



10 December 2018

Assol Kubeisinova  
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P.O. Box 119  
Gjoa Haven, NU X0B 1J0

**RE: Modification Request No. 3b – Milne Port 380-Person Camp  
Mary River Project, Type 'A' Water Licence - 2AM-MRY1325 - Amend. No. 1**

Baffinland Iron Mines Corporation (Baffinland) provides this request to the Nunavut Water Board (NWB) to consider approval of Modification Request No. 3b. Modification No. 3 was first submitted on 23 June 2017, but was revised and resubmitted on 19 July 2017 following a request from the NWB for the Milne Port Camp Pad Surface Water Diversion and the 380-Person Camp modifications to be combined. The NWB provided approval<sup>1</sup> of Modification 3a for the Milne Camp Pad Surface Water Diversion under Motion No. 2017-10-01, but stated that the 380-Person Camp and associated water treatment systems, now considered under Modification 3b, were not yet approved, pending a determination from the Nunavut Impact Review Board (NIRB).

On 30 April 2018, Baffinland submitted to the NIRB an application to amend Project Certificate No. 005. The amendment application requested increasing the amount of ore that could be transported to Milne Port along the Tote Road and shipped to market from 4.2 to 6.0 Mtpa. The amendment application also sought regulatory approval for additional supporting infrastructure, including the 380-Person Camp at Milne Port and a 15 ML diesel fuel tank at the Milne Port Bulk Fuel Storage Facility. The NIRB subsequently conducted its review, including a Community Information Session in Pond Inlet, and issued the Reconsideration Report<sup>2</sup> on 31 August 2018. Within the Reconsideration Report<sup>2</sup>, the NIRB concluded that the 380-Person Camp at Milne Port was approved to proceed through the permitting stage. Subsequent to the NIRB's Reconsideration Report and in a letter dated 30 September 2018, the Ministers of Crown-Indigenous Relations and Intergovernmental Affairs, Northern Affairs and Internal Trade (Ministers) provided acceptance of the NIRB recommendation regarding the 380-Person Camp at Milne Port and indicated it was approved to proceed, subject to any further regulatory requirements.

Based on the recommendations and approvals granted from the NIRB and the Ministers for the construction of the 380-Person Camp at Milne Port, Baffinland submits this request for approval to the NWB for Modification Request No. 3b. To assist the NWB in their assessment of Modification 3b,

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<sup>1</sup> NWB (2017) Re: Licence No 2AM-MRY1325 Type "A" – Modification Application (No. 3a) by Baffinland Iron Mines Corporation for Construction of a Proposed Surface Water Diversion System at the Milne Port Site of the Mary River Mine Project. 8 September 2018

<sup>2</sup> NIRB (2018) Reconsideration Report and Recommendations, Production Increase Proposal, Baffinland Iron Mines Corporation, NIRB File No. 08MN053. 31 August 2018



Baffinland has provided responses to comments received in 2017 in regards to the 380-Person Camp to ensure all comments<sup>34</sup> have been sufficiently addressed. Additionally, supporting documentation from the previous submissions have been appended to this submission for clarity and consistency.

Baffinland intends to commence construction on the 380-Person Camp beginning in early 2019 following approval from the NWB, with construction proceeding as follows:

- ) Installation of first 100 beds and supporting infrastructure (28 days)
- ) Installation of second 100 beds (28 days)
- ) Installation of camp core, third 100 beds and remaining supporting infrastructure (35 days)
- ) Installation of remaining beds (21 days)
- ) Finish commissioning of camp and supporting infrastructure (16 days)

We trust that the attached responses and documentation provide additional clarification on the proposed work and infrastructure changes at the Mary River Project. Please do not hesitate to contact the undersigned should you have any remaining questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", written over a circular stamp or seal.

Christopher Murray  
Environmental & Regulatory Compliance Manager

Attachments:

- Attachment 1: Baffinland Response to Comments
- Attachment 2: Milne Port Surface Water Management Plan (H353004-40000-220-272-0006-0001)
- Attachment 3: 380-Person Camp Layout
- Attachment 4: 380-Person Camp Construction Methodology
- Attachment 5: 380-Person Camp – Supporting IFCs
- Attachment 6: Milne Port Water Management Process Flow Diagram
- Attachment 7: Potable Water Treatment Plant Performance Guarantee
- Attachment 8: Waste Water Treatment Plant Performance Guarantee
- Attachment 9: Waste Water Treatment Plant General Arrangement
- Attachment 10: Waste Water Treatment Plant Process Description

Cc: Karén Kharatyan (NWB)  
Fai Ndofo, Sean Joseph (QIA)  
Sarah Forté, Bridget Campbell, Ian Parsons (CIRNAC)  
Grant Goddard, Megan Lord-Hoyle, Tim Sewell (Baffinland)

<sup>3</sup> INAC (2017) Indigenous and Northern Affairs Canada (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. 16 August 2017.

<sup>4</sup> QIA (2017) Baffinland Iron Mines Corporation's, Mary River Project, Modification Requests for Milne Port and Mine Site Accommodation Camp Upgrades and Milne Inlet Fuel Storage Facility. 32 July 2018

## **Attachment 1**

### **Baffinland Responses to Comments**

**Table A-1 - Water Licence Modification 3b - Baffinland Responses to Comments**

ID	Comment / Recommendation	Baffinland Response
	<b>QIA</b>	
1	Page 6 of the modification request notes that "environmental monitoring of construction activities will consist of water quality monitoring and periodic environmental inspections". The QIA notes that the frequency of "environmental monitoring" and "environmental inspections" is not detailed. This additional information is recommended to understand the potential impact to water quality, quantity and flow (thus relation to the Water Compensation Agreement) resulting from activities occurring partially within a drainage channel.	<p>Daily inspections will be conducted by Baffinland's Environmental personnel in conjunction with the Contractor's Health, Safety and Environment Lead, in accordance with Part D, Item 7 of the Type 'A' Water Licence 2AM-MRY1325. Inspections will ensure that Contractors are complying with the conditions of the Type 'A' Water Licence (in particular Part D, Conditions Applying to Construction and Operation) and Baffinland's management plans and procedures. Inspections will be documented by taking photos and using Baffinland's environmental inspection forms, examples of which can be found in the Environmental Protection Plan. This includes inspections and photos before and after the work, and during the course of the work to document any deficiencies. Documented deficiencies will be forwarded to the responsible Contractor for corrective action.</p> <p>The construction of the camp and associated infrastructure will be completed on an established aggregate pad during frozen conditions, as such, water quality monitoring will not be required.</p>
2	For construction documentation H343004-400-228-272-0001-0001(Attachment 3) and H353004-4000-228-271-0001-0001 (Attachment 4) of the modification request are for construction drawings that are not signed and sealed by a Professional Engineer or contain a Permit to Practice stamp, as required by Part D, Item 1 of the Water Licence.	Baffinland notes that the drawings referenced are in relation to the Milne Port Camp Pad Stream Diversion. This activity was approved by the NWB under Modification 3a and constructed, and as-built documentation submitted to the NWB on 24 January 2018.
3	QIA expects to receive completed as-built plans and drawings as per Part G, Item 6 of the Water Licence, as well as, sections l.b, l.c, l.d, l.g, 1.h, 1.k, l.n of Schedule D of the Water Licence regarding conditions applying to construction. The QIA looks forward to reviewing this information in the completed as-built documentation.	Baffinland will submit as built documentation consistent with the requirements of the Type 'A' Water Licence 2AM-MRY1325 and the Lease Operations Guide for As Built Drawings.

**Table A-1 - Water Licence Modification 3b - Baffinland Responses to Comments**

ID	Comment / Recommendation	Baffinland Response
	<b>CIRNAC</b>	
1	<p><u>Comment:</u></p> <p>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 reiterate it here.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p><u>Recommendation:</u></p> <p>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.</p>	<p>In the NIRB recommendation on the 6 MPTA production increase, and the subsequent decision by the Minister, the construction and occupancy of the 380 person camp is now permitted under Project Certificate No. 005 as amended. Domestic water use at Milne Port will continue to remain significantly below the permitted 300 m3/day limit following the construction and operation of the new camp and no increase to the Water Licence Terms and Conditions are required.</p>
2	<p><u>Comment:</u></p> <p>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.</p> <p>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 &amp; Hydraulic Calculations, and Construction Methodology – Camp Pad Water Diversion System.</p> <p>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.</p> <p><u>Recommendation:</u></p> <p>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.</p>	<p>Baffinland provided an updated Port Site Water Management Plan, which was approved under Modification No. 7 for the 2018 Work Plan. This Water Management Plan details the revised surface water drainage at Milne Port. The Plan has been appended to this submission as Attachment 2.</p>

**Table A-1 - Water Licence Modification 3b - Baffinland Responses to Comments**

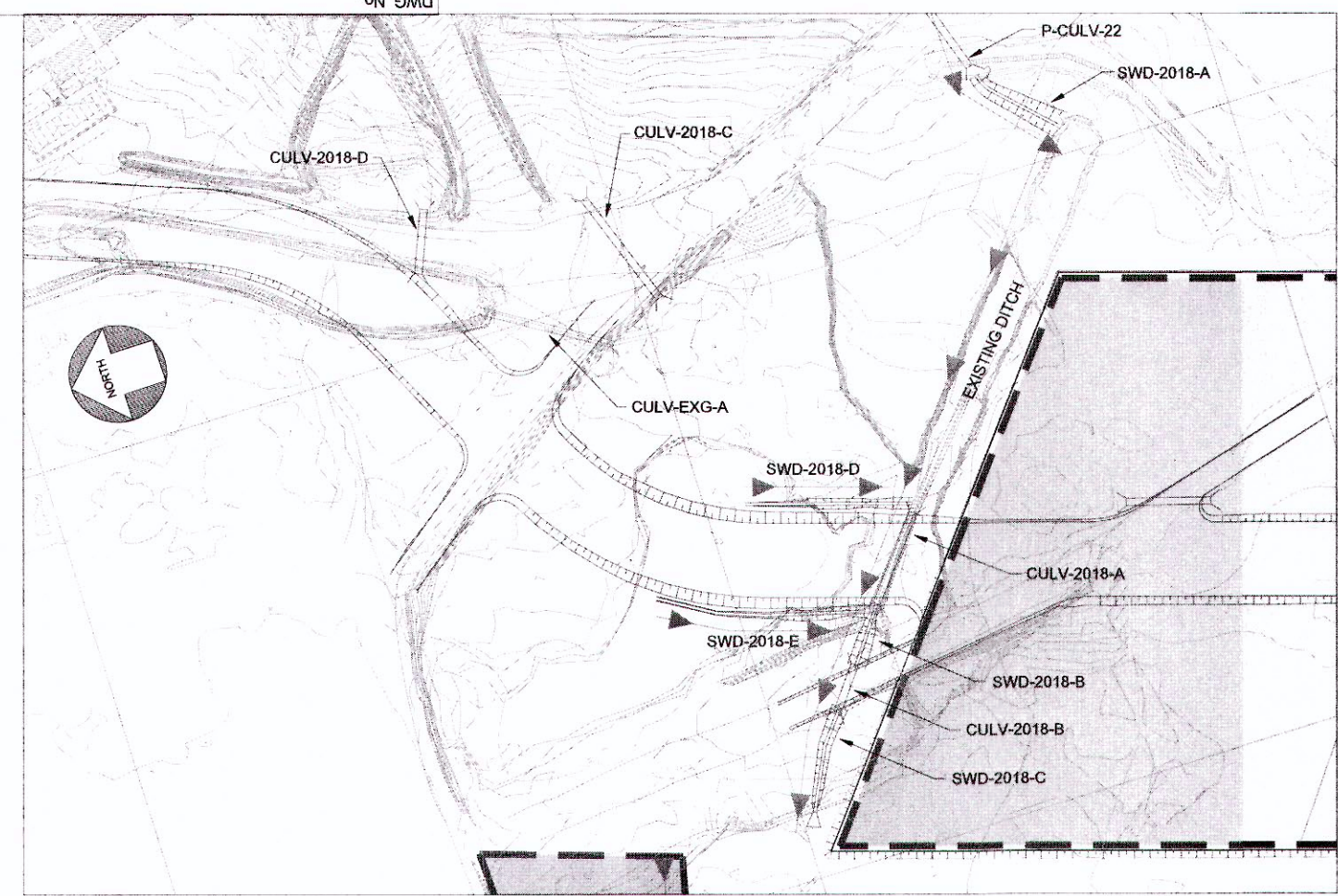
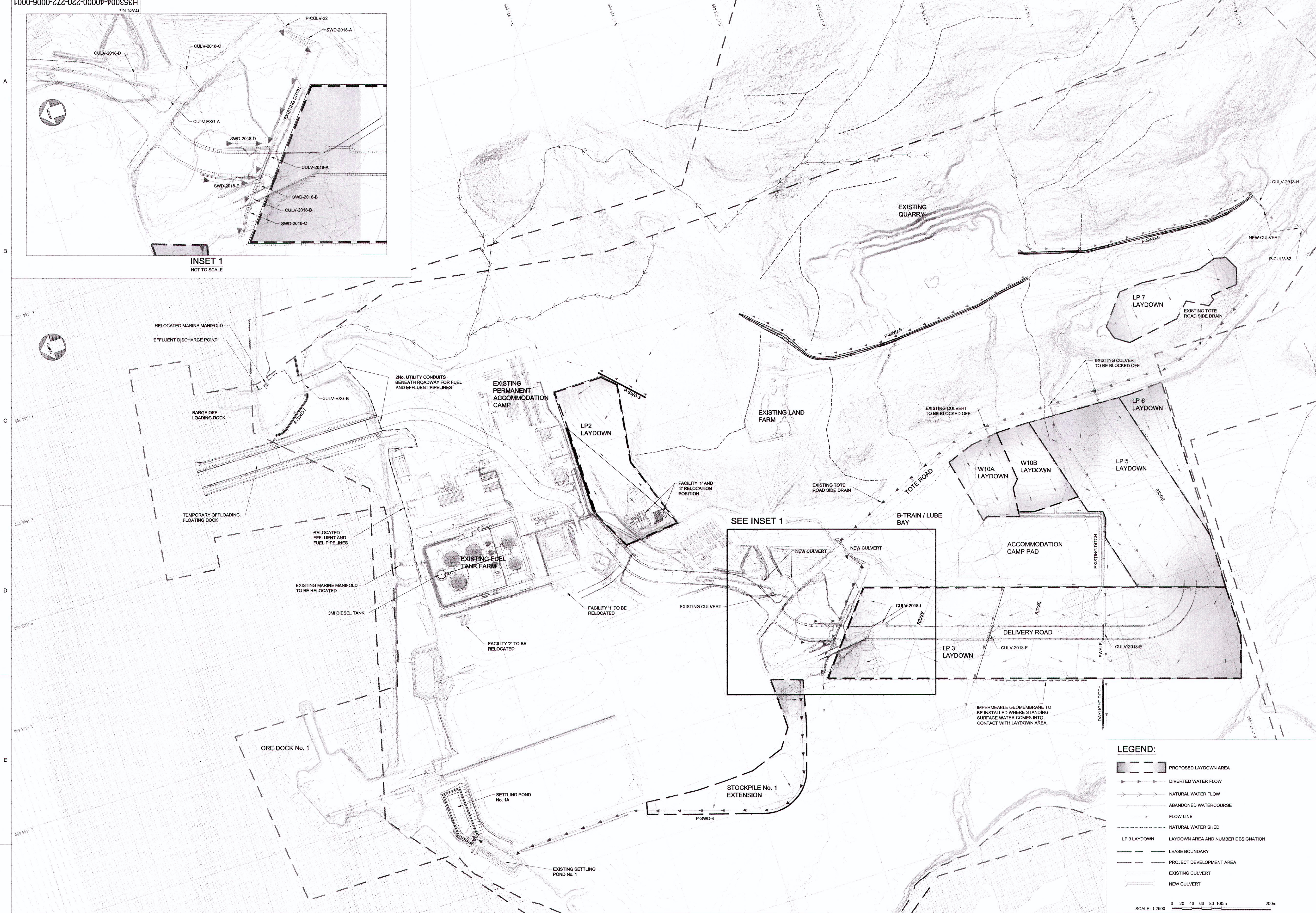
ID	Comment / Recommendation	Baffinland Response
	<b>CIRNAC</b>	
3	<p><u>Comment:</u> Baffinland has provided a consultant's report confirming that the Wastewater Treatment Plant constructed in 2011 by Filterboxx Water &amp; Environmental Corporation using GE's Zeeweed membrane bioreactor and previously 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.</p> <p><u>Recommendation:</u> 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 licence.</p>	Baffinland confirms that the water treatment plant as proposed will allow discharge criteria for Faecal Coliforms to be met.
4	<p><u>Comment:</u> 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.</p>	Reclamation security for the 380 Person Camp and associated infrastructure was included in the 2017 Work Plan Addendum and was subsequently posted with QIA in 2017.

**Attachment 2**

**Milne Port Surface Water Management Plan**

**(H353004-40000-220-272-0006-0001)**





INSET 1  
NOT TO SCALE

**LEGEND:**

- PROPOSED LAYDOWN AREA
- DIVERTED WATER FLOW
- NATURAL WATER FLOW
- ABANDONED WATERCOURSE
- FLOW LINE
- NATURAL WATER SHED
- LP 3 LAYDOWN
- LAYDOWN AREA AND NUMBER DESIGNATION
- LEASE BOUNDARY
- PROJECT DEVELOPMENT AREA
- EXISTING CULVERT
- NEW CULVERT

SCALE: 1:2500

0 20 40 60 80 100m 200m

NOT FOR CONSTRUCTION

**HATCH**

**Baffinland**  
BAFFINLAND IRON MINES LP  
MARY RIVER PROJECT

PORT SITE  
2018 SURFACE WATER  
MANAGEMENT PLAN

DWG. No. H353004-40000-220-272-0006-0001  
SCALE 1:2500  
OR AS NOTED

PERMIT TO PRACTICE  
NATL LTD.  
Signature: [Signature]  
Date: 2018-05-01  
PERMIT NUMBER P-532  
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NL



No.	DESCRIPTION	REVISIONS
C	STOCKPILE No. 1, SETTLING POND No. 1A ADDED - APPROVED FOR PERMITTING	IHB FH 31/05/2018
B	APPROVED FOR PERMITTING	IHB FH 15/02/2018
A	APPROVED FOR PERMITTING	IHB FH 15/02/2018

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	
DESIGNER	F HUGO		2018-05-01
CHECKER	R GOOSEN		2018-05-01
RESP. ENG.	R HALIM		2018-05-01
LEAD DISC. ENG.	A GROBBELAAR		2018-05-01
AREA LEAD	V LAVRIC		2018-05-01
ENG. MANAGER	D STANGER		2018-05-01
AREA MANAGER	T ATIBA		2018-05-01

DRAWING APPROVAL STATUS: Approved for Use

DRAWING No.	REFERENCE DRAWINGS
1	
2	
3	
4	
5	
6	
7	
8	