

August 30, 2019

Richard Dwyer
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU
X0B 1J0

Re: July 2019 Monthly Monitoring Report for Water Licence 2AM-BRP1831

Dear Richard,

This report is provided by Sabina Gold and Silver Corp. (Sabina) to address the requirements of Part I, Item 18 of the Back River Project (the Project) Type A water licence 2AM-BRP1831 (the Licence).

These requirements include:

- All data and information required by Part I and Tables of Schedule I;
- An assessment of data to identify areas of non-compliance with regulated discharge parameters referred to in this Licence; and
- Documentation of conditions during spring freshet, major rain events, and periods of sustained precipitation including flow measurements, photographs, and notes.

Clauses under Part I of the Licence specifically applicable to monthly monitoring include Items 4, 8, 9, 12, and 20. These items are addressed individually below as are the tables of Schedule I. It is noted that, at this time, activities have not yet commenced under this Licence with the exception of winter ice road construction which was initiated in January of 2019 and completed in May 2019.

Part I, Item 4 Monitoring Program as outlined in Schedule I Tables 1 and 2

An overview of monitoring activity by station is provided in Table A located at the end of this report. The majority of the sampling required under Schedule I Table 2 of the Licence is not yet applicable as they refer to facilities which have not yet been constructed.

Part I, Item 8 Monthly Volumes of Water Used and Discharge of Greywater, Sewage Sludge, Effluent and Contact Water

Except for the discharges discussed below under Part I, Item 12 and Part I, Item 18, no further discharges occurred this month. No water was withdrawn under this licence this month.



Part I, Item 9 Monthly Quantity of Landfill, Landfarm, Waste Rock, Tailings Deposited and Ore Stockpiled and Processed

No waste was deposited in the Landfarm this month. The landfill, waste rock piles, and tailings storage area have not been constructed at this time, and no ore has been mined under this Licence.

Part I, Item 12 Monitoring During Discharge at BRP-15, 16, 43-45, 49, or 51

Of these facilities, discharge only occurred from the MLA temporary fuel berms this month. Prior to discharge the berm water was sampled and screened against discharge criteria and the Inspector was notified of the planned discharge. Berm water quality results as well as estimated discharge volumes and relevant discharge criteria per Part F, Item I of the Licence are provided in Table 1. Discharge occurred in a manner so as to minimize erosion. See details for each monitoring station in Table A of this report.

Table 1. Sample Results for BRP-G-MLAQuarry, July 2019

	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Lead (mg/L)	Oil and Grease (mg/L)	TSS (mg /L)	pH	Volume Discharged (L)
Max Avg. Concentration	0.37	0.09	0.002	0.1	5 and no visible sheen	15	6.0 - 9.5	n/a
MLA Berm 1	<0.00050	<0.00050	<0.00045	0.000134	<5.0 no	5.2	6.17	5,500 L
MLA Berm 2	<0.00050	<0.00050	<0.00045	0.000224	<5.0 no	7.4	6.36	6,250 L
MLA Berm 4	<0.00050	<0.00070	<0.00045	0.000093	<5.0 no	4.0	6.51	4,000 L
MLA Berm 7	<0.00050	<0.00050	<0.00045	0.000140	<5.0 no	7.4	6.69	4,000 L
Windsock Berm	<0.00050	<0.00050	<0.00045	0.000075	<5.0	7.0	6.92	1,000 L

Part I, Item 18 Assessment of Discharge Compliance and Documentation During Freshet and Major/Sustained Rain Events

In July, runoff was observed from the MLA quarry. This runoff was sampled for the parameters required for station BRP-G-01 to TBD (described in the Licence as “General Site Runoff – surficial runoff anywhere at both Goose Property and MLA, including quarries”). This station was labelled BRP-G-MLAQuarry, and sampling results are provided in Table 2 below, along with the discharge criteria outlined in Part C, Item 21 of the Licence. No exceedances were noted.

Table 2. Sample Results for BRP-G-MLAQuarry, July 2019

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample	BRP-G-MLAQuarry July 4, 2019
Total Suspended Solids (mg/L)	50.0	100.0	48.0
Oil and Grease	No Visible Sheen	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5	7.47

No discharges or seepages were observed from any other facilities this month. Other aspects of Part I Item 18, namely the requirement to report monthly, are addressed by this report as a whole.

Part I, Item 20 Additional Monitoring Imposed by Inspector

No additional monitoring has been requested by the Inspector at this time.

Should you require any additional information please feel free to contact me.

Regards,

Merle Keefe
Manager, Environmental Permitting
Sabina Gold & Silver Corp.
#1800 – 555 Burrard Street
Vancouver, BC V7X 1M9



Table A Monitoring Activity Overview by Station, July 2019

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-G-01 to BRP-G-TBD	Regulated Monitoring	General Site Runoff Surficial runoff anywhere at both Goose Property and MLA, including quarries; monitoring for erosion and sedimentation.	Construction	C	Weekly if flow enters a waterbody	No flow entering a waterbody was observed this month. However, runoff from the MLA Quarry was observed and sampled - see report
BRP-S-01 to BRP-S-TBD	General Monitoring	General Seeps Seepage or runoff from excavated and/or stockpiled material anywhere at both Goose Property and MLA, including quarries, that does not gather into a collection system or the site is reclaimed.	Construction and Operations	A, D	Monthly during flow, or as found	No seepage was observed this month
BRP-01	Regulated Monitoring	Goose Lake Discharge (discharge point for release of dewatering effluent with or without treatment)	Construction	A, B, G	Weekly during dewatering	N/A – dewatering activities have not been initiated
				D	Four times during dewatering, at the same time as the weekly samples	
				H	Once per month during dewatering, at the same time as Group D	
				I	One time during dewatering, at the same time as Group D	
BRP-02	General Monitoring	Llama Lake (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-03	Verification Monitoring	Llama Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-04	General Monitoring	Llama Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-05	Verification Monitoring	Llama WRSA Pond (representative of collected water quality)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-06	General Monitoring	Umwelt Lake (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-07	Verification Monitoring	Umwelt Pit (representative of collected pit water prior to transfer to tailings management facility)	Construction to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-08	General Monitoring	Umwelt Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase

BRP-09	Verification Monitoring	Umwelt WRSA Pond (representative of collected water quality, including landfill seepage/runoff)	Construction to Closure (early)*	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-10	Verification Monitoring	Primary Water Pond (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-11	Verification Monitoring	Saline Water Pond (representative of stored water quality)	Construction (late) to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-12	General Monitoring	Big Lake Intake (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Four times per year	N/A – facility construction has not been initiated
				B	Weekly	
BRP-13	Verification Monitoring	Ore Stockpile Pond (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-14	Verification Monitoring	ANFO Plant (representative of collected water quality)	Construction to Closure	A, E	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-15	Regulated Monitoring	Goose Fuel Tank Farm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-16	Regulated Monitoring	Goose Hazardous Waste Management Area (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-17	Regulated Monitoring	Goose Property Sewage Treatment Plant (discharge point for treated sewage onto land)	Construction to Closure	A, F	Prior to discharge	N/A – facility construction has not been initiated
BRP-17A	Regulated Monitoring	Goose Property Sewage Treatment Plant (discharge point for treated sewage into Tailings Storage Facility or Tailing Facility)	Construction to Closure*	A, F	Prior to discharge	N/A – facility construction has not been initiated
BRP-18	General Monitoring	Llama Watershed Outflow (representative of non-contact water, PN04 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet	N/A- wrong mine phase
BRP-19	General Monitoring	Echo Outflow (representative of non-contact water). PN09 from water and load balance	Operations Stage 1 to Closure	A, D	Once during freshet	N/A- wrong mine phase
BRP-20	Verification Monitoring	Echo Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-21	General Monitoring	Echo Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-22	Verification Monitoring	Echo WRSA Pond (representative of collected water quality)	Operations Stage 2 to Closure (early)	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-23	General Monitoring	Gander Pond Outflow (representative of non-contact water, PN07 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet	N/A mine phase
BRP-24	General Monitoring	Goose Lake Intake (intake point for potable and industrial water withdrawal)	Operations Stage 1 to Closure (early)	B	Weekly	N/A- no water withdrawn

BRP-25	Verification Monitoring	Goose Pit (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-26	General Monitoring	Goose Pit Lake (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-27	Verification Monitoring	Goose Main Tailings Facility (intake point for water treatment, represents pre-treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-28	Verification Monitoring	Goose Main Tailings Facility (discharge point for water treatment, represents post-treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-29	Verification Monitoring	TSF WRSA Pond (representative of collected water quality, including landfill seepage/runoff)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-30	General Monitoring	Goose Southeast Inflow (representative of non-contact water, PN06 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet	N/A mine phase
BRP-40	General Monitoring	Bathurst Inlet Intake (intake point in marine environment for potable and industrial water withdrawal)	Construction to Closure	A, D, B	At Licensee's discretion	N/A – water was not desalinated under this Licence this month
BRP-41	General Monitoring	Bathurst Inlet Discharge (discharge point in marine environment for effluent from desalination plant)	Construction to Closure	A, J	At Licensee's discretion	N/A – water was not desalinated under this Licence this month
BRP-42	Regulated Monitoring	MLA Greywater (discharge point for treated greywater onto land)	Construction to Closure	A, F	Prior to discharge or transfer of water	N/A – Water was not discharged under this Licence this month.
BRP-43	Regulated Monitoring	MLA Fuel Tank Farm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-44	Regulated Monitoring	MLA Landfarm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-45	Regulated Monitoring	MLA Hazardous Waste Management Area (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-49	Regulated Monitoring	MLA Temporary Fuel Storage Facility (representative of collected water quality)	Construction	A, E	Prior to discharge or transfer of water	N/A – water was discharged this month from multiple berms. See report.
BRP-51	Regulated Monitoring	Goose Landfarm (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – no water was discharged from this facility this month
BRP-52	General Monitoring	MLA Pond S1 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A – water was not withdrawn from this location this month
				B	Weekly when in use	
BRP-53	General Monitoring	MLA Pond S2 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A – water was not withdrawn from this location this month
				B	Weekly when in use	
BRP-54	General	MLA Lake 3 (intake point for potable and industrial water)	Construction to	A, D	Once per quarter when in use	N/A – water was not withdrawn from this

Group Code	Monitoring	Potable and industrial water withdrawal)	Closure	B	Weekly when in use	Withdrawn from this location this month
BRP-55	General Monitoring	MLA Lake 4 (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	N/A - water was not withdrawn from this location this month
				B	Weekly when in use	
BRP-I-01 to BRP-I-TBD	General Monitoring	Interconnection Winter Ice Road Proximal Water Bodies (intake points for fresh water used in the construction of the Interconnection Winter Ice Road)	Construction to Closure	B	Weekly when in use	No water was used for ice road construction this month

* Refers to Group Code from Water Licence 2AM-BRP1831 Schedule I Table 1