Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

ECCC File: 6100 000 036/010
NWB File: 2AM-MRY2540

October 24, 2025

via email at: licensing@nwb-oen.ca

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

Dear Robert Hunter:

RE: 2AM-MRY2540 – Baffinland Iron Mines – Mary River – Status of ECCC Comments on Baffinland's 2024 QIA-NWB Annual Report for Operations Reviewed

Environment and Climate Change Canada (ECCC) has reviewed Baffinland Iron Mine's response to intervenor comments on their 2024 Annual Report submitted to the Nunavut Water Board (NWB).

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation

The following comment is provided:

ECCC Comment #1: Total Suspended Solids Freshet Exceedances at Camp Lake Settling Ponds Outfall

References

- Main Document: 2024 QIA-NWB Annual Report (Baffinland Iron Mines Corporation, March 31, 2025) Section 7.3.1.0 Freshet Monitoring
    - Table 7.6.3: Water Quality Results for Water Licence Monitoring Location - CLSP-OUT

ECCC Comment

ECCC's review of Baffinland Iron Mine's NWB 2024 Annual Report noted that during freshet monitoring, measured total suspended solids (TSS) concentrations at Camp Lake Settling Ponds Outfall (CLSP-OUT), range from 206 to 433 mg/L, above the water licence criteria of 30 mg/L for grab samples and 15 mg/L for average concentrations. Concentrations are consistently higher at CLSP-OUT than at the other three sampled sites. The Annual Report states "proactive measures were taken prior to freshet to ensure unimpeded flow through water conveyance structures" and reports on remedial works to the drainage feeding into culvert CV-187 and Sheardown Lake Tributary 1 Outfall (SDLT-OUT). Measures employed at CLSP-OUT were not sufficient to prevent high TSS loads, which can negatively impact the aquatic environment. Further measures should be considered.

ECCC recommended the Proponent discuss what further measures at CLSP-OUT could help reduce TSS loads at freshet.

Baffinland Iron Mine's Response

As part of Modification 13, Baffinland constructed the Camp Lake Settling Pond (CLSP) structure, which has consistently demonstrated effectiveness in limiting elevated TSS concentrations to short durations in the associated stream. It is also noted that the stream has become significantly smaller in volume and flow compared to pre-construction conditions. The low flow characteristics of the site likely contribute to higher observed concentrations due to the low flow nature across the natural sandy beach. Each year, Baffinland implements sediment and erosion control measures in accordance with the Surface Water Aquatic Effects Management Plan. These include the deployment of flocculant blocks, spring berms, and the installation of silt fencing, which collectively work to minimize the mobilization of residual sediment into the stream.

Further, prior to the 2024/25 winter season, select locations around the Project Site were identified as High Priority Snow Removal Areas and/or No Snow Push Areas, including the Camp Lake Sedimentation Pond Outfall location. An awareness campaign was completed with the Departments responsible for snow management and included receptive discussions with their equipment operators about why these changes in snow management are important. This educational approach, re-enforced with monitoring of snow clearing activities by the Environment Department, proved effective by reducing snow accumulation in proximity to the outfall locations, which contributes to increased TSS results during freshet.

Given the transient nature of freshet, elevated TSS timeframes dramatically decreased, impact from low flow sampling conditions, and the monitoring of the lake itself through the Core Receiving Environment Monitoring Program (CREMP) continues, Baffinland believes the mitigation measures already in place are working to effectively reduce TSS. Baffinland will continue to monitor performance and assess the effectiveness of existing infrastructure and best management practices as part of its adaptive management approach.

ECCC Response and Recommendation

ECCC acknowledges that the Proponent's efforts have reduced TSS loads at the Camp Lake Settling Pond outlet sampling location (CLSP-OUT) by approximately an order of

magnitude between 2023 and 2024. However, 2024 TSS concentrations are approximately an order of magnitude higher than water licence criteria and warrant further action.

TSS concentrations lower than what is being measured would be expected at the outlet of a settling pond, which raises questions about the pond's retention time and whether it is possible to increase the retention time. The Proponent's response discusses the low flow conditions over a sandy beach of the stream's sampling location. This raises questions about whether sediment is stirred up during sampling and whether a sampling location closer to the pond outlet might yield more accurate results.

ECCC recommends the Proponent consider whether increasing the Camp Lake Settling Pond's retention time is feasible and could be beneficial, and whether the current sampling location yields the most accurate measurements of TSS in water discharged from the pond.

If you need more information, please contact Jessica Kassar at 867-222-2036 or Jessica.Kassar@ec.gc.ca.

Sincerely,

Kassar, Jessica

Digitally signed by Kassar, Jessica
Date: 2025.10.24 10:10:46 -04'00'

Jessica Kassar
Environmental Assessment Officer

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)