

Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
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ECCC File: 6100 000 010/042
NWB File: 2A-BOS1835, 2AM-DOH1335



July 6, 2021

via email at: licensing@nwb-oen.ca

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Richard Dwyer:

RE: 2AM-BOS1835, 2AM-DOH1335 – Hope Bay Water Licenses (Boston Project and Doris-Madrid) Annual Report

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the Annual Report for the above-noted Water Licenses. We appreciate the opportunity to submit these comments to the registry. You will find our comments below.

ECCC's specialist advice is based on our mandate pursuant to the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

ECCC provides the following comments:

1. Phosphorus – Measured Concentrations versus Predictions

Reference(s)

- 2020 Nunavut Water Board Annual Report - Appendix E
 - Table 6
 - Attachment 2 – Annual WLB Assessment – 2020 – Plots

Comment

The figures provided in Attachment 2 indicate that measured concentrations of both total and dissolved phosphorus at TL-1 exceeded the predicted concentrations for 2020. Table 6 of the Annual Water and Load Balance Assessment identifies phosphorus as a conservative parameter, indicating that the measured values are below model predictions. As depicted in the plots provided, the measured concentrations of dissolved phosphorus and total phosphorus were frequently above the modelling predictions during 2020, so it is unclear



why phosphorus was classified as conservative. In addition, ECCC notes that there is limited data for total phosphorus compared to other parameters.

ECCC Recommendation(s)

ECCC recommends the Proponent:

1. Provide additional information and discussion on total and dissolved phosphorus being classified as a conservative parameter, given the measured concentrations are exceeding predictions.
2. Provide a rationale for the limited sampling data for total phosphorus.

2. Monitoring Data Post-Treatment at TL-12

Reference(s)

- Water Treatment Plan
- 2020 Nunavut Water Board Annual Report – Appendix D

Comment

The Water Management Plan indicates that underground mine water (monitored at TL-12) is pumped from a settling sump system to a water treatment plant on the surface that is designed to remove total suspended solids (TSS) prior to discharge to Roberts Bay. The Plan states that weekly water quality is collected at TL-12 as well as after treatment in order to determine the performance of the water treatment plant. Appendix D of the annual report provides data on TL-12, prior to treatment through the water treatment plant, however, no data are provided on the quality of the water post treatment, and there does not appear to be a corresponding SNP station for this sampling point. Inclusion of the post-treatment data within the annual report would provide additional context on overall water quality being discharged to Robert's Bay.

ECCC Recommendation(s)

ECCC recommends the Proponent provide data for post-treatment effluent quality and a comparison of pre-treatment quality to overall post-treatment quality.

If you need more information, please contact Anna Graham at Anna.Graham@ec.gc.ca.

Sincerely,



Anna Graham
Environmental Assessment Coordinator

cc: Gillian Brown, Acting Head, Environmental Assessment North (NT and NU)