.89**	2.50	0.134	mg/L	5	11/18/19 14:17	EPA200.7		AES
Sodium*	**529**	5.00	1.83	mg/L	5	11/18/19 14:17	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0004	mg/L	2	11/19/19 16:55	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/19/19 16:55	EPA200.8		AES
Copper*	**0.0037**	0.0002	0.0002	mg/L	2	11/19/19 16:55	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/19/19 16:55	EPA200.8		AES
Manganese*	**0.0016**	0.0010	0.0002	mg/L	2	11/19/19 16:55	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0001	mg/L	2	11/19/19 16:55	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/19/19 16:55	EPA200.8		AES
Uranium	<0.0002	0.0002	0.0002	mg/L	2	11/19/19 16:55	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/19/19 16:55	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-A

1911126-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-A

1911126-02RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**3.25**	0.500	0.0670	mg/L	1	12/11/19 13:43	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-C

1911126-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**2410**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**60.0**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**2470**	10.0	3.06	mg/L	10	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.424**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:45	EPA350.1		LLG
Chloride*	**525**	25.0	4.82	mg/L	25	11/20/19 21:12	EPA300.0		AES
Fluoride*	**2.51**	0.500	0.128	mg/L	5	11/20/19 20:54	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:16	EPA353.2		LLG
Ortho-Phosphate as P	**0.182**	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**7.85**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**3610**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	<5.00	5.00	1.48	mg/L	5	11/20/19 20:54	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.500	0.500	0.250	mg/L	10	11/18/19 14:20	EPA200.7		AES
Calcium*	**5.61**	1.00	0.128	mg/L	10	11/18/19 14:20	EPA200.7		AES
Hardness as CaCO3	**24.4**	6.62	1.09	mg/L	10	11/18/19 14:20	2340 B		AES
Iron*	**0.619**	0.500	0.277	mg/L	10	11/18/19 14:20	EPA200.7		AES
Magnesium*	**2.53**	1.00	0.188	mg/L	10	11/18/19 14:20	EPA200.7		AES
Potassium*	<10.0	10.0	0.955	mg/L	10	11/18/19 14:20	EPA200.7		AES
Silica (Si02)	**11.0**	10.7	0.572	mg/L	10	11/18/19 14:20	Calculation		AES
Silicon	**5.14**	5.00	0.267	mg/L	10	11/18/19 14:20	EPA200.7		AES
Sodium*	**1430**	10.0	3.67	mg/L	10	11/18/19 14:20	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0179**	0.0025	0.0011	mg/L	5	11/19/19 17:05	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0002	mg/L	5	11/19/19 17:05	EPA200.8		AES
Copper*	**0.0107**	0.0005	0.0005	mg/L	5	11/19/19 17:05	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0005	mg/L	5	11/19/19 17:05	EPA200.8		AES
Manganese*	**0.0096**	0.0025	0.0004	mg/L	5	11/19/19 17:05	EPA200.8		AES
Molybdenum*	**0.0047**	0.0025	0.0003	mg/L	5	11/19/19 17:05	EPA200.8		AES
Selenium*	**0.0156**	0.0050	0.0032	mg/L	5	11/19/19 17:05	EPA200.8		AES
Uranium	**0.0073**	0.0005	0.0004	mg/L	5	11/19/19 17:05	EPA200.8		AES
Zinc*	<0.0100	0.0100	0.0018	mg/L	5	11/19/19 17:05	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-C

1911126-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-4-C

1911126-03RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**4.18**	0.500	0.0670	mg/L	1	12/11/19 14:11	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-MI

1911126-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**610**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**80.0**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**690**	10.0	3.06	mg/L	10	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.317**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:46	EPA350.1		LLG
Chloride*	**9.13**	2.00	0.386	mg/L	2	11/20/19 21:30	EPA300.0		AES
Fluoride*	**1.19**	0.200	0.0510	mg/L	2	11/20/19 21:30	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:17	EPA353.2		LLG
Ortho-Phosphate as P	**0.348**	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**8.62**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**1130**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**224**	10.0	2.95	mg/L	10	11/20/19 21:48	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/18/19 14:23	EPA200.7		AES
Calcium*	**1.73**	0.500	0.064	mg/L	5	11/18/19 14:23	EPA200.7		AES
Hardness as CaCO3	**6.64**	3.31	0.546	mg/L	5	11/18/19 14:23	2340 B		AES
Iron*	<0.250	0.250	0.138	mg/L	5	11/18/19 14:23	EPA200.7		AES
Magnesium*	**0.561**	0.500	0.094	mg/L	5	11/18/19 14:23	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	11/18/19 14:22	EPA200.7		AES
Silica (Si02)	**9.46**	5.35	0.286	mg/L	5	11/18/19 14:23	Calculation		AES
Silicon	**4.42**	2.50	0.134	mg/L	5	11/18/19 14:23	EPA200.7		AES
Sodium*	**437**	5.00	1.83	mg/L	5	11/18/19 14:22	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0099**	0.0010	0.0004	mg/L	2	11/19/19 17:09	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/19/19 17:09	EPA200.8		AES
Copper*	**0.0037**	0.0002	0.0002	mg/L	2	11/19/19 17:09	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/19/19 17:09	EPA200.8		AES
Manganese*	**0.0099**	0.0010	0.0002	mg/L	2	11/19/19 17:09	EPA200.8		AES
Molybdenum*	**0.0372**	0.0010	0.0001	mg/L	2	11/19/19 17:09	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/19/19 17:09	EPA200.8		AES
Uranium	**0.0070**	0.0002	0.0002	mg/L	2	11/19/19 17:09	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/19/19 17:09	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-MI

1911126-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-MI

1911126-04RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**5.78**	0.500	0.0670	mg/L	1	12/11/19 14:27	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-A

1911126-05 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**420**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**420**	10.0	3.06	mg/L	10	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.354**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:47	EPA350.1	M5	LLG
Chloride*	**14.7**	5.00	0.964	mg/L	5	11/20/19 22:06	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/20/19 22:06	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:21	EPA353.2		LLG
Ortho-Phosphate as P	**0.0730**	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**8.39**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**1510**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	**633**	25.0	7.38	mg/L	25	11/20/19 22:24	EPA300.0		AES
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/18/19 14:25	EPA200.7		AES
Calcium*	**3.34**	0.500	0.064	mg/L	5	11/18/19 14:25	EPA200.7		AES
Hardness as CaCO3	**11.1**	3.31	0.546	mg/L	5	11/18/19 14:25	2340 B		AES
Iron*	<0.250	0.250	0.138	mg/L	5	11/18/19 14:25	EPA200.7		AES
Magnesium*	**0.680**	0.500	0.094	mg/L	5	11/18/19 14:25	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	11/18/19 14:25	EPA200.7		AES
Silica (Si02)	**11.8**	5.35	0.286	mg/L	5	11/18/19 14:25	Calculation		AES
Silicon	**5.53**	2.50	0.134	mg/L	5	11/18/19 14:25	EPA200.7		AES
Sodium*	**528**	5.00	1.83	mg/L	5	11/18/19 14:25	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0010	0.0010	0.0004	mg/L	2	11/19/19 17:12	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/19/19 17:12	EPA200.8		AES
Copper*	**0.0039**	0.0002	0.0002	mg/L	2	11/19/19 17:12	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/19/19 17:12	EPA200.8		AES
Manganese*	**0.0140**	0.0010	0.0002	mg/L	2	11/19/19 17:12	EPA200.8		AES
Molybdenum*	**0.0027**	0.0010	0.0001	mg/L	2	11/19/19 17:12	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/19/19 17:12	EPA200.8		AES
Uranium	**0.0011**	0.0002	0.0002	mg/L	2	11/19/19 17:12	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/19/19 17:12	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-A

1911126-05 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-A

1911126-05RE1 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Total Organic Carbon*	**3.81**	0.500	0.0670	mg/L	1	12/11/19 14:44	5310C	H3	LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-C

1911126-06 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**2070**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**60.0**	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	10	11/18/19 13:20	2320 B		VJL
Alkalinity, Total as CaCO3*	**2130**	10.0	3.06	mg/L	10	11/18/19 13:20	2320 B		VJL
Ammonia as N	**0.500**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:50	EPA350.1		LLG
Chloride*	**542**	25.0	4.82	mg/L	25	11/20/19 23:36	EPA300.0		AES
Fluoride*	**3.66**	0.500	0.128	mg/L	5	11/20/19 22:42	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/18/19 14:22	EPA353.2		LLG
Ortho-Phosphate as P	**0.212**	0.0500	0.0240	mg/L	1	11/13/19 16:30	EPA365.3		AES
pH*	**8.12**			pH Units	1	11/13/19 13:30	EPA150.1		FGH
Total Dissolved Solids*	**3390**	10.0		mg/L	1	11/18/19 16:35	EPA160.1		VJL
Sulfate*	<5.00	5.00	1.48	mg/L	5	11/20/19 22:42	EPA300.0		AES
Total Organic Carbon*	**107**	12.5	1.68	mg/L	25	11/22/19 00:05	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.500	0.500	0.250	mg/L	10	11/18/19 14:28	EPA200.7		AES
Calcium*	**4.23**	1.00	0.128	mg/L	10	11/18/19 14:28	EPA200.7		AES
Hardness as CaCO3	**18.6**	6.62	1.09	mg/L	10	11/18/19 14:28	2340 B		AES
Iron*	<0.500	0.500	0.277	mg/L	10	11/18/19 14:28	EPA200.7		AES
Magnesium*	**1.94**	1.00	0.188	mg/L	10	11/18/19 14:28	EPA200.7		AES
Potassium*	<10.0	10.0	0.955	mg/L	10	11/18/19 14:28	EPA200.7		AES
Silica (Si02)	<10.7	10.7	0.572	mg/L	10	11/18/19 14:28	Calculation		AES
Silicon	<5.00	5.00	0.267	mg/L	10	11/18/19 14:28	EPA200.7		AES
Sodium*	**1300**	10.0	3.67	mg/L	10	11/18/19 14:28	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0188**	0.0025	0.0011	mg/L	5	11/19/19 17:16	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0002	mg/L	5	11/19/19 17:16	EPA200.8		AES
Copper*	**0.0109**	0.0005	0.0005	mg/L	5	11/19/19 17:16	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0005	mg/L	5	11/19/19 17:16	EPA200.8		AES
Manganese*	**0.0266**	0.0025	0.0004	mg/L	5	11/19/19 17:16	EPA200.8		AES
Molybdenum*	**0.0075**	0.0025	0.0003	mg/L	5	11/19/19 17:16	EPA200.8		AES
Selenium*	**0.0173**	0.0050	0.0032	mg/L	5	11/19/19 17:16	EPA200.8		AES
Uranium	**0.0034**	0.0005	0.0004	mg/L	5	11/19/19 17:16	EPA200.8		AES
Zinc*	**0.0886**	0.0100	0.0018	mg/L	5	11/19/19 17:16	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

MW-3-C

1911126-06 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0050	0.0050	0.00003	mg/L	1	11/19/19 10:01	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911119 - General Prep - Wet Chem										
Blank (B911119-BLK1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911119-BS1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	2.72	0.100	mg NH3-N/L	2.50		109	90-110			
LCS Dup (B911119-BSD1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	2.70	0.100	mg NH3-N/L	2.50		108	90-110	0.977	20	
Batch B911132 - General Prep - Wet Chem										
Blank (B911132-BLK1)				Prepared & Analyzed: 11/13/19						
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911132-BS1)				Prepared & Analyzed: 11/13/19						
Ortho-Phosphate as P	0.252	0.0500	mg/L	0.250		101	85-115			
LCS Dup (B911132-BSD1)				Prepared & Analyzed: 11/13/19						
Ortho-Phosphate as P	0.236	0.0500	mg/L	0.250		94.4	85-115	6.56	20	
Batch B911135 - General Prep - Wet Chem										
Duplicate (B911135-DUP1)			**Source: 1911136-17**	Prepared & Analyzed: 11/13/19						
pH	6.87		pH Units		6.82			0.730	20	
Reference (B911135-SRM1)				Prepared & Analyzed: 11/13/19						
pH	7.01		pH Units	7.00		100	98.5-101.4			
Batch B911167 - General Prep - Wet Chem										
Blank (B911167-BLK1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B911167-DUP1)			**Source: 1911108-01**	Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	230	10.0	mg/L		225			2.22	20	
Reference (B911167-SRM1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	595	10.0	mg/L	600		99.2	85-115			
Batch B911168 - General Prep - Wet Chem										
Blank (B911168-BLK1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	ND	10.0	mg/L							
LCS (B911168-BS1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	97.0	10.0	mg/L	100		97.0	85-115			
LCS Dup (B911168-BSD1)				Prepared & Analyzed: 11/18/19						
Alkalinity, Total as CaCO3	106	10.0	mg/L	100		106	85-115	8.87	20	
Batch B911171 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

General Chemistry - Quality Control
(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (B911171-BLK1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911171-BS1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.03	0.020	mg/L as N	1.00		103	90-110			
LCS Dup (B911171-BSD1)				Prepared & Analyzed: 11/18/19						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.562	20	
Batch B911183 - General Prep - Wet Chem										
Blank (B911183-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911183-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	23.6	1.00	mg/L	25.0		94.3	90-110			
Fluoride	2.63	0.100	mg/L	2.50		105	90-110			
Sulfate	24.0	1.00	mg/L	25.0		96.1	90-110			
LCS Dup (B911183-BSD1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Chloride	23.7	1.00	mg/L	25.0		94.8	90-110	0.575	20	
Fluoride	2.62	0.100	mg/L	2.50		105	90-110	0.381	20	
Sulfate	24.0	1.00	mg/L	25.0		96.0	90-110	0.117	20	
Batch B911193 - General Prep - Wet Chem										
Blank (B911193-BLK1)				Prepared & Analyzed: 11/21/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B911193-BS1)				Prepared & Analyzed: 11/21/19						
Total Organic Carbon	10.0	0.500	mg/L	10.0		100	85-115			
LCS Dup (B911193-BSD1)				Prepared & Analyzed: 11/21/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.299	20	
Batch B912072 - General Prep - Wet Chem										
Blank (B912072-BLK1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B912072-BS1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	9.71	0.500	mg/L	10.0		97.1	85-115			
LCS Dup (B912072-BSD1)				Prepared & Analyzed: 12/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	4.23	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911141 - Diss. 200.7/200.8										
Blank (B911141-BLK1)				Prepared: 11/14/19 Analyzed: 11/15/19						
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 (B911141-BS1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.60	0.050	mg/L	5.00		112	85-115			
Calcium	5.32	0.100	mg/L	5.00		106	85-115			
Iron	5.44	0.050	mg/L	5.00		109	85-115			
Magnesium	26.9	0.100	mg/L	25.0		108	85-115			
Potassium	11.0	1.00	mg/L	10.0		110	85-115			
Silicon	5.74	0.500	mg/L	5.00		115	85-115			
Sodium	4.36	1.00	mg/L	4.05		108	85-115			
LCS Dup (B911141-BSD1)				Prepared: 11/14/19 Analyzed: 11/15/19						
Aluminum	5.26	0.050	mg/L	5.00		105	85-115	6.17	20	
Calcium	5.05	0.100	mg/L	5.00		101	85-115	5.08	20	
Iron	5.08	0.050	mg/L	5.00		102	85-115	6.97	20	
Magnesium	25.7	0.100	mg/L	25.0		103	85-115	4.65	20	
Potassium	10.3	1.00	mg/L	10.0		103	85-115	6.54	20	
Silicon	5.46	0.500	mg/L	5.00		109	85-115	4.97	20	
Sodium	4.13	1.00	mg/L	4.05		102	85-115	5.47	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911142 - Diss. 200.7/200.8										
Blank (B911142-BLK1)				Prepared: 11/14/19 Analyzed: 11/19/19						
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 (B911142-BS1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0462	0.0005	mg/L	0.0500		92.4	85-115			
Cadmium	0.0481	0.0001	mg/L	0.0500		96.1	85-115			
Copper	0.0467	0.0001	mg/L	0.0500		93.3	85-115			
Lead	0.0484	0.0005	mg/L	0.0500		96.8	85-115			
Manganese	0.0484	0.0005	mg/L	0.0500		96.9	85-115			
Molybdenum	0.0506	0.0005	mg/L	0.0500		101	85-115			
Selenium	0.234	0.0010	mg/L	0.250		93.7	85-115			
Uranium	0.0460	0.0001	mg/L	0.0500		92.1	85-115			
Zinc	0.0454	0.0020	mg/L	0.0500		90.7	85-115			
LCS Dup (B911142-BSD1)				Prepared: 11/14/19 Analyzed: 11/19/19						
Arsenic	0.0445	0.0005	mg/L	0.0500		89.0	85-115	3.82	20	
Cadmium	0.0477	0.0001	mg/L	0.0500		95.4	85-115	0.703	20	
Copper	0.0465	0.0001	mg/L	0.0500		93.1	85-115	0.295	20	
Lead	0.0486	0.0005	mg/L	0.0500		97.3	85-115	0.455	20	
Manganese	0.0475	0.0005	mg/L	0.0500		95.0	85-115	1.92	20	
Molybdenum	0.0487	0.0005	mg/L	0.0500		97.4	85-115	3.82	20	
Selenium	0.232	0.0010	mg/L	0.250		92.9	85-115	0.872	20	
Uranium	0.0480	0.0001	mg/L	0.0500		96.0	85-115	4.20	20	
Zinc	0.0444	0.0020	mg/L	0.0500		88.8	85-115	2.12	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911165 - EPA 245.1/7470										
Blank (B911165-BLK1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0004	0.0002	mg/L							B3
LCS (B911165-BS1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0054	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911165-BSD1)				Prepared: 11/18/19 Analyzed: 11/19/19						
Mercury	0.0053	0.0002	mg/L	0.00500		106	85-115	2.40	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/12/19 12:06

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.
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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client:	GCC ENERGY LLC
Address:	6473 C.R. 120
City:	HESPERUS **State:** CO **Zip:** 81326
Phone #:	970 385 4528
Contact Person:	TBIRD@GCC.COM / TOM BIRD
Email Report to:	LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Name(optional):	GCC BASELINE
Sampler Name (Print):	MICHAEL G. MCFARLAND

Bill to (if different):	
P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Email:	

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE (GW) BASELINE	AMMONIA	ORTHOPHOSPHATE
1911-126-01	MW-4-MI	11-12-19	0850	X							1	1		4			X	X	X
-02	MW-4-A	11-12-19	0934	X							1	1		4			X	X	X
-03	MW-4-C	11-12-19	1010	X							1	1		4			X	X	V
-04	MW-3-MI	11-12-19	1058	X							1	1		4			X	X	V
-05	MW-3-A	11-12-19	1156	X							1	1		4			X	X	V
-06	MW-3-C	11-12-19	1315	X							1	1		4			X	X	V

Relinquished By:	Date:	Time:	Received By:
Michael G McFarland	11-12-19	1448	
Relinquished By:	Date: 11-12-19	Time: 16:54	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS: Report to State? (Circle) Yes No

1 On Ice

1.9/1.7°C Temperature at receipt: CHECKED BY: DZ

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

* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Project Information

Printed: 11/13/2019 8:37 am

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: Debbie Zufelt

King Coal
Phone: (970) 385-4528
Fax: (970) 385-4638

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

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18 November 2019

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 11/07/19 15:47.
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 http://greenanalytical.com/certifications/

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

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-6-LM	1911091-01	Water	11/07/19 12:27	11/07/19 15:47	
MW-6-A	1911091-02	Water	11/07/19 10:38	11/07/19 15:47	

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

MW-6-LM

1911091-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**355**	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Total as CaCO3*	**355**	10.0	3.06	mg/L	5	11/12/19 10:15	2320 B		VJL
Ammonia as N	**1.99**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:36	EPA350.1		LLG
Chloride*	**11.4**	5.00	0.964	mg/L	5	11/13/19 19:42	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 19:42	EPA300.0	M5	AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 15:24	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/08/19 13:55	EPA365.3		AES
pH*	**7.32**			pH Units	1	11/08/19 15:20	EPA150.1		FGH
Total Dissolved Solids*	**1630**	10.0		mg/L	1	11/08/19 16:50	EPA160.1		VJL
Sulfate*	**830**	100	29.5	mg/L	100	11/13/19 20:00	EPA300.0		AES
Total Organic Carbon*	**1.85**	0.500	0.0670	mg/L	1	11/12/19 03:00	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.100	0.100	0.050	mg/L	2	11/13/19 16:14	EPA200.7		AES
Calcium*	**136**	0.200	0.026	mg/L	2	11/13/19 16:14	EPA200.7		AES
Hardness as CaCO3	**843**	1.32	0.219	mg/L	2	11/13/19 16:14	2340 B		AES
Iron*	<0.100	0.100	0.055	mg/L	2	11/13/19 16:14	EPA200.7		AES
Magnesium*	**122**	0.200	0.038	mg/L	2	11/13/19 16:14	EPA200.7		AES
Potassium*	**11.3**	2.00	0.191	mg/L	2	11/13/19 16:14	EPA200.7		AES
Silica (Si02)	**15.9**			mg/L	2	11/13/19 16:14	Calculation		AES
Silicon	**7.43**	1.00	0.053	mg/L	2	11/13/19 16:14	EPA200.7		AES
Sodium*	**172**	2.00	0.734	mg/L	2	11/13/19 16:14	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0035**	0.0010	0.0004	mg/L	2	11/13/19 15:05	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/13/19 15:05	EPA200.8		AES
Copper*	**0.0069**	0.0002	0.0002	mg/L	2	11/13/19 15:05	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/13/19 15:05	EPA200.8		AES
Manganese*	**0.166**	0.0010	0.0002	mg/L	2	11/13/19 15:05	EPA200.8		AES
Molybdenum*	**0.0022**	0.0010	0.0001	mg/L	2	11/13/19 15:05	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/13/19 15:05	EPA200.8		AES
Uranium	**0.0047**	0.0002	0.0002	mg/L	2	11/13/19 15:05	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/13/19 15:05	EPA200.8		AES

Green Analytical Laboratories

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

MW-6-LM

1911091-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

MW-6-A

1911091-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**220**	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/12/19 10:15	2320 B		VJL
Alkalinity, Total as CaCO3*	**220**	10.0	3.06	mg/L	5	11/12/19 10:15	2320 B		VJL
Ammonia as N	**2.72**	0.100	0.0450	mg NH3-N/L	1	11/14/19 10:37	EPA350.1		LLG
Chloride*	**29.6**	5.00	0.964	mg/L	5	11/13/19 20:54	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 20:54	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 15:25	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.0240	mg/L	1	11/08/19 13:55	EPA365.3		AES
pH*	**6.87**			pH Units	1	11/08/19 15:20	EPA150.1		FGH
Total Dissolved Solids*	**5210**	10.0		mg/L	1	11/08/19 16:50	EPA160.1		VJL
Sulfate*	**3460**	100	29.5	mg/L	100	11/13/19 21:12	EPA300.0		AES
Total Organic Carbon*	**3.10**	0.500	0.0670	mg/L	1	11/12/19 03:17	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.250	0.250	0.125	mg/L	5	11/13/19 16:17	EPA200.7		AES
Calcium*	**431**	0.500	0.064	mg/L	5	11/13/19 16:17	EPA200.7		AES
Hardness as CaCO3	**3070**	3.31	0.546	mg/L	5	11/13/19 16:17	2340 B		AES
Iron*	**2.72**	0.250	0.138	mg/L	5	11/13/19 16:17	EPA200.7		AES
Magnesium*	**484**	0.500	0.094	mg/L	5	11/13/19 16:17	EPA200.7		AES
Potassium*	**11.1**	5.00	0.478	mg/L	5	11/13/19 16:17	EPA200.7		AES
Silica (Si02)	**12.5**			mg/L	5	11/13/19 16:17	Calculation		AES
Silicon	**5.83**	2.50	0.134	mg/L	5	11/13/19 16:17	EPA200.7		AES
Sodium*	**276**	5.00	1.83	mg/L	5	11/13/19 16:17	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	<0.0025	0.0025	0.0011	mg/L	5	11/13/19 15:22	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0002	mg/L	5	11/13/19 15:22	EPA200.8		AES
Copper*	**0.0017**	0.0005	0.0005	mg/L	5	11/13/19 15:22	EPA200.8		AES
Lead*	<0.0025	0.0025	0.0005	mg/L	5	11/13/19 15:22	EPA200.8		AES
Manganese*	**0.585**	0.0025	0.0004	mg/L	5	11/13/19 15:22	EPA200.8		AES
Molybdenum*	<0.0025	0.0025	0.0003	mg/L	5	11/13/19 15:22	EPA200.8		AES
Selenium*	<0.0050	0.0050	0.0032	mg/L	5	11/13/19 15:22	EPA200.8		AES
Uranium	<0.0005	0.0005	0.0004	mg/L	5	11/13/19 15:22	EPA200.8		AES
Zinc*	**0.0117**	0.0100	0.0018	mg/L	5	11/13/19 15:22	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

MW-6-A

1911091-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911088 - General Prep - Wet Chem										
Blank (B911088-BLK1)				Prepared & Analyzed: 11/08/19						
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911088-BS1)				Prepared & Analyzed: 11/08/19						
Ortho-Phosphate as P	0.237	0.0500	mg/L	0.250		94.8	85-115			
LCS Dup (B911088-BSD1)				Prepared & Analyzed: 11/08/19						
Ortho-Phosphate as P	0.233	0.0500	mg/L	0.250		93.2	85-115	1.70	20	
Batch B911091 - General Prep - Wet Chem										
Blank (B911091-BLK1)				Prepared & Analyzed: 11/08/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B911091-DUP1)			**Source: 1911088-01**	Prepared & Analyzed: 11/08/19						
Total Dissolved Solids	275	10.0	mg/L		280			1.79	20	
Reference (B911091-SRM1)				Prepared & Analyzed: 11/08/19						
Total Dissolved Solids	520	10.0	mg/L	600		86.7	85-115			
Batch B911095 - General Prep - Wet Chem										
Blank (B911095-BLK1)				Prepared & Analyzed: 11/11/19						
Total Organic Carbon	ND	0.500	mg/L							
LCS (B911095-BS1)				Prepared & Analyzed: 11/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B911095-BSD1)				Prepared & Analyzed: 11/11/19						
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.197	20	
Batch B911099 - General Prep - Wet Chem										
Duplicate (B911099-DUP2)			**Source: 1911096-01**	Prepared & Analyzed: 11/08/19						
pH	11.2		pH Units		11.1			0.537	20	
Reference (B911099-SRM1)				Prepared & Analyzed: 11/08/19						
pH	7.00		pH Units	7.00		100	98.5-101.4			
Batch B911108 - General Prep - Wet Chem										
Blank (B911108-BLK1)				Prepared: 11/11/19 Analyzed: 11/12/19						
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911108-BS1)				Prepared: 11/11/19 Analyzed: 11/12/19						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110			
LCS Dup (B911108-BSD1)				Prepared: 11/11/19 Analyzed: 11/12/19						
Nitrate/Nitrite as N	1.04	0.020	mg/L as N	1.00		104	90-110	0.163	20	
Batch B911117 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (B911117-BLK1)				Prepared & Analyzed: 11/12/19						
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 (B911117-BS1)				Prepared & Analyzed: 11/12/19						
Alkalinity, Bicarbonate as CaCO3	99.0	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	99.0	10.0	mg/L	100		99.0	85-115			
LCS Dup (B911117-BSD1)				Prepared & Analyzed: 11/12/19						
Alkalinity, Bicarbonate as CaCO3	100	10.0	mg/L				85-115	1.01	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	100	10.0	mg/L	100		100	85-115	1.01	20	
Batch B911119 - General Prep - Wet Chem										
Blank (B911119-BLK1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911119-BS1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	2.72	0.100	mg NH3-N/L	2.50		109	90-110			
LCS Dup (B911119-BSD1)				Prepared: 11/12/19 Analyzed: 11/14/19						
Ammonia as N	2.70	0.100	mg NH3-N/L	2.50		108	90-110	0.977	20	
Batch B911129 - General Prep - Wet Chem										
Blank (B911129-BLK1)				Prepared & Analyzed: 11/13/19						
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911129-BS1)				Prepared & Analyzed: 11/13/19						
Chloride	23.0	1.00	mg/L	25.0		91.9	90-110			
Fluoride	2.57	0.100	mg/L	2.50		103	90-110			
Sulfate	22.5	1.00	mg/L	25.0		90.2	90-110			
LCS Dup (B911129-BSD1)				Prepared & Analyzed: 11/13/19						
Chloride	23.1	1.00	mg/L	25.0		92.4	90-110	0.564	20	
Fluoride	2.63	0.100	mg/L	2.50		105	90-110	2.08	20	
Sulfate	23.3	1.00	mg/L	25.0		93.0	90-110	3.11	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911112 - Diss. 200.7/200.8										
Blank (B911112-BLK1)				Prepared: 11/12/19 Analyzed: 11/13/19						
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 (B911112-BS1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Aluminum	4.88	0.050	mg/L	5.00		97.6	85-115			
Calcium	4.75	0.100	mg/L	5.00		95.0	85-115			
Iron	4.91	0.050	mg/L	5.00		98.3	85-115			
Magnesium	25.2	0.100	mg/L	25.0		101	85-115			
Potassium	9.60	1.00	mg/L	10.0		96.0	85-115			
Silicon	5.20	0.500	mg/L	5.00		104	85-115			
Sodium	3.92	1.00	mg/L	4.05		96.8	85-115			
LCS Dup (B911112-BSD1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Aluminum	4.80	0.050	mg/L	5.00		96.0	85-115	1.70	20	
Calcium	4.77	0.100	mg/L	5.00		95.5	85-115	0.524	20	
Iron	4.86	0.050	mg/L	5.00		97.3	85-115	1.02	20	
Magnesium	25.0	0.100	mg/L	25.0		99.8	85-115	1.05	20	
Potassium	9.67	1.00	mg/L	10.0		96.7	85-115	0.677	20	
Silicon	5.07	0.500	mg/L	5.00		101	85-115	2.39	20	
Sodium	3.90	1.00	mg/L	4.05		96.2	85-115	0.627	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911113 - Diss. 200.7/200.8										
Blank (B911113-BLK1)				Prepared: 11/12/19 Analyzed: 11/13/19						
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 (B911113-BS1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Arsenic	0.0516	0.0005	mg/L	0.0500		103	85-115			
Cadmium	0.0494	0.0001	mg/L	0.0500		98.7	85-115			
Copper	0.0480	0.0001	mg/L	0.0500		95.9	85-115			
Lead	0.0504	0.0005	mg/L	0.0500		101	85-115			
Manganese	0.0473	0.0005	mg/L	0.0500		94.7	85-115			
Molybdenum	0.0511	0.0005	mg/L	0.0500		102	85-115			
Selenium	0.266	0.0010	mg/L	0.250		106	85-115			
Uranium	0.0512	0.0001	mg/L	0.0500		102	85-115			
Zinc	0.0464	0.0020	mg/L	0.0500		92.9	85-115			
LCS Dup (B911113-BSD1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Arsenic	0.0466	0.0005	mg/L	0.0500		93.1	85-115	10.3	20	
Cadmium	0.0442	0.0001	mg/L	0.0500		88.5	85-115	10.9	20	
Copper	0.0459	0.0001	mg/L	0.0500		91.8	85-115	4.33	20	
Lead	0.0483	0.0005	mg/L	0.0500		96.6	85-115	4.27	20	
Manganese	0.0465	0.0005	mg/L	0.0500		92.9	85-115	1.85	20	
Molybdenum	0.0470	0.0005	mg/L	0.0500		94.0	85-115	8.32	20	
Selenium	0.232	0.0010	mg/L	0.250		92.7	85-115	13.8	20	
Uranium	0.0472	0.0001	mg/L	0.0500		94.4	85-115	8.12	20	
Zinc	0.0440	0.0020	mg/L	0.0500		88.0	85-115	5.36	20	

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Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911110 - EPA 245.1/7470										
Blank (B911110-BLK1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	ND	0.0002	mg/L							
LCS (B911110-BS1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911110-BSD1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115	0.220	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/18/19 16:54

Notes and Definitions

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

Green Analytical Laboratories

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client:	GCC ENERGY LLC
Address:	6473 C.R. 120
City:	HESPERUS **State:** CO **Zip:** 81326
Phone #:	970 385 4528
Contact Person:	TBIRD@GCC.COM / TOM BIRD
Email Report to:	ALSO LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Name(optional):	GCC ENERGY LLC BASELINE
Sampler Name (Print):	MICHAEL G. MCFARLAND

Bill to (if different):	
P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Email:	

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER :	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE	AMMONIA	ORTHOPHOSPATE
1911-091-01	MW-6-LM	11-7-19	12:27	X							1	1		4			X	X	X
-02	MW-6-A	11-7-19	10:38	X							1	1		4			X	X	X

Relinquished By: Michael B McFarland	**Date:** 11-7-19 **Time:** 1444	Received By:	ADDITIONAL REMARKS: # 1 On Ice
Relinquished By:	Date: 11-7-19 Time: 15:47	Received By: Debbie Zufelt	Report to State? (Circle) Yes No
Relinquished By:	Date: Time:	Received By:	
Relinquished By:	Date: Time:	Received By:	2.4/2.2°C Temperature at receipt: DZ CHECKED BY

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Project Information

Printed: 11/08/2019 8:29 am

GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326
Laboratory PM: Debbie Zufelt

King Coal
Phone: (970) 385-4528
Fax: (970) 385-4638

Project Name: GCC GW Baseline
Project Number: GCC GW Baseline
Client PM: Tom Bird
Comments: All Metals Are Field Filtered. Send Out PRESERVED bottles per Landon. 11-01-18

Analysis	Comment
Alkalinity, Bicarbonate	
Alkalinity, Carbonate	
Alkalinity, Hydroxide	
Alkalinity, Total	
Aluminum Dissolved by ICP	
Arsenic Dissolved by ICPMS	
Cadmium Dissolved by ICPMS	
Chloride by IC	
Copper Dissolved by ICPMS	
Fluoride by IC	
Hardness, diss	
Iron Dissolved by ICP	
Lead Dissolved by ICPMS	
Manganese Dissolved by ICPMS	
Mercury Dissolved by CVAA	
Molybdenum Dissolved by ICPMS	
Nitrate/Nitrite as N	
pH	
Potassium Dissolved by ICP	
Selenium Dissolved by ICPMS	
Silica Dissolved by ICP Package	
Sodium Dissolved by ICP	
Solids, Total Dissolved (TDS)	
Sulfate by IC	
Total Organic Carbon	
Uranium Dissolved by ICPMS	
Zinc Dissolved by ICPMS	

Hardness, diss subanalyses:

Calcium Dissolved by ICP
Magnesium Dissolved by ICP

Silica Dissolved by ICP Package subanalyses:

Silicon Dissolved by ICP

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15 November 2019

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 11/06/19 16:07.
If you need any further assistance, please feel free to contact me.

Sincerely,

Jeremy D Allen For 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 http://greenanalytical.com/certifications/

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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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-8-EAA	1911075-01	Water	11/06/19 11:00	11/06/19 16:07	
MW-8-MI	1911075-02	Water	11/06/19 11:20	11/06/19 16:07	
MW-8-LM	1911075-03	Water	11/06/19 12:12	11/06/19 16:07	
MW-8-PL	1911075-04	Water	11/06/19 11:43	11/06/19 16:07	
MW-7-EAA	1911075-05	Water	11/06/19 13:28	11/06/19 16:07	
MW-99-EAA	1911075-06	Water	11/06/19 14:10	11/06/19 16:07	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-EAA

1911075-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**445**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**445**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.216**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:53	EPA350.1		LLG
Chloride*	**11.0**	5.00	0.964	mg/L	5	11/13/19 13:08	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 13:08	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:55	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/08/19 10:35	EPA300.0	BS1	AES
pH*	**7.01**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**1380**	10.0		mg/L	1	11/07/19 14:34	EPA160.1		VJL
Sulfate*	**577**	25.0	7.38	mg/L	25	11/13/19 13:26	EPA300.0		AES
Total Organic Carbon*	**3.52**	0.500	0.0670	mg/L	1	11/11/19 23:59	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 20:42	EPA200.7		AES
Calcium*	**143**	0.100	0.013	mg/L	1	11/08/19 20:42	EPA200.7		AES
Hardness as CaCO3	**867**	2.31	0.418	mg/L	5	11/11/19 16:42	2340 B		AES
Iron*	**2.30**	0.050	0.028	mg/L	1	11/08/19 20:42	EPA200.7		AES
Magnesium*	**124**	0.500	0.094	mg/L	5	11/11/19 16:42	EPA200.7		AES
Potassium*	**3.52**	1.00	0.096	mg/L	1	11/08/19 20:42	EPA200.7		AES
Silica (Si02)	**15.9**			mg/L	1	11/08/19 20:42	Calculation		AES
Silicon	**7.42**	0.500	0.027	mg/L	1	11/08/19 20:42	EPA200.7		AES
Sodium*	**77.1**	1.00	0.367	mg/L	1	11/08/19 20:42	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0018**	0.0005	0.0002	mg/L	1	11/08/19 17:49	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/08/19 17:49	EPA200.8		AES
Copper*	**0.0010**	0.0001	0.0001	mg/L	1	11/08/19 17:49	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/13/19 14:12	EPA200.8		AES
Manganese*	**3.39**	0.0005	0.00009	mg/L	1	11/08/19 17:49	EPA200.8		AES
Molybdenum*	**0.0008**	0.0005	0.00007	mg/L	1	11/08/19 17:49	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/08/19 17:49	EPA200.8		AES
Uranium	**0.0019**	0.0001	0.00008	mg/L	1	11/13/19 14:12	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/08/19 17:49	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-EAA

1911075-01 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-MI

1911075-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**585**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**585**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**1.31**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:54	EPA350.1		LLG
Chloride*	**9.66**	5.00	0.964	mg/L	5	11/13/19 13:44	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 13:44	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:56	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/08/19 10:35	EPA300.0	BS1	AES
pH*	**7.44**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**1050**	10.0		mg/L	1	11/07/19 14:36	EPA160.1		VJL
Sulfate*	**317**	10.0	2.95	mg/L	10	11/13/19 15:13	EPA300.0		AES
Total Organic Carbon*	**2.65**	0.500	0.0670	mg/L	1	11/12/19 00:14	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 20:45	EPA200.7		AES
Calcium*	**51.3**	0.100	0.013	mg/L	1	11/08/19 20:45	EPA200.7		AES
Hardness as CaCO3	**267**	0.662	0.109	mg/L	1	11/08/19 20:45	2340 B		AES
Iron*	**0.130**	0.050	0.028	mg/L	1	11/08/19 20:45	EPA200.7		AES
Magnesium*	**33.8**	0.100	0.019	mg/L	1	11/08/19 20:45	EPA200.7		AES
Potassium*	**5.07**	1.00	0.096	mg/L	1	11/08/19 20:45	EPA200.7		AES
Silica (Si02)	**12.6**			mg/L	1	11/08/19 20:45	Calculation		AES
Silicon	**5.88**	0.500	0.027	mg/L	1	11/08/19 20:45	EPA200.7		AES
Sodium*	**275**	1.00	0.367	mg/L	1	11/08/19 20:45	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0005**	0.0005	0.0002	mg/L	1	11/08/19 17:53	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/08/19 17:53	EPA200.8		AES
Copper*	**0.0037**	0.0001	0.0001	mg/L	1	11/08/19 17:53	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/13/19 14:16	EPA200.8		AES
Manganese*	**0.0377**	0.0005	0.00009	mg/L	1	11/08/19 17:53	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.00007	mg/L	1	11/08/19 17:53	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/08/19 17:53	EPA200.8		AES
Uranium	**0.0001**	0.0001	0.00008	mg/L	1	11/13/19 14:16	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/08/19 17:53	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-MI

1911075-02 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-LM

1911075-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**685**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	**60.0**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**745**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.282**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:55	EPA350.1		LLG
Chloride*	**2.48**	1.00	0.193	mg/L	1	11/13/19 15:31	EPA300.0		AES
Fluoride*	**3.88**	0.100	0.0255	mg/L	1	11/13/19 15:31	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:57	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/07/19 07:15	EPA300.0	BS1	AES
pH*	**8.52**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**780**	10.0		mg/L	1	11/07/19 14:38	EPA160.1		VJL
Sulfate*	<1.00	1.00	0.295	mg/L	1	11/13/19 15:31	EPA300.0		AES
Total Organic Carbon*	**1.69**	0.500	0.0670	mg/L	1	11/12/19 00:33	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 20:55	EPA200.7		AES
Calcium*	**1.68**	0.100	0.013	mg/L	1	11/08/19 20:55	EPA200.7		AES
Hardness as CaCO3	**6.38**	0.662	0.109	mg/L	1	11/08/19 20:55	2340 B		AES
Iron*	<0.050	0.050	0.028	mg/L	1	11/08/19 20:55	EPA200.7		AES
Magnesium*	**0.528**	0.100	0.019	mg/L	1	11/08/19 20:55	EPA200.7		AES
Potassium*	**2.18**	1.00	0.096	mg/L	1	11/08/19 20:55	EPA200.7		AES
Silica (Si02)	**7.77**			mg/L	1	11/08/19 20:55	Calculation		AES
Silicon	**3.63**	0.500	0.027	mg/L	1	11/08/19 20:55	EPA200.7		AES
Sodium*	**305**	1.00	0.367	mg/L	1	11/08/19 20:55	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0006**	0.0005	0.0002	mg/L	1	11/08/19 17:56	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/08/19 17:56	EPA200.8		AES
Copper*	**0.0051**	0.0001	0.0001	mg/L	1	11/08/19 17:56	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/13/19 14:19	EPA200.8		AES
Manganese*	**0.0026**	0.0005	0.00009	mg/L	1	11/08/19 17:56	EPA200.8		AES
Molybdenum*	<0.0005	0.0005	0.00007	mg/L	1	11/08/19 17:56	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/08/19 17:56	EPA200.8		AES
Uranium	<0.0002	0.0002	0.0002	mg/L	2	11/13/19 14:19	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/08/19 17:56	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-LM

1911075-03 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-PL

1911075-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**390**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**390**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.199**	0.100	0.0450	mg NH3-N/L	1	11/07/19 15:56	EPA350.1	M5	LLG
Chloride*	**5.66**	5.00	0.964	mg/L	5	11/13/19 16:07	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 16:07	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:58	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/08/19 10:35	EPA300.0	BS1	AES
pH*	**7.39**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**620**	10.0		mg/L	1	11/07/19 14:40	EPA160.1		VJL
Sulfate*	**127**	5.00	1.48	mg/L	5	11/13/19 16:07	EPA300.0		AES
Total Organic Carbon*	**1.75**	0.500	0.0670	mg/L	1	11/12/19 01:18	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 21:00	EPA200.7		AES
Calcium*	**52.1**	0.100	0.013	mg/L	1	11/08/19 21:00	EPA200.7		AES
Hardness as CaCO3	**294**	0.662	0.109	mg/L	1	11/08/19 21:00	2340 B		AES
Iron*	**0.075**	0.050	0.028	mg/L	1	11/08/19 21:00	EPA200.7		AES
Magnesium*	**39.7**	0.100	0.019	mg/L	1	11/08/19 21:00	EPA200.7		AES
Potassium*	**2.35**	1.00	0.096	mg/L	1	11/08/19 21:00	EPA200.7		AES
Silica (Si02)	**18.0**			mg/L	1	11/08/19 21:00	Calculation		AES
Silicon	**8.42**	0.500	0.027	mg/L	1	11/08/19 21:00	EPA200.7		AES
Sodium*	**83.3**	1.00	0.367	mg/L	1	11/08/19 21:00	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0104**	0.0005	0.0002	mg/L	1	11/08/19 18:00	EPA200.8		AES
Cadmium*	<0.0001	0.0001	0.00004	mg/L	1	11/08/19 18:00	EPA200.8		AES
Copper*	**0.0004**	0.0001	0.0001	mg/L	1	11/13/19 14:23	EPA200.8		AES
Lead*	<0.0005	0.0005	0.00009	mg/L	1	11/13/19 14:23	EPA200.8		AES
Manganese*	**0.313**	0.0005	0.00009	mg/L	1	11/13/19 14:23	EPA200.8		AES
Molybdenum*	**0.0017**	0.0005	0.00007	mg/L	1	11/08/19 18:00	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0006	mg/L	1	11/08/19 18:00	EPA200.8		AES
Uranium	**0.0004**	0.0001	0.00008	mg/L	1	11/13/19 14:23	EPA200.8		AES
Zinc*	<0.0020	0.0020	0.0004	mg/L	1	11/13/19 14:23	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-8-PL

1911075-04 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-7-EAA

1911075-05 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**350**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**350**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.182**	0.100	0.0450	mg NH3-N/L	1	11/07/19 16:00	EPA350.1		LLG
Chloride*	**11.6**	5.00	0.964	mg/L	5	11/13/19 16:42	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 16:42	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 14:59	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/07/19 07:50	EPA300.0	BS1	AES
pH*	**6.99**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**1530**	10.0		mg/L	1	11/07/19 14:42	EPA160.1		VJL
Sulfate*	**756**	25.0	7.38	mg/L	25	11/13/19 17:00	EPA300.0		AES
Total Organic Carbon*	**3.45**	0.500	0.0670	mg/L	1	11/12/19 01:34	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 21:03	EPA200.7		AES
Calcium*	**162**	0.100	0.013	mg/L	1	11/08/19 21:03	EPA200.7		AES
Hardness as CaCO3	**997**	2.31	0.418	mg/L	5	11/11/19 16:45	2340 B		AES
Iron*	**2.00**	0.050	0.028	mg/L	1	11/08/19 21:03	EPA200.7		AES
Magnesium*	**144**	0.500	0.094	mg/L	5	11/11/19 16:45	EPA200.7		AES
Potassium*	**3.74**	1.00	0.096	mg/L	1	11/08/19 21:03	EPA200.7		AES
Silica (Si02)	**16.3**			mg/L	1	11/08/19 21:03	Calculation		AES
Silicon	**7.61**	0.500	0.027	mg/L	1	11/08/19 21:03	EPA200.7		AES
Sodium*	**74.9**	1.00	0.367	mg/L	1	11/08/19 21:03	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0013**	0.0010	0.0004	mg/L	2	11/13/19 14:58	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/13/19 14:58	EPA200.8		AES
Copper*	**0.0005**	0.0002	0.0002	mg/L	2	11/13/19 14:58	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/13/19 14:58	EPA200.8		AES
Manganese*	**4.76**	0.0010	0.0002	mg/L	2	11/13/19 14:58	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0001	mg/L	2	11/13/19 14:58	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/13/19 14:58	EPA200.8		AES
Uranium	**0.0018**	0.0002	0.0002	mg/L	2	11/13/19 14:58	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/13/19 14:58	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-7-EAA

1911075-05 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-99-EAA

1911075-06 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry									
Alkalinity, Bicarbonate as CaCO3*	**425**	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Carbonate as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Hydroxide as CaCO3*	<10.0	10.0		mg/L	5	11/07/19 15:30	2320 B		VJL
Alkalinity, Total as CaCO3*	**425**	10.0	3.06	mg/L	5	11/07/19 15:30	2320 B		VJL
Ammonia as N	**0.178**	0.100	0.0450	mg NH3-N/L	1	11/07/19 16:01	EPA350.1		LLG
Chloride*	**11.3**	5.00	0.964	mg/L	5	11/13/19 17:18	EPA300.0		AES
Fluoride*	<0.500	0.500	0.128	mg/L	5	11/13/19 17:18	EPA300.0		AES
Nitrate/Nitrite as N*	<0.020	0.020	0.006	mg/L as N	1	11/12/19 15:03	EPA353.2		LLG
Ortho-Phosphate as P	<0.0500	0.0500	0.00913	mg/L	1	11/07/19 08:24	EPA300.0	BS1	AES
pH*	**7.05**			pH Units	1	11/07/19 08:55	EPA150.1		FGH
Total Dissolved Solids*	**1590**	10.0		mg/L	1	11/07/19 14:44	EPA160.1		VJL
Sulfate*	**746**	25.0	7.38	mg/L	25	11/13/19 17:36	EPA300.0		AES
Total Organic Carbon*	**3.47**	0.500	0.0670	mg/L	1	11/12/19 01:50	5310C		LLG
Dissolved Metals by ICP									
Aluminum*	<0.050	0.050	0.025	mg/L	1	11/08/19 21:06	EPA200.7		AES
Calcium*	**171**	0.100	0.013	mg/L	1	11/08/19 21:05	EPA200.7		AES
Hardness as CaCO3	**1020**	2.31	0.418	mg/L	5	11/11/19 16:47	2340 B		AES
Iron*	**2.09**	0.050	0.028	mg/L	1	11/08/19 21:06	EPA200.7		AES
Magnesium*	**143**	0.500	0.094	mg/L	5	11/11/19 16:47	EPA200.7		AES
Potassium*	**3.85**	1.00	0.096	mg/L	1	11/08/19 21:05	EPA200.7		AES
Silica (Si02)	**16.8**			mg/L	1	11/08/19 21:05	Calculation		AES
Silicon	**7.83**	0.500	0.027	mg/L	1	11/08/19 21:05	EPA200.7		AES
Sodium*	**77.4**	1.00	0.367	mg/L	1	11/08/19 21:05	EPA200.7		AES
Dissolved Metals by ICPMS									
Arsenic*	**0.0014**	0.0010	0.0004	mg/L	2	11/13/19 15:01	EPA200.8		AES
Cadmium*	<0.0002	0.0002	0.00008	mg/L	2	11/13/19 15:01	EPA200.8		AES
Copper*	**0.0006**	0.0002	0.0002	mg/L	2	11/13/19 15:01	EPA200.8		AES
Lead*	<0.0010	0.0010	0.0002	mg/L	2	11/13/19 15:01	EPA200.8		AES
Manganese*	**5.11**	0.0010	0.0002	mg/L	2	11/13/19 15:01	EPA200.8		AES
Molybdenum*	<0.0010	0.0010	0.0001	mg/L	2	11/13/19 15:01	EPA200.8		AES
Selenium*	<0.0020	0.0020	0.0013	mg/L	2	11/13/19 15:01	EPA200.8		AES
Uranium	**0.0020**	0.0002	0.0002	mg/L	2	11/13/19 15:01	EPA200.8		AES
Zinc*	<0.0040	0.0040	0.0007	mg/L	2	11/13/19 15:01	EPA200.8		AES

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

MW-99-EAA

1911075-06 (Ground Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Dissolved Mercury by CVAA									
Mercury*	<0.0002	0.0002	0.00003	mg/L	1	11/13/19 09:43	EPA245.1		LLG

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911064 - General Prep - Wet Chem										
Blank (B911064-BLK1)			Prepared: 11/06/19 Analyzed: 11/08/19							
Ortho-Phosphate as P	ND	0.0500	mg/L							
LCS (B911064-BS1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ortho-Phosphate as P	1.13	0.0500	mg/L	1.00		113	90-110			BS1
LCS Dup (B911064-BSD1)			Prepared: 11/06/19 Analyzed: 11/07/19							
Ortho-Phosphate as P	1.15	0.0500	mg/L	1.00		115	90-110	1.95	20	BS1
Batch B911069 - General Prep - Wet Chem										
Blank (B911069-BLK1)			Prepared & Analyzed: 11/07/19							
Ammonia as N	ND	0.100	mg NH3-N/L							
LCS (B911069-BS1)			Prepared & Analyzed: 11/07/19							
Ammonia as N	2.62	0.100	mg NH3-N/L	2.50		105	90-110			
LCS Dup (B911069-BSD1)			Prepared & Analyzed: 11/07/19							
Ammonia as N	2.60	0.100	mg NH3-N/L	2.50		104	90-110	0.660	20	
Batch B911074 - General Prep - Wet Chem										
Blank (B911074-BLK1)			Prepared & Analyzed: 11/07/19							
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B911074-SRM1)			Prepared & Analyzed: 11/07/19							
Total Dissolved Solids	545	10.0	mg/L	600		90.8	85-115			
Batch B911075 - General Prep - Wet Chem										
Blank (B911075-BLK1)			Prepared & Analyzed: 11/07/19							
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 (B911075-BS1)			Prepared & Analyzed: 11/07/19							
Alkalinity, Bicarbonate as CaCO3	95.0	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	95.0	10.0	mg/L	100		95.0	85-115			
LCS Dup (B911075-BSD1)			Prepared & Analyzed: 11/07/19							
Alkalinity, Bicarbonate as CaCO3	102	10.0	mg/L				85-115	7.11	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	102	10.0	mg/L	100		102	85-115	7.11	20	
Batch B911094 - General Prep - Wet Chem										

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

General Chemistry - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Reference (B911094-SRM1)			Prepared & Analyzed: 11/07/19							
pH	7.04		pH Units	7.00		101	98.5-101.4			
Batch B911095 - General Prep - Wet Chem										
Blank (B911095-BLK1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	ND	0.500	mg/L							
LCS (B911095-BS1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115			
LCS Dup (B911095-BSD1)			Prepared & Analyzed: 11/11/19							
Total Organic Carbon	10.1	0.500	mg/L	10.0		101	85-115	0.197	20	
Batch B911107 - General Prep - Wet Chem										
Blank (B911107-BLK1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	ND	0.020	mg/L as N							
LCS (B911107-BS1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	1.06	0.020	mg/L as N	1.00		106	90-110			
LCS Dup (B911107-BSD1)			Prepared: 11/11/19 Analyzed: 11/12/19							
Nitrate/Nitrite as N	1.06	0.020	mg/L as N	1.00		106	90-110	0.282	20	
Batch B911129 - General Prep - Wet Chem										
Blank (B911129-BLK1)			Prepared & Analyzed: 11/13/19							
Chloride	ND	1.00	mg/L							
Fluoride	ND	0.100	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B911129-BS1)			Prepared & Analyzed: 11/13/19							
Chloride	23.0	1.00	mg/L	25.0		91.9	90-110			
Fluoride	2.57	0.100	mg/L	2.50		103	90-110			
Sulfate	22.5	1.00	mg/L	25.0		90.2	90-110			
LCS Dup (B911129-BSD1)			Prepared & Analyzed: 11/13/19							
Chloride	23.1	1.00	mg/L	25.0		92.4	90-110	0.564	20	
Fluoride	2.63	0.100	mg/L	2.50		105	90-110	2.08	20	
Sulfate	23.3	1.00	mg/L	25.0		93.0	90-110	3.11	20	

Green Analytical Laboratories

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www.GreenAnalytical.com

GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911084 - Diss. 200.7/200.8										
Blank (B911084-BLK1)			Prepared & Analyzed: 11/08/19							
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 (B911084-BS1)			Prepared & Analyzed: 11/08/19							
Aluminum	4.84	0.050	mg/L	5.00		96.9	85-115			
Calcium	4.67	0.100	mg/L	5.00		93.4	85-115			
Iron	4.76	0.050	mg/L	5.00		95.3	85-115			
Magnesium	23.5	0.100	mg/L	25.0		93.9	85-115			
Potassium	9.53	1.00	mg/L	10.0		95.3	85-115			
Silicon	4.96	0.500	mg/L	5.00		99.3	85-115			
Sodium	3.86	1.00	mg/L	4.05		95.3	85-115			
LCS Dup (B911084-BSD1)			Prepared & Analyzed: 11/08/19							
Aluminum	4.73	0.050	mg/L	5.00		94.5	85-115	2.44	20	
Calcium	4.67	0.100	mg/L	5.00		93.3	85-115	0.0872	20	
Iron	4.65	0.050	mg/L	5.00		93.1	85-115	2.32	20	
Magnesium	23.5	0.100	mg/L	25.0		94.1	85-115	0.176	20	
Potassium	9.51	1.00	mg/L	10.0		95.1	85-115	0.223	20	
Silicon	4.90	0.500	mg/L	5.00		98.0	85-115	1.27	20	
Sodium	3.84	1.00	mg/L	4.05		94.9	85-115	0.417	20	

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6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

Dissolved Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911085 - Diss. 200.7/200.8										
Blank (B911085-BLK1)				Prepared & Analyzed: 11/08/19						
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 (B911085-BS1)				Prepared & Analyzed: 11/08/19						
Arsenic	0.0505	0.0005	mg/L	0.0500		101	85-115			
Cadmium	0.0517	0.0001	mg/L	0.0500		103	85-115			
Copper	0.0487	0.0001	mg/L	0.0500		97.3	85-115			
Lead	0.0503	0.0005	mg/L	0.0500		101	85-115			
Manganese	0.0482	0.0005	mg/L	0.0500		96.4	85-115			
Molybdenum	0.0494	0.0005	mg/L	0.0500		98.8	85-115			
Selenium	0.250	0.0010	mg/L	0.250		99.8	85-115			
Uranium	0.0495	0.0001	mg/L	0.0500		99.0	85-115			
Zinc	0.0490	0.0020	mg/L	0.0500		98.1	85-115			
LCS Dup (B911085-BSD1)				Prepared & Analyzed: 11/08/19						
Arsenic	0.0489	0.0005	mg/L	0.0500		97.8	85-115	3.26	20	
Cadmium	0.0495	0.0001	mg/L	0.0500		99.1	85-115	4.23	20	
Copper	0.0478	0.0001	mg/L	0.0500		95.6	85-115	1.78	20	
Lead	0.0506	0.0005	mg/L	0.0500		101	85-115	0.426	20	
Manganese	0.0485	0.0005	mg/L	0.0500		97.0	85-115	0.612	20	
Molybdenum	0.0486	0.0005	mg/L	0.0500		97.2	85-115	1.62	20	
Selenium	0.241	0.0010	mg/L	0.250		96.4	85-115	3.50	20	
Uranium	0.0488	0.0001	mg/L	0.0500		97.5	85-115	1.52	20	
Zinc	0.0449	0.0020	mg/L	0.0500		89.8	85-115	8.81	20	
Batch B911113 - Diss. 200.7/200.8										

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6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

Dissolved Metals by ICPMS - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911113 - Diss. 200.7/200.8 (Continued)										
Blank (B911113-BLK1)				Prepared: 11/12/19 Analyzed: 11/13/19						
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 (B911113-BS1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Arsenic	0.0516	0.0005	mg/L	0.0500		103	85-115			
Cadmium	0.0494	0.0001	mg/L	0.0500		98.7	85-115			
Copper	0.0480	0.0001	mg/L	0.0500		95.9	85-115			
Lead	0.0504	0.0005	mg/L	0.0500		101	85-115			
Manganese	0.0473	0.0005	mg/L	0.0500		94.7	85-115			
Molybdenum	0.0511	0.0005	mg/L	0.0500		102	85-115			
Selenium	0.266	0.0010	mg/L	0.250		106	85-115			
Uranium	0.0512	0.0001	mg/L	0.0500		102	85-115			
Zinc	0.0464	0.0020	mg/L	0.0500		92.9	85-115			
LCS Dup (B911113-BSD1)				Prepared: 11/12/19 Analyzed: 11/13/19						
Arsenic	0.0466	0.0005	mg/L	0.0500		93.1	85-115	10.3	20	
Cadmium	0.0442	0.0001	mg/L	0.0500		88.5	85-115	10.9	20	
Copper	0.0459	0.0001	mg/L	0.0500		91.8	85-115	4.33	20	
Lead	0.0483	0.0005	mg/L	0.0500		96.6	85-115	4.27	20	
Manganese	0.0465	0.0005	mg/L	0.0500		92.9	85-115	1.85	20	
Molybdenum	0.0470	0.0005	mg/L	0.0500		94.0	85-115	8.32	20	
Selenium	0.232	0.0010	mg/L	0.250		92.7	85-115	13.8	20	
Uranium	0.0472	0.0001	mg/L	0.0500		94.4	85-115	8.12	20	
Zinc	0.0440	0.0020	mg/L	0.0500		88.0	85-115	5.36	20	

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GCC Energy, LLC	Project: GCC GW Baseline	
6473 CR 120	Project Name / Number: GCC GW Baseline	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	11/15/19 09:54

Dissolved Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B911110 - EPA 245.1/7470										
Blank (B911110-BLK1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	ND	0.0002	mg/L							
LCS (B911110-BS1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115			
LCS Dup (B911110-BSD1)				Prepared: 11/11/19 Analyzed: 11/13/19						
Mercury	0.0055	0.0002	mg/L	0.00500		109	85-115	0.220	20	

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Notes and Definitions

M5	Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
BS1	Laboratory control sample recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
COC - Revision 6.0

Company or Client:	GCC ENERGY LLC / TOM BIRD
Address:	6473 C.R. 120
City:	HESPERUS State: CO Zip: 81326
Phone #:	970 385-4528
Contact Person:	TBIRD@GCC.COM
Email Report to:	LBECK@RESOURCEHYDROGEOLOGIC.COM
Project Name(optional):	AMMONIA - ORTHOPHOSPHATE-TDS
Sampler Name (Print):	MICHAEL G. MCFARLAND

Bill to (if different):
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Email:

For Lab Use	Sample Name or Location	Collected Date	Collected Time	Matrix: GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER:	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other:	Other:	ANALYSIS REQUEST: GCCE GW BASELINE	AMMONIA	ORTHOPHOSPHATE
1911.075.01	MW-8-EAA	11-6-19	11:00	X							1	1		4			X	X	X
-02	MW-8-MI	11-6-19	11:20	X							1	1		4			X	X	X
-03	MW-8-LM	11-6-19	12:12	X							1	1		4			X	X	X
-04	MW-8-PL	11-6-19	11:43	X							1	1		4			X	X	X
-05	MW-7-EAA	11-6-19	13:28	X							1	1		4			X	X	X
-06	MW-99-EAA	11-6-19	14:10	X							1	1		4			X	X	X

Relinquished By:	Date:	Time:	Received By:
Michael McFarland	11-6-19	15:27	
Relinquished By:	Date:	Time:	Received By:
Maeve Bonally	11-6-19	16:07	Debbie Zufelt
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ADDITIONAL REMARKS: Report to State? (Circle) Yes No

#1 On Ice

3.0/2.8°C Temperature at receipt: DZ CHECKED BY

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.