July 13, 2020

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Re: Response to Comments on the Issued for Construction Drawings – Mine Site Landfarm
Mary River Project, Type 'A' Water Licence - 2AM-MRY1325 - Amendment No. 1

Baffinland Iron Mines Corporation (Baffinland) provides the attached responses to comments received from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)[1] and the Qikiqtani Inuit Association (QIA)[2] regarding the Issued for Construction (IFC) drawings and design brief for the Mine Site Landfarm, submitted on June 17, 2020. Baffinland has addressed the comments provided as detailed in Attachment 1.

We trust that the attached responses provide additional clarification on the IFC drawings. Please do not hesitate to contact the undersigned should you have any remaining questions or comments.

Regards,

Christopher Murray
Environmental & Regulatory Compliance Manager

Cc: Karén Kharatyan (NWB)
Chris Spencer, Jared Ottenhof (QIA)
Bridget Campbell, Godwin Okonkwo (CIRNAC)
Megan Lord-Hoyle, Lou Kamermans, Timothy Sewell, Shawn Stevens, Connor Devereaux, Arron MacDonell, Amanda McKenzie (Baffinland)

Attachments
Attachment 1: Baffinland Response to Comments

[1] CIRNAC (2020) Re: Crown-Indigenous Relations and Northern Affairs Canada Review Comments for the Issued for Construction Drawings Submission for the Mine Site Landfarm at the Mary River Project, Water Licence No. 2AM-MRY1325 – Amendment No. 1 Letter dated July 2, 2020.
[2] QIA (2020) Re: 200618 2AM-MRY1325 - Submission of Construction Notification and IFC Submission - Mine Site Landfarm. Letter dated July 6, 2020.

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ATTACHMENT 1

Baffinland Response to Comments

Baffinland

Table 1 - Response to Comments on Mine Site Landfarm Issued for Construction Drawings

Comment ID	Comment	Baffinland Response
CIRNAC-1	Baffinland Iron Mines Corporation notes that the landfarm location has been altered from its original design. According to the application for Modification No. 10 (BIMC, 2018) Drawing 100, Rev 0 – Landfill Expansion – Site Plan, the landfarm was originally planned to be built in what was called cell 5. The Design Brief and For-Construction Drawings show the new location of the landfarm in what the application for Modification No. 10 refers to as Cell 3 (see Figure 1 for screen capture of Drawing 100, Rev 0 – Landfill Expansion – Site Plan). The reasons for this change were stated by BIMC as follows: “Detailed design identified that the grades in the original location identified in the Modification No. 10 submission would not be appropriate.” It is not clear whether the area of Cell 5 has also been deemed not appropriate for landfill construction. Further, now that the extents of the landfarm will be changed and the original Cell 3 of the landfill will be used for the landfarm, it is not clear what the implications will be for the capacity and physical extents of the landfill. **Recommendation:** CIRNAC recommends that BIMC clarify the effects or implications that the change in landfarm location will have on landfill footprint and capacity.	During the detailed design, it was identified that in order to install a lined facility (landfarm) in the location of Cell 5, significant earthworks would be required to correct the grade, such that the lined facilities internal drainage would be appropriate and directed towards the sumps incorporated into the design to manage water collection. The grade in the area of Cell 3 was determined to be more appropriate for the installation of the lined landfarm facility. In addition, the installation of several smaller cells within the landfarm footprint will allow for cell sequencing and the location of the cells will ensure better access throughout the life of the facility. Cell 5 is still appropriate for the construction of future expansions to the landfill, as the facility is un-lined and the same design constraints for the landfarm do not apply. Detailed design and Issued for Construction drawings will be submitted for Cell 5 prior to it's construction as a landfill facility to confirm the grade profile. There are no anticpated impacts on the total storage volume of the landfill facility at this time.
QIA-1	BIMC submitted the Mine Site Landfarm IFC package to NWB and QIA on June 18, 2020, in contravention of Inuit Impact and Benefit Agreement2 (IIBA) Section 15.10.4 which requires that regulatory submissions are to be provided to QIA 30 days in advance. This requirement allows QIA to provide feedback on draft submissions to promote the alignment of objectives between QIA and BIMC.	As this matter is related to the implementation of the IIBA and not the Type 'A' Water Licence, Baffinland will address this matter directly with QIA.
QIA-2	BIMC, in their covering letter, indicated the 2020 security estimate assigned 9,000 m2 to the facility footprint and highlights the design’s effective footprint is only 8,813 m2. However, Section 4.0 Closure and Reclamation indicates the lined area is 16,276 m2 and the unlined area is 4,900 m2. The access road area is not discussed in this submission. QIA requests a confirmation of the final footprint for the lined area, unlined area, access roads and any additional infrastructure related to the facility.	On review of the design and confirmation from KP, the total lined area is confirmed to be 16,276 m2. The effective footprint represents the effective area for the deposition of soils within the landfarm design, and not the lined area. As a result, there is a total deficit of 7,276 m2 of area accounted for in the reclamation estimate, representing approximately $30,000 that will need to be reconciled in the 2021 Work Plan reclamation estimate. Alternatively this could be addressed with QIA on the re-calculation of the 2020 Work Plan estimate following the outcome of the current arbitration proceedings, whichever opportunity to review securities occurs first. The access road is included in the total disturbed area for the landfill facility of 74,120 m2 (2014, 2015 and 2019 Work Plan areas cumulative). Total disturbed area will be reconciled once as-built documentation is provided and/or through the use of satellite imagery.
QIA-3	QIA interprets item no. 3.6 of Table 1 to indicate that the storage capacity was derived from the 2016 and 2017 Annual Reports. It is unclear to QIA why the 2018 and 2019 Annual Reports were not referenced. Is the proposed storage capacity sufficient for current and future anticipated use?	The 2018 Annual Report was not relied upon as no soils were deposited at the Milne Port landfarm in 2018 due to the facility cleanup and initiation of soil management strategies. The 2019 Annual Report was not issued at the time the design was initiated. Contaminated soils requiring treatment in excess of the available annual volume will be backhauled by sealift, consistent with current practice.
QIA-4	How has bedrock geology, surficial geology, permafrost conditions and groundwater flow dynamics (if significant) been factored into the proposed design?	These considerations are outlined in Section 3.1 of the Design Brief; "*Due to the granular nature of the existing foundation soils and the presence of permafrost, it was determined that the slope stability of the perimeter berms and bearing capacity of the foundation soils would be adequate for the Landfarm (KP, 2008). It is expected that differential settlement of the foundation soils will be negligible (KP, 2008).*" As described in the KP (2018) design brief for the landfill expansion submitted with Modification No. 10 and encompassing the construction of the landfarm, *"Disturbance to the original ground (excavation, scarifying etc.) should be minimized as to not impact current permafrost conditions".* This is consistent with the design of the landfarm as subgrade preparation is to be placed directly on existing ground foundation soils to establish the appropriate grades (Section 3.4).

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Table 1 - Response to Comments on Mine Site Landfarm Issued for Construction Drawings

Comment ID	Comment	Baffinland Response
QIA-5	How has BIMC incorporated lessons learned from current [lined] facilities, including any incidents or failures (e.g., seepages at the Waste Rock Facility), in this design?	The design of the landfarm is consistent with other lined structures at the Project, including the existing Milne Port landfarm facility, where no noted issues with liner integrity have been observed to date. The suspected liner failure at the waste rock facility pond was attributed in part to the poor subgrade preparation. For the landfarm, the bedding preparation design is considered to be adequate, and the forces acting on the liner inside the landfarm will differ significantly from those of a pond (latent heat capacity, wave action, etc.).
QIA-6	Does BIMC intend to install monitoring equipment to support construction and post construction monitoring?	The Quality Assurance/Quality Control for construction is outlined in Section 3.6, and will include regular survey of grades, approvals of subgrade material prior to placement of geosynthetics, and inspection and monitoring of the geosynthetic installation including seams. No instrumentation has been identified as required for construction or post construction monitoring. Consistent with the Type 'A' Water Licence 2AM-MRY1325, the landfarm facilty will be included in the bi-annual geotechnical inspections. Monitoring during construction will be overseen by the Engineer of Record.
QIA-7	QIA is seeking confirmation that BIMC will follow the Lease Operations Manual for As-Built Reports when delivering the Construction Summary Report.	Confirmed.