



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
918 Nunavut Drive
Iqaluit, NU, X0A 3H0

Your file - Votre référence
2AM-BRP1831
Our file - Notre référence
GCDocs#126364118

June 19, 2024

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
Email: licensing@nwb-oen.ca

**Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of the
Updated Water Management Plan for the Back River Project, Type A Water
Licence No. 2AM-BRP1831**

Dear Richard,

Thank you for the May 28, 2024, invitation to review the updated Water Management Plan for Back River Project, submitted by B2 Gold Nunavut, for Type A Water Licence No. 2AM-BRP1831.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the response and its attachments pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown Indigenous and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at Leeann.Pugh@rcaanc-cirnac.gc.ca or (867) 975-4751 or Andrew Keim at (867) 975-4550 or Andrew.Keim@rcaanc-cirnac.gc.ca.

Sincerely,

Lee Ann Pugh
Regional Water Coordinator



Technical Review Memorandum

Date: June 19, 2024

To: Richard Dwyer, Licensing Administrator, Nunavut Water Board

From: Lee Ann Pugh, Regional Water Coordinator, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada's Review of the Updated Water Management Plan for Back River Project, Type A Water Licence No. 2AM-BRP1831**

Region: ☒ Kitikmeot ☐ Kivalliq ☐ Qikiqtani

A. Background

The Back River Project is located within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 km southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories. The Project is located predominantly within the Queen Maud Gulf Watershed.

The Project is comprised of two main areas; the Marine Laydown Area (MLA) situated along the western shore of southern Bathurst Inlet and the Goose Lake Area, south of the MLA and is where the gold deposits are located. These areas are connected seasonally by an approximately 160 km long winter ice road (WIR). The majority of annual resupply is brought in by water to the MLA and necessary materials are transferred via winter ice road to the Goose Lake Property.

B2Gold Nunavut is seeking to modify its Water Management Plan to reflect changes in water management practices for snowmelt and runoff during the construction phase at the Back River site. The addendum describes two primary changes:

1. An Emergency Discharge Pond is proposed to manage contact water, runoff, or snowmelt. B2Gold Nunavut is proposing that effluent, runoff water, or snowmelt (at freshet) may be discharged to land if effluent discharge criteria are met, as per 2AM-BRP1831.
2. Runoff water or snowmelt that is collected in open pits may be discharged to land, guided by criteria in 2AM-BRP1831.



CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.

Table 1: Summary of Recommendations

Recommendation Number	Subject
R-01	Emergency Discharge Pond
R-02	Design Report and Drawings
R-03	Revisions to the Water Management Plan to Include Emergency Dump Pond
R-04	Open Pits Discharge Criteria and Definitions

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File, No., Rev., Date
Water Management Plan Version 5_Addendum 01	B2Gold Nunavut, May 2024
Water Management Plan Version 5	B2Gold Nunavut, May 2024
Approved Water Licence 2AM-BRP1831	NWB, November 2018

C. RESULTS OF REVIEW

1. Emergency Discharge Pond

Comment:

The Water Management Plan Addendum states, *“During construction the emergency dump pond (Sabina 2021) may also be used to manage contact water, runoff or snowmelt. Effluent from the Emergency Discharge Pond, runoff water or snowmelt at freshet may be discharged to land if effluent discharge criteria defined in the Type A Water Licence are met.”*

The Emergency Discharge Pond Design Report does not appear to consider inputs from runoff water or snowmelt. Should an emergency occur and there is a requirement to discharge chemicals from the plant to the Emergency Discharge Pond, there are concerns regarding:



- a) storage issues could occur if runoff/snowmelt water in the Pond does not meet effluent discharge criteria. This may be difficult to anticipate due to the changing the amount snowmelt/runoff during freshet each season.
- b) the discharge of runoff water or snowmelt could potentially undermine the intended purpose of the Pond and lead to environmental impacts in receiving environments; and
- c) Lack of clarity on actions/mitigation measures B2Gold may take should the water in the Emergency Discharge Pond not meet the applicable discharge criteria as stated in the approved water licence.

Recommendation:

(R-01A) CIRNAC recommends that B2Gold Nunavut clearly reference the discharge criteria in the approved Water Licence and Water Management Plan to determine if it is applicable to the water in the Emergency Discharge Pond.

(R-01B) CIRNAC recommends that B2Gold Nunavut provide details on if the Emergency Discharge Pond is acceptable for storing the runoff/snowmelt water while taking into consideration the original purpose of the Emergency Discharge Pond.

2. Design Report and Drawings

Comment:

The Emergency Discharge Pond Design Report and Drawings was submitted to the Board for review in 2021. After receiving input from regulators, including CIRNAC, the Board, on September 2, 2021, the Board indicated that the report met the requirements of Part D, Item 3 of the approved water licence.

Part D, Item 11 of the approved water licence states the Licensee shall submit a Construction Summary Report within 90 days of completing construction. CIRNAC notes that it is not evident if B2Gold Nunavut has begun or completed construction of the Emergency Discharge Pond.

Recommendation:

(R-02) CIRNAC recommends that B2Gold Nunavut clarify if the Emergency Discharge Pond has undergone or has completed construction and to provide a Construction Summary Report to the Board within the next 90 days.



3. Revisions to the Water Management Plan to Include Emergency Dump Pond

Comment:

Table 5.2-3 and Table 8.1-1 within the Water Management Plan Addendum states that these tables were updated to indicate the mine development sequence during construction, including: *“Management of runoff or snowmelt water in Open Pits at freshet.”* There were no revisions providing the construction of the Emergency Dump Pond. The document only had revisions for the open pit water management.

Recommendation:

(R-03) CIRNAC recommends B2Gold Nunavut provide further information regarding the construction of the Emergency Dump Pond to the Board.

4. Open Pits Discharge Criteria and Definitions

Comment:

Section 8.1.3 of the Water Management Plan states, *“The development of Echo and Umwelt Open Pit will commence during the Construction Phase. Water will be collected in the Echo and Umwelt Open Pit using sumps and pumped to the Primary Pond to be stored until ready for reclaim use in the Process Plant. In accordance with Part D, Item 9, runoff water or snowmelt collected in the Open Pits may be discharged to land. Part D, Item 9 requires the Licensee to conduct daily visual inspection for runoff/seepage, and conduct sampling, where turbidity is observed, for all construction activity during spring freshet. In addition, all surface runoff and/or discharge where flow may directly or indirectly enter a waterbody, shall be sampled weekly and not exceed criteria set by the NWB in Part D, Item 21.”*

Part D, Item 9 of the approved water licence states, *“The Licensee shall conduct daily visual inspections for runoff/seepage, and conduct sampling, where turbidity is observed, for all construction activity during spring freshet and during and after remarkable rainfall events.”*

CIRNAC notes that Part D, Item 9 does not explicitly state that water collected in the open pits can be discharged to land.

Part D, Item 21 of the approved water licence states, *“All Project related surface runoff and/or discharge from drainage management systems, where flow may directly or indirectly enter a Water body, shall be sampled Weekly and not exceed the following Effluent quality limits:*



Parameter	Maximum Average Concentration	Maximum Authorized Concentration in a Grab Sample
Total suspended solids (TSS) (mg/L)	50.0	100.0
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

CIRNAC is concerned that should runoff/snowmelt interact with the open pit, it can become “contact water” and the water quality could potentially change before it is discharged onto the land and receiving waterbodies.

The approved water licence defines contact water as, “...*any water that may be physically or chemically affected by mining activities, including runoff and seepage from WRSA, Ore Stockpiles and other mine facilities.*” Contact water does not appear to qualify into Part D, Item 21.

Recommendation:

(R-04A) CIRNAC recommends B2Gold Nunavut to confirm the management of the runoff/snowmelt water from the open pit and clarify if it is “contact water” that will be discharged to the land.

(R-04B) CIRNAC recommends B2Gold Nunavut revise the Water Management Plan to address these concerns accordingly and as per applicable terms of the approved water licence.