

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

ECCC File: 6100 000 011/004
NWB File: 2AM-MRY1325



June 29, 2020

via email at: licensing@nwb-oen.ca

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

Dear Richard Dwyer:

RE: 2AM-MRY1325 – Baffinland Iron Mines Corp. – Mary River Project – Submission of Construction Details for the Waste Rock Pond Water Treatment Plant

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above-mentioned construction details for 2AM-MRY1325 Type A Water Licence by Baffinland Iron Mines Corp. (The Proponent).

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 has the following comments:

1. Geotube Disposal

Reference(s)

- Construction Summary Report, Waste Rock Water Treatment Plant May 21, 2020
Section 12 Required Maintenance

Comment

The geotubes being used for filtration of the treated effluent are very large, and are contained in a bermed area (see photos in Figures 17 and 18). The report states in Section 12 - *Required Maintenance* that when the geotubes are full, they must be replaced. The report recommends constructing a second geotube pond for this. There is no information on how geotubes will be decommissioned and disposed of.



ECCC Recommendation(s)

ECCC recommends that the proponent describe and include geotube decommissioning and disposal in the mine's interim closure and reclamation plan (ICRP).

2. Sulphate

Reference(s)

- Construction Summary Report Waste Rock Water Treatment Plant May 21, 2020 – Appendix B Golder Report: Design Basis Memorandum Waste Rock Pile Water Treatment Facility- Monthly Reports.

Comment

The Golder report titled "*Waste Rock Management Plan For 2020 through 2021*", and dated Dec. 31, 2019, attached to the Waste Rock Management Plan V2 includes predictions for water quality that are based on 2019 data for the pond, and states that ongoing water treatment will be required through 2021. This report includes updated water quality predictions, which are compared to *Metal and Diamond Mining Effluent Regulations* (MDMER) criteria, and so did not include comparisons for sulphate. The report's predictions for sulphate were 3429 mg/L in 19/20 and 3073 in 20/21 for an average runoff year.

Sulphate data collected in 2018 and 2019 were significantly higher than predictions, and the levels would be of concern at end-of-pipe. For example, in August 2018, Baffinland reported concentrations of 2700 – 4930 mg/L SO₄; in August 2019, >5400 mg/L SO₄.

ECCC Recommendation(s)

ECCC recommends that the proponent identify the reason for the discrepancy in sulphate levels and predictions, and determine if reductions in sulphate concentrations can be achieved.

If you need more information, please contact Eva Walker at (867) 669-4744 or Eva.Walker@Canada.ca.

Sincerely,

[Original signed by]

Eva Walker
Acting Senior Environmental Assessment Officer
Prairie and Northern Region, Environment Climate Change Canada

Cc John Olyslager, Acting Head, Environmental Assessment North (NT and NU)