



Nunavut Impact Review Board

2023 Site Update Report

**Back River Gold Mine Project**

Sabina Gold & Silver Corp.

NIRB File No. 12MN036



October 2023

**Full Report Title:** *The 2023 Site Update Report for the Nunavut Impact Review Board's Monitoring of the Back River Gold Mine Project (NIRB File No. 12MN036)*

**Project:** Back River Gold Mine Project  
**Project Location:** Kitikmeot Region, Nunavut

**NIRB File No.:** 12MN036  
Back River Gold Mine Project Certificate No. 007

**Project Owner:** Sabina Gold and Silver Corporation  
**Proponent Contact:** Merle Keefe  
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**Report prepared by:** Guillaume Daoust

**Pictures in Report:** Courtesy of Sabina Gold and Silver Corporation

**Cover Photograph:** Goose Camp Accommodation

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## 1.0 Introduction

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and is responsible for post environmental assessment monitoring of a Project in accordance with Part 7 of Article 12 of the *Nunavut Agreement* and s. 135(4) of the *Nunavut Planning and Project Assessment Act, S.C. 2013, c. 14 (NuPPAA)*.

As such, the NIRB is responsible for the establishment of a monitoring program for the Project, which includes conducting periodic site visits. The objective of the NIRB's site visits is to determine whether, and to what extent, the land or resource use in question is being carried out within the predetermined terms and conditions of the NIRB's Project Certificate issued for the Back River Gold Mine Project (Back River or the Project), in accordance with *Nunavut Agreement, NuPPAA*, and as outlined in the NIRB Project Certificate.

The NIRB Monitoring Officer attempted to go to the site twice this year but was unable due to mechanical issues with the plane and a cancellation due to wildlife emergencies in Yellowknife. Therefore, the Monitoring Officer was unable to visually inspect activities occurring related to the Project and assess compliance with the requirements of the Back River Project Certificate.

To ensure parties are kept up to date at the site, the NIRB has developed a Site Update Report based on discussions, updates, and photos provided by the Proponent. This update will form a part of the NIRB's monitoring program.

## 2.0 Back River Gold Mine Project History and Current Status

The Back River Gold Mine Project (NIRB File No. 12MN036; the Back River Project or the Project), approximately 400 kilometres (km) southwest of the community of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories and is owned and operated by Sabina Gold and Silver Corp. (the Proponent or Sabina). Back River consists of the proposed mobilization, construction, operation, closure, reclamation, and post-closure monitoring of a gold mine operation in the Kitikmeot region of Nunavut. There are two (2) main development areas with a winter ice road interconnecting the Goose Property and the Marine Laydown Area (MLA) at Bathurst Inlet.

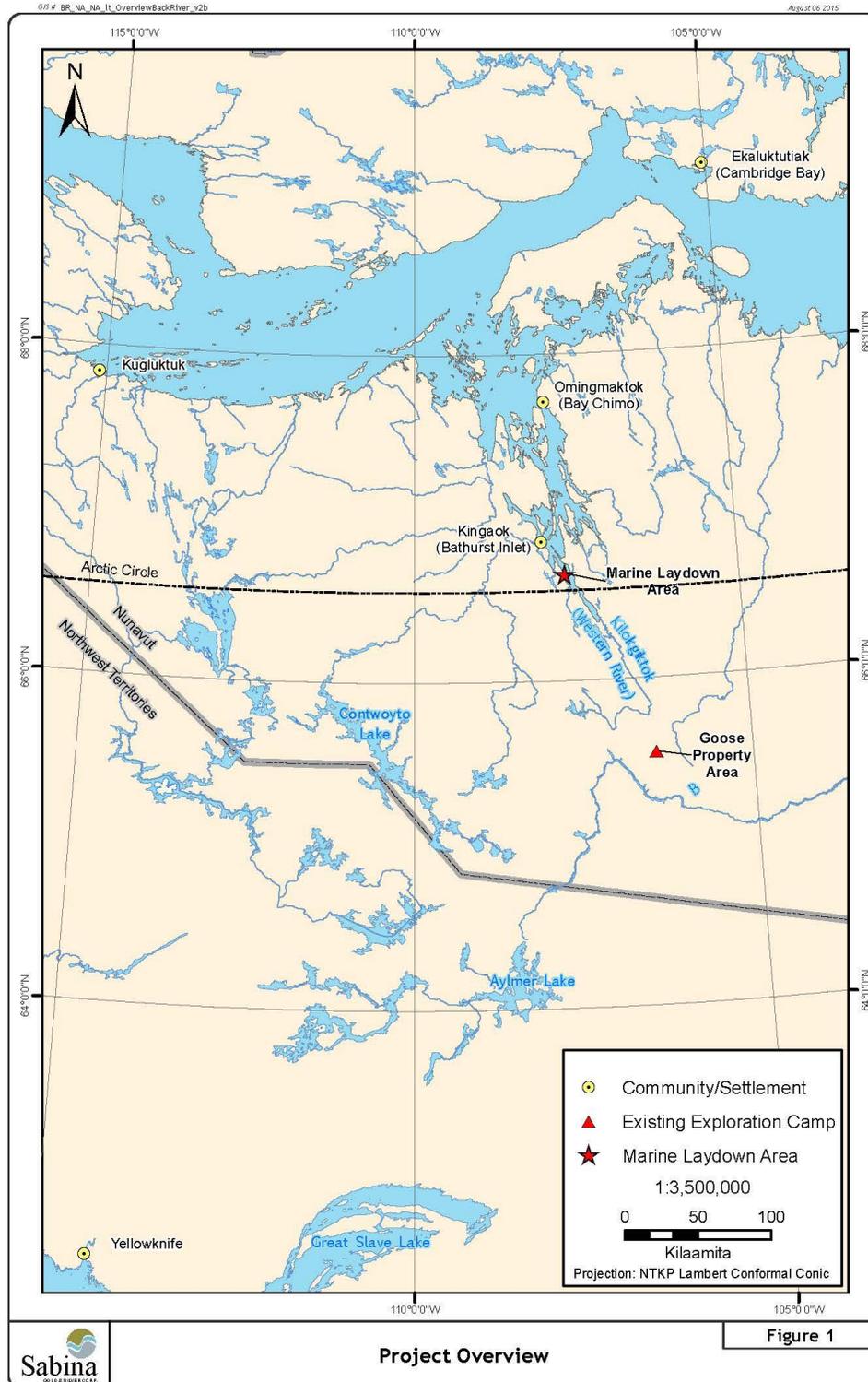


Figure 1: Project Overview Map<sup>1</sup>

The Goose Property once developed will comprise of:

- An ore processing plant,
- Four (4) deposits (Umwelt, Llama, Echo, and Goose Main) to be mined through open and underground mining methods;
- An all-weather air strip;
- A camp facility; and
- Associated mining facilities.

Ore mined at the Goose Property would be hauled to ore stockpiles located at the Goose Site where the ore would be processed within an ore processing plant (mill) using conventional gravity concentration and cyanidation techniques at approximately 6,000 tonnes of ore per day. A tailings storage facility would be built south-southeast of the Goose Main open pit for tailings deposition during the first two (2) years of production, with tailings then to be directly deposited into the mined-out Umwelt open pit and then into the mined-out Goose Main open pit for the remaining of the mine life. The gold produced at the processing plant would be stored on-site and then transported off-site by aircraft.

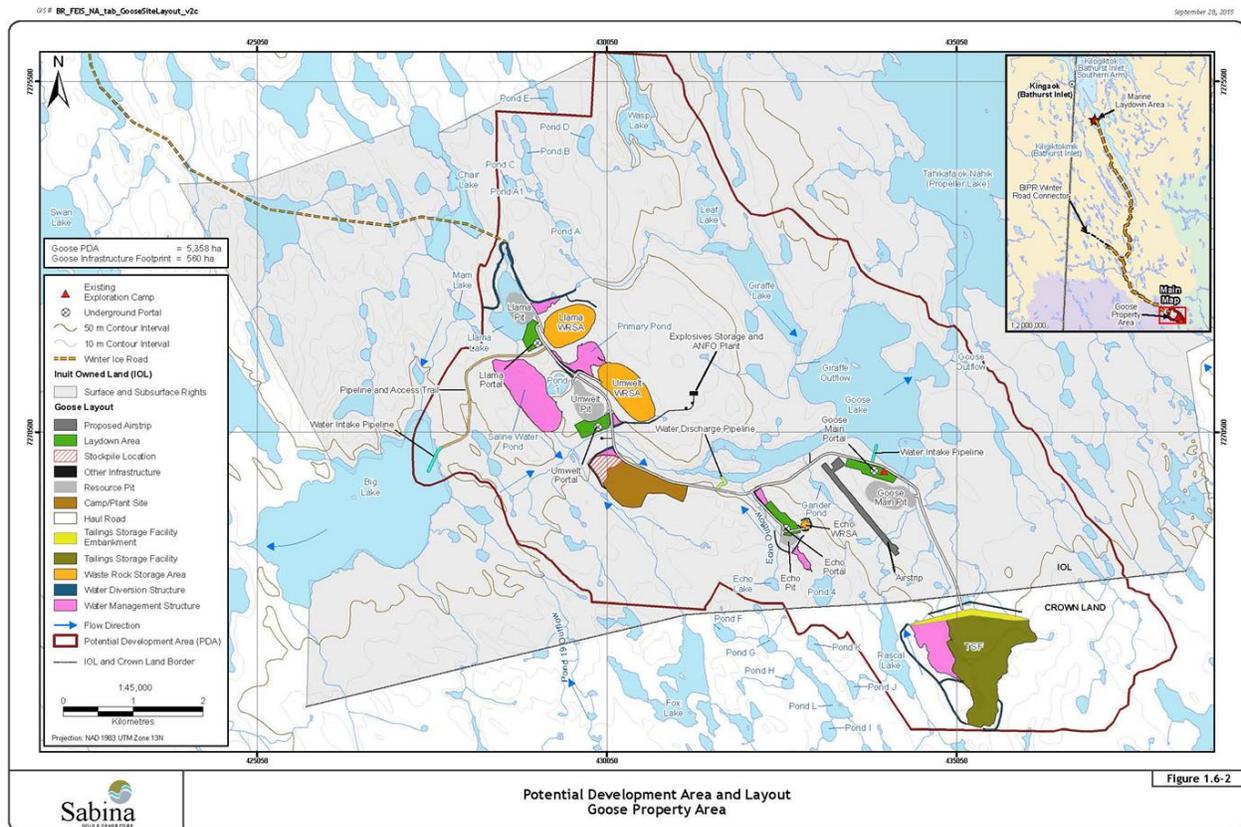
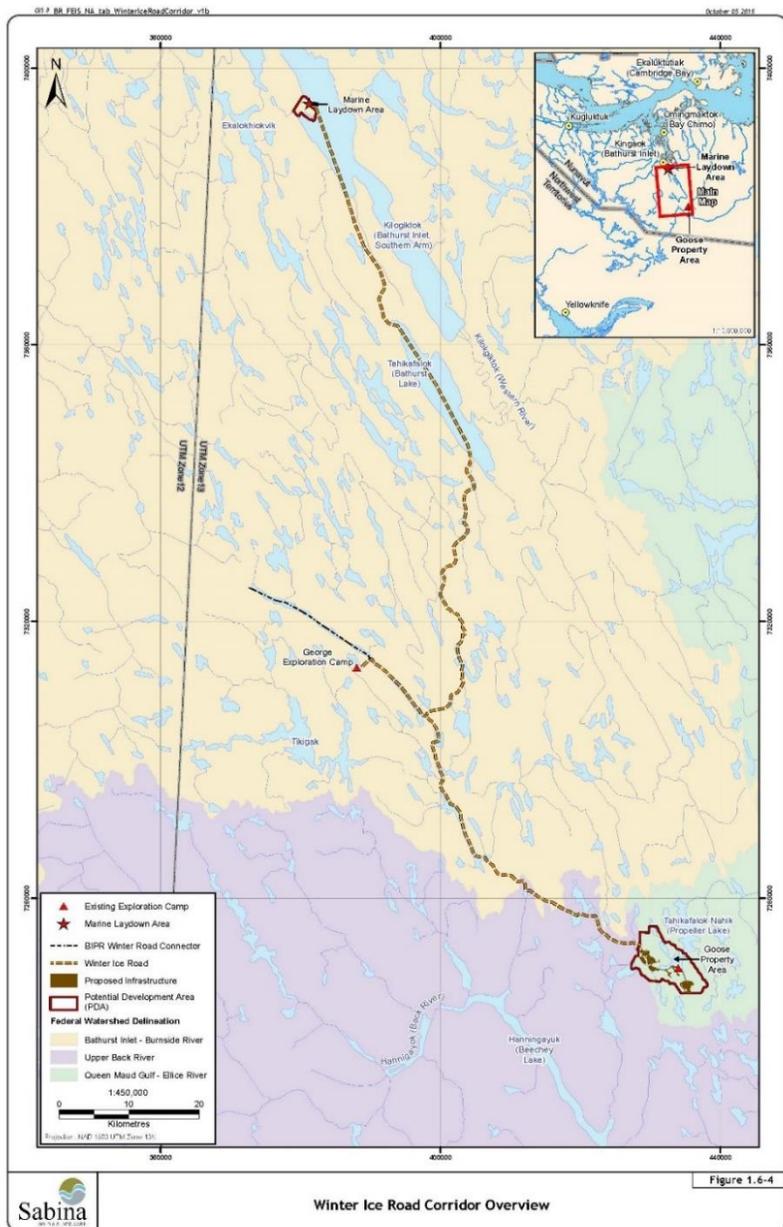


Figure 2: Potential Development of Goose Property Area<sup>2</sup>

<sup>1</sup> Source: Sabina Gold and Silver Corp.

<sup>2</sup> Source: Sabina Gold and Silver Corp.



**Figure 3: Winter Ice Road Corridor Between MLA and Goose Property**

The MLA is located approximately 130 km north-northwest of the Goose Property and is the primary staging area for equipment, material, fuel, and other supplies required for the construction and operation of the Project. The MLA consists of a single barge terminal, laydown areas, a camp facility, and associated storage and maintenance facilities. The Project would be resupplied annually from southern Canada by barge during the open water season. Project materials would then be transported annually from the MLA to the Goose Property using a winter ice road from mid-January to April (Figure 3).<sup>3</sup>

The George Property is an advanced exploration camp located approximately 50 km northwest of Goose Property and currently has four (4) mineral deposits identified for potential future development. Sabina may also construct an annual spur road from the winter ice road to the George Property for transportation of supplies to the site. The continuation of a diamond drilling based mineral exploration program for the George Property and the Wishbone claim of mineral leases was included within the scope of the Board’s assessment for the Back River Project. It should be noted that further advanced exploration (*i.e.*, bulk sampling and infrastructure development) was not included with the understanding such activities would require further assessment by the NIRB prior to occurring.

<sup>3</sup> Source: Sabina Gold and Silver Corp.

The NIRB Project Certificate No. 007 was issued for the Back River Gold Mine Project on December 19, 2017. On March 13, 2018, Sabina received Type “B” Water License No. 2BCBRP1819 from the Nunavut Water Board (NWB) which allowed for identified Initial Development Works to start at both the Goose Property and Marine Laydown Area. On April 23, 2018, Sabina finalized the required agreements (including, but not limited to, the Inuit Impact Benefit Agreement (IIBA) and Land Tenure Agreements) with the Kitikmeot Inuit Association (KIA). These agreements allow for advancement of the Project and ensure appropriate long-term benefits are being provided to Inuit of the Kitikmeot Region. In September 2018 Sabina acquired Type “A” Water Licence No. 2AM-BRP1831 from the NWB and in 2021 applied to amend the licence for finalization of project construction. Sabina is currently continuing exploration activities as previously approved and started construction in the 2022 with materials being shipped to site in 2023.

For further information on the site history see the NIRB’s public registry, along with all other documentation related to the Back River Project, at <http://www.nirb.ca/project/124129>.

### 3.0 Public Information Session

To further ensure ongoing awareness of Project-specific Terms and Conditions, and encourage effective participation throughout the Board’s monitoring process, the NIRB scheduled a community information session for Agnico Eagle’s Doris North Gold Mine Project (05MN047) and Phase 2 Hope Bay Belt Project (12MN001) and Sabina’s Back River Project (12MN036). The sessions consisted of an afternoon open house (2:00-4:00 pm) and a planned evening update meeting (7:00-9:00 pm) at the Luke Noviligak Community Hall in Cambridge Bay on September 14, 2023.

The afternoon session had one (1) attendance. The evening session had three (3) attendance. No questions or comments were shared by participants.

#### 3.1 Advertisements

The NIRB advertised the meeting through radio, posters, and online through Facebook in Cambridge Bay both in English and Inuktitut in the month prior to the meeting.

#### 3.2 Meeting Materials

The following materials were provided at the public meeting:

Document	Public Registry No
The NIRB’s PowerPoint presentation (in English and Inuinnaqtun)	347108
Comment Forms (in English and Inuktitut)	N/A

All document received and pertaining to this project, including copies of consultation materials, the presentation, and advertisements, can be accessed from the NIRB’s online public registry at:

<b>Project Name</b>	<b>Public Registry Location</b>
Doris North Gold Mine	<a href="http://www.nirb.ca/project/123632">www.nirb.ca/project/123632</a>
Phase 2 Hope Bay	<a href="http://www.nirb.ca/project/124148">www.nirb.ca/project/124148</a>
Back River Project	<a href="http://www.nirb.ca/project/124149">www.nirb.ca/project/124149</a> .

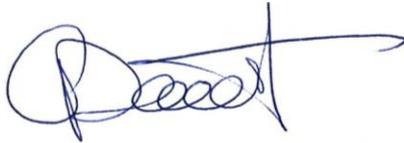
## 4.0 2023 Site Update

As the NIRB Monitoring Officer was unable to conduct a site visit in 2023, Sabina personnel provided images of the Project area and activities based on a list provided by the NIRB. Sabina also provided a summary of activities carried out in 2022-2023 which is appended to this report as Appendix A and Appendix B.

## 5.0 Conclusions

Although the Proponent has provided information updates and photos, the NIRB not conducting a site visit does limit NIRB’s ability to monitor the Project. While the site is in construction it is important to see the ongoing changes and activities at the mine site while they are in operation including the winter ice road and the Marine Laydown Area. For the 2023-2024 monitoring year it is essential that the NIRB Monitoring Officer be able to visit the site.

Prepared by: Guillaume Daoust  
Title: Technical Advisor II  
Date: October 10, 2023  
Signature:



Reviewed by: Kelli Gillard  
Title: Manager Project Monitoring  
Date: October 10, 2023  
Signature:





Photo 1: Mill Construction Area



Photo 2: New Accommodation at Goose Camp



Photo 3: Dinning Hall in the New Complex



Photo 4: New Structures Adjacent to the Mill Construction



**Photo 5: Permafrost Equipment in the Parking Lot of the New Complex**



**Photo 6: Second Bulk Fuel Storage Tank Adjacent to the Mill**



**Photo 7: Culverts Installed at Rascal Creek outlet into Goose Lake**



**Photo 8: Tanker truck used to apply water for Dust Mitigation**



Photo 9: Waste Management at the Incinerator



Photo 10: Vegetation Plot Monitoring



Photo 11: Wildlife Monitoring Camera near Goose Lake



Photo 12: Spill Response Equipment at the Marine Laydown Area

**Appendix II      SABINA 2023 SITE UPDATE**



September 8, 2023

Guillaume Daoust  
Technical Advisor II  
Nunavut Impact Review Board  
[gdaoust@nirb.ca](mailto:gdaoust@nirb.ca)

**Re: Back River Project Update 2023**

Guillaume,

Please find a Back River Project Update for 2023 enclosed as requested. A construction update is provided as well as an update on key Project Certificate No. 007 term and conditions monitoring.

**Construction Update:**

- **Goose Project on schedule for first gold pour in Q1 2025:** All long lead items for the 2024 construction season have been received at B2Gold's freight consolidation points, prepped for ship transport and currently the 2023 sealift is underway
- **Concrete and steel work in the mill area progressing:** Erection of structural steel has commenced, with building cladding to begin shortly. The Company expects the ball mill to be set in place in December 2023.
- **Phase 1 of the accommodation complex opened in July 2023:** Phase 1 of the accommodation complex includes 310 beds at the permanent site location, which together with the 160 beds located at the existing exploration camp, provide the necessary accommodation to support the Back River Project.
- **Earthworks necessary to extend airstrip to be completed in September 2023:** Planned extension of the airstrip to 5,000 feet will allow large capacity, fully loaded passenger planes to land at the Goose Project during the 2024 construction campaign.
- **Winter ice road preparations are well underway:** The Request for Proposal process has closed for the selection of the winter ice road constructor and a decision is forthcoming.
- **Inuit employment continues to increase from 2022:** Inuit hours worked to date when compared to the end of 2022 have increased by ~15,000 hours, and the number of Inuit employees at project





Figure 2. Underground air quality monitoring device.

- Ongoing active dust/passive monitoring, as mentioned above (TC 1)
- See additional notes on GHG reduction measures below (TC 6)
- **Dust mitigation measures (TC 3)**
  - Consistent watering efforts are completed on all site roads to mitigate dust
  - New GN approved chemical dust suppressants mobilized to site in 2023, successful test application completed. Plans to increase application efforts in 2024.

- **Incinerator (TC 4)**



Figure 3. Active incinerator and waste management facility

- Waste management has improved site-wide over the past year. This has been achieved by interdepartmental collaboration and communication, education (toolbox meetings), waste audits/ inspections, improved signage, and dedicated waste management areas. We have purchased and are utilizing several 5-yard bins at our waste management areas to accommodate waste volumes. The environment team continues to work with our site services team to improve signage and communication with all relevant parties to ensure smooth and compliant waste management. Environment staff have made a point of attending several toolbox meetings on both shifts to answer questions, understand working group needs, and re-enforce waste management requirements on site.
- **How stack testing works, still no stack testing done (TC 5)**
    - Stack testing will be completed in 2024 when the new incinerator and new camp are commissioned

- **Any GHG reduction modification (TC 6)**
  - Heat recovery initiatives (waste oil furnaces)
  - Vehicles are driven at designated speeds and regularly maintained to ensure optimal fuel efficiency
  - Complete burns in incinerator at manufacturer recommended temps
  - Renewable energy center application
  - Process plant design, powerhouse, nothing but waste heat recovery – that’s how we heat that building
- **Local weather monitoring (TC 8)**
  - Weather monitoring completed 365 days, 24/7
  - Monthly downloads



Figure 4. Active meteorological station

- **Any noise monitoring or visible mitigation at site (TC 9 & 10)**
  - Handheld decibel noise monitors mobilized to site in 2023
  - Third party Occupational Hygienist will be engaged to come to site and conduct monitoring

- **Permafrost monitoring or mitigation measures (TC 12)**
  - Rigorous permafrost monitoring occurred during the baseline data collection data stage providing a very thorough understanding of the thermal regime in the project area
  - Permafrost monitoring is continuing to occur in 2023 and the thermal monitoring plan is progressing. Monitoring is occurring at the Primary Pond location (which is in construction), at the Goose Camp Pad, and we have committed to installing ground temperature monitoring cables in both the bulk tank facilities at the MLA and Goose at the next available opportunity.
  - Additionally, drilling was completed to investigate if permafrost was aggrading back into camp pad by third party geotechnical engineer and confirmed it was (-8 degrees Celsius approximate reading)
  
- **Landfill management (TC 14)**
  - Storage of inert non-hazardous landfill material being temporary stored in an exhausted quarry
  - Relocation of inert non-hazardous landfill material to Echo WRSA being constructed to occur in 2024
  
- **Borrow site (TC 16)**



Figure 5. Borrow site in top right of photo

- **Saline water management, (not present yet) (TC 19)**
  - B2 Gold confirms we are not encountering saline water at this time
- **Thermal Monitoring, (not present yet) (TC 20)**
  - Same answer for TC 12 above:
  - Rigorous permafrost monitoring occurred during the baseline data collection data stage providing a very thorough understanding of the thermal regime in the project area
  - Permafrost monitoring is continuing to occur in 2023 and the thermal monitoring plan is progressing. Monitoring is occurring at the Primary Pond location (which is in construction), at the Goose Camp Pad, and we have committed to installing ground temperature monitoring cables in both the bulk tank facilities at the MLA and Goose at the next available opportunity.
  - Additionally, drilling was completed to investigate if permafrost was aggrading back into camp pad by third party geotechnical engineer and confirmed it was (-8 degrees Celsius approximate reading)
- **Any surface water monitoring, sedimentation control (TC 21 & TC23)**



Figure 6. Sedimentation fence installed at exploration cuttings sump

- B2 Gold understands the importance of surface water monitoring and sedimentation control and mobilized third party consultants (WSP) onsite during construction of the RSW culvert specifically to monitor turbidity

- **To manage contact water (TC 22)**
  - Contact water is minimal onsite with no tailings or waste rock facilities constructed
  - Contact water generated within Echo Open Pit is contained and managed within the pit boundaries
- **Rascal stream fish passage (TC 24)**
  - Not constructed
  - Will be constructed in conjunction with the airstrip extension which is planned for Q3 2023
- **Rascal Stream west/east if constructed (TC 26)**
  - Construction completed at the start of Q3, 2023



Figure 7. Culvert installation at Gander Outflow

**Mitigation measures on Water crossing, to visit the Gander Outflow (TC 29)**

- Weirs were successfully constructed in 2022 upstream of the water crossing to reduce and mitigate velocities that could impede fish migration
- Fisheries and Oceans Canada (DFO) were on site in 2023 and viewed the installations as well as reviewed the plans in advance of 2022 construction

- **Ensure no barriers to culvert, Rascal Stream (TC 30 and related to TC 24&29)**



Figure 8. Culvert installation at Gander Outflow

#### **Monitoring of the Rascal Stream Fish Passage (TC 31)**

- Monitoring occurred in 2023 by third party consultants (WSP), and those results will be provided in the 2023 annual report
  - During 2024 freshet, B2 Gold will again have third party consultants (WSP) on site and this plan has been reviewed with DFO
- **Any vegetation monitoring close to site (TC35, 34)**
    - Plots are established for both the Goose and MLA sites and along the Winter Ice Road (WIR)
    - Annual monitoring occurred in early August
- **Mitigation measures for wildlife movement (TC 45)**
    - Caribou monitoring along the WIR for the Back River Project from March 28 through to the end of road operations on April 24, 2023. The objectives of this monitoring program were to support mitigations for caribou along the WIR as outlined in the Back River Wildlife Mitigation and Monitoring Program Plan (WMMPP; ERM 2022). The specific objectives were:
      - Educate driver on mitigation measures and monitor driver mitigation
      - Record sightings of caribou along the WIR and locate areas where caribou are more likely to cross the WIR



- Deploy remote cameras along the WIR to record caribou crossing the road
  - Conduct caribou behaviour surveys along the WIR
- The ERM wildlife biologist worked with an Inuit land user to conduct the winter 2023 program. It was noted by an Inuit environment technician: *“I’m very happy with what I’m seeing out here, this is really important work and the site is doing great”.*
- **Any visible deterrent to birds around the project (TC 54, 56,57)**
  - No visible deterrents to birds around the project
  - In 2023, blasting in Echo open pit was shut down for approximately 4.5 weeks apprx. due to ravens nesting on the high wall. Additional B2 Gold shut down rock truck #12 at Goose and trailer at the MLA due to nesting.
  - Once the nesting birds left, activities recommenced.
- **Helicopter logging data, during flight (TC 61)**

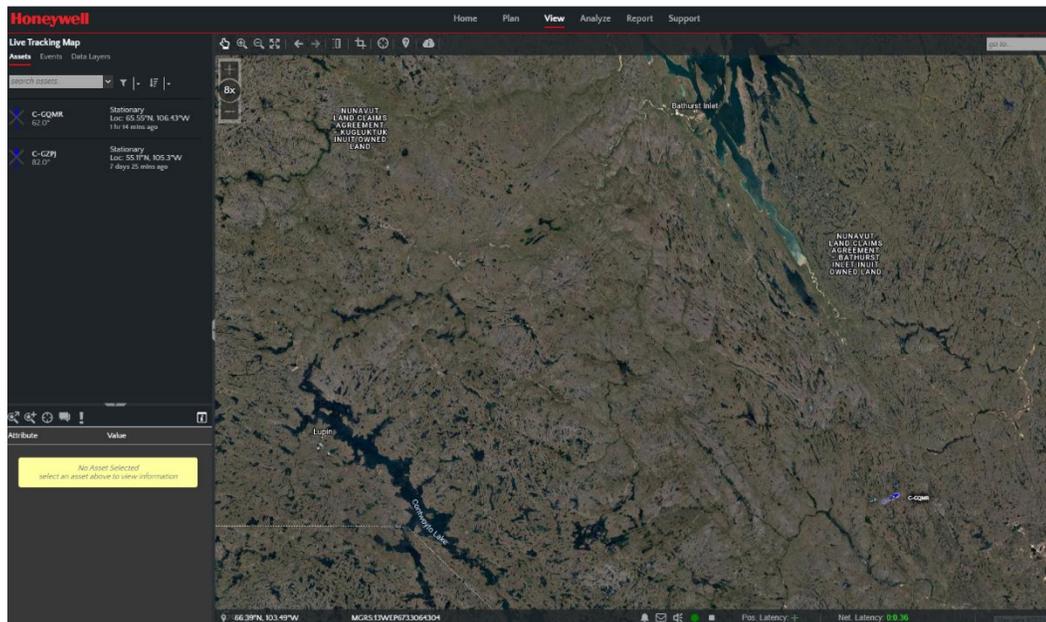


Figure 9. Helicopter skytracker software active at site

- Helicopter companies track and maintain helicopter logs as well and we will continue to provide this data annually
- **Employee language training (where can employee find the information?) (TC 76)**
  - Training courses based on demand/upon request. To date, none have been requested.



- Other measures to reduce the potential for language barriers to Inuit employment on site: Explain CLO (John K.) extended and increased site visits, Internal translated glossary circulated to site for signage (demonstrate signage)
- **Location where the Proponent monitor public use of WIR, if possible (TC80)**
  - It's not a public road
  - Site Visitor Access Policy in place and circulated to seasonal communities
  - Permanent employee presence in CB/Kug which communicate with locals
  - Dispatch gates at either end; sign in procedures, etc.
- **Where to assess the EFAP for employees (TC 83)**
  - EFAP brochures are hung up at Project sites. Further, during the hiring process information about the EFAP is provided directly to new hires. See attached brochure.
  - Memos from HR are regularly provided reminded employees of the services available
- **Airborne actinolite fibres monitoring potential risk (TC 86)**
  - We have never experience actinolite fibers on our project site, but all rock (underground or drill core) is inspected by UG workers or Geologists
- **Spills equipment at MLA (TC 89)**
  - Seacan at the MLA is situated for spill response on the marine environment
  - OPEP and SOPEP are always in place
  - Transport Canada inspected our OHF last year
- **How do you ensure Bay Chimo/ Bathurst have spill equipment and adequate training? (TC 92)**
  - Discussed preliminary equipment lists for the communities during the EA, including potentially:
    - 1000 ft. of floating boom, floats, anchors
    - Dozen packages of oil absorbent pads
    - Shovels
    - Gloves
    - Eye protection
    - Respirators
    - Chest waders
  - B2 will be re-engaging communities to continue conversations
- **TC 93 is related to any construction of the jetty at the MLA**
  - Not constructed, and no plans for construction in 2024.



- We will review the necessity of the MLA jetty for a potential 2024 construction.

Thank you very much,

A handwritten signature in black ink, appearing to read "Christian Standing".

Christian Standing  
Supervisor, Environment  
B2Gold Back River Corp.

c.c. Jaymes Dircks, General Manager, Goose Site, B2Gold Back River Corp.  
Andrew Moore, Director, Indigenous & Northern Affairs, B2Gold Back River Corp.  
Merle Keefe, Manger, Environment, B2Gold Back River Corp.  
Thomas Bolt, Environmental Coordinator, B2Gold Back River Corp.