



Water Resources Division  
Nunavut Regional Office  
Iqaluit, NU X0A 0H0

Your file - Votre référence  
2AM-MRY1325

August 16, 2017

Our file - Notre référence  
CIDM#1169306

Karén Kharatyan  
Technical Advisor  
Nunavut Water Board  
Gjoa Haven, NU X0B 1J0

**Re: Indigenous and Northern Affairs Canada's (INAC) comments on Baffinland  
Iron Mines Corporation's modification request for the Milne Port  
Accommodation Camp Upgrade under water licence #2AM-MRY1325  
Amendment #1 – Mary River Project**

Dear Mr. Kharatyan,

Thank-you for the email notice received on July 25, 2017 regarding the above mentioned modification request.

INAC Water Resources Division reviewed Baffinland's modification request and the results of our review are presented in the enclosed memorandum for the Board's consideration. Comments have been provided pursuant to the Department's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

Please do not hesitate to contact me at 867-975-3876 or [sarah.forte@aandc-aadnc.gc.ca](mailto:sarah.forte@aandc-aadnc.gc.ca) for any additional information.

Regards,

Sarah Forté  
Water Management Coordinator

## **Technical Review Memorandum**

To: Karén Kharatyan, Technical Advisor, Nunavut Water Board

CC: Andrew Vermeer, Regulatory Reporting Specialist, Baffinland Iron Mines Corporation

From: Sarah Forté, Water Management Coordinator, Indigenous and Northern Affairs Canada

Date: August 16, 2017

Re: Modification Request for Water Licence #2AM-MRY1325 Amendment #1 – Milne Port Accommodation Camp Upgrade

Licensee: Baffinland Iron Mines Corporation

Project: Mary River Project

Region: Qikiqtani

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### **A. BACKGROUND**

Baffinland Iron Mines Corporation (Baffinland) submitted an addendum to their 2017 Workplan in May 2017 for Type A water licence 2M-MRY1325 amendment #1. This water licence covers mining activities associated with the Mary River iron mine, which has two principal sites, the Mine Site, approximately 100 km inland, and the Milne Port, at the southern tip of Milne Inlet.

The principal activities described in the workplan addendum were:

- installing an 800 person camp and associated facilities at the Mine Site,
- installing a rapid deploy 50 person camp and a 380 person temporary camp at the Milne Port,
- adding laydowns at Milne Port, and
- increasing the fuel storage capacity at Milne Port.

The Nunavut Water Board (NWB or Board) requested comments on the proposed addendum and both the Qikiqtani Inuit Association (QIA) and Indigenous and Northern Affairs Canada (INAC) submitted comments on June 28, 2017. INAC's principle comment was that certain proposed activities fell outside the project as scoped by the Nunavut Impact Review Board (NIRB) and described in the water licence.

To date, three separate modifications requests have been submitted by Baffinland:

- 1) Milne Port fuel storage capacity increase, on July 12, 2017
- 2) Milne Port accommodations camp upgrade, on July 19, 2017
- 3) Mine Site accommodations camp upgrade, on July 26, 2017

The present modification request is for the installation a new 380 person camp at the Milne Port Site. The proposed facility would include a garage, potable water treatment plant, wastewater treatment plant, transformer and e-house. The camp pad was constructed prior to the submission of the modification request to the NWB and is the subject of an Inspector's Direction to stop work.

## **B. RESULTS OF REVIEW**

On behalf of the Water Resources Division of INAC, the following comments and recommendations are provided for the Board's consideration:

### **1. Proposed modification outside scope of licence**

#### References:

- RE: Modification Request - Milne Port Accommodations Camp Upgrade, Water Licence 2AM-MRY1325 – Amend. No. 1, Baffinland Iron Mines Corporation, July 19, 2017
- Re: 2017 Work Plan Addendum for Water Licence #2AM-MRY1325 Amendment #1, INAC, June 28, 2017
- RE: Modification Request - Mine Site Accommodations Camp Upgrade, Water Licence 2AM-MRY1325 – Amend. No. 1, Baffinland Iron Mines Corporation, July 26, 2017
- Executive Summary for Type A Water Licence Application, Baffinland Iron Mines Corporation, February 2012
- Application for amendment to the Type 'A' Water Licence 2AM-MRY1325, Baffinland Iron Mines Corporation, July 16, 2014
- Mary River Project Final Environmental Impact Statement, Baffinland Iron Mines Corporation, February 2012, Table 1.2-1
- Early Revenue Phase, Addendum to Final Environmental Impact Statement, Baffinland Iron Mines Corporation, June 2013, Table 1.2-1

#### Comment:

The proposed expansion of the accommodations at Milne Port is outside the scope of the project as it has been assessed by the Nunavut Impact Review Board (NIRB) for the project certificate and the water licence issued by the NWB. INAC had made this

comment in our June 28, 2017 submission regarding the work plan amendment and re-iterate it here.

The project descriptions submitted by Baffinland to the NIRB and NWB were used to define the projects in the project certificate and water licence. Camp capacities during the operations phases of the descriptions are compiled in the table below along with current and proposed capacities.

Camp	Original project camp capacity	ERP <sup>1</sup> project camp capacity	ERP capacity + 20%	Current camp capacity	Proposed camp capacity
	(# people)				
Milne Port	40	60	72	327	554 (707) <sup>2</sup>

<sup>1</sup> ERP Early Revenue Phase

<sup>2</sup> Maximum capacity before Weatherhaven camps are removed.

The current camp capacity at Milne Port is 545% over the Early Revenue Phase (ERP) operations phase capacity in the project description. The initial project ERP project description was for the shipment of 3.5 Mt/year. During NIRB hearings, discussion to allow for operational flexibility allowed for an increase of in ore shipment of up to 20%. This could be used to justify increasing infrastructure by up to 20%, as calculated in the fourth column. The current capacity is still 454% over, and the proposed upgrades would lead to camp capacity at Milne Port being 7.7 times greater than what had previously been discussed.

Camp capacity can be used as an indirect measure of water use, sewage generation, and number of employees, which makes it an easy reference to use when assessing potential impacts. INAC is of the opinion that the proposed increase in camp capacity at Milne Port is outside the scope of the project certificate and water licence, and its impacts have not been assessed.

Baffinland writes that their modification request “*is consistent with approved activities outlined in the project certificate (Project Certificate 005 – Amend. 1)*”, but do not provide arguments of how this is so.

#### Recommendation:

As in our comments regarding the workplan amendment, INAC recommends the licensee submit amendment applications to the NIRB and NWB seeking authorization for the proposed changes.

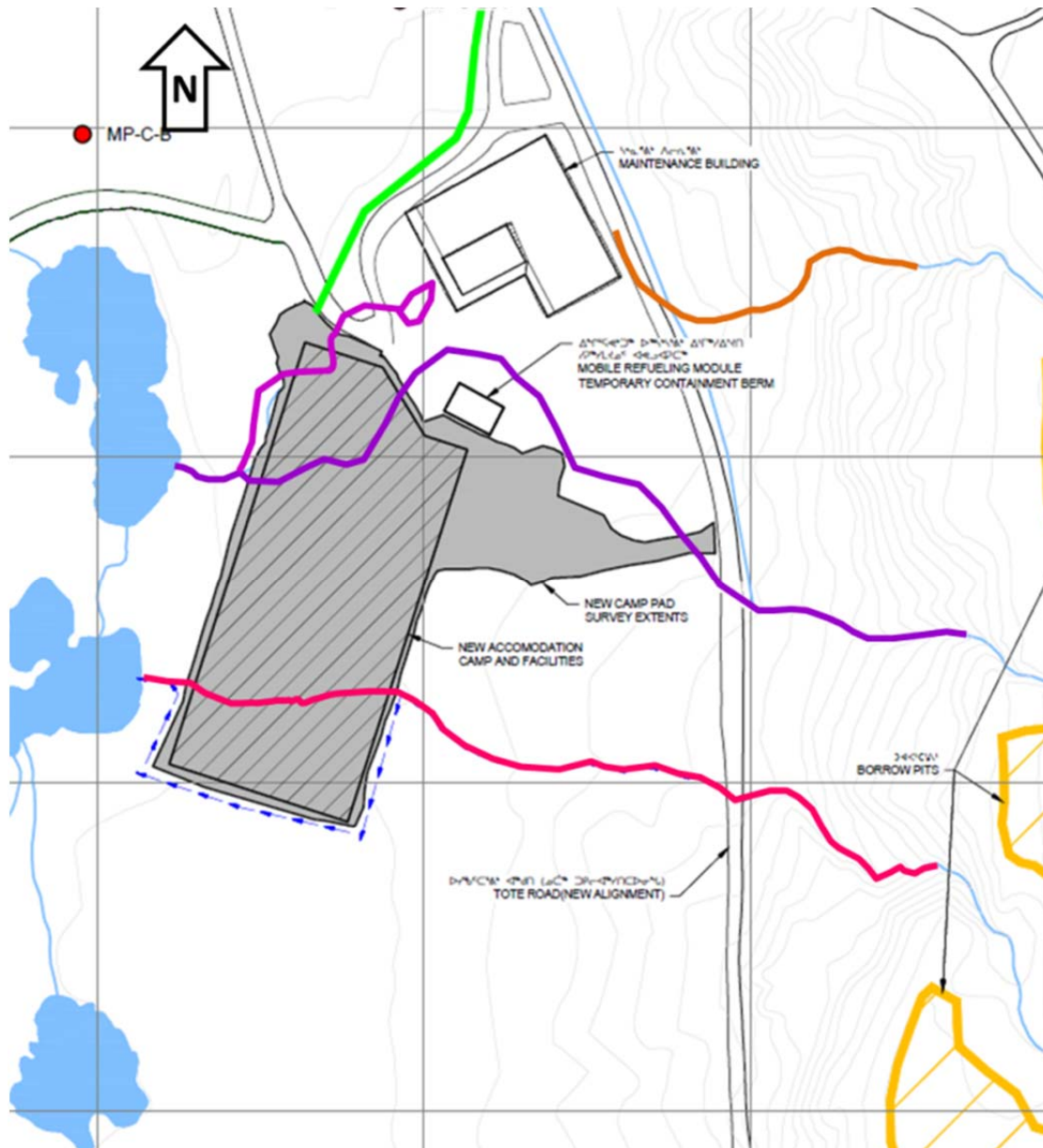
## **2. Diversions for streams covered by camp pad**

### References:

- RE: Modification Request - Milne Port Accommodations Camp Upgrade, Water Licence 2AM-MRY1325 – Amend. No. 1, Baffinland Iron Mines Corporation, July 19, 2017
- 2017 Work Plan, Baffinland Iron Mines Corporation, May November 4, 2016, Figure 1
- 2016 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations, Baffinland Iron Mines Corporation, March 31, 2017, Figure 1.3

### Comment:

As outlined in the modification request submitted, Baffinland has constructed a pad approximately 280 × 120m for the new accommodations camp. The new pad was constructed over intermittent streambeds, which resulted an Inspector's Direction to stop work and the present application for a modification request. The stream mentioned in the direction is the one furthest to the south, coloured in red in the Figure 1 on the following page.



**Figure 1: Snapshot of map in Attachment 1 of the modification request showing planned diversion ditch with blue arrows. Streams not coloured blue were added from maps included in the 2017 workplan and 2016 annual report.**

As can be seen on the map, a diversion ditch is planned for the southern-most stream (coloured in red) around the south end of the pad. Detailed information has been provided on the diversion ditch in attachments 2 and 3 of the modification request; Camp Pad Natural Stream Diversion – Hydrology & Hydraulic Calculations, and Construction Methodology – Camp Pad Water Diversion System.

Two branches of a stream approximately 100 m further north (coloured in purple on the map in Figure 1) are also covered by the new pad. These streams are not mentioned in

the modification request. From the map, it appears that the higher reach of the central stream will be diverted to a ditch flowing northwards along the Tote Road, though there is no text to supporting this assumption. There is no discussion in Baffinland's submission as to how water from the lower reach of the central stream (dark purple), and the northern fork of this stream (light purple) will be managed. In addition, the stream system appears to include a potentially ephemeral pond to the southwest of the maintenance building.

Recommendation:

INAC recommends that the licensee provide additional details as to how it will manage water flowing seasonally through the second stream covered by new pad.

### **3. Wastewater treatment plant effluent treatment parameters**

References:

- RE: Supplementary Information - Milne Port Accommodations Camp Upgrade, Water Licence 2AM-MRY1325 – Amend. No. 1, Baffinland Iron Mines Corporation, August 10, 2017, Attachment 1: Banner Environmental Engineering Consultants Ltd. – Baffin WWTP Review
- Nunavut Water Board Licence No. 2AM-MRY1325 – Amendment No. 1

Comment:

Baffinland has provided a consultant's report confirming that the Wastewater Treatment Plant constructed in 2011 by Filterboxx Water & Environmental Corporation using GE's Zeeweed membrane bioreactor and previously operated in Fort McMurray Alberta will meet the sewage treatment requirements.

The list of required effluent treatment parameters in the consultant's report is:

Biochemical Oxygen Demand	100 mg/L
Total Suspended Solids	120 mg/L
Oil and Grease	No Visible Sheen
pH	6.0 – 9.5
Toxicity	Not acutely toxic

The parameters and concentrations match the parameters and maximum concentrations found in Table 5 of the water licence, Effluent Quality Discharge Limits for Sewage Treatment Facilities to the Ocean, with the exception of Faecal Coliform. The licence also has a requirement that the maximum concentration of Faecal Coliform of any grab sample be below 10 000 CFU/100 mL.

Recommendation:

INAC recommends that the licensee confirm whether the proposed wastewater treatment plant for the Milne Inlet camp will allow it to meet the Faecal Coliform discharge criteria identified within the requirements of the water license.

**4. Reclamation cost**

References:

- 2017 Work Plan Addendum, Baffinland Iron Mines Corporation, May 26, 2017

Comment:

If this modification was accepted by the Board, it would be necessary for the additional infrastructure to be accounted for in the reclamation cost. Before Baffinland can bring material not included in the November 2016 version of the 2017 workplan to site, or execute any work not described in the plan, the NWB must set the amount of security to be held for the project's reclamation. INAC will want time to review and comment on the updated reclamation cost estimates.