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Kugluktuk

Bathurst Inlet
Kingaok

Bay Chimo
Umingmaktok

Cambridge Bay
Ikaluktutiak

Gjoa Haven
Okhoktok

Taloyoak

Kugaaruk

Robert Hunter

Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0

November 2nd, 2023

Re: KIA response to B2Gold Nunavut Responses to KIA comment for 2022 Annual Report for the Back River Project.

Dear Robert Hunter, the KIA has reviewed B2Gold Nunavut's responses to comments made on 2022 Annual Report for the Back River project to the NWB.

KIA's consultants accepts most of B2Gold Nunavut's responses with no further comment. There are some comments for particular responses which are enclosed.

Thank you.

John Roesch

John Roesch, P.Eng.

Senior Hope Bay Project Officer
Kitikmeot Inuit Association, Department of Lands and Environment

Cc Wynter Kuliktana, Director, KIA, Department of Lands and Environment

Additional Responses as follows:

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Back River Project 2022 Annual Report to NWB

KIA-NWB-03

Review Comment Number	KIA-NWB-03
Subject/Topic	Appendices
References	Appendix C Monitoring Activity Overview by Station
Summary	Appendix C is missing from the PDF of the report.
Detailed Review Comment	The missing Appendix C may contain information pertaining to fish and fish habitat.
Recommendation/Request	Please repost the 2022 Annual Report with all appendices.
Importance	Moderate
B2Gold Nunavut Response	Appendix C (Monitoring Summary) has been attached to this submission.
KIA Response	The appendix (labelled Appendix A in the response report) was reviewed. No monitoring activity pertaining to water quality or fish was reported in the appendix due to dewatering activities having not yet been initiated to trigger monitoring programs.

KIA-NWB-04

Review Comment Number	KIA-NWB-04
Subject/Topic	Spills
References	Section 2.11 A LIST AND DESCRIPTION OF ALL UNAUTHORIZED DISCHARGES INCLUDING VOLUMES, SPILL REPORT LINE IDENTIFICATION NUMBER AND SUMMARIES OF FOLLOW-UP ACTION TAKEN
Summary	Dozer fell through the ice. 150 L of hydrocarbons is listed as being spilled.
Detailed Review Comment	For mitigation of this spill, it is stated the incident is currently under investigation. The hydrocarbon type is not listed, nor whether they are still contained in the vehicle or if the vehicle is still in the water body.
Recommendation/Request	Please provide more information on the type of hydrocarbons and whether the total amount of 150 L was actually lost in the water body. Additionally, please provide information on fish presence in the water body and whether any spill containment or cleanup occurred in 2022.
Importance	Moderate
B2Gold Nunavut Response	Due to the significant logistical difficulty and high safety risk

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	retrieval, B2Gold has determined that the dozer is not recoverable. This determination has been based on a consideration of the chemicals the dozer contains, their behaviour on release, and Bathurst Inlet oceanographic conditions as well as factors impacting the ability to safely retrieve the machinery which include it's deep depth and the soft sediments at the location of the dozer (which hinders retrieval). The human safety risk and logistical difficulty of retrieval is believed to outweigh the environmental risk of these chemicals being released (if not already released). B2Gold will reach out to the KIA to discuss this further.
KIA Response	The response from B2Gold Nunavut did not provide the requested information on the type of hydrocarbons, whether the total amount of 150 L is actually lost in the water body or likely contained in the vehicle, or fish presence in the water body. Since the water body is Bathurst Inlet, it can be assumed any number of fish species may be exposed to fuel and oil contained in the vehicle. What is not known is the rate at which this exposure will occur if the vehicle will not be recovered. As this exposure is now an issue of water contamination, Environment Canada needs to be notified and involved in determining any next steps, along with the KIA.

KIA-NWB-06

Review Comment Number	KIA-NWB-06
Subject/Topic	Water and Load Balance Report – Appendix C
References	Fe-flow model
Summary	Calibration
Detailed Review Comment	Golder made the following modifications to the 2015 SRK numerical model: • Grid refinement in proximity of Llama Open Pit, the Llama, Goose Main, and Echo underground workings; • Addition of two layers to increase the maximum depth of the modelled area; • Layers 2 and 3 of the previous model were removed; and Boundary conditions have been updated.
Recommendation/Request	Golder should clarify how these changes affected the calibration and the overall baseline condition model mass budget.

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Importance	Moderate
B2Gold Nunavut Response	The model based on interpretated baseline conditions but is not calibrated. The model can be calibrated in the future as operation data is collected. Without calibration, the scenarios have been developed to reasonable bracket expected conditions. The changes made to the model are designed to make the model predictions more accurate or more conservative (e.g., predict higher TDS or higher groundwater inflows to an open pit or underground). The grid refinement made near the mine facilities enhanced the predicted resolution of hydraulic heads near the mine. The addition of two layers to the base the model improved the accuracy of the model to predict upwelling of deeper saline ground water during dewatering of the underground development. Both of these changes did not alter the model's representation of baseline conditions or adversely impact the mass budget error of the model. The two near surface layers that represented lakebed sediments in the SRK model, were removed to improve numerical stability. Furthermore, it has been shown that lakebed sediments are often not continuous enough to provide a uniform resistance to flow and can result in an underestimate of inflow from lakes near to dewatered undergrounds and pits.
KIA Response	The response states that the changes to the model have increased the model accuracy to predict the dewatering of the deep saline groundwater. It is unclear how the accuracy has been improved if the model has not been calibrated. An attempt to calibrate the model on baseline condition should be attempted and it can be further refined in the future once operation data is available.

KIA-NWB-08

Review Comment Number	KIA-NWB-08
Subject/Topic	Water and Load Balance Report – Appendix C
References	Fe-flow model
Summary	Hydraulic Conductivity - 2
Detailed Review Comment	The bullet point list at Page 4 of Appendix C describing two scenarios for conductivity (see screenshot below) should indicate mbgs rather than masl. If 0 masl is being used a local

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	datum, that should also be stated. **Scenario 1:** ■ 0 to 200 masl - Near surface hydraulic conductivity assumed to equal to the arithmetic average of packer test results ■ Below 200 masl – Equivalent to the bedrock hydraulic conductivity profile adopted in the SRK model (SRK 2015). The hydraulic conductivity reduction was truncated at a minimum hydraulic conductivity of 5 x 10^{-10} m/s **Scenario 2:** ■ 0 to 200 masl - Near surface hydraulic conductivity assumed to be equal to the arithmetic average of packer test results ■ 200 masl to -500 masl – hydraulic conductivity assumed to be three times the geometric average ■ Below -500 masl – assumed to progressively reduce to 5 x 10^{-10} m/s
Recommendation/Request	Please review and update/ clarify the bullet point list, as needed.
Importance	Low
B2Gold Nunavut Response	The plots and scenarios are described relative to elevation, with the datum taken to be mean annual sea level.
KIA Response	B2Gold Nunavut's response does not provide the requested information. The depths of the scenarios should be revised as follows: Scenario 1 • "0 to -200 masl" • "Below -200 masl" Scenario 2 • "0 to -200 masl" • "-200 masl to -500 masl" • "Below -500 masl"

KIA-NWB-10

Review Comment Number	KIA-NWB-10
Subject/Topic	Water and Load Balance Report – Appendix C
References	Fe-flow model
Summary	Model Predictions
Detailed Review Comment	Golder states that to estimate groundwater inflows, the 2015 SRK Fe-flow model was used. Minor changes have been made by Golder, as described in Comment KIA-NWB-04. Golder Scenario 1, which has the same hydraulic conductivity profile as the SRK model, provides groundwater inflows that are significantly different than the one estimated by SRK.
Recommendation/Request	Please provide an explanation for obtaining different

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	groundwater inflow values, from using the same numerical model. Alternatively, please outline any changes to the model parameters that were implemented and their rationale.
Importance	Moderate
B2Gold Nunavut Response	In additional to the described changes in hydraulic conductivity and as described in the groundwater technical memorandum, Golder modified the specific storage assigned to the model and implemented a new mine plan. The specific storage was reduced from 1 x 10-4 m/s to 1 x 10-6 m/s. The original value of 1 x 10-4 m/s is unrealistically high for bedrock and is more representative of unconsolidated deposits. It is suspected that the assigned specific storage in the SRK model was inadvertently left unchanged from the default model settings applied by the software when building the model. As a result of the unrealistic specific storage, the 2015 SRK model incorrectly predicts higher inflow than the Golder model for a similarly applied hydraulic conductivity profile.
KIA Response	B2Gold Nunavut's response is acceptable. Please include the correct unit of measurement for the specific storage.

KIA-NWB-13

Review Comment Number	KIA-NWB-13
Subject/Topic	Updates to Plan and Reports
References	Sabina, Back River Project, 2022 Annual Report for Water Licence 2AM-BRP 1831 (March 31, 2023) Section 2.20
Summary	Section 2.20 provides a table describing updates made to various plans and includes the current update date. While plans submitted in April of 2022 were indeed available on the WLB FTP site (Water Management Plan, Tailings Management Plan, Mine Waste Rock Management Plan), these plans are still listed as pending NWB approval in a Table in Section 2.20. Sabina has not addressed the KIA's previous review comments on the Landfill and Waste Management Plan, Waste Rock Management Plan, and 2021 Interim Closure and Reclamation Plan.
Detailed Review Comment	In Section 2.20 Sabina states that they have submitted updates to the following plans: - Landfill and Waste Management Plan (August 2022) - Water Management plan (April 2022) - Tailings Management Plan (April 2022) - Mine Waste Rock Management Plan (April 2022)

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	These 2022 plans were available on the NWB FTP site. However, there is potentially a typo within the table in Section 2.20, which lists these updated plans as "pending NWB approval". This may not be a typo, if the NWB has indeed not accepted them. The KIA previously submitted review comments on the August 2022 version of the Landfill and Waste Management Plan, submitted to the NWB in September 2022. As Sabina still needs to produce an updated Landfill and Waste Management Plan, the KIA's questions and concerns still need to be addressed. In addition, in the 2021 Annual Review of Water Licence 2AM-BRP1831, the KIA indicated that the Waste Rock Management Plan is vague on measures to manage waste rock seepage and runoff. Sabina responded that updates would be completed in the next iteration of the Waste Rock Management Plan and appended as an addendum to the Annual Report (March 2023). The 2022 Waste Rock Management Plan should have included these updates. It is unclear whether these updates are in progress and will be provided as an addendum to the 2022 Annual Report for Water Licence 2AM-BRP1831, as there were no plan updates since April 2022 on the NWB FTP site. Similarly, during the 2021 Annual Report for the Water Licence review, the KIA noted discrepancies between waste rock and overburden volumes reported in the WRMP compared to those presented in the July 2021 Interim Closure and Reclamation Plan (ICRP). Sabina responded that updates would be completed to the volumes and areas of the waste rock storage areas, as appropriate, in the next iteration of the ICRP, as an addendum to the Annual Report (March 2023). At the time of review of the 2022 Annual Report, an updated ICRP was unavailable.
Recommendation/Request	The KIA requests the following: • Please update the table in Section 2.20 to correct the plans, if they are erroneously listed as pending NWB approval, and are available on the NWB registry. • The KIA would like to review the ICRP update when it becomes available. Please indicate when updated ICRP and Landfill and Waste Management Plans can be expected. • Future iterations of the Annual Report should reflect reporting commitments, including any updates to the

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	above plans.
Importance	Low
B2Gold Nunavut Response	At the time of submission of the 2022 Annual report to the NWB the plans noted were still pending NWB approval. B2Gold was not aware of comments submitted by the KIA on the Landfill and Waste Management Plan at that time but will be updating this plan for submission with the 2023 Annual report and will address all relevant comments then. B2Gold will also review the KIA's comments on the Waste Rock Management Plan and Interim Closure and Reclamation Plan to ensure they are addressed appropriately in these plans. B2Gold notes that the Landfill and Waste Management Plan and the Interim Closure and Reclamation Plan are currently also in review as part of B2Gold's Back River Energy Center proposal and any updates would also address comments received on those plans during that review process
KIA Response	The KIA had previously submitted comments to Sabina in prior annual reviews on the following plans: • Landfill and Waste Management Plan (August 2022) • Water Management plan (April 2022) • Tailings Management Plan (April 2022) • Mine Waste Rock Management Plan (April 2022) B2Gold, in their response indicates that they are unaware that technical comments were previously provided and that these comments were not addressed between the different versions of the plans or annual reports. This was perhaps due to issues with company changeover. The KIA requests that B2Gold Nunavut review previous years comments to Sabina Gold & Silver Corps. on these management plans and to meet with KIA to discuss how these comments will be addressed prior to the next annual report to the NWB.