



Additional Information Response

1 message

Daniel Takami <danieltakami@gmail.com>

Thu, Dec 1, 2022 at 3:43 PM

To: Patrick Lennberg - DNR <patrick.lennberg@state.co.us>, Sergio Rivera <sergio.rivera@novametallix.com>

Cc: Robert Botts <robert.botts@stinson.com>

Patrick,

Enclosed is additional information concerning our 3rd Quarter Groundwater and Surface Water Monitoring Report. If you have any questions, please let me know.

Respectfully,

Daniel J. Takami

President, Sustainable Metal Solutions, LLC

President, Nederland Mining Consultants Inc.

President, Grand Island Resources, LLC

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2022.12.01 DRMS SW GW Additional Information Responses Signed.pdf

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Division of Reclamation, Mining & Safety
c/o Mr. Patrick Lennberg
1001 E 62nd Ave,
Room 215
Denver, CO 80216

RE: Additional Information Required, 3rd Quarter 2022 Groundwater and Surface Water Monitoring Report; Cross Gold Mine, Permit No. M-1977-410

Dear Mr. Lennberg:

This is responsive to your letter dated November 8, 2022. Grand Island Resources ("GIR") also makes reference herein to its October 5, 2022 responses ("GIR October Response") to your September 6, 2022 letter.

General

1. *The Operator in TR-10 committed to collecting duplicate samples at the rate of one duplicate sample for each media sampled. Therefore, for each sampling event the Operator shall collect a one duplicate sample for surface water, one duplicate for groundwater and one duplicate for effluent. Explain why no duplicate samples were collected.*

As stated in GIR October Response:

GIR provided the following response to DRMS as part of GIR response letter to a DMRS addressing DRMS' letter: **"Additional Information Required, 2nd Quarter 2022 Groundwater and Surface Water Monitoring Report; Cross Gold Mine, Permit No. M-1977-410":** GIR collected duplicate samples of 1 groundwater location and 1 surface water location per each sampling event starting in September. An additional 1 duplicate for the effluent will be collected starting in October, thereby correcting the oversight.

2. *Additionally, other QA/QC samples such as rinsates, field blanks and matrix spikes samples were not collected, why?*

As stated in GIR October Response:

GIR provided the following response to DRMS as part of GIR response letter to a DMRS addressing DRMS' letter: **"Additional Information Required, 2nd Quarter 2022 Groundwater and Surface Water Monitoring Report; Cross Gold Mine, Permit No. M-1977-410":** GIR indicated: This resulted from an administrative oversight between GIR and the testing laboratories. Moving forward field blanks and matrix spikes will be taken once every 20 samples; 1 per groundwater sampling event, 1 per surface water sampling event and 1 per effluent sampling event. Rinsate samples are not considered necessary because all wells are equipped with permanent pumping infrastructure;

GIR is not utilizing temporary equipment to collect the water samples; a non-contacting peristaltic pump is being used currently to filter the water samples in the field; tubing and filters are single use. GIR would appreciate clarification from DRMS regarding rinsate such that corrections to protocols are made in accordance with DRMS expectations.

3. *Please clearly state which samples were filtered in the field.*

No samples were filtered in the field during the third quarter sampling events. Going forward GIR is field filtering water samples for dissolved metals.

Surface Water

4. *In the analytical result tables temperature is listed twice with one entry indicating field and the other not referencing where/when it was taken. Please describe the difference between these two entries.*

The second Temperature (not specifically labelled) is the Laboratory Reported Temperature, the temperature was taken upon sample receipt at the Laboratory.

5. *In the analytical result tables pH is listed twice. One entry indicates it was collected in the field the other entry is adjusted to 25 degrees C, but the values for each entry are identical. Please describe the difference between the two.*

The Field Temperature values were incorrectly reported due to table input errors. The corrected values are presented below on Tables 4.1.1, 4.1.2, and 4.1.3 for the months of July, August, and September, respectively.

6. *The pH measurements values in the tables do not match what is recorded on the field sheets, please provide an explanation for the difference. Please update and resubmit the tables with the field measured pH values clearly indicated.*

The Field pH values were incorrectly reported due to table input errors. The corrected values are presented below on Tables 4.1.1, 4.1.2, and 4.1.3 for the months of July, August, and September, respectively.

7. *The field water quality data collected at the time of sampling should be included on the data tables in the report. Please update the tables to reflect the field water quality data collected at the time of sampling.*

Field Ambient Temperature and Field Specific Conductivity have been added to the tables. The updated information is presented below on Tables 4.1.1, 4.1.2, and 4.1.3 for the months of July, August, and September, respectively.

Table 4.1.1

Sample Collected on: July 8, 2022			
Parameter	Sta. 2022-01	Sta. 2022-02	Unit
Arsenic Potentially Dissolved	ND	ND	ug/L
Arsenic Total Recoverable	ND	ND	ug/L
Cadmium Potentially Dissolved	ND	ND	ug/L
Cadmium Total Recoverable	ND	0.11	ug/L
Chromium Potentially Dissolved	ND	ND	ug/L
Chromium Total Recoverable	ND	ND	ug/L
Chromium, hexavalent Dissolved	ND	ND	mg/L
Chromium, hexavalent Total	ND	ND	mg/L
Chromium, trivalent Potentially Dissolved	ND	ND	mg/L
Chromium, trivalent Total Recoverable	ND	ND	mg/L
Copper Potentially Dissolved	3.2	2.8	ug/L
Copper Total Recoverable	3	2.4	ug/L
Field pH	7	7.7	SU
Field Water Temperature	10	14	Celsius
Iron Total Recoverable	380	320	ug/L
Lead Potentially Dissolved	0.85	3.6	ug/L
Lead Total Recoverable	0.91	3.7	ug/L
Manganese Potentially Dissolved	17	13	ug/L
Mercury	5	4.8	ng/L
Mercury Total	ND	ND	ug/L
Nickel Potentially Dissolved	0.49	0.46	ug/L
pH adj. to 25 deg C	7.6	7.9	SU
Selenium Potentially Dissolved	ND	ND	ug/L
Silver Potentially Dissolved	0.12	0.17	ug/L
Specific Conductance	58	110	umhos/cm
Specific Conductance Total	58	110	umhos/cm
Sulfide Total	ND	ND	mg/L
Sulfide Total	ND	ND	mg/L
Temperature	20.4	20.7	Degrees C
Total Suspended Solids	2.8	3.6	mg/L
Un-ionized Hydrogen Sulfide Total	ND	ND	mg/L
Zinc	3.2	82	ug/L
Zinc Potentially Dissolved	3.7	17	ug/L
Field Ambient Temperature	15	17	Degrees C
Field Specific Conductivity	0.2	0.1	uS/cm

Table 4.1.2

Sample Collected on:	August 25, 2022		
Parameter	Sta. 2022-01	Sta. 2022-02	Unit
Arsenic Potentially Dissolved	ND	ND	ug/L
Arsenic Total Recoverable	ND	ND	ug/L
Cadmium Potentially Dissolved	ND	ND	ug/L
Cadmium Total Recoverable	ND	0.14	ug/L
Chromium Potentially Dissolved	ND	ND	ug/L
Chromium Total Recoverable	ND	ND	ug/L
Chromium, hexavalent Dissolved	ND	ND	mg/L
Chromium, hexavalent Total	0.0058	ND	mg/L
Chromium, trivalent Potentially Dissolved	ND	ND	mg/L
Chromium, trivalent Total Recoverable	ND	ND	mg/L
Copper Potentially Dissolved	2.4	3	ug/L
Copper Total Recoverable	2.5	3	ug/L
Field pH	7.3	7.9	SU
Field Water Temperature	12	8	Celsius
Iron Total Recoverable	450	320	ug/L
Lead Potentially Dissolved	0.24	4	ug/L
Lead Total Recoverable	0.39	3.3	ug/L
Manganese Potentially Dissolved	11	9.5	ug/L
Mercury	5.6	5.2	ng/L
Mercury Total	ND	ND	ug/L
Nickel Potentially Dissolved	0.7	0.53	ug/L
pH adj. to 25 deg C	7.5	7.9	SU
Selenium Potentially Dissolved	ND	ND	ug/L
Silver Potentially Dissolved	ND	ND	ug/L
Specific Conductance	56	110	umhos/cm
Specific Conductance Total	56	110	umhos/cm
Sulfide Total	ND	ND	mg/L
Sulfide Total	ND	ND	mg/L
Temperature	19.1	20	Degrees C
Total Suspended Solids	ND	2	mg/L
Un-ionized Hydrogen Sulfide Total	ND	ND	mg/L
Zinc	2	12	ug/L
Zinc Potentially Dissolved	9.5	15	ug/L
Field Ambient Temperature	18	19	Degrees C
Field Specific Conductivity	0.2	0.5	uS/cm

Table 4.1.3



Sample Collected on:	September 26, 2022		
Parameter	Sta. 2022-01	Sta. 2022-02	Unit
Arsenic Potentially Dissolved	DRY BED	ND	ug/L
Arsenic Total Recoverable		ND	ug/L
Cadmium Potentially Dissolved		ND	ug/L
Cadmium Total Recoverable		0.13	ug/L
Chromium Potentially Dissolved		ND	ug/L
Chromium Total Recoverable		ND	ug/L
Chromium, hexavalent Dissolved		ND	mg/L
Chromium, hexavalent Total		ND	mg/L
Chromium, trivalent Potentially Dissolved		ND	mg/L
Chromium, trivalent Total Recoverable		ND	mg/L
Copper Potentially Dissolved		ND	ug/L
Copper Total Recoverable		0.78	ug/L
Field pH		8.4	SU
Field Water Temperature		12	Celsius
Iron Total Recoverable		66	ug/L
Lead Potentially Dissolved		0.95	ug/L
Lead Total Recoverable		0.98	ug/L
Manganese Potentially Dissolved		5.6	ug/L
Mercury		2.9	ng/L
Mercury Total		ND	ug/L
Nickel Potentially Dissolved		ND	ug/L
pH adj. to 25 deg C		7.4	SU
Selenium Potentially Dissolved		ND	ug/L
Silver Potentially Dissolved		ND	ug/L
Specific Conductance		220	umhos/cm
Specific Conductance Total		220	umhos/cm
Sulfide Total		ND	mg/L
Sulfide Total		ND	mg/L
Temperature		20.5	Degrees C
Total Suspended Solids		ND	mg/L
Un-ionized Hydrogen Sulfide Total		ND	mg/L
Zinc		11	ug/L
Zinc Potentially Dissolved		6.2	ug/L
Field Ambient Temperature		16	Degrees C
Field Specific Conductivity		0.3	uS/cm

Groundwater

8. *None of the groundwater sample results, including effluent, exceeding Table Value Standards (TVS) were clearly indicated (bold font or highlighted). The Division understands that some of the samples were not filtered in the field, but the results should be highlighted for reference with later reports. Additionally, pH measurement exceedances occurred regardless of filtered status. Please update and resubmit the tables with the sample results exceeding TVS clearly indicated.*

The exceedances to TVS have been highlighted and are presented below on the Revised Tables 2.1.1, 2.1.2 and 2.1.3 for the months of July, August, and September, respectively.

9. *The pH measurements values in the tables do not match what is recorded on the field sheets, please provide an explanation for the difference. Please update and resubmit the tables with the field measured pH values clearly indicated.*

The values were incorreced entered on the tables. Tables 2.1.1, 2.1.2 and 2.1.3 for the months of July, August, and September, respectively, have been corrected to reflect the field measurements for ph.

10. *There is a shift in the groundwater flow direction in the September Potentiometric Surface Map figure is this due to a change in pumping at the Cross Winze, please clarify.*

GIR assumes that DRMS is referring to the two potentiometric lines closest to the Cabin Well (compliance well). GIR is not in a position to clarify the reason for the apparent referenced shift in flow direction given that, as described below, the surfaces are developed based on only three data points which in proximity to the well are very close together and the line segments in question are very short. Currently, no hydrogeological study or model exist that could shed light on observed phenomena.

The potentiometric surface lines shown on all potentiometric surface maps for the reporting period of July, August and September were all created based on the following:

1. Four input groundwater elevations corresponding to the groundwater levels taken on the day the groundwater samples are obtained via a pressure transducer logged data; i.e., Caribou Well, Cross Well, Cabin Well and the Cross Winze groundwater elevations.
2. The outside (limit) for surface potentiometric lines development construction points (external triangle) comprises the following:
 - a. Caribou to Cabin Well (compliance)
 - b. Caribou to Winze
 - c. Winze to Cabin Well (compliance)
3. The internal construction points (inside triangles) for potentiometric lines development are:
 - a. Caribou to Cross Well
 - b. Winze to Cross Well
 - c. Cross Well to Cabin Well (compliance)
4. The elevation delta between two wells is calculated and the result is divided by the distance between the corresponding wells thereby obtaining the gradient between the wells.
5. An arbitrary 10-foot potentiometric surface interval was assigned for illustration purposes on the potentiometric surface maps; the resulting equidistant points are plotted on a map and the corresponding elevation points are connected via spline lines
6. In the case of the September potentiometric surface map (as well as all other maps), the resulting equidistant points between the Cross Winze and the Cabin Well; the Cross Well and the Cabin Well and

the Caribou Well and the Cabin Well were connected at the corresponding equal elevation with spline lines to develop the potentiometric surface shown.

- 7. Should DRMS desire it, GIR would use straight lines between potentiometric surface lines as opposed to spline lines.**

11. Please update the effluent tables to include the TVS each analyte is being compared to

Tables 3.1, 3.2 and 3.3 months of July, August and September, respectively, have been updated to reflect TVS.

12. The effluent sample result tables do not have results for Coliform(s), please provide an explanation for the missing values

There was an input error on the Tables. Tables 3.1, 3.2 and 3.3 months of July, August, and September, respectively, have been updated to reflect TVS.



Sample Collected on:	July 7, 2022						
Parameter	Standard	Cross Well	Caribou Well	Cabin Well	Unit	Comments	Method
30-day Total Coliforms	2.2	ND	ND	ND	org/100 ml		SM 9221-9223
Aluminum	5	0.001	0.031	0.018	mg/l		EPA 200.8
Antimony	0.006	<0.0012	<0.0012	<0.0012	mg/l		EPA 200.8
Arsenic	0.01	<0.0006	<0.0006	<0.0006	mg/l		EPA 200.8
Asbestos	7,000,000	ND	ND	ND	fibers/liter		EPA 100.2M
Barium	2	0.0273	0.0061	0.0348	mg/l		EPA 200.8
Beryllium	0.004	<0.0001	<0.0001	<0.0001	mg/l		EPA 200.8
Beta and Photon Emitters	4	<3	<2.9	<3.1	mrem/year		SM 7110B
Boron	0.75	<0.01	<0.01	0.02	mg/l		EPA 200.7
Cadmium	0.005	0.0002	<0.0001	<0.0001	mg/l		EPA 200.8
Calcium	Non Corrosive	45.3	9.3	31.9	mg/l as CaCO3		EPA 200.7
Chloride	250	5.42	0.48	2.15	mg/l		EPA 300.0
Chlorophenol	0.0002	ND	ND	ND	mg/l	Standard in mg/l; results in ug/l	EPA 625
Chromium	0.1	<0.0015	<0.0015	<0.0015	mg/l		EPA 200.8
Cobalt	0.05	<0.0002	<0.0002	<0.0002	mg/l		EPA 200.8
Color	15	ND	ND	ND	color units		SM 2120 A
Copper	0.2	0.0266	0.3165	0.0009	mg/l		EPA 200.8
Corrosivity	Non Corrosive	-1.41	-3.48	-1.53	Langelier Units		SM 2330-B
Cyanide [Free]	0.2	<0.005	<0.005	<0.005	mg/l		ASTM D4282-15
Fluoride	2	<0.1	<0.1	<0.1	mg/l		EPA 300.0
Foaming Agents	0.5	0.1	0.1	0.1	mg/l		SM 5540 C
Gross Alpha Particle Activity	15	0.9	0.5	1	pCi/l		SM 7110B
Iron	0.3	0.031	0.023	0.055	mg/l		EPA 200.7
Lead	0.05	0.0034	0.0005	0.0012	mg/l		EPA 200.8
Lithium	2.5	ND	ND	ND	mg/l		E200.7
Manganese	0.05	0.003	0.0013	0.0107	mg/l		EPA 200.8
Max Total Coliforms	23	ND	ND	ND	org/100 ml		SM 9221-B
Mercury (inorganic)	0.002	<0.0002	<0.0002	<0.0002	mg/l		EPA 245.7
Molybdenum	0.21	0.0007	<0.0005	0.0045	mg/l		EPA 200.8
Nickel	0.1	<0.0009	<0.0009	<0.0009	mg/l		EPA 200.8
Nitrate	10	0.31	0.07	0.21	mg as N		EPA 300.0
Nitrate-NitriteTotal	10	0.22	0.1	0.25	mg as N		Calculation
Nitrite	1	<0.03	<0.03	<0.03	mg as N		EPA 300.0
Odor	3	ND	ND	ND	odor units		SM 2150 B
pH	6.5 - 8.5	7.0-6.8	5.8-5.7	7.3-7.1	pH units		SM 4500- H-B
Phenol	0.3	ND	ND	ND	mg/l	Standard in mg/l; results in ug/l	EPA 625
Selenium	0.02	<0.0008	<0.0008	<0.0008	mg/l		EPA 200.8
Silver Dissolved	0.05	<0.0005	<0.0005	<0.0005	mg/l		EPA 200.8
Silver Total		<0.0005	<0.0005	<0.0005	mg/l		EPA 200.8
Sulfate	250	11.56	2.72	7.02	mg/l		EPA 300.0
TDS	400	62	21	43	mg/l		SM 2540-C
Thallium	0.002	<0.0002	<0.0002	<0.0002	mg/l		EPA 200.8
Uranium	0.0168 -0.03	<0.0002	<0.0002	<0.0002	mg/l		EPA 200.8
Vanadium	0.1	<0.001	<0.001	<0.001	mg/l		EPA 200.8
Zinc	2	6.43	0.063	0.163	mg/l		EPA 200.8
Note 1: The standard value indicated is for dissolved concentrations; the test results provided correspond to total concentrations this is due to an interpretation error by the Operator							
The highlighted cells Indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41							

Table 2.1.2

Sample Collected on: August 25, 2022							
Parameter	Standard	Cross Well	Caribou Well	Cabin Well	Unit	Comments	Method
30-day Total Coliforms	2.2	ND	ND	ND	org/100 ml		SM 9221-9223
Aluminum	5	ND	0.011	0.032	mg/l		EPA 200.8
Antimony	0.006	ND	ND	ND	mg/l		EPA 200.8
Arsenic	0.01	ND	ND	ND	mg/l		EPA 200.8
Asbestos	7,000,000	ND	ND	ND	fibers/liter		EPA 100.2M
Barium	2	0.0265	0.0058	0.0456	mg/l		EPA 200.8
Beryllium	0.004	ND	ND	ND	mg/l		EPA 200.8
Beta and Photon Emitters	4	<2.9	<2.9	<2.8	mrem/year		SM 7110B
Boron	0.75	ND	ND	ND	mg/l		EPA 200.7
Cadmium	0.005	0.0002	ND	0.0002	mg/l		EPA 200.8
Calcium	Non Corrosive	16.5	3.8	15.9	mg/l as CaCO3		EPA 200.7
Chloride	250	3.55	0.51	2.42	mg/l		EPA 300.0
Chlorophenol	0.0002	ND	ND	ND	mg/l	Standard in mg/l; results in ug/l	EPA 625
Chromium	0.1	ND	ND	ND	mg/l		EPA 200.8
Cobalt	0.05	ND	ND	ND	mg/l		EPA 200.8
Color	15	ND	ND	ND	color units		SM 2120 A
Copper	0.2	0.0065	0.3086	0.019	mg/l		EPA 200.8
Corrosivity	Non Corrosive	-1.84	-3.28	-1.72	Langelier Units		SM 2330-B
Cyanide [Free]	0.2	ND	ND	ND	mg/l		ASTM D4282-15
Fluoride	2	ND	0.24	0.26	mg/l		EPA 300.0
Foaming Agents	0.5	ND	ND	ND	mg/l		SM 5540 C
Gross Alpha Particle Activity	15	1.6	0.2	0.3	pCi/l		SM 7110B
Iron	0.3	0.032	0.016	0.323	mg/l		EPA 200.7
Lead	0.05	0.0006	0.0003	0.0044	mg/l		EPA 200.8
Lithium	2.5	ND	ND	ND	mg/l		E200.7
Manganese	0.05	0.0013	ND	0.034	mg/l		EPA 200.8
Max Total Coliforms	23	ND	ND	ND	org/100 ml		SM 9221-B
Mercury (inorganic)	0.002	ND	ND	ND	mg/l		EPA 245.7
Molybdenum	0.21	0.0006	ND	0.0059	mg/l		EPA 200.8
Nickel	0.1	ND	ND	ND	mg/l		EPA 200.8
Nitrate	10	0.22	0.1	0.25	mg as N		EPA 300.0
Nitrate-NitriteTotal	10	0.22	0.1	0.25	mg as N		Calculation
Nitrite	1	ND	ND	ND	mg as N		EPA 300.0
Odor	3	ND	ND	ND	odor units		SM 2150 B
pH	6.5 - 8.5	6.6-7.0	6.2-6.2	8.1-7.3	pH units		SM 4500- H-B
Phenol	0.3	ND	ND	ND	mg/l	Standard in mg/l; results in ug/l	EPA 625
Selenium	0.02	ND	ND	ND	mg/l		EPA 200.8
Silver Dissolved	0.05	ND	ND	ND	mg/l		EPA 200.8
Silver Total		ND	ND	ND	mg/l		EPA 200.8
Sulfate	250	9.29	2.75	8.76	mg/l		EPA 300.0
TDS	400	102	67	104	mg/l		SM 2540-C
Thallium	0.002	ND	ND	ND	mg/l		EPA 200.8
Uranium	0.0168 -0.03	ND	ND	ND	mg/l		EPA 200.8
Vanadium	0.1	ND	ND	ND	mg/l		EPA 200.8
Zinc	2	0.639	0.003	0.346	mg/l		EPA 200.8

Note 1: The standard value indicated is for dissolved concentrations; the test results provided correspond to total concentrations this is due to an interpretation error by the Operator

The highlighted cells Indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41



Note 1: The standard value indicated is for dissolved concentrations; however, unless indicted on the Comments, the test results provided correspond to total concentrations this is due to an interpretation error by the Operator

The highlighted cells Indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41

Table 3.1

Sample Collected on:	July 7, 2022				
Parameter	Standard	Cross Portal	Caribou Portal	Unit	Method
30-day Total Coliforms	2.2	ND	ND	org/100 ml	SM 9221-9223
Aluminum	5	0.047	0.003	mg/l	EPA 200.8
Antimony	0.006	ND	ND	mg/l	EPA 200.8
Arsenic	0.01	ND	ND	mg/l	EPA 200.8
Asbestos	7,000,000	ND	ND	fibers/liter	EPA 100.2M
Barium	2	0.627	0.512	mg/l	EPA 200.8
Beryllium	0.004	ND	ND	mg/l	EPA 200.8
Beta and Photon Emitters	4	<2.9	<3.0	mrem/year	SM 7110B
Boron	0.75	ND	ND	mg/l	EPA 200.7
Cadmium	0.005	0.002	0.0002	mg/l	EPA 200.8
Calcium	Non Corrosive	21.3	23.7	mg/l as CaCO ₃	EPA 200.7
Chloride	250	1.28	0.53	mg/l	EPA 300.0
Chlorophenol	0.0002	ND	ND	mg/l	EPA 625
Chromium	0.1	ND	ND	mg/l	EPA 200.8
Cobalt	0.05	0.002	ND	mg/l	EPA 200.8
Color	15	8	ND	color units	SM 2120 A
Copper	0.2	0.0054	0.001	mg/l	EPA 200.8
Corrosivity	Non Corrosive	-0.87	-0.53	Langelier Units	SM 2330-B
Cyanide [Free]	0.2	ND	ND	mg/l	ASTM D4282-15
Fluoride	2	ND	ND	mg/l	EPA 300.0
Foaming Agents	0.5	ND	ND	mg/l	SM 5540 C
Gross Alpha Particle Activity	15	2.2	4.1	pCi/l	SM 7110B
Iron	0.3	0.177	0.076	mg/l	EPA 200.7
Lead	0.05	0.198	0.0024	mg/l	EPA 200.8
Lithium	2.5	ND	ND	mg/l	E200.7
Manganese	0.05	0.244	0.0102	mg/l	EPA 200.8
Max Total Coliforms	23	ND	ND	org/100 ml	SM 9221-B
Mercury (inorganic)	0.002	ND	ND	mg/l	EPA 245.7
Molybdenum	0.21	0.0088	0.0056	mg/l	EPA 200.8
Nickel	0.1	ND	ND	mg/l	EPA 200.8
Nitrate	10	0.34	0.18	mg as N	EPA 300.0
Nitrate-NitriteTotal	10	0.34	0.18	mg as N	Calculation
Nitrite	1	ND	ND	mg as N	EPA 300.0
Odor	3	ND	ND	odor units	SM 2150 B
pH	6.5 - 8.5	7.21	7.4	pH units	SM 4500- H-B
Phenol	0.3	ND	ND	mg/l	EPA 625
Selenium	0.02	ND	ND	mg/l	EPA 200.8
Silver Dissolved	0.05	ND	ND	mg/l	EPA 200.8
Silver Total		ND	ND	mg/l	EPA 200.8
Sulfate	250	12.31	10.46	mg/l	EPA 300.0
TDS	400	69	75	mg/l	SM 2540-C
Thallium	0.002	ND	ND	mg/l	EPA 200.8
Uranium	0.0168 -0.03	0.0016	0.0051	mg/l	EPA 200.8
Vanadium	0.1	ND	ND	mg/l	EPA 200.8
Zinc	2	0.245	0.087	mg/l	EPA 200.8

The highlighted cells indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41

Table 3.2

Sample Collected on: August 25, 2022					
Parameter	Standard	Cross Portal	Caribou Portal	Unit	Method
30-day Total Coliforms	2.2	ND	ND	org/100 ml	SM 9221-9223
Aluminum	5	0.026	0.019	mg/l	EPA 200.8
Antimony	0.006	ND	ND	mg/l	EPA 200.8
Arsenic	0.01	ND	0.0007	mg/l	EPA 200.8
Asbestos	7,000,000	ND	ND	fibers/liter	EPA 100.2M
Barium	2	0.0738	0.0914	mg/l	EPA 200.8
Beryllium	0.004	ND	ND	mg/l	EPA 200.8
Beta and Photon Emitters	4	<2.8	<2.7	mrem/year	SM 7110B
Boron	0.75	ND	ND	mg/l	EPA 200.7
Cadmium	0.005	0.0013	0.0001	mg/l	EPA 200.8
Calcium	Non Corrosive	22	29.2	mg/l as CaCO ₃	EPA 200.7
Chloride	250	0.55	0.59	mg/l	EPA 300.0
Chlorophenol	0.0002	ND	ND	mg/l	EPA 625
Chromium	0.1	ND	ND	mg/l	EPA 200.8
Cobalt	0.05	0.0004	ND	mg/l	EPA 200.8
Color	15	ND	ND	color units	SM 2120 A
Copper	0.2	0.0046	0.0016	mg/l	EPA 200.8
Corrosivity	Non Corrosive	-0.89	0.28	Langelier Units	SM 2330-B
Cyanide [Free]	0.2	ND	ND	mg/l	ASTM D4282-15
Fluoride	2	0.26	0.27	mg/l	EPA 300.0
Foaming Agents	0.5	ND	ND	mg/l	SM 5540 C
Gross Alpha Particle Activity	15	1.8	5.9	pCi/l	SM 7110B
Iron	0.3	0.458	0.132	mg/l	EPA 200.7
Lead	0.05	0.0271	0.0127	mg/l	EPA 200.8
Lithium	2.5	ND	ND	mg/l	E200.7
Manganese	0.05	0.0434	0.1443	mg/l	EPA 200.8
Max Total Coliforms	23	ND	ND	org/100 ml	SM 9221-B
Mercury (inorganic)	0.002	ND	ND	mg/l	EPA 245.7
Molybdenum	0.21	0.0053	0.0057	mg/l	EPA 200.8
Nickel	0.1	ND	ND	mg/l	EPA 200.8
Nitrate	10	0.19	0.2	mg as N	EPA 300.0
Nitrate-NitriteTotal	10	0.19	0.2	mg as N	Calculation
Nitrite	1	ND	ND	mg as N	EPA 300.0
Odor	3	ND	ND	odor units	SM 2150 B
pH	6.5 - 8.5	7.2	8.08	pH units	SM 4500- H-B
Phenol	0.3	ND	ND	mg/l	EPA 625
Selenium	0.02	ND	ND	mg/l	EPA 200.8
Silver Dissolved	0.05	ND	ND	mg/l	EPA 200.8
Silver Total		ND	ND	mg/l	EPA 200.8
Sulfate	250	9.21	11.42	mg/l	EPA 300.0
TDS	400	116	155	mg/l	SM 2540-C
Thallium	0.002	ND	ND	mg/l	EPA 200.8
Uranium	0.0168 -0.03	0.0006	0.0058	mg/l	EPA 200.8
Vanadium	0.1	ND	ND	mg/l	EPA 200.8
Zinc	2	0.229	0.02	mg/l	EPA 200.8

The highlighted cells Indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41

Table 3.3

Sample Collected on: September 27, 2022					
Parameter	Standard	Cross Portal	Caribou Portal	Unit	Method
30-day Total Coliforms	2.2	ND	ND	org/100 ml	SM 9221-9223
Aluminum (dissolved)	5	0.009	0.003	mg/l	EPA 200.8
Antimony	0.006	ND	ND	mg/l	EPA 200.8
Arsenic	0.01	ND	0.0007	mg/l	EPA 200.8
Asbestos	7,000,000	ND	ND	fibers/liter	EPA 100.2M
Barium	2	0.07	0.0582	mg/l	EPA 200.8
Beryllium	0.004	ND	ND	mg/l	EPA 200.8
Beta and Photon Emitters	4	<3.0	5.1	mrem/year	SM 7110B
Boron (dissolved)	0.75	ND	ND	mg/l	EPA 200.7
Cadmium	0.005	0.001	ND	mg/l	EPA 200.8
Calcium	Non Corrosive	22.8	26.8	mg/l as CaCO ₃	EPA 200.7
Chloride	250	0.38	0.52	mg/l	EPA 300.0
Chlorophenol	0.0002	ND	ND	mg/l	EPA 625
Chromium	0.1	ND	ND	mg/l	EPA 200.8
Cobalt (dissolved)	0.05	ND	ND	mg/l	EPA 200.8
Color	15	ND	ND	color units	SM 2120 A
Copper (dissolved)	0.2	0.0026	0.0008	mg/l	EPA 200.8
Corrosivity	Non Corrosive	-1.31	-0.63	Langelier Units	SM 2330-B
Cyanide [Free]	0.2	ND	ND	mg/l	ASTM D4282-15
Fluoride	2	ND	ND	mg/l	EPA 300.0
Foaming Agents	0.5	ND	ND	mg/l	SM 5540 C
Gross Alpha Particle Activity	15	2.5	6.7	pCi/l	SM 7110B
Iron	0.3	0.104	0.07	mg/l	EPA 200.7
Lead	0.05	0.0087	0.0021	mg/l	EPA 200.8
Lithium	2.5	ND	ND	mg/l	E200.7
Manganese	0.05	0.0216	0.0027	mg/l	EPA 200.8
Max Total Coliforms	23	ND	ND	org/100 ml	SM 9221-B
Mercury (inorganic)	0.002	ND	ND	mg/l	EPA 245.7
Molybdenum	0.21	0.0062	0.0057	mg/l	EPA 200.8
Nickel	0.1	ND	ND	mg/l	EPA 200.8
Nitrate	10	0.15	0.22	mg as N	EPA 300.0
Nitrate-NitriteTotal	10	0.15	0.22	mg as N	Calculation
Nitrite	1	ND	ND	mg as N	EPA 300.0
Odor	3	ND	ND	odor units	SM 2150 B
pH	6.5 - 8.5	6.71	7.22	pH units	SM 4500- H-B
Phenol	0.3	ND	ND	mg/l	EPA 625
Selenium (dissolved)	0.02	ND	ND	mg/l	EPA 200.8
Silver Dissolved	0.05	ND	ND	mg/l	EPA 200.8
Silver Total		ND	ND	mg/l	EPA 200.8
Sulfate	250	10.33	11.75	mg/l	EPA 300.0
TDS	400	122	139	mg/l	SM 2540-C
Thallium	0.002	ND	ND	mg/l	EPA 200.8
Uranium	0.0168 -0.03	0.0009	0.0059	mg/l	EPA 200.8
Vanadium (dissolved)	0.1	ND	ND	mg/l	EPA 200.8
Zinc (dissolved)	2	0.206	0.013	mg/l	EPA 200.8
The highlighted cells indicate Test Results Higher than the Reference Values from Reg. 5 CCR 1002-41					



GIR appreciates the opportunity to submit clarification regarding our 3rd Quarter Water Collection and Testing in accordance with Technical Revision 10 (TR10).

Respectfully submitted

A handwritten signature in black ink that reads "D. J. Takami".

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