

Technical Review  
Baffinland Mary River Iron Ore Project  
Final EIS Addendum – Early Revenue Phase

---

Aboriginal Affairs and Northern Development Canada

**Submission to the Nunavut Impact Review Board**

**10/18/2013**

## Executive Summary

A detailed technical review of Baffinland Iron Mines Corporation's (Baffinland) Mary River Iron Ore Project Final Environmental Impact Statement (FEIS) Addendum under Nunavut Land Claims Agreement Section 12.8.2 (b) was carried out by Aboriginal Affairs and Northern Development Canada (AANDC) to qualitatively assess the information presented by the Proponent for its proposed Early Revenue Phase (ERP). The review factors identified by the Nunavut Impact Review Board (NIRB) were considered and the requested NIRB formatting for intervenor submissions was followed.

Within AANDC's jurisdictional mandate and with the exception of the issues identified herein, AANDC: i) agrees with the conclusions presented in the FEIS Addendum regarding the alternatives assessment, environmental and socioeconomic impacts, proposed mitigation, significance of impacts, and monitoring measures; ii) considers the conclusions presented in the FEIS Addendum are supported by the analysis; and iii) believes that appropriate assessment methodologies have been applied and monitoring measures proposed.

Most of the issues identified in the review of the FEIS Addendum are related to the need for a clear understanding of risks and mitigation measures to prevent impacts associated with some of the proposed ERP activities. This includes the need for clarification on: dredging procedures at Milne Port; proposed management of runoff from the Milne Port Ore Stockpile; the commitment to the provision of refuge stations and emergency shelters along the haul road; additional closure and reclamation costs associated with ERP facilities; and field fuelling procedures.

While not directly relevant to the matters before the NIRB, AANDC is concerned that Baffinland has assumed that no amendment to their Water Licence (No: 2AM-MRY1325) will be required for the ERP. The need for an amendment has not been accounted for in Baffinland's planning. As such, we are taking this early opportunity to raise this issue.

Another issue identified by AANDC relates to the justification for the duration of the ERP operations (i.e., the road haul option), currently envisaged to extend for the life of the project. It is not clear how the ERP has been justified throughout the life of the project, nor are there any stated criteria to be used to terminate the ERP once the rail haul option is operational.

It is thought that most of the above issues can be resolved through Proponent responses to these technical comments without the need to modify or add new Terms and Conditions to the Approved Project Certificate. AANDC has identified one Term and Condition which could be considered as follows:

- A new Term and Condition which addresses Milne Port stockpile runoff impacts to the marine environment, the ultimate receiver of the Milne Port ore stockpile runoff.

Although only one Term and Condition is recommended at this time, it is important to note that the impact analysis in some areas, as identified, is incomplete. Therefore, if the Proponent responses to technical comments do not adequately address these issues, revisions or additions to Terms and Conditions may be recommended in AANDC's final submission to the NIRB.

Further, at the request of NIRB, AANDC examined Baffinland's application to amend the North Baffin Regional Land Use Plan (NBRLUP) which is being considered under a joint review process with the Nunavut Planning Commission (NPC). This review is to determine conformity of the FEIS Addendum and the NBRLUP amendment application to NBRLUP requirements, specifically Appendix K of the land use plan. AANDC finds that the requirements of NBRLUP Appendix K appear to be met by Baffinland's FEIS Addendum and NBRLUP amendment application.

**Technical Review**  
**Baffinland Mary River Iron Ore Project**  
**Final EIS Addendum – Early Revenue Phase**

**Table of Contents**

<b>Executive Summary .....</b>	<b>1</b>
<b>Table of Contents.....</b>	<b>3</b>
<b>List of Acronyms and Abbreviations.....</b>	<b>4</b>
<b>1.0 Introduction.....</b>	<b>5</b>
<b>2.0 Technical Issues.....</b>	<b>8</b>
2.1 Project Need and Purpose.....	8
2.2 Project Description - Licensing and Schedule Implications .....	10
2.3 Project Description - Milne Port Dredging .....	12
2.4 Marine Environment - Milne Port Ore Stockpile Runoff Management .....	14
2.5 Environmental Management System - Road Management Plan .....	16
2.6 Environmental Management System - Hazardous Materials Management - Fuel Handling Procedures .....	18
2.7 Mine Closure and Reclamation.....	20
<b>3.0 Summary and Recommendations .....</b>	<b>22</b>

## **List of Acronyms and Abbreviations**

AANDC	Aboriginal Affairs and Northern Development Canada
ARD	Acid Rock Drainage
DEIS	Draft Environmental Impact Statement
DIAND	Department of Indian Affairs and Northern Development
ERP	Early Revenue Phase
FEIS	Final Environmental Impact Statement
IIBA	Inuit Impact and Benefit Agreement
ML	Metal Leaching
MMER	Metal Mining Effluent Regulation
NIRB	Nunavut Impact Review Board
NBRLUP	North Baffin Regional Land Use Plan
NPC	Nunavut Planning Commission
NWB	Nunavut Water Board
TSS	Total Suspended Solids

## 1.0 Introduction

On December 28, 2012 the Nunavut Impact Review Board (NIRB) issued a project certificate (Project Certificate No. 005) to Baffinland Iron Mines Corporation (Baffinland) for the Mary River Iron Ore Project. The approved project includes the mining of 18 Mt/yr of iron ore on northern Baffin Island to be transported by rail to Steensby Inlet and shipped out to markets throughout the year. In January, 2013 Baffinland proposed a change to the project, known as the 'Early Revenue Phase' (ERP), which includes an additional hauling of 3.5 Mt/yr of ore along the Milne Inlet Tote Road to be stored at a port facility and shipped out through Milne Inlet in the open water season throughout the life of the project. NIRB determined that these changes justified a reconsideration of project certificate terms and conditions under section 12.8.2 (b) of the Nunavut Land Claims Agreement (NLCA) and Baffinland submitted an Addendum to the Final Environmental Impact Statement (FEIS), which specifically addresses the proposed ERP, to be assessed by NIRB as part of this process.

Aboriginal Affairs and Northern Development Canada (AANDC) has a broad mandate for the co-management of water resources and the management of Crown Land in Nunavut under the following applicable laws and policies:

- The *Department of Indian Affairs and Northern Development Act (DIAND Act)*;
- The *Nunavut Land Claims Agreement Act*;
- The *Nunavut Waters and Nunavut Surface Rights Tribunal Act and Regulations*;
- The *Territorial Lands Act and Regulations*; and
- The Mine Site Reclamation Policy for Nunavut.

As set out in the NLCA, the responsible Ministers will make a decision on the proposed project reconfiguration, based on the NIRB's report of its reconsideration. The Ministers may accept, reject, or vary the report based on the grounds specified in the NLCA and the NIRB shall amend the project certificate to reflect any changes accepted by the responsible Ministers. As part of the NIRB's reconsideration, AANDC, along with other stakeholders, acts as an intervener in the process, providing advice and expertise to the NIRB by way of this submission. If the proposed changes are approved, the Department will also be responsible for inspecting and enforcing some of the works and undertakings.

AANDC has conducted its review of the FEIS Addendum to assess whether environmental and socioeconomic impacts, including cumulative impacts and alternative means to carry out the project, have been adequately identified and evaluated. AANDC has also reviewed the mitigation and monitoring plans to ensure that they are appropriate.

AANDC's review was focused in the following areas:

- Surface water quality and quantity;
- Geotechnical engineering with respect to permafrost conditions;

- Geochemistry (potential for ARD + Metal Leaching);
- Site water management, including wastewater treatment;
- Waste management;
- Environmental implications of road and port design, construction and operation;
- Closure and reclamation planning;
- Accidents/malfunctions and hazardous materials handling;
- Inuit harvesting;
- Local education and training;
- Livelihood and employment; and,
- Contracting and business opportunities.

AANDC followed the guidance provided in NIRB's letter of 15 August 2013 to interveners entitled "*Conformity Determination for Baffinland Iron Mine Corp.'s Addendum to the Final Environmental Impact Statement Submission for the Mary River Project and Commencement of the NIRB's Technical Review Period*". The following points were considered from AANDC's jurisdiction and area of expertise:

- Determination of whether there is agreement/disagreement with the conclusions in the FEIS Addendum regarding the alternatives assessment, environmental impacts, proposed mitigation, significance of impacts and monitoring measures – and reasons to support the determination;
- Determination of whether or not conclusions in the FEIS Addendum are supported by the analysis – and reasons to support the determination;
- Determination of whether appropriate methodology was utilized in the FEIS Addendum to develop conclusions – and reasons to support the determination, along with any proposed alternative methodologies which may be more appropriate (if applicable);
- Identification of any terms and conditions contained within the Mary River Project Certificate which may require reconsideration or amendment in light of the ERP proposal; and
- Identification of additional terms and conditions which would be required to address the potential impacts of the ERP proposal.

As it relates to the NPC-NIRB Joint Review of Baffinland Iron Mine Corp.'s Application to Amend the North Baffin Regional Land Use Plan (NBRLUP), as AANDC conducted its technical review of the ERP proposal, AANDC also examined whether the requirements of NBRLUP Appendix K have been met by Baffinland's FEIS Addendum and NBRLUP application. This was in accordance with the NIRB's request in their September 23, 2013 correspondence to interveners entitled "*Process Map and Invitation for Public Comments Associated with the NPC-NIRB Joint Review of Baffinland Iron Mine Corp.'s Application to Amend the North Baffin Regional Land Use Plan*". NIRB specifically asked parties to comment on the following aspects of the proposed transportation corridor:

- Acceptability of the corridor width;
- Proposed measures for mitigation of potential adverse impacts; and,
- Likelihood of maximizing access to other resources while minimizing overall footprint."

The formatting of AANDC's submission is consistent with the formatting suggested in NIRB's letter of September 16, 2013 "*Next Steps in the NIRB's Reconsideration of the Project Certificate for Baffinland Iron Mine Corp.'s Mary River Early Revenue Phase Proposal*".

In undertaking the review of the FEIS Addendum to help identify issues, AANDC also reviewed earlier Information Requests which were forwarded to the Proponent in March 2011 as part of the technical review of the Draft Environmental Impact Statement (DEIS). The DEIS contained the road haul option before it was eliminated in the February 2012 FEIS.



## 2.0 Technical Issues

### 2.1 Project Need and Purpose

<b>Review Comment Number</b>	<b>AANDC No. 1</b>
<b>Subject/Topic</b>	<b>Project Need and Purpose - Conditions for Termination of the ERP</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Addendum Volume 1, Section 1.4.1 - Justification for the Early Revenue Phase (Pg.10, Parag.1 and 3); FEIS Addendum Volume 1, Section 2.3 - Construction Phase – ERP and Approved Project (Pg. 20, Parag. 1).
<b>Summary</b>	How the ERP has been justified throughout the life of the project is not clear nor are the criteria to be used to terminate the ERP once the rail haul option is operational.
<b>Importance of issue to impact assessment</b>	Impact assessment seeks to ensure project decisions adequately consider the social and environmental implications. The ERP duration, particularly in light of the potential to increase impacts and raise public concern, should be justified in accordance with the purpose of the ERP.
<b>Detailed Review Comment</b>	<p>The Proponent outlines the need for the ERP as a means of generating early cash flow with reduced initial capital expenditures. They state that it is expected that the road haulage operation would continue after the rail operation of the Approved Project becomes fully operational and that it would continue over the 21 year mine operational period. As currently defined, the ERP is more than just a means to generate an early revenue stream; it provides the basis to increase the Approved Project annual mine production rate by 20% (18 Mt/yr to 21.5 Mt/yr) over the entire life of the project.</p> <p>Continuation of the road haul option throughout the life of the project will generate additional employment opportunities but may have other unwanted environmental or social consequences. It would be helpful to know what criteria the Proponent will use to decide when road haul should be terminated once the railway is operational and whether environmental and socioeconomic criteria will be included.</p>
<b>Recommendation</b>	The Proponent is requested to justify extending the ERP throughout the life of the project and outline the criteria that will be used to decide when the road haul option will be discontinued.

<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue identified	
<b>New Term and Condition</b> required in light of the issue identified	

## 2.2 Project Description - Licensing and Schedule Implications

<b>Review Comment Number</b>	<b>AANDC No. 2</b>
<b>Subject/Topic</b>	<b>Project Description - Licensing and Schedule Implications</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Amendment Volume 1 - Main Document, Section 15.3 - Required Permit, Licences and Authorizations (Pg. 120, Parag. 2); Others as listed below under <i>Detailed Review Comments</i> .
<b>Summary</b>	The implications of requiring an amendment to the Type A Water Licence on the project and scheduling of activities has not been considered by the Proponent.
<b>Importance of issue to impact assessment</b>	A requirement to seek an amendment to the Type A Water Licence may cause a delay in project start-up and delivery. Even short delays to get an amendment can lead to more serious delays given the short construction and shipping windows available. These can translate into additional costs and could lead the Proponent to operate outside of their water licence restrictions.
<b>Detailed Review Comment</b>	<p>Baffinland was issued its Type A Water Licence on July 15, 2013 and in the FEIS Addendum state they do not anticipate that the ERP will necessitate any amendment to this Licence. While the increased impacts associated with the ERP may be considered insignificant, there will be multiple changes to the project description which will redefine water demand, wastewater discharges and waste generation for the project. These changes may require an amendment to the Type A Water Licence or at least some further evaluation.</p> <p>Examples of these changes in the FEIS Addendum include the following:</p> <ul style="list-style-type: none"> <li>• Volume 3 - Project Description, Section 2.5.2 - Sewage and Wastewater Management (Pg. 27, Parag. 3). Worker camp at Milne Port now 225 maximum workers while previously 170 were estimated. This would have implications on water demands, water and wastewater treatment.</li> <li>• Volume 3 - Project Description, Section 2.5.3 - Solid Waste Management (Pg. 28, Parag. 6). It is stated that estimated volumes of hazardous and recyclable wastes will be developed during detailed engineering design. AANDC notes that these volumes will likely increase given the greater number of workers and a larger truck fleet (more tires, more oil and other recyclables, etc.). The Waste Management Plan has not been updated for the ERP.</li> <li>• Volume 7 - Freshwater Environment, Section 2.3.1 Assessment Methods (Pg. 3, Parag. 3). <i>"The ERP will result in a new discharge of mine effluent from the new ore stockpile at Milne Port. There will also be minor changes in the volume of treated sewage effluent discharged to</i></li> </ul>

	<p><i>receiving waters at Milne Port and the Mine Site during construction and operation.”</i></p> <ul style="list-style-type: none"> <li>• Volume 7 - Freshwater Environment, Section 2.3.2.3 - Milne Port LSA Potential Effects Assessment (Pg. 4, Parag. 3). <i>“During the Construction Phase, the daily maximum water take has increased to 82.7 m<sup>3</sup>/day from 67.5 m<sup>3</sup>/day assessed in the FEIS”</i>. Water Licence condition Part E, Item 3 (Table 2) specifically limits water take to 68.5 m<sup>3</sup>/day.</li> <li>• Volume 7 - Freshwater Environment, Section 2.3.2.5 - Mine Site LSA Potential Effects Assessment (Pg. 8, Parag. 4). <i>“During the Construction Phase, the daily maximum water take has increased to 739 m<sup>3</sup>/day from 709 m<sup>3</sup>/day assessed in the FEIS. In addition, under the assumption that the ERP trucking operation could continue indefinitely, the Operations Phase water take of 247 m<sup>3</sup>/day represents an increase from 203 m<sup>3</sup>/day assessed in the FEIS”</i>. The corresponding Water Licence limits are currently 657.5 m<sup>3</sup>/day for the construction phase (Part E, Item 3, Table 2) and 203.8 m<sup>3</sup>/day for domestic operations (Part E, Item 4, Table 3).</li> <li>• There is also a question as to whether the ERP will constitute the ‘Operations Phase’ as defined under the Water Licence, hence, enacting the water usage restrictions associated with operations.</li> </ul> <p>While the Proponent has discussed the environmental impacts of the ERP activities in the FEIS Addendum (i.e. ‘not significant’), this does not necessarily satisfy licensing requirements. The need for a licence amendment with its inherent process may have impacts on the timelines for specific project activities.</p>
<b>Recommendation</b>	<p>The Proponent is requested to clearly outline how they intend to meet the current restrictions of their Water Licence given the changes introduced in the ‘Early Revenue Phase’ and include a consideration of the implications on the project and scheduling of activities if an amendment is required. The Proponent is strongly encouraged to open a dialogue with the Nunavut Water Board to determine if a Type A Water Licence amendment is required.</p>
<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue identified	
<b>New Term and Condition</b> required in light of the issue identified	<p>No new Term and Condition is considered necessary however the Proponent should outline impacts to the project and scheduling of project activities (particularly the 2014 Work Plan) in the event of a required Type A Water Licence amendment.</p>

## 2.3 Project Description - Milne Port Dredging

<b>Review Comment Number</b>	<b>AANDC No. 3</b>
<b>Subject/Topic</b>	<b>Project Description – Milne Port Dredging</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Addendum, Volume 3 - Project Description, Section 2.3.5 Ore Dock, Dredging Requirement (Pg. 19, Parag. 5); AANDC DEIS IR #57.
<b>Summary</b>	Insufficient information has been provided to assess potential impacts of dredging operations at Milne Port and ensure appropriate mitigation has been provided.
<b>Importance of issue to impact assessment</b>	Dredging procedures and dredged spoils and supernatant management procedures can negatively impact water and sediment quality and aquatic life. With insufficient information on these procedures, the impact analysis is viewed as incomplete and appropriate mitigation not adequately considered.
<b>Detailed Review Comment</b>	The Proponent has identified that some dredging may be required and provided a dredge disposal area within the proposed quarry (FEIS Addendum Volume 3, Figure 3-2.9, Pg. 16). Depending on the results of on-going drilling investigations, the storage of dredge material may require a large facility because of the large volume of dredge water which must be allowed to settle prior to discharging the supernatant to the environment. The Proponent has shown in FEIS Volume 8, Appendix 8A-1, Figure 3.2-3 (Pg. 167) that the sea bed sediments may contain 5 to 60% of silt and or clay. If sufficient silt and clay are present in the dredged effluent, storage of excess dredge water will have to be provided in the dredge material disposal area for some time until the suspended solids settle. Since the quarry may still likely be operational when extra storage volume is required, it may be difficult to provide sufficient storage for water with high suspended solids.
<b>Recommendation</b>	The Proponent should provide pollution prevention measures in the dredging procedure, including how the dredged material will be handled and disposed, and how the treated (settled) supernatant will be discharged to the environment.
<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue identified	

<b>New Term and Condition</b> required in light of the issue identified	
---	--

## 2.4 Marine Environment - Milne Port Ore Stockpile Runoff Management

<b>Review Comment Number</b>	<b>AANDC No. 4</b>
<b>Subject/Topic</b>	<b>Marine Environment - Milne Port Ore Stockpile Runoff Management</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Addendum Volume 8 - Marine Environment, Section 3.5.2.5 Wastewater and Site Water Discharge (Pg. 24, Parag. 4); FEIS Addendum Volume 3, Figure 3-2.9 (Pg. 16); FEIS Addendum Volume 3, Appendix 3B -Key Facts Table - ERP and Approved Project (Pg. 2).
<b>Summary</b>	Insufficient information has been provided related to handling of runoff from the new Ore Stockpile at Milne and the potential for any acid rock drainage (ARD) and/or metal leaching (ML).
<b>Importance of issue to impact assessment</b>	Metal leaching and suspended solids loadings may originate in the runoff from the new Ore Stockpile. If not managed correctly, these could result in deleterious impacts on water and sediment quality and on aquatic life.
<b>Detailed Review Comment</b>	<p>The ARD/ML potential of the Milne Port Ore Stockpile, which is 3.5Mt in size, has not been addressed in the amended FEIS Project Description. Intuitively one would expect runoff quality from the Milne Port Ore Stockpile to be similar to that from the Mine Site Ore Stockpile. However the extended storage period (up to 1 year) associated with the Milne Port Ore Stockpile coupled with the additional ore handling prior to storage (leading to more surface abrasion and creation of fines) may contribute to increased metal leaching potential.</p> <p>Ore Stockpile storm water management ponds are to be provided at Milne Port as shown in FEIS Addendum Volume 3, Figure 3-2.9. FEIS Addendum Volume 8 - Marine Environment, Section 3.5.2.5 - Wastewater and Site Water Discharge states that <i>“Run-off from the ore stockpile (and any other contact waters) will be directed into a retention pond where TSS and associated metal complexes will be settled out. As necessary, these source waters will be treated to meet the MMER before being released to the drainage ditch”</i>. However, additional treatment should be identified when settling alone is not sufficient. Peak flows associated with spring thaw may be particularly problematic from a treatment and storage perspective.</p>
<b>Recommendation</b>	The Proponent is asked to provide information on the predicted water quality of the runoff from the Milne Port Ore Stockpile, how large runoff volumes will be stored for eventual treatment and what additional treatment will be utilized if discharge limits are not met.

<p><b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue identified</p>	<p>This issue is addressed under Project Certificate Term and Condition #17 - To prevent impacts to water bodies from effluent. (<i>"The Proponent shall develop and implement effective measures to ensure that effluent from project-related facilities and/or activities, including sewage treatment plants, <b>ore stockpiles</b>, and mine pit, satisfies all discharge criteria requirement established by the relevant regulatory agencies prior to being discharged into the receiving environment"</i>).</p>
<p><b>New Term and Condition</b> required in light of the issue identified</p>	<p>The issue is also indirectly addressed under Project Certificate Term and Condition #46 - To mitigate impacts to freshwater aquatic habitat. Ideally a new Term and Condition should be developed similar to #46 which addresses effluent impacts to the marine environment, the ultimate receiver of the Milne Port ore stockpile runoff. Currently the Terms and Conditions related to discharges to the marine environment deal specifically with spills, ballast water and antifouling treatments, the latter specifically only for Steensby Port (Term and Condition # 91).</p>



## 2.5 Environmental Management System - Road Management Plan

<b>Review Comment Number</b>	<b>AANDC No. 5</b>
<b>Subject/Topic</b>	<b>Environmental Management System – Road Management Plan</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Volume 10, Appendix 10D-2 - Surface Water and Aquatic Ecosystems Management Plan, Section 6.1, Table 6.1 (Pg. 20); FEIS Addendum Volume 10, Appendix 10D-8 - Roads Management Plan.
<b>Summary</b>	Proponent's commitment to the provision of refuge stations and emergency shelters along the Milne Inlet Tote Road is not clear.
<b>Importance of issue to impact assessment</b>	Given that year round transport of ore is now proposed along the Milne Inlet Tote Road, the provision of refuge stations and emergency shelters has become more important from a health and safety perspective and may save lives of workers and the public in the future.
<b>Detailed Review Comment</b>	In the March 2013 revised Surface Water and Aquatic Ecosystems Management Plan (updated for 2013 Work Plan but not the ERP) reference is made to <i>"Two temporary refuge stations, one at km 33 and one at km 68 consisting each of a half size trailer and 4 drum fuel storage area (described below in the section Milne Inlet Tote Road Refuge Stations)"</i> . AANDC notes that there is no section entitled <i>Milne Inlet Tote Road Refuge Stations</i> in this Plan and FEIS Addendum Volume 3 – Project Description makes no reference to these refuge stations. FEIS Addendum Volume 10, Appendix 10D-8 - Roads Management Plan (updated for the ERP) also makes no reference to these refuge stations. In Baffinland's October 12, 2012 document "Submission of Baffinland Response to Technical Review Comments on the Type A Water Licence Application" in response to AANDC Issue No.13, Baffinland stated that secondary containment would be provided for the drums stored at the refuge stations. With the introduction of ore transport via the Tote Road in the ERP, it is not clear if these refuge stations will remain temporary (construction phase only) or will they be provided for the duration of the project. The revised Roads Management Plan (Appendix 10D-8) does not address refuge stations or emergency shelters. Given that year round transport of ore is now proposed along the Tote Road, the importance of these safety measures has become all the more relevant.
<b>Recommendation</b>	The Proponent is requested to confirm whether i) the proposed refuge stations along the Milne Inlet Tote Road will remain beyond the construction phase, and ii) will emergency shelters be provided and available for employee and public use during the operations phase.

<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue identified	Refuge stations are addressed in Term and Condition #165
<b>New Term and Condition</b> required in light of the issue identified	

## 2.6 Environmental Management System - Hazardous Materials Management - Fuel Handling Procedures

<b>Review Comment Number</b>	<b>AANDC No. 6</b>
<b>Subject/Topic</b>	<b>Hazardous Materials Management - Fuel Handling Procedures</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Addendum Volume 3 - Project Description, Section 2.5.1 - Fuel Supply and Storage (Pg. 27, Parag. 2).
<b>Summary</b>	Clarification is required from the Proponent on the proposed in-field refueling procedures for mine mobile equipment such as mine haul trucks, loaders and drills.
<b>Importance of issue to impact assessment</b>	A change in refueling procedures was noted in the FEIS Addendum which is related to mine site activities and not ERP activities. If this is indeed a new procedure not originally assessed in the original FEIS, some information on the procedure should be provided to allow impact analysis and ensure appropriate mitigation measures have been identified.
<b>Detailed Review Comment</b>	Volume 3 - Project Description, Section 2.5.1 - Fuel Supply and Storage (page 27) states " <i>The mine mobile equipment such as mine haul trucks, loaders and drills will be refueled by fuel trucks in the field or near the maintenance shop. In view of the long pipeline distances, it is felt that refueling by tanker trucks is the most flexible and practical approach.</i> " AANDC is not certain whether this refueling-by-tanker-truck approach (as opposed to at designated fueling stations equipped with secondary containment) was previously considered in the original FEIS or whether this is a new element added to the Project Description in the FEIS Addendum. If this is a new approach not previously considered in the original FEIS, information on refueling procedures and mitigation measures to protect the environment should be provided.
<b>Recommendation</b>	Proponent to provide clarification as to whether refueling by fuel trucks in the field is a new approach and if it is, provide appropriate procedures and mitigation measures for accidental releases to protect the environment.
<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue	

identified	
<b>New Term and Condition</b> required in light of the issue identified	

## 2.7 Mine Closure and Reclamation

<b>Review Comment Number</b>	<b>AANDC No. 7</b>
<b>Subject/Topic</b>	<b>Mine Closure and Reclamation</b>
<b>Reference</b> to NIRB EIS Guidelines, FEIS Addendum and/or FEIS.	FEIS Addendum Volume 10, Appendix 10G – Interim Closure and Reclamation Plan, Appendix B, Table B-16: Mine Closure and Reclamation Cost – Milne Port (Pg. 22, 2 <sup>nd</sup> last row).
<b>Summary</b>	Despite statements to the contrary, the June 2013 Interim Closure and Reclamation Plan does not address the additional closure costs associated with the ERP infrastructure.
<b>Importance of issue to impact assessment</b>	If closure were to occur early during the ERP, sufficient funds need to be held to ensure sites are closed and remediated with minimal impact to the environment.
<b>Detailed Review Comment</b>	The June 2013 Interim Abandonment and Reclamation Plan, Section 1 - Executive Summary states that “ <i>The Mining RECLAIM spreadsheet provided by Aboriginal Affairs and Northern Development Canada ..... has been used as the basis for the interim estimate of the financial cost of final closure and reclamation measures. It addresses Project-related activity areas and infrastructure related to the Mary River Project including the Early Revenue Phase (ERP), mobilization and post closure monitoring. The financial cost obtained is based on the information available at the time of publishing and will require updating as the Project progresses</i> ” (emphasis added). The above citation implies the Interim A&R Plan addresses the ERP however the new plan estimates a final closure cost for Milne Inlet Port closure of \$7,311,986. This is the same estimate as provided in the February 2012 Preliminary A&R Plan. Given that the ERP will include reclamation/closure of more laydown areas, temporary camp facilities, storm water management ponds and an ore dock and ore handling facilities, the Milne Port closure cost is expected to increase.
<b>Recommendation</b>	The Proponent is requested to provide a preliminary estimate of increased closure costs associated with ERP and justify whether an increase in the security bonding is required for the 2014 Work Plan to reflect the ERP (even though ERP approval may not have been granted yet).
<b>Existing Terms and Conditions</b> requiring reconsideration or amendment in light of the issue	

identified	
<b>New Term and Condition</b> required in light of the issue identified	

### 3.0 Summary and Recommendations

A detailed technical review of the Baffinland FEIS Addendum was carried out by AANDC to qualitatively assess the information presented by the Proponent for its proposed Early Revenue Phase (ERP). The review factors identified by the NIRB were considered and the requested NIRB formatting for intervenor submissions was followed.

It was apparent the Proponent expended a great deal of effort to clearly identify where revisions to the original FEIS were made to address the ERP; this was greatly appreciated and facilitated our review.

Within AANDC's jurisdictional mandate and with the exception of the issues identified herein, AANDC: i) agrees with the conclusions presented in the FEIS Addendum regarding the alternatives assessment, environmental and socioeconomic impacts, proposed mitigation, significance of impacts, and monitoring measures; ii) considers the conclusions presented in the FEIS Addendum are supported by the analysis; and iii) believes that appropriate assessment methodologies have been applied and monitoring measures proposed. Further, the requirements of NBRLUP Appendix K appear to be met by Baffinland's FEIS Addendum and NBRLUP amendment application.

The recommendations from the review of the Baffinland Mary River Iron Ore Project FEIS Addendum documentation are reproduced below under technical issue headings:

#### **Project Need and Purpose - Conditions for Termination of the ERP**

**AANDC No. 1** - The Proponent is requested to justify extending the ERP throughout the life of the project and outline the criteria that will be used to decide when the road haul option will be discontinued.

#### **Project Description - Licensing and Schedule Implications**

**AANDC No. 2** - The Proponent is requested to clearly outline how they intend to meet the current restrictions of their Water Licence given the changes introduced in the 'Early Revenue Phase' and include a consideration of the implications on the project and scheduling of activities if an amendment is required. The Proponent is strongly encouraged to open a dialogue with the Nunavut Water Board to determine if a Type A Water Licence amendment is required.

#### **Project Description – Milne Port Dredging**

**AANDC No. 3** - The Proponent should provide pollution prevention measures in the dredging procedure, including how the dredged material will be handled and disposed, and how the treated (settled) supernatant will be discharged to the environment.

#### **Marine Environment - Milne Port Ore Stockpile Runoff Management**

**AANDC No. 4** - The Proponent is asked to provide information on the predicted water quality of the runoff from the Milne Port Ore Stockpile, how large runoff volumes will be stored for eventual treatment and what additional treatment will be utilized if discharge limits are not met.

### **Environmental Management System – Road Management Plan**

**AANDC No. 5** - The Proponent is requested to confirm whether i) the proposed refuge stations along the Milne Inlet Tote Road will remain beyond the construction phase, and ii) will emergency shelters be provided and available for employee and public use during the operations phase.

### **Hazardous Materials Management - Fuel Handling Procedures**

**AANDC No. 6** - Proponent to provide clarification as to whether refueling by fuel trucks in the field is a new approach and if it is, provide appropriate procedures and mitigation measures for accidental releases to protect the environment.

### **Mine Closure and Reclamation**

**AANDC No. 7** - The Proponent is requested to provide a preliminary estimate of increased closure costs associated with ERP and justify whether an increase in the security bonding is required for the 2014 Work Plan to reflect the ERP (even though ERP approval may not have been granted yet).

It is thought that most of the above issues can be resolved through the Proponent's responses to technical comments without the need to modify or add new Terms and Conditions to the Approved Project Certificate. AANDC has identified one Term and Condition which could be considered as follows:

**AANDC No. 4** - A new Term and Condition similar to Term and Condition #46 which addresses stockpile runoff impacts to the marine environment, the ultimate receiver of the Milne Port ore stockpile runoff.

Although only one Term and Condition is recommended at this time, it is important to note that the impact analysis in some areas, as identified, is incomplete. Therefore, if the Proponent responses to technical comments do not adequately address these issues, revisions or additions to Terms and Conditions may be recommended in AANDC's final submission to the NIRB.

AANDC's review of socioeconomic aspects concerning Inuit harvesting in the Milne Port area and open water shipping route, local education and training opportunities, livelihood and employment opportunities, and contracting and business opportunities associated with the road haulage option did not identify any outstanding issues requiring a new or revised Term and Condition.