May 5, 2011

Nunavut Impact Review Board
PO Box 1360
Cambridge Bay, NU
X0B 0C0

Attention: **Ryan Barry**
Director, Technical Services

Subject: **Response to NIRB`s April 29, 2011 Letter**
Environmental Review of the Mary River Project

Baffinland Iron Mines Corporation (Baffinland) is pleased to reply to the letter from the Nunavut Impact Review Board (NIRB) dated April 29, 2011. As requested, Baffinland is responding to the following two items - timelines for receipt of the remaining portions of Baffinland' s Information Request (IR) response, along with rationale of how the technical review can proceed despite existing information gaps and deferred IR responses; and suggestions from the Company on how to best proceed with the review given that the DEIS assesses both the railway and road operation, the latter of which is no longer proposed.

We refer the other reviewers to *NIRB Guide 5 – Guide to the NIRB Review Process* which references the multiple steps the environmental assessment process is made up of. These include:

- Project Scoping and Guideline creation
- Issuance of Guidelines for the preparation of a Draft Environmental Impact Statement (DEIS)
- Preparation and submission of the DEIS by the Project Proponent
- NIRB – Guideline Conformity review of DEIS
- Technical review of the DEIS
- Technical Meeting
- Pre-Hearing Conference (PHC)
- Preparation and submission of the Final Environmental Impact Statement (FEIS) by the Project Proponent
- NIRB – FEIS compliance review
- Technical review of the FEIS
- Final Hearing
- NIRB's Determination: Delivery of the Final Hearing Report to the Minister

We believe reviewers should keep the IR stage (which forms part of the technical review of the DEIS) in context of where we are in the process. This progression provides multiple opportunities for engagement between the proponent and reviewers which allows future concerns to be addressed.

Submission of Deferred IR Responses

In our letter to NIRB dated April 7, 2011, Baffinland outlined the process used to evaluate each of the IRs submitted. As a result of this process, 12 IRs required supplemental information which the company was unable to collect by our original April 15, 2011 response date. Table 1 provides our response to these remaining outstanding IRs.

Specific to receipt of the remaining portions of the Company's IR Response, Baffinland intends to provide its outstanding responses, associated technical information, and air quality model inputs on Friday, May 6. We propose to courier a DVD containing the air quality model inputs to Environment Canada in Yellowknife directly (and only to them due to large file size), and send NIRB a DVD with all information. We will also email what files can be emailed to NIRB, and will post all information to an FTP site that can be made quickly accessible to reviewers. We expect reviewers, such as Environment Canada, will receive the requested data within 2-3 days to ensure all data is readily available.

Summary of Project Description Changes

As stated in your letter, Baffinland presented and integrated the Road Haulage Option into much of the DEIS. This was done to ensure an adequate representation of potential effects should we decide to proceed with this option. We have updated and attached the "Key Project Facts" that appeared as Table 3-1.1 in Volume 3, and as Table 1-1.1 in Volume 1 to explain the reduced Project activity as a result of not pursuing with the Road Haulage Option. It should be noted that the removal of the Road Haulage Option has resulted in changes in the frequency, duration, and magnitude of certain project interactions which will decrease the potentially negative residual effects and thus make predictions more conservative in nature. Similarly, the positive effects of some of the socio-economic and economic aspects will also be of lower magnitude as a result of the change.

We have also attached an evaluation of the direction and significance of change in the effects assessment as a result of this change in the project description in Tables 1-12.1 and 1-12.2 (presented also as Tables 1 and 2 in the Executive Summary).

Baffinland has provided the following summary of the main changes that will occur with the removal of the Road Haulage Option from the project as presented in the DEIS.

<u>Milne Port</u>

Milne Port will not be used to ship ore. As such, the ore dock, stockpiles, conveyors, and ore stockpile runoff stormwater ponds are no longer proposed. The size of the camp at Milne Inlet will be reduced during construction and during the operation phase. Milne Port will be used only periodically during the open water season to receive oversized equipment and materials using the freight dock.

Milne Inlet Tote Road

The Milne Inlet Tote Road will no longer be used to haul ore. As such, the scale of the proposed upgrades will be reduced to meet the requirements of hauling materials, equipment and fuel during the construction phase. The 5 bridges are still proposed, sharp corners and steep grades will be repaired, and the roadbed will be improved. During construction, the amount of quarrying/ material for road preparation will be reduced as will the scale of road maintenance during the operations phase.

Mine Site

The DEIS presented the ore handling facilities for the railway and road operations separately, with separate means to remove ore from the pit, crushing and stockpiling facilities, truck or rail car loading facilities, and stormwater management ponds. In the absence of the road haulage operation, the railway stockpiles and stormwater management pond and railway loading and unloading facilities will remain. The road operation crushing facilities, stockpiles, stormwater pond, and truck loading facilities will be removed. One of the two tank farms (the one closest to the road operation facilities and not associated with the railway) will be removed. The overall camp capacities will also be reduced as shown in the revised Table 3-1.1 (key project facts). The footprint of the open pit and waste rock stockpiles remain unchanged.

Railway and Steensby Port

These project sites remain unchanged with the removal of the road operation from the Project.

Shipping

The volume of open water shipping to Milne Port will be reduced considerably during the construction phase, and nearly entirely reduced during the operation phase, since the shipping of ore from Milne Port is no longer proposed.

Proceeding with the Technical Review

With the exception of providing a synopsis on the recently acquired caribou collaring data set, the remaining IRs will be provided to NIRB by Friday, May 6, 2011. Based on our preliminary review these data will not alter the caribou effects assessment as referenced in the DEIS.

During the preparation of the DEIS, Baffinland understood that the road haulage option, while referenced in the DEIS, was not considered part of the Project scope, as stated in the letter from NIRB dated October 19, 2010. The supplemental information provided in the DEIS assessing the road haulage activities does not detract from reviewers being able to evaluate the potential environmental and socio-economic environmental effects of the Project reflected in the Guidelines for the Preparation of an Environmental Impact Statement for Baffinland Iron Mines Corporation's Mary River Project dated November 16, 2009.

The clarification of the Project scope coupled with the submission and a response to the IRs addresses the matters in your above- noted correspondence.

Therefore we look forward to proceeding with the next phase of the NIRB environmental assessment process.

Should you have any further queries or comments, please do not hesitate to contact the undersigned.

Sincerely

Matthew Pickard
Director, Environment, Health, Safety and Sustainability
Baffinland Iron Mines Corporation

Table 1 Outstanding IRs

IR Number	Description of IR	Status and Comments
EC-2-2	Environment Canada requested an assessment of the Project's effects on bird species at risk	To be provided by May 06
EC-23-2 EC-24-1	Environment Canada requested additional water quality data from weekly site monitoring that was not included in the consultant's baseline report	The baseline water quality data provided in the DEIS is sufficient for establishing baseline conditions. However, this information will be provided on May 6, 2011.
EC-44-1	Environment Canada requested the CALMET and CALPUFF input files, presumably so that Environment Canada can run the air quality models themselves	The input files for the air quality modeling are not required to review the air quality effects assessment; only to verify that the consultant carried out the work appropriately. This information will be provided on May 6, 2011.
EC-46-1 EC-46-2	Environment Canada requested a table presenting maximum concentrations shown in the air quality contour plots within the DEIS	To be provided by May 06.
EC-46-5	Environment Canada requested an analysis of potential ship emissions from ships transporting ore and supplies to impact air quality along the shoreline	To be provided by May 06.
EC-8-1	Requesting calculated noise zones of influence of aircraft at each airstrip	To be provided by May 06.
GN-17	Requesting information on snowfall measurement (methods, accuracy) and requesting all collected meteorological data	To be provided by May 06.
QIA-22-3 QIA-23-3	QIA requested that the proponent utilize caribou collar data the proponent received from the GN on April 7.	Baffinland received additional caribou collar data from the GN on April 7, 2011 well after the DEIS was submitted. Baffinland will prepare a brief summary of this additional collar data by May 31, 2011.
GN-6	GN noted that the potential for Project lighting to affect wildlife was not assessed, and Baffinland committed previously to carrying out a literature review and making contact with northern mines, to evaluate if this is an issue or effect that needs to be assessed.	To be provided by May 06.

Table 3-1.1 Key Project Facts (Revised is underlined; DEIS numbers presented in brackets)

Potential Development Area (ha)	Milne Port	224 ha				
	Tote Road	865 ha				
	Mine Site	2,739 ha				
	Railway	1,308 ha				
	Steensby Port	2,419 ha				
Number of Identified Potential Quarries/ Aggregate Site	Milne Port	One borrow area and one rock quarry				
	Tote Road	Up to 20 rock quarries (Q1 to Q20) and 16 borrow areas (P1 to P16)				
	Mine Site	One existing borrow area (Borrow Area #3), one existing rock quarry (Rock Quarry #2) and one proposed quarry (QMR2)				
	Railway	63 rock quarries				
	Steensby Port	1 rock quarry (QS2), plus one large rock cut for airstrip				
Total quantities Aggregate (tonnes)		**Quarried Rock**		**Borrowed Sand and Gravel**		
	Milne Port	<u>800,000</u> (1,200,000)		<u>80,000</u> (100,000)		
	Tote Road	<u>1,800,000</u> (2,700,000)		<u>35,000</u> (50,000)		
	Mine Site	<u>2,000,000</u> (2,700,000)		100,000		
	Railway	27,000,000		--		
	Steensby Port	1,300,000		10,000		
Traffic		**Construction Phase**				**Operation Phase**
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5 - 25**
Air Traffic (Max. size aircraft / Estimated flights)	Milne Port (Dash-8 / ATR)	<u>No regularly scheduled flight - one each week or less</u> (DEIS noted daily to weekly during construction)				
	Mine Site (Boeing 737)	1 daily	1 daily	1 daily	1 daily	3x / week
	Steensby Port (Boeing 737)	1 daily	1 daily	1 daily	1 daily	Emergency/alternate landings only
Road Traffic (Avg. trucks per day)	Tote Road	30	30	<u>30</u> (120)	<u>30</u> (120)	<u>No regular traffic</u> (110)
Railway traffic	Railway	N/A				4 round trips/day
Workforce (numbers)	Exploration	150	150	150	150	150
	Construction On-Site	<u>1,800</u> (2,140)	<u>2,400</u> (2,844)	2,811	1,457	--
	Construction Payroll	<u>3,600</u> (4,280)	<u>4,800</u> (5,688)	5,622	2,914	--
	Operation 3 Mt/a	0	<u>0</u> (150)	<u>0</u> (311)	<u>0</u> (311)	<u>0</u> (311)
	Operation 18 Mt/a	0	0	0	0	<u>715</u> (746)

Table 3-1.1 Key Project Facts (Cont'd)

Camps, Water Supply and Wastewater		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Camp Capacity (peak # of people)	Milne Port	100 (165)	100 (165)	100 (165)	100 (165)	0 to 30 (30 to 105)
	Tote Road	50	50	Camp removed		
	Tote Road emergency shelters	14	14	14	14	14
	Mine Site	1,000 (1,200)	1,000 (1,200)	1,000 (1,200)	1,000 (1,200)	275 (475)
	Mid-Rail Ravn River Tunnels S. Cockburn	200 200 0 0	200 200 100 400	200 200 100 400	200→0 200→0 0 400→0	Camps removed
	Steensby Port	600	600	600	600	175
Water Demand m^3/day (expected)	Milne Port and Tote Road	50 (125)	50 (125)	50 (125)	50 (125)	25; seasonal
	Mine Site	530	530	530	530	390
	Railway	440	440	440	440	0
	Steensby Port	415	415	415	415	175
Treated (Sewage) Effluent (m^3/day)	Milne Port	45 (18)	45 (63)	30 (63)	30 (63)	0 (6)
	Tote Road Camp	Trucking 15 m^3/day	Trucking 15 m^3/day	Camp decommissioned – refuge stations only		
	Mine Site	420	420	420	420	60
	Mid-Rail	60	60	60	60	Camps removed
	Ravn River	Trucked to the Mine Site WWTP				Camp removed
	Cockburn Lake	Trucked to Steensby Port WWTP				Camp removed
	Cockburn South	Trucked to Steensby Port WWTP				Camp removed
	Steensby Port	360	360	360	360	55
Waste						
Waste to Landfill m^3/yr	Mine Landfill	2,750	2,750	2,750	2,750	900
	Steensby Landfill	1,400	1,400	1,400	1,400	300
Waste to Incinerator Tonnes/yr	Milne Port	50 (200)	50 (200)	50 (200)	50 (200)	50 (170)
	Mine Site	1,700	1,700	1,700	1,700	600
	Steensby Port	1,550	1,550	1,550	1,550	230

Table 3-1.1 Key Project Facts (Cont'd)

Shipping of Freight and Fuel		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Shipping Milne Port	Freight vessels	10	6	3	3	Only oversized equipment delivered (3)
	Freight (tonnes)	165,000	95,000	43,000	46,000	See above (46,000)
	Fuel tankers	2	3 (3-6)	3 (3-6)	3 (3-6)	0 (3-6)
	Fuel delivery	20 ML	30 (60) ML	30 (60) ML	30 (60) ML	0 (60 ML)
Shipping Steensby Port	Freight vessels	13	9	7	4	3
	Freight (tonnes)	206,000	150,000	107,000	80,000	60,000
	Fuel tankers	2	4	4	3	3-6
	Fuel delivery	20 ML	35 ML	35 ML	120 ML	160 ML
Fuel Storage						
	Milne Port	Bladder tanks will be decommissioned; and a temporary 20 ML capacity fuel farm of steel tanks will be constructed for the 4 years of construction				Minimal bulk fuel storage (contingency only)
		(Multiple Iso-containers)	(Permanent tank farm operational 2 steel tanks at 30 ML capacity; total storage of 60 ML)			
	Tote Road	Multiple 20,000 L Iso-containers positions as required		none		
	Mine Site	Existing fuel bladders	2 steel tanks at 5.2 ML capacity; total storage of 10.4 ML (3 steel tanks at 5.2 ML capacity; total storage of 15.6 ML)			
	Railway	Multiple 20,000 L Iso-containers positions as required				none
	Steensby Port	Multiple Iso-containers	Permanent tank farm operational Diesel = 4 steel tank at 40 ML ; Total storage of 160 ML Diesel = 1 steel tank at 7.5 ML (island tank)			
Explosives						
Explosives	Milne Port	Magazine				
	Tote Road	Mobile Mixing Unit and magazines				
	Mine Site	Magazine	ANFO Mixing Plant			
	Railway	Mobile Mixing Unit and magazines				
	Steensby Port	Magazine	ANFO Mixing Plant			

Table 3-1.1 Key Project Facts (Cont'd)

Production		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Ore Production (million tonnes per annum – Mt/a)	Trucking		0 (0.5)	0 (3)	0 (3)	0 (3)
	Railway	--	--	--	--	18
Total Waste Rock & Overburden	Approximate tonnage – Mt/a	0 (2)	0 (2)	0 (6)	22	30
Ore Stockpiles (tonnes)	Milne Port		0 (3,000,000)	0 (3,000,000)	0 (3,000,000)	0 (3,000,000)
	Mine ROM		0 (400,000)	0 (400,000)	400,000	400,000
	Mine – Road Operation	--	0 (50,000)	0 (250,000)	0 (500,000)	0 (500,000)
	Mine - Railway	--	--	--	--	1,400,000
	Steensby Port - 1.4 Mt fine ore stockpile capacity					900,000
	Steensby Port - 3.2 Mt coarse ore stockpile capacity					2,300,000
Ore Shipments (ships per year)	Milne Port Handymax (50,000 DWT) or Panamax (75,000 DWT) vessels		0 (Less than 30)	0 (50 to 60)	0 (50 to 60)	0 (50 to 60)
	Steensby Port Ten dedicated icebreaker ore carriers (160,000 to 190 ,000 DWT)					102
Power Supply						
Power Supply Milne Port	Annual consumption	Mobile genset for camp only (50, 000 MWh)				
	Running Load	Mobile genset for camp only (9.8 MW)				
	Installed Power	Mobile genset for camp only (15.8 MW)				
	Number / Size of unit	Mobile genset for camp only (5 units at 5.6 MW each; 2 standby units)				
Tote Road Upgrade	Stand-alone generators as required for quarries and temporary mid-way camp					
Power Supply Mine Site	Annual consumption	114,000 MWh				
	Running Load	9.8 MW				
	Installed Power	15.8 MW				
	Number / Size of unit	5 units at 5.6 MW each (2 standby units)				
Railway Construction	Temporary generators installed at camps and quarries					
Power Supply Steensby Port	Annual consumption	120,000 MWh				
	Running Load	11 MW				
	Installed Power	22 MW				
	Number / Size of unit	6 units at 5.6 MW each (2 standby units)				

Preamble - The following Table 1-12.2 has been revised to show changes to the effects assessment now that the haulage of ore via the Milne Inlet Tote Road to Milne Port will not be operated as part of the Project. A column on the right hand side of the table has been added to indicate any change to the effects assessment as a result of no road haulage operations. Noteworthy changes to the table include a reduction in employment at earlier stages of the Project as a result of not trucking ore to Milne Port. Effects on employment as a result of the Project remain as Significant and Positive.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Population demographics	Demographic stability	• In-migration of a small number of workers from south will have effect on the demographic make-up of communities • Migration of non-Inuit Project employees into the North Baffin LSA • Migration of non-Inuit into North Baffin for indirect jobs • Inter-community Inuit migration • Out-migration from the North Baffin	• Designation of North Baffin communities as "Point of Hire" (Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet) • Iqaluit and Ottawa are also designated "Point of Hire" • Free transportation from "Point of Hire" to Mine Site	• In-migration of a small number of workers from south or other Nunavut communities will have effect on the demographic make-up of communities	Not significant	Not significant. Effects likely to be reduced with reduced employment.
Education and training	Life skills	• Improved life skills amongst many LSA residents	• Job readiness training • Supportive work environment • "Second chance" hiring policy • "No drug, no alcohol" policy	• Improved life skills amongst many LSA residents	Significant - positive	Significant – positive. Negligible change to effects assessment.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
	Schooling	• Incentives related to school attendance and success	• Minimum age of 18 yrs for Project employment • Career planning • Priority hiring for Inuit	• Incentives related to school attendance and success	Significant - positive	Significant – positive. Negligible change to effects assessment.
	Skills	• Opportunities to gain skills	• Upgrading opportunities • Summer experience • Career counselling • Training MOU	• Opportunities to gain skills	Significant - positive	Significant – positive. Negligible change to effects assessment.
Human health and well-being	Substance abuse	• Transport of substances through Project sites • Affordability of substances • Attitudes towards substances and addictions	• "No drug – no alcohol" policy • Baggage search • Focus on health and safety • Employee assistance • Addiction counselling	• Negative - transportation of substances through the site, combined with increased ability to afford substances will have effects on substance abuse • Positive – focus on health and safety, employee assistance and counselling will increase awareness of employees	Not significant	Not significant – positive. Negligible change to effects assessment.
	Well-being of children	• Changes in parenting • Increased household income and food security	• Orientation and training related to fly-in/fly-out adaptation • Fund to support family services • Money management training • Orientation and training related to health and well-being	• Improved well-being of children	Significant - positive	Significant – positive. Negligible change to effects assessment.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
	Community and social stability	• Absence from community during work rotation	• Orientation and training related to fly-in/fly-out adaptation • Short rotation (two week in / two week out)	• Absence of residents while they are working at Project will have effect on community social stability	Not significant	Not significant. Negligible change to effects assessment.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Community infrastructure and public service	Competition for skilled workers	• Competition for skilled workers • Labour force capacity	• Early start for skills training • On-going training • Employment experience	• Competition for skilled workers may lead to temporary effects on municipal services.	Not significant	Not significant. Negligible change to effects assessment.
Cultural resources	Cultural resources	• Disturbance or removal of archaeological sites • Unauthorized removal of artefacts	• Pre-development archaeological surveys, mitigation by SDR prior to construction, implementation of a chance finds procedure • Training, flagging and exclusion zones, management plans, implementation of chance finds procedure	• Unmitigated archaeological sites subject to accidental or deliberate partial or complete destruction • Increased access to interior could result in chance finds • Increased traffic at Steensby Inlet could affect archaeological resources	Not significant	Not significant. Negligible change to effects assessment.
Resources and land use	Inuit harvesting of wildlife	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	• Prohibition of harvesting by employees	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	Not significant	Not significant. Reduced potential to affect public safety and marine mammal harvesting in Pond Inlet as ore shipping no longer proposed.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Resources and land use	Travel and camps	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	• Road Management Plan • Mine Closure Plan • Safety Plan • IIBA Agreement with QIA • Designated railway crossing locations	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	Not significant	

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Governance and leadership	Governance and leadership	• IIBA Agreement with QIA • Development of leadership skills	• Participation in initiatives to identify indicators of relevance to regional monitoring programs, share data generated by activities related to the Project, and discuss the interpretation of this data with others involved in these initiatives • Fit well with the strategic priorities identified for both the RSA	• IIBA agreement with QIA • Development of leadership skills	Significant - positive	Significant – positive. Negligible change to effects assessment.
Livelihood and Employment	Job creation	• Creation of jobs in the LSA	• LSA points of hire • Recruitment strategy • Inuit hiring policy • Management commitment	• Creation of jobs in the LSA	Significant - positive	Fewer jobs will be created but the available jobs still expected to be greater than supply. Remains Significant – positive.
	Local employment	• Employment of LSA residents		• Employment of LSA residents	Significant - positive	
	Career path	• Job progression and career advancement – new career paths		• Job progression and career advancement – new career paths	Significant - positive	
Economic Development and Self-reliance	Land	• Increased land use	• Lease agreement	• Increased land use	Not significant	Not significant. Negligible change to effects assessment.
	People	• Increased local recruitment • Increased education and awareness • Development of community support funds	• Inuit recruitment strategy • Education and training program • Community support fund	• Increased local recruitment • Increased education and awareness • Development of community support funds	Significant - positive	Significant – positive. Negligible change to effects assessment.

HUMAN ENVIRONMENT						
Valued Socio-Economic Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Economic development and self-reliance	Economy	• Improved community economy	• Inuit contracting strategy • Capacity building fund • Cooperation with QIA to develop and support local entrepreneurs/businesses	• Improved community economy	Significant - positive	Significant – positive. Negligible change to effects assessment.
		• Improved territorial economy	• Direct and indirect job creation • Taxes and royalties	• Improved territorial economy	Significant - positive	Reduction in jobs and taxes paid, but remains Significant – positive.
Contracting and business opportunities	Marketplace	• Expanded market -business services to Project • Expanded market -consumer goods and services	• Inuit contracting strategy • Cooperation with QIA to build Inuit capacity • Establish a fund to support and build capacity	• Expanded market — business services to Project • Expanded market — consumer goods and services	Uncertain - positive	Negligible change to effects assessment. Remains positive and uncertain in terms of significance.
	Entrepreneurial capacity	• Increased entrepreneurial capacity	• Management assistance to Inuit designated firms • Opportunities for local entrepreneurs to work with Project	• Increased entrepreneurial capacity • Increased entrepreneurial capacity	Uncertain - positive	Negligible change to effects assessment. Remains positive and uncertain in terms of significance.
Benefits, taxes and royalties	Territorial own-source revenues	• Increased taxes and revenues • Payments of payroll and corporate taxes to territorial government	• None	• Increased taxes and revenues • Payments of payroll and corporate taxes to territorial government	Significant - positive	Reduction in jobs and taxes paid, but remains Significant – positive.

Preamble – The following Table 1-12.1 has been revised to show changes to the effects assessment now that the haulage of ore via the Milne Inlet Tote Road will not be operated as part of the Project. A column to the right hand side of the table has been added to indicate any change to the effects assessment due to no road haulage operation. It should be noted that predicted potential effects to the biophysical environment remain as Not Significant with reduced negative residual effects.

ATMOSPHERIC ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Climate change	Greenhouse Gases (GHG)	• Increased GHG emissions • Climate change	• Arctic grade diesel fuel • Rail transportation of ore	• Increased GHG emissions	Not significant	Not significant. Residual negative effect will be reduced
Air quality	Air quality	• Increased concentrations of: ○ Total Suspended Particulate (TSP), Inhalable Particulate Matter (PM10), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: ○ Dust, metals, potential acid input (PAI).	• Apply best management practices for limiting air emissions • Use of low sulphur arctic grade diesel fuel • Limit speed on roads • Ore crushing facilities are enclosed, vented and equipment with dust collection equipment • Apply dust suppressant as required in high traffic areas and stockpiles • Procurement policy on emissions from equipment (incinerator, generators, vehicles) • Waste segregation (incineration) • Where possible, use of granular material for road construction • Regular maintenance of equipment and vehicles	• Increased concentrations of: ○ Total Suspended Particulate (TSP), Inhalable Particulate Matter (PM10), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: ○ Dust, metals, potential acid input (PAI).	Not significant	Not significant. Residual negative effects will be reduced at: • Milne Port • Tote Road • Mine Site
Noise and vibration	Noise and vibration levels	• Sensory impact on wildlife	• Procurement policy for noise for equipment and vehicles • Use of mufflers – regular maintenance of engines and equipment	• Sensory impact on wildlife	Not significant	Not significant. Residual negative effects will be reduced at: • Milne Port • Tote Road • Mine Site

TERRESTRIAL ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Landforms, soil and permafrost	Sensitive landforms	• Soil contamination • Soil structure alteration • Soil destabilization and erosion • Thaw weakening and settlement • Creep settlement	• Siting of facilities and alignment of roads and railway • Design foundations suitable for site conditions • Design stream crossing structures for extreme flood event • Ensure adequate drainage and prevent pooling of water	• No residual effect (disturbance of sensitive landforms) after mitigation	Not significant	Not significant. Residual negative effects will be reduced at: • Tote Road (reduced borrow extraction)
Vegetation	Vegetation	• Loss of vegetation abundance and diversity	• Limit physical footprint of facilities • Limit areas of access for vehicles • Progressive reclamation / closure	• Loss of vegetation limited to Project Development Areas (PDA)	Not significant	Not significant. Residual negative effects will be reduced at: • Tote Road (reduced borrow extraction)
Birds	Peregrine falcon Snow geese Eider Red-throated loon	• Destruction of nests • Habitat loss • Mortality • Influences on health • Sensory disturbance	• Employee awareness / environmental induction program • Minimize footprint of facilities • Conduct nest search prior to start of activities • No hunting policy • Avoidance of areas of large concentrations of foraging or moulting birds • Avoidance of known nests or nesting areas • To the extent possible, enforce closure of a 500 m radius of the nest until fledging occurs • Nest-specific management plans • To the extent possible, develop appropriate aircraft approach and departure flight paths • Refer to mitigation measures outlined in Appendix 10D-11 Terrestrial Environment Management Plan	• Habitat loss • Mortality • Influences on health	Not significant	Not significant. Residual negative effects will be reduced in a minor way due to reduced development at Milne Port and along the Milne Inlet Tote Road.

TERRESTRIAL ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Terrestrial wildlife and habitat	Caribou	• Habitat loss • Restriction of movement • Mortality	• Use of dust suppressant on Tote Road during growing season • Speed limits for trucks and trains which will provide more time for caribou to get off the road or rail, and will increase the chance of a truck being able to stop before a collision with a caribou. • The train is expected to operate 300 days per year, so seasonal stoppages are possible if large groups of migratory caribou return to the area. • Baffinland has a no hunting policy for all personnel while working on site. • Snow management that will grade snow banks along railway and roadway so that caribou are able to easily cross the transportation corridor without being blocked by steep snow banks. • The railway embankment will be constructed of finer fill material at the five identified trails for easier caribou movement across the railway embankment. The finer fill will replicate natural trail conditions. • Physical barriers from trains will be reduced by limiting train traffic to four passes per day.	• Habitat loss • Restriction of movement • Mortality	Not significant	Not significant. Residual negative effects will be reduced at: • Tote Road (reduced borrow extraction)
FRESHWATER AQUATIC ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Water quantity	Water quantity	• Reductions in water quantity due to water withdrawals • Increases in water quantity due to effluent discharges • Redistribution of water flows in the natural environment due to diversions	• Permit required for water withdrawal • Measurement of withdrawal quantities as per Water License • Implement measures to reduce water consumption	• Redistribution of water flows in the natural environment due project use	Not significant	Not significant. Minor reduction in water withdrawals (already insubstantial).

FRESHWATER AQUATIC ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Surface water and sediment quality	Water and sediment quality	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	Not significant	Not significant. Minor reduction in the potential for sediment releases with less roadbed work along the Milne Inlet Tote Road.
			• Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants • All hazardous materials stored on impermeable surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable)			

FRESHWATER AQUATIC ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
			• Smaller tank – double wall iso-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan			
Freshwater fish, fish habitat, and other aquatic organisms	Arctic char	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine • Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants • All hazardous materials stored on impermeable	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	Not significant	Not significant. Negligible change to effects assessment.

FRESHWATER AQUATIC ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
			surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable) • Smaller tank – double wall iso-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan			

MARINE ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Sea ice	Fast ice	• Disruption of shore fast ice in Steensby Inlet • Potential change to timing of shore fast ice break up and formation	• Minimize width of shipping lane through fast ice to the extent possible	• Disruption of shore fast ice along shipping route in Steensby Inlet	Not significant	Not significant (no change)
Marine water and sediment quality	Marine water and sediment quality	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and malfunction (e.g. oil spill)	• Site runoff water management as per management plan • Hazardous substances contained within impermeable areas as per Waste Management Plan • Sewage treatment and wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Emergency and Spill Response Plan, Milne Port OPEP and Steensby Port OPEP; SOPEP for all ships • Ship on-board waste management - no discharge at sea	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and Malfunction	Not significant	Not significant. Reduced potential effects on water and sediment quality at Milne Port as no ore dock will be constructed, and ore will not be stockpiled and loaded onto ships.

MARINE ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Marine habitat and biota	Marine habitat	• Disruption of marine coastal habitat	• Minimize footprint of marine structures	• Loss marine coastal habitat for ports	Not significant	Not significant. There will be a reduction in the coastal habitat lost, as the ore dock at Milne Port will not be constructed.
	Arctic char	• Effects on Arctic char health, habitat quality, and mortality	• Minimize footprint of marine structures • Compensation plan for HADD • Appropriate design of marine structures	• Effects on Arctic char health and habitat	Not significant	Not significant. There will be a reduction in the coastal habitat lost, as the ore dock at Milne Port will not be constructed.

MARINE ENVIRONMENT						
Valued Ecosystem Component	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**	**Change to Effects Assessment (no road operation)**
Marine mammals	Ringed seals	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by airborne and/or underwater noise from construction, shipping, and aircraft • Hearing impairment and/or damage caused by noise from construction activities • Masking of environmental sounds caused by vessel and construction noise • Mortality from collisions with vessels and blasting during construction	• Dock structures were designed to minimize the footprints in the marine environment • Schedule dock construction activity during period of low mammal occurrence – April to June (blasting, pile driving, dredging) • Use proven mitigation measures to mitigate noise during construction (DFO's guideline of 100 kPa overpressure limit, bubble curtain system for blasting) • Discourage marine mammals from the blast area with potential use of acoustic deterrent device • Vessels will maintain a constant course and speed whenever possible - reduce vessel speed in Milne Inlet • Vessels will minimize idling of engines when docked at Milne and Steensby ports • Aircraft will be operated at a minimum altitude of 450 m over marine areas, when weather conditions allow • Aircraft will be prohibited from flying low over marine mammals for sightseeing or photography • Primary use of Mary River airstrip during the Operation Phase • Educate workers about bear safety • Work areas kept clean of food scraps, garbage, and toxic materials • Use of bear monitor at camp sites • Use of bear deterrent devices	• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality from icebreaking • Masking caused by shipping noise	Not significant	Not significant. Reduction in effects to ringed seals at Milne Port due to reduced infrastructure and activities.
	Walruses				Not significant	Not significant. No change to effects assessment.
	Beluga whales				Not significant	Not significant. Reduction in effects to beluga at Milne Port due to reduced infrastructure and activities.
	Narwhals				Not significant	Not significant. Reduction in effects to narwhals at Milne Port due to reduced infrastructure and activities.
	Bowhead whales				Not significant	Not significant. Reduction in effects to bowhead whales at Milne Port due to reduced infrastructure and activities.
	Polar bears	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft • Mortality from human-bear interactions		• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality if a bear is killed in defence of human life	Not significant	Not significant. Reduced potential for human-bear interactions as Milne Port will not be staffed during most of the year during the operation phase.