Baffinland

October 12, 2012

Mr. Damien Côté
Executive Director
Nunavut Water Board
P.O Box 119
Gjoa Haven, NU
X0B 1J0

Re: Submission of Baffinland Response to Technical Review Comments on the Type A Water Licence Application

Dear Mr. Côté,

On June 22nd, 2012, various interveners submitted technical comments in response to the Type A Water Licence application put forth by Baffinland for the Mary River Project on the 14th of February, 2012.

Appended to this letter are Baffinland's responses to technical comments in table format. Should you have any questions or concerns, please contact myself, or Oliver Curran.

We look forward to speaking to you next at the October 18th Preliminary Technical Meeting via teleconference.

Sincerely,

Erik Madsen
Vice President, Sustainable Development, Health, Safety and Environment

Cc
Phyllis Beaulieu (NWB)
Sean Joseph (NWB)
Ryan Barry (NIRB)

Attachment: Baffinland Response to Technical Review Comments – NWB Type A Water Licence October 12th 2012.pdf

Technical Review Comments - NWB Type A Water License June 22nd, 2012				
Aboriginal Affairs and Northern Development Canada				
Number	**Issue**	**Comment/Recommendation**	**Reference**	**Baffinland Response (October 12th, 2012)**
Water Management				
1	The proponent's commitment to incorporate as-built site drainage plans into the Surface Water and Aquatic Ecosystems Management Plan could not be located.	AANDC requests that the proponent include, in the next revision of the Surface Water and Aquatic Ecosystems Management Plan, a statement that as-built drawings will be produced and incorporated into the Plan following construction of any facility.	FEIS Volume 10, Section 7.4.2.2; AANDC FEIS Information Request No. 6; Commitment No. 222	Noted.
2	Project site water balance schematics do not address existing conditions.	AANDC recommends that the proponent provide a more complete set of water balance schematics representative of existing conditions in the future update to the Surface Water and Aquatic Ecosystems Management Plan.	FEIS Volume 3, Appendix 3B, Attachment 5, Surface Water and Aquatic Ecosystems Management Plan, Figures 1 through 7; AANDC DEIS Technical Review Comment No. 22; AANDC FEIS Information Request No. 8; Commitment No. 235.	Noted. BIM is continuing with annual flow measurements to improve hydrologic data and the existing site water balances will be updated when Baffinland has better information available.
3	Confidence in the future post-closure pit lake quality estimates.	AANDC requests that the proponent develop additional long term monitoring and mitigation measures to address the pit water quality issue.	FEIS Volume 3, Appendix 3B, Attachment 5, Waste Rock Management Plan, Annex 5, Table 2; FEIS Volume 7, Section 3.4.2, pages 153-156; DEIS Technical Review Comments EC No. 5.5 and AANDC No. 68; AANDC FEIS Information Request No. 9; Commitment No. 244.	Baffinland has presented its on-going waste rock characterisation program in the FEIS (Waste Rock Management Plan).
4	Clarification required on time of filling assumed for pit lake water quality modeling.	AANDC requests that the proponent clarify the pit water quality modeling assumptions and pit fill time projections for the 6, 10, 15 and 21 year modeling scenarios and provide additional scenarios as required to address the range of potential future water quality outcomes.	FEIS Volume 3, Appendix 3B, Attachment 5, Waste Rock Management Plan, Annex 3 – Waste Rock Geological and Geochemical Characterization Program, Section 5.3 - Existing Status of Pit Drainage Water Quality Model, page 16; DEIS Volume 1, Section 13, paragraph 3, page 122; FEIS Volume 1, Section 13, paragraph 3, page 141.	The pit lake water quality predictions will be updated at the completion of the next phase of the waste rock characterisation program (2012 - 2014).
5	Clarification required on how effluent is to be discharged following the natural hydrograph.	AANDC requests that the proponent justify the appropriateness of modeling effluent releases to follow the natural hydrograph and describe the measures that will be incorporated into the management plans to put this into practice.	FEIS Volume 7, Impact Statements SWSQ-10 (page 143) and SWSQ-11 (page 147); FEIS Volume 3, Appendix 3B, Attachment 5, Waste Rock Management Plan; FEIS Volume 3, Appendix 3B, Attachment 5, Fresh Water Supply, Sewage and Wastewater Management Plan.	The runoff from the sedimentation pond with be in compliance with MMER discharge criteria and future Type A water licence criteria.
6	Discussion of the consequences of stratification in the pit lake and associated contingency plans.	The proponent is requested to provide additional information on deep lakes in northern climates to support their supposition that lake stratification is not a concern for the pit lake in the future.	Table 1B-3: Concordance with EIS Guidelines (NWB), Item No. 13; March 9, 2012 "Errata and Clarification Document for the Application for the Type A Water Licence for the Mary River Project" - Attachment 4: Complementary Information.	BIM requests clarification from AANDC as to the relevance of their concern.
Fresh Water Supply				
7	Baseline water quality data for fresh water supply sources is incomplete.	AANDC recommends that baseline water quality data be provided to the NWB for the unnamed lake north of the Ravn River as well as Km 32 Lake and ST347 Lake.	FEIS Volume 3, Appendix 3B, Attachment 3, Potable Water Treatment Plant Design Basis, Section 4.1	If information is required, BIM will provide water quality analysis for each lake.
Vegetation				
8	Clarification of re-vegetation monitoring and commitment to active revegetation trials.	AANDC recommends that the proponent revise the EMP and Preliminary Mine Closure and Reclamation Plan to include the revegetation trials described in their response to AANDC FEIS Information Request No. 10. Furthermore, the results of these studies should be provided in Annual Reports submitted to the NWB.	FEIS Vol. 6, Section 3.2; FEIS Vol. 3, Appendix 3B, Attachment 10 (Preliminary Mine Closure & Reclamation Plan), Section 5.0; FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 3.1, Tables 3-1 and 3-2; AANDC DEIS Technical Review Comment No. 59; DEIS Technical Review Comment No.'s GN R41, GN R43 and GN R47; AANDC FEIS Information Request No. 10; Commitment No.'s 179 and 206.	Noted. These Plans will be updated to include this information and the results of the studies will be presented in Annual Reports.
ARD/ML Management				
9	Test results for the NP-depleted humidity cells have not been reported.	AANDC requests the proponent incorporate the test results, when available, for the NP-depleted humidity cells into their understanding of site ARD and modify their waste rock management and other treatment plans accordingly.	FEIS Vol.6, Appendix 6B-1, Section 3.2.2.	These results will be accounted for when available.
Waste Management				

10	No quality control or assurance is provided for open burning proposed for the Mary River Project.	AANDC recommends the proponent submit a QA/QC plan for open burning permitted under the water licence, including provisions to document and report on the type and quantity of material being burnt and to monitor and report on surface water and sediment quality of potentially affected water bodies.	FEIS Volume 3, Appendix 3B, Attachment 3, Waste Management Design, Section 3.1.2; FEIS Volume 3, Appendix 3B, Attachment 5, Environmental Protection Plan, Section 2.14.	Noted. Prior to the commencement of any open burning Baffinland will incorporate into the Waste Management Plan a section that details open burning QA/QC provisions including requirements to document and report on the type and quantity of material being burnt. Surface water and sediment quality of potentially affected water bodies will be monitored as outlined by the Surface Water and Aquatic Ecosystems Management Plan.
11	Incineration Management Plan does not include contingencies for potential impacts of waste from ships and floating barge camps.	AANDC recommends that a complete waste management plan for ship wastes, including an incineration management plan, be provided to the NWB. All incineration associated with the Mary River Iron Ore Project (including floating barge camps and ships) should be conducted in accordance with Environment Canada's Technical Document for Batch Waste Incineration, and a QC/QA program should be developed to ensure that incineration will not impact surface water quality.	FEIS Volume 3, Appendix 3B, Attachment 5, Waste Management Plan for Construction, Operation, and Closure; AANDC FEIS Information Request No. 12; NIRB Guidelines 9.4.7 and 6.5.8; Commitment No. 338.	All waste generated onboard ships will be disposed of onboard according to the individual ship Waste Management Plan and current regulations under the Canada Shipping Act. No ship generated waste will be disposed of onshore.
12	Plans to decommission existing waste storage ponds and stabilization ponds were not found.	AANDC recommends the proponent clarify plans to decommission the waste storage ponds and stabilization ponds and requests that a pond reclamation plan be submitted to the NWB prior to decommissioning.	FEIS Volume 3, Appendix 3B, Attachment 5, Fresh Water, Sewage, and Wastewater Management Plan, Sections 5.4.1 and 5.4.6; FEIS Volume 3, Appendix 3B, Attachment 5, Preliminary Mine Closure and Reclamation Plan, Section 8.9.	Please refer to BIM's existing A & R plan as part of the existing Type B Water Licence (updated March 2012).
Hazardous Materials and Waste Management				
13	Lining and berming of the fuel drum storage areas at the Milne Inlet Tote Road refuge stations.	AANDC recommends the proponent ensure that appropriate secondary containment (berms and liners) be established at the Milne Inlet Tote Road km 33 and km 68 refuge station fuel storage areas.	FEIS Volume 3, Appendix 3B, Attachment 5, Surface Water and Aquatic Ecosystems Management Plan, Table 6.1, page 17; DEIS Volume 10, Appendix 10D-2 (Surface Water and Aquatic Ecosystems Management Plan), Section 5.2, page 36; NIRB Guideline 9.4.9.	Noted. All fuel will be stored in secondary containment.
14	References to the National Fire Code should be revised to the most current version available.	The proponent is requested to reference the most current version of the National Fire Code in their management plans when these plans are updated in the future.	FEIS Volume 3, Appendix 3B, Attachment 5, Emergency Response and Spill Contingency Plan, Section 1.3, page 7; NIRB Guideline 9.4.2.	Noted. Most current version of the National Fire Code will be captured in the next plan revision.
15	With the exception of fuel and explosives, the Hazardous Materials and Hazardous Waste Management Plan provides limited information on the management of the other hazardous materials used at the Project.	The proponent is requested to submit a revised Hazardous Materials and Hazardous Waste Management Plan that addresses the following points: 1. A discussion of other hazardous materials (in addition to fuel and explosives) including but not limited to chemicals listed as hazardous materials in the Emergency Response and Spills Contingency Plan (Annex 4) and/or a list of hazardous materials expected to be used, their purpose and best estimates of their quantities to be used; 2. The inclusion of MSDS in Annex A for all hazardous materials on site; and 3. Key issues related to storage, handling, and clean up of these hazardous materials.	FEIS Volume 3, Appendix 3B, Attachment 5, Hazardous Materials and Hazardous Waste Management Plan; AANDC FEIS Information Request No. 15; NIRB Guideline 9.4.9; Commitment No. 338.	Noted. At time of development, the Hazardous Materials and Hazardous Waste Management Plan only captured the most commonly used hazardous materials expected to be used on site. In future revisions all other hazardous materials used on site will be addressed and MSDS included once those materials become known.
Environmental Mitigation and Monitoring Plans (EMMPs)				
16	Descriptions of QA/QC procedures are not included in some of the EMMPs.	The proponent is requested to provide appropriate QA/QC procedures for the Fresh Water Supply, Sewage and Wastewater Management Plan and other plans as required.	FEIS Volume 3, Appendix 3B, Attachment 5, Surface Water and Aquatic Ecosystems Management Plan, Section 10.3, paragraph 1; FEIS Volume 3, Appendix 3B, Attachment 5, Fresh Water Supply, Sewage, and Wastewater Management PlanTable of Contents.	In order to reduce inconsistancies, but protect the environment Baffinland did not see a need to reproduce the QA/QC proceducres in all the management plans, please refere to the Environmental Monitroing Plan Appendix B for a review of these procedures.
17	In the EMP, the frequency of sampling is not provided for several monitoring parameters.	The proponent is requested to provide the frequency of sampling in tabular format along with the locations and parameters to be sampled in the EMP.	FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 4: Freshwater Environment.	Agreed. When Monitoring Plans are updated for Construction this level of detail will be provided.
18	A separate pit water monitoring station is requested in the proposed list of monitoring stations for the mine site.	The proponent is requested to provide a separate pit water quality monitoring station to the list of mine site monitoring stations to characterize pit water quality separately from other possible ARD/ML sources.	FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 4: Freshwater Environment, Table 4-11: Monitoring Stations.	Agreed. The Environmental Monitoring Plan will be updated for Construction and Operation and a pit water quality station will be included in Table 4-10 for monitoring.

19	Monitoring parameters and frequencies for treated sewage effluent are not consistent between monitoring plans.	The proponent is requested to clarify the list of parameters and monitoring frequency to be used for sewage treatment plant effluents.	FEIS Volume 3, Appendix 3B, Attachment 5, Fresh Water Supply, Sewage, and Wastewater Management Plan, Section 9.2.2; FEIS Volume 3, Appendix 3B, Attachment 5, Surface Water and Aquatic Ecosystems Management Plan, Section 10.2.2; FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 4.3: Sewage Treatment Facility Discharge Monitoring; FEIS Volume 3, Appendix 3B, Attachment 5, Environmental Protection Plan, Section 2.15.	The referenced management plans will be updated during Construction to confirm with monitoring parameters and frequecncies that are stated in the Environmental Monitoring Plan,Section 4.3: Sewage Treatment Facility Discharge Monitoring. " *Samples will be collected at the discharge of the Sewage Treatment Plant every four weeks during discharge and at the Polishing Waste Stabilization Ponds (PWSP) Monitoring Stations once before discharge and every four weeks thereafter. Samples will be analyzed for biochemical oxygen demand (BOD), TSS, pH, fecal coliform, oil, and grease (visual). An acute toxicity test will be conducted once each open water season for each Sewage Treatment Plant discharge"*
20	Waste rock pile and ore stockpile runoff monitoring parameters and frequencies presented in various EMMPs are not consistent.	The proponent is requested to clarify the list of parameters and sampling frequency to be used for waste rock pile and ore stockpile runoff monitoring.	FEIS Volume 3, Appendix 3B, Attachment 5, Waste Rock Management Plan, Section 7.1.2; FEIS Volume 3, Appendix 3B, Attachment 5, Surface Water and Aquatic Ecosystems Management Plan – Appendix 10D-2, Section 10.2.2; FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 4.5: Waste Rock and Ore Storage Effluent Monitoring.	Noted.
21	List of parameters for monitoring within the lakes and rivers is too limited.	The proponent is requested to include a range of surface water quality monitoring parameters and propose a monitoring frequency that will support all project-based monitoring requirements and a commitment to include any regional monitoring objectives that may be identified.	FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 4.3.1: Water Sampling – Mary River and Sheardown Lake.	Parameters for monitoring in lakes and rivers were based on discharge criteria identified in the water license as well as key additional parameters within Nunavut territory. (MMER, CCME)
22	Waste monitoring is not adequately addressed in the EMP.	The proponent is requested to provide full inspection and monitoring detail (as per the Waste Management Plan for Construction, Operation and Closure) to the waste monitoring section of the EMP.	FEIS Volume 3, Appendix 3B, Attachment 5, EMP, Section 6.1: Waste Monitoring; FEIS Volume 3, Appendix 3B, Attachment 5, Waste Management Plan for Construction, Operation, and Closure.	This work is already addressed in the Waste Management Plan and therefore BIM do not see a need to duplicate this information in the Environmental Montioring Plan.
23	The Water Licence application does not provide information on the commitments made in the FEIS for monitoring and reporting related to water use and waste deposition.	The proponent is requested to clarify, as part of the water licence technical review, commitments to monitoring, reporting, evaluating, reviewing and continuous improvement as cited in the FEIS with respect to use of water and deposition of wastes.	FEIS Volume 2, Sections 3.7 and 3.9; FEIS Volume 7, Sections 2.3.1.1, 2.3.2.5, and 3.4.4 FEIS Volume 10, Section 11 AANDC FEIS Information Request No. 28	BIM confirms commitments made in the cited sections in the FEIS on monitoring, reporting , evaluating reviewing and continuous improvement and does not see a need to further clarify commitments
Closure and Reclamation Plan				
24	The commitment to remove dams at Final Closure needs to be clarified.	AANDC requests the proponent include, in the next revision of the Preliminary Mine Closure and Reclamation Plan, a commitment that all dams associated with the Mary River Project will be removed at Final Closure.	FEIS Volume 3, Appendix 3B, Attachment 10, Preliminary Mine Closure and Reclamation Plan, Section 8.12. NIRB Technical Meeting (May 1-3, 2012)	Baffinland will rehabilitate areas associated with dams for the Mary River Project at final closure and profile ares for natural drainage.
25	Post Closure Monitoring does not include all waste management facilities.	AANDC requests that the proponent include sewage effluent stabilization ponds, landfills, and landfarms as initial sampling locations for post closure monitoring.	FEIS Volume 3, Appendix 3B, Attachment 10, Preliminary Mine Closure and Reclamation Plan, Section 9.2.1.	Agreed. The Closure and Post Closure Plan will be updated regularly throughout the life of the Project.
26	The assumptions and the derivation of some closure cost estimates are not clear and there is no mechanism for re-evaluation.	The proponent is requested to clarify the basis for deriving their estimated closure costs, in regards to the issues identified, in future revisions of the closure and reclamation plan. The proponent is also requested to provide a mechanism for periodic reevaluation and update of the closure and reclamation plan and associated security requirements to occur at least every five years.	FEIS Volume 3, Appendix 3B, Attachment 5, Preliminary Mine Closure and Reclamation Plan, Appendix B: Mine Reclaim Assumptions and Spreadsheet Snapshots.	The closure cost estimate is based on quantities and recent unit costs for completing these activities. The "Reclaim Model" was also used where applicable (AANDC closure cost model). The closure cost will be updated periodically in accordance with the terms and conditions of the Type A Water Licence.
Water License Comments Included in FEIS Review to NIRB March 30, 2012				
Number	**Issue**	**Comment/Recommendation**	**Reference**	**Response**
26	The water licence application lacks clarity because it is not a distinct and stand-alone document.	AANDC requests that the water licence application be submitted as a stand-alone document addressing the inconsistencies identified in Annex A.	FEISWater Licence Application	The Type A Water Licence was submitted as part of the FEIS, as agreed upon with the NIRB and NWB. BIM sees no reason to provide duplicate copies as the AANDC has been provided with a copy pg thte FEIS, as such the Water License can be seen in Volume 3 of the FEIS.
27	The water licence application does not include a Supplementary Questionnaire for Mine Development.	AANDC requests that the Supplementary Questionnaire for Mine Development be submitted as part of a stand-alone water licence application.	NWB Supplementary Questionnaire for Mine Development	This is not a requirment of the Type A Water License.

28	The Water Licence application does not provide information on the commitments made in the FEIS for monitoring and reporting related to water use and waste deposition.	The proponent is asked to revise the Environmental Monitoring Plan to include a strategy for monitoring, reporting and reviewing data in accordance with commitments made in the FEIS.	FEIS Volume 2, Sections 3.7 and 3.9; FEIS Volume 7, Sections 2.3.1.1, 2.3.2.5, and 3.4.4; FEIS Volume 10	BIM does not see a need to duplicate commitments made in the FEIS in the referenced sections in the Environmental Monitoring Plan.
Annex A: Information Requests to Enhance Stand-Alone Water Licence Application				
Regarding Water Licence Distinction and Completion, and with respect to Issue 27 above, AANDC requests that the following omissions and inconsistencies in the water application be addressed for clarity.				
General Water Licence Application				
	Block 13 references a table in Attachment 5 of the application. AANDC recommends that this table be included in block 13.			This is not deemed necessary.
	Block 13: AANDC notes that the drawing references for Railway Construction are mislabelled.			Baffinland notes this error and will make appropriate corrections to relevant drawings.
	AANDC recommends inclusion of a table to summarize the quantity and quality of waste in Block 15 rather than referencing the Waste Management Plan.			The proposed table is not necessary under the NWB guidelines and all relevent information can be found in the Waste Management Plan.
	The Steensby Port Oil Pollution Emergency Plan (OPEP) mentions an active hunting camp in Steensby Inlet which is likely to be a user of water. Block 18 should include this camp and any other traditional sites that are within the Project area.			Noted. These descrepencies will be accounted for.
	Block 21 references the Mine Closure and Reclamation Plan for security information. The estimated closure and reclamation cost (total costs for IOL and Crown land) should be included in block 21.			The proposed table is not necessary under the NWB guidelines and all relevent information can be found in the Mine Closure and Reclamation Plan.
Management Plans				
	Spill Contingency Plan, Section 4.4: Training exercises should be specific to the Spill Contingency Plan and not the OPEP.			Please refer to Section 4.3 of the Emergency Response and Spill Contingency Plan.
	Spill Contingency Plan, Annex 1 (Site Maps and Drawings) references Appendix 3B, Attachment 9 (Drawings) and Annex 2 (Spill Kits and Contents) references Annex 4 (Bulk Cargo Transfer Procedures/Tug and Ice Management Vessel Fuelling) of the Milne Port OPEP. This plan should be a stand-alone document complete with all referenced materials and this plan should be revised accordingly. It is noted that the reference to Annex 4 of the Milne OPEP is incorrect.			Please note Annex 2 (Spill Kits and Contents) references Annex 4 (Resident Spill Response Equiptment) of the Milne Port OPEP. Not Annex 5 (Bulk Cargo Transfer Procedures/Tug and Ice Management Vessel Fuelling) of the Milne Port OPEP. Therefore it is not incorrect. Please also note that Annex 5 (Bulk Cargo Transfer Procedures/Tug and Ice Management Vessel Fuelling) of the Milne Port OPEP meets NWB requirments and will not be issued as an independent document.
	Spill Contingency Plan, Annex 5 includes MSDS for only 4 of 32 chemicals listed in Annex 4. It is also noted that Annex A of the Hazardous Materials and Waste Management Plan includes only 3 MSDS. AANDC recommends that the Spill Contingency Plan and Hazardous Materials and Waste Management Plan include MSDS for all chemicals and hazardous materials on site, respectively.			MSDS sheets will be added and updated where appropriate.

	Surface Water and Aquatic Management Plan, Sections 6.8.2 and 7.4.2: Improper referencing of Table 10.1 (Sections 6.8.2 and 7.4.2 references Tables 8.3 and 8.1 respectively). The Quality Assurance/Quality Control (QA/QC) Plan referenced in Section 10.3 should exist as a stand-alone plan.			Noted. Improper referencing will be corrected. The QA/QC Plan exists as Appendix 10D-3 to the Fresh Water Supply, Sewage and Wastewater Management Plan, meeting NWB guidelines.
	Waste Management Plan, Section 4.6: Incomplete sentence. AANDC requests that the reference to the landfill drawing be provided.			Please reffer to Annex 2: Waste Management Plan for Construction, Operation and Closure
	Hazardous Materials and Hazardous Waste Management Plan, Section 4.2: Incomplete sentence. AANDC recommends that this sentence be amended to identify the location of MSDS of hazardous materials on site.			The senetence will be ammended. Please note that the MSDS sheets can be seen in Annex A of the Hazardous Materials and Hazardous Waste Management Plan.
	Hazardous Materials and Hazardous Waste Management Plan, Section 5.2: Table 5-3 is referenced but it appears as though the wrong table was referenced (Table 5-2 appears to contain relevant information).			Noted. This will be corrected.
	Relevant Environmental Protection Plan (EPP) procedures should be included in section 4.6 of the Hazardous Materials and Hazardous Waste Management Plan rather than referencing a section in the FEIS.			This information is available in the PEP. Repeating this information is not necessary.
	Environmental Protection Plan, Section 2.18: The wrong table is referenced (Table 2.18-3 not 2.18-2)			Noted. Ths will be corrected.
	Environmental Protection Plan, Section 4.0: This form was given the wrong title (Request for Revision to an Operational Standard not Landfill Facility Inspection Form).			Noted. Ths will be corrected.
	Section 4.3 (5) of the Environmental Monitoring Plan references Table 2-20 that does not exist in the plan. A reference is required for section 4.2.1.1 and improper references were observed in sections 4.2.1.2 (Table 4-4 not 4-4.19), 4.5 (Appendix A not Annex 1), 4.6.1 (Table 4-10 not 2-19). AANDC recommends that the proper references be identified.			Noted. Table 2-20 will be changed to Table 4-5. Section 4.2.1.1 will be updated to reference Table 4-6. Section 4.2.1.2 will be updated to reference Table 4-4. All other references will be corrected/updated.
	Preliminary Mine Closure and Reclamation Plan, Table 9-1 is mislabelled in the Table of Contents as Table 8-1.			Noted. This will be corrected.
	Preliminary Mine Closure and Reclamation Plan Section 6.1 references sections 5.2, 5.3, 5.4, and 5.6 but these sections do not exist in the plan. The sections referenced in 7.1 and 8.13 do not apply and require updating. Section 4.1.1, referred to in Section 8.11, does not exist. AANDC recommends that the proper references be identified.			The references in Section 6.1 will be updated to: 6.2, 6.3, 6.4 and 6.6. Sections refrenced in 7.1 will be updated to 7.3, 7.4, and 7.6 respectivley. The reference to Section 4.1.1 will be updated to Section 5.1.1
	The drawing referenced in Section B.3 of Appendix B of the Preliminary Mine Closure and Reclamation Plan should be included in the plan.			Inluding these drawings is not necessary as they are available in Attachment 9 of the Type A Water License Application.

	Sections B.3.1 and B.3.3 of Appendix B of the Preliminary Mine Closure and Reclamation Plan reference the cost for airstrip lighting in the previous Abandonment and Reclamation (A&R) Plan. AANDC recommends that these costs be included in the current plan.			Noted. This wil lbe updated.
	The drawing referenced in Section B.4 of Appendix B of the Preliminary Mine Closure and Reclamation Plan should be included in an appendix.			These drawing are available in Attachment 9 of the Type A Water License Application.
Miscellaneous				
	It is noted that the Health and Safety Plan, the OPEP for Milne Inlet and the OPEP for Steensby Inlet are not within the scope of a water licence. As such, AANDC recommends that these plans not be included in the water licence application.			These Plans are relevant to a Type A Water License, given the criteria set out by The NWB.
	There are several references for document and drawing numbers in the management plans (Attachment 5). In order to make it easier for people to find these documents, AANDC recommends that document and drawing numbers be accompanied by the title and location of each document and/or drawing.			Noted. This will be updated.
	Environmental Design Basis, Section 6.2.2.2: Table 6-126 is referenced but does not exist (Table 6-12 appears to contain relevant information).			Noted. This will be updated.
	Potable Water Treatment Plant Design, Table 4-5: Clarification is requested as to whether “km water quality” is for 3km Lake or 32km Lake.			This is a reference to 3km Lake.

Department of Fisheries and Oceans (DFO)				
Number	**Issue**	**Comment**	**Reference**	**Baffinland Response (October 12th, 2012)**
Freshwater Environment				
3.1	Sediment and Erosion Control Plan	1. DFO recommends that BIM provide detailed sediment and erosion control plans for the installation of watercourse crossings, water intake structures and lake encroachment areas.	Type A Water Licence Application, Attachment 3: Project Wide Documents, Section 6.2.3.2 and Attachment 5: Surface Water and Aquatic Ecosystem Management Plan Appendix 10D-2, Section 4 and Environmental Protection Plan Appendix 10B Section 2.9.	During the construction phases of the Project the referenced Management Plans in the Type A Water Licence will be updated and include sediment and erosion control plans and procedures.
		2. A monitoring plan to ensure that all sediment and erosion control measures are functioning as intended should be developed. This should include contingency measures if it is found that some measures are not functioning as intended.		BIM will adhere to Best Management practices to ensure all sediment and erosion control measures are funtctioning as intended.
		3. BIM should provide detailed dewatering and fish removal plans for the installation of the watercourse crossings, which will occur during the open water season. The dewatering plan should also include the methodology for maintaining flows downstream of the dewatered area ie. use of pumps or diversions.		If dewatereing and fish removal for watercourse crossings is required than appropriate management plans will be developed to include methodology for mainging flows downstream.
3.2	Watercourse Crossings – Culverts and Bridges	1. DFO recommends that BIM provide stream crossing design criteria, final crossing designs and site specific mitigation measures to DFO for review upon completion of the detailed engineering phase.	Type A Water Licence Application, Attachment 5: Surface Water and Aquatic Ecosystem Management Plan, Section 6.4.4 and Attachment 7.	BIM will provide final design criteria, final crossign designs and site specific mitigation measures to DFO during detailed engineering design phase.
		2. DFO recommends that a monitoring program be developed to determine if the mitigation measures installed to facilitate fish passage are functioning as intended and that this includes a contingency plan if it is found that fish passage was not maintained as predicted.		Water crsossings- Culverts and Bridges have been designed using DFO guidelines and regulations to facilicate fish passage as well as impliimineting the required mitigation measures. Therefore BIM does not see a need for additional monitoriong program and contingency plans.
3.3	Use of Explosives In or Near Fish Bearing Waters	DFO recommends that the detailed blasting program, mitigation and monitoring plan be developed in consultation with DFO during the regulatory phase, using the 50 kPa threshold.	Type A Water Licence Application, Attachment 3: Project Wide Documents, Sections, 6.5.1and 6.1.5.2.	BIM agrees and will provied detailed blasting program to DFO during the regulatory phases. BIM will adhere to DFO guidelines for all blasting activities.
3.4	Preliminary Mine Closure and Reclamation Plan	1. DFO recommends that the proponent develop detailed plans for the decommissioning of the watercourse crossings to ensure that removal of watercourse crossings and the associated rock fill. The plan should include measures which will be taken to ensure that fish passage is maintained, the bed and banks of the watercourse are stable.	Attachment 10: Preliminary Mine Closure and Reclamation Plan, Figure 8.10	Prior to decomissioning, Baffinland agrees detailed plans for the decommissioning of watercourse crossings that ensure that the removal of watercourse crossings and the associated rock fill will be provided. Plans shall include measures which will be taken to ensure that fish passage is maintained and the bed and banks of the watercourse are stable.
		2. Sediment and erosion control plans, dewatering plans and fish salvage plans should also be included to ensure there are no negative impacts to fish and fish habitat resulting from the removal of the watercourse crossing.		Sediment and erosion control plans, dewatering plans and fish salvage plans will also be included decommissioning plans and provided prior to decommissioning.
Marine Environment				
4.1	Construction Phase Monitoring	DFO recommends the proponent develop a detailed mitigation and monitoring plan for construction phase of the project in Steensby Inlet.	Attachment 5: Environmental Monitoring Plan, Section 5, Surface Water and Aquatic Ecosystem Management Plan, Section 6.5.1.	Agreed. All Mangement plans in the Type A Water Licence will be updated for the construction phase of the Project.
4.2	Dredging and Disposal of Dredged Sediments	DFO recommends that the Proponent provide the methodology for the proposed dredging at the freight dock and the ore dock. This should include mitigation measures which will be implemented to reduce the negative impacts to fish and marine mammals and identify the location where the dredged sediments will be disposed.	Attachment 3: Project Wide Documents, Section 6.4	If required, this request will be handled through the Disposal at Sea application, if submitted, in consultation with DFO and Environment Canada.

Fish Habitat Off –Setting Plan (No Net Loss Plan)				
5.0	Fish Habitat Off –Setting Plan (No Net Loss Plan)	1. DFO recommends that BIM continue to explore off-setting options in both the freshwater and marine environment to offset the HADD.		The Fish Habitat Off Set Plan is discussed in the FEIS
		2. As new fish habitat off-setting options are considered community consultation should also occur so that input from the communities can be incorporated into the design of the Fish Habitat Off-Setting Plan.		The Fish Habitat Off Set Plan is discussed in the FEIS
		3. In order to evaluate the success of the off-setting options that are implemented DFO recommends that BIM develop a monitoring plan and ensure that sufficient baseline data is collected to determine if the new fish habitat is stable and functioning as intended.		The Fish Habitat Off Set Plan is discussed in the FEIS

Environment Canada				
Number	**Issue**	**Comment**	**Reference**	**Baffinland Response (October 12th, 2012)**
Water Quality				
2.1	Sewage discharge limits	a. Baffinland establish maximum monthly average concentrations and maximum grab sample concentrations for discharge limits for sewage effluent as per Table 1-1.	Design Basis – Sewage Treatment Plant, Table 4-4; Appendix 10D-2, p. 43; Appendix 10D-3, Table 5-2, p.30-31; Appendix 10D-12, Table 4-6, p. 26-27; Water license 2BB-MRY1114	The Environmental Monitoring Plan lists the 'Treated Sewage Effluent Discharge to Freshwater and Marine water Quality Standards' in Table 4-6. These describe monthly average maximum concentrations for environmental discharge and are based on the original discharge limits for the site as imposed in the 2BB-MRY0710 water licence. The 2BB-MRY0710 water licence has since been amended and in the most recent licence these same limits were used but the licence stipulated these to be the maximum allowable concentration of any grab sample. As such, Baffinland proposes to likewise update the Environmental Monitoring Plan to indicate that these limits are for max. concentration of any grab sample.
		b. Sewage effluent sampling be conducted on a monthly basis.		Noted. Baffinland will indicate within relevant management plans that effluent sampling will be conducted on a monthly basis.
		c. Appendices 10D-2, 10D-3 and 10D-12 be updated to reflect the sewage discharge limits and sewage sampling frequency that will be pursued.		For regulatory purposes, it is intended that sewage treatment plant effluent will be sampled and tested once a month. There are some discrepancies within the surface water and environmental protection management plans which refer to weekly sampling which Baffinland will correct. Samples will be analyzed monthly for biochemical oxygen demand (BOD), TSS, pH, fecal coliform, oil, and grease (visual). However, an acute toxicity test will be conducted once each open water season for each Sewage Treatment Plant discharge.
		d. Appendix 10D-3 be revised to include the sampling locations for monitoring sewage effluent discharges to Sheardown Lake and Mary River.		Appendix 10D-3 (Fresh Water Mgmt. Plan) refers to sampling only at the discharge of the new sewage treatment plant - discharging to Mary River as the existing sewage plant discharge (to Sheardown Lake) is already covered under an existing water license. However, for clarity Baffinland will revise App. 10D-3 to include sampling locations for discharge to Sheardown also as requested.
2.2	Oily water wastewater treatment facility discharge limits	a. Establish discharge limits for treated oily water that are protective of the receiving aquatic environment.	Design Basis – Wastewater Treatment (Oily Water), Table 4-6; Appendix 10D-3, Table 6-1, p.19, p.32; Appendix 10D-12, Table 4-7, p. 28	Please refer to Volume 3, Appendix 3B, Attachment 5 (Environmental Monitoring Plan), Table 4-3 (Bulk Fuel Storage Contact Water) and Table 4-7 (Vehicle Maintenance Shop Facility Effluent Criteria).
		b. Model oily water discharges to determine predicted end-of-pipe and receiving water concentrations for parameters of concern.		As the flows of treated wastewater from maintenance shops (oily water) are very small or absent, Baffinland does not see a need to do any additional modeling.
2.3	Location of sampling points for sewage and treated oily water discharges	a. Confirm sewage and oily wastewater will be treated in independent wastewater plants.	Appendix 10D-3, p. 30-31	Baffinland confirms that the sewage and oily wastewater will be treated in independent wastewater treatment plants.
		b. Update the Plan to include the appropriate latitude and longitude for the monitoring locations for each effluent type, including sampling points for the two sewage plants planned for the mine site.		Baffinland will update the plan to include sampling point locations for each separate sewage and wastewater (oily water) treatment plant at the mine site.
2.4	Mine contact water discharge limits	EC recommends that discharge limits for mine contact water from the east pond, west pond, pit and ore stockpiles be established that are commensurate with the predicted water quality for these sources provided in Volume 7 of the FEIS.	FEIS, Volume 7, Section 3.0, Tables 7-3.16 to 7-3.22; Appendix 10D-2, Table 9-2, p. 40; Appendix 10D-12, Table 4-8, p. 28	Baffinland has proposed that mine contact water be monitored to ensure that discharge meets criteria based upon MMER regulations.
2.5	Reference site selection	a. Baffinland select defensible reference sites for the freshwater and marine environments at its earliest opportunity and undertake a comprehensive sampling program at these sites in 2012.	Appendix 10D-14, BIMC correspondence to NIRB, May 15, 2012; Appendix 10D-12, Table 4-9; Appendix 10D-13, Appendix 2, Tables 1-4	Noted. Baffinland can confim that a program is currently underway to select a reference site.
		b. When selecting reference sites, Baffinland consider the proximity of project infrastructure along with total suspended particulate (TSP) contour plots provided in Appendix 5C-5 of Volume 5 to ensure sites are not within the mine's zone of influence.		Noted. Baffinland will ensure reference sites are not withing the mine's zone of influence.

2.6	Statistical Design	EC recommends that Baffinland provide more statistical details regarding its water and sediment monitoring programs before construction gets underway with the objective of ensuring these programs are adequate to detect project-related changes. For more guidance regarding study design, EC recommends Baffinland consult INAC (2009). EC would be pleased to review the plans and the proposed sample sizes, based on results of power analysis, once available. In particular: a. As per EEM guidance (EC 2012, EC 2004) EC recommends the same probability level be assigned to alpha and beta so the chance of rejecting the null hypothesis when it's true (i.e., false positives) is equivalent to accepting the null hypothesis when it's false (i.e., false negative).	Appendix 10D-13, Appendix 1, Tables 1, 5; Appendix 3, Tables 4, 5	The water and sediment monitoring programs will be finalized as part of the AEMP. As stated at the FEIS hearing, Baffinland will consult with EC and QIA during the development and finalization of the AEMP.
		b. EC also recommends Baffinland commit to using one-tailed hypothesis testing for water and sediment quality analyses since one-sided tests are appropriate in this case and increase the power of the test.		The water and sediment monitoring programs will be finalized as part of the AEMP. As stated at the FEIS hearing, Baffinland will consult with EC and QIA during the development and finalization of the AEMP.
2.7	Quarry setback from water courses along railway	Given the acid sensitivity of the some of the river systems along the railway, EC recommends Baffinland consider the lakes/streams in this LSA as sensitive environments and institute a minimum setback of 100 m from the high water mark for quarries accessed along the railway that have ARD/ML potential.	FEIS, Volume 7, Section 3.4.2.1, SQSW-5, p. 131-133	Please note, Baffinland will not be exploiting quarrys with ARD generating potential.
2.8	Sediment sampling	EC is pleased Baffinland plans to sample the top 1-2 cm of sediments as recommended. EC notes that other northern mines have successfully sampled the top 1 cm of sediments and recommends that Baffinland liaise with the consultants who have had success at sampling the top 1 cm of sediments in Arctic lakes/streams. EC would be available to discuss a proposed protocol.	Volume 7, Section 3.4.4.2, p. 175	Noted.
2.9	Use of dust suppressants	EC recommends Baffinland consider all commercially available dust suppressants and select the product that poses the lowest risk to the environment, particularly when the material is to be applied close to water bodies. If Baffinland ultimately decides to use DL-10 or calcium chloride, EC recommends that a buffer zone of 30 m be maintained around water bodies intersecting or adjacent to the tote road or railway access road, and that application rates be maintained such that product does not migrate from the roadway.	Appendix 10D-3, p. 21	Baffinland will consider numerious available supressants and choose a dust suppressant that best meets environmental and economic concerns. In the event that DL-10 or calcium chloride are chosen the implementation a 30m buffer zone will be considered.
2.1	Criteria for treated landfarm soil to permit its use outside the landfarm	EC requests Baffinland specify the criteria that will be used to determine if treated soil from the landfarm is suitable for use as landfill cover material or other purposes. For clarity, these criteria along with the number of soil samples taken per volume of soil to verify its compliance with criteria should be included in the next iteration of this Plan.	Appendix 10D-2, p. 18, 20, 27	Objectives included in the 2010 Government of Nunavut's Environmental Guideline for Site Remediation. Industrial criteria are suitable if the treated soils are to remain in place until the landfarm is decommissioned or the term of the commercial lease expires.
2.11	Toxicity testing of emulsion plan residue	EC requests that Baffinland provide details on how toxicity will be tested, the frequency of toxicity testing and what will constitute a pass/fail for the toxicity test. Also, if the residue is determined to be toxic, EC requests a description of levels at which offsite disposal would be used, or alternatively, how it would be encapsulated in the landfill and suggests an evaluation of landfarm disposal be considered.	Appendix 10D-3, p. 21	Please note that Baffinland is still in the process of selecting a Blasting/Explosives contractor. Upon receiving approval from the NIRB and NWB an Explosives contractor will be selected. Once the Explosives contractor is retained, the Explosives Management Plan will be updated. As described in the FEIS, an evaporator will be used to treat liquid waste from the emulsion plant. Dried up residues will be treated as hazardous waste and shipped off site for final disposal or treatment.
2.12	Method detection limits for metals in seawater	EC recommends Baffinland seek out analytical labs that can achieve MDL lower than the CCME guidelines for Cr (VI), Cr (III), As and Cd so meaningful comparisons can be made between monitoring results and CCME thresholds.	Volume 8	Noted.
Waste Management				
3.1	Commitment to recycling practices	EC recommends Baffinland clarify what commitments will be made with respect to recycling practices and ensure these commitments are accurately captured in the next revision of this Plan.	Appendix 10D-4, Section 4.4.3, p. 19; Annex 4, Appendix A, p. 17	Baffinland commits to ensuring that a sound waste management program which focuses on the principles of reduction/recovery/reuse/recycling is implemented. Known specific management strategies related to recycling can be found Appendix 10D-4, Section 4.4.

3.2	Use of modified burn barrels	Based on the recent study noted above EC recommends that Baffinland dispose of food waste and food packaging using an incinerator that meets applicable Canada Wide Standards for Dioxins and Furans and the Canada Wide Standards for Mercury.	Appendix 10D-4, p. 24	Baffinland will ensure all food waste or food packing will be disposed of in an incinerator designed to meet Canada Wide Standards for Dioxins and Furans and the Canada Wide Standards for Mercury.
3.3	Storage capacity for sewage at temporary railway camps	EC recommends Baffinland consider increasing the capacity of sewage storage at Cockburn South camp to accommodate more than 1 week of storage. In addition, EC recommends the next iteration of the Plan be updated to include the sewage storage capacity of each of the temporary camps so reviewers can determine whether the capacity is adequate.	Appendix 10D-3, p. 16-17	Noted. Baffinland will review Appendix 10D-3 and revise as appropriate.
3.4	Use of bacteria in landfarm to expedite biodegradation	EC recommends Baffinland consult the New Substances Notification Regulations (Organisms) before importing or using bacteria in landfarming applications. If the bacteria are not listed on Canada's Domestic Substance List, Baffinland may need to notify the Government of Canada about the bactieria before it can be imported or used at the Mary River Project site.	Appendix 10D-4, p.28	Noted.
3.5	Use of soil from bladder farm in landfarm construction	EC recommends the frequency of analysis and the number of samples taken per volume of soil to ensure compliance with landfarm chemical criteria be provided in the next revision of this Plan.	Appendix 10D-4, Annex 5	Noted. Baffinland will ensure the frequency of analysis and the number of samples taken per volume of soil will be representative of the total volume to demonstrate compliance.
3.6	Landfilling of sewage sludge	EC recommends Baffinland clarify if landfilling will be used as a disposal method for dewatered sludge and, if so, to update Appendix 10D-3 accordingly.	Appendix 10D-4, p. 10	Baffinland is proposing to use incineration as a treatment method of dewatered sludge. Incinerator ash will be disposed by landfilling as oulined in Appendix 10D-4.
3.7	Verification that incinerator bottom ash meets landfill disposal criteria	EC recommends Baffinland clarify how frequently the TCLP analysis will be conducted on bottom ash. Specifically, EC requests Baffinland specify whether a set of samples will be taken and tested for every burn cycle or if subsamples will be taken per specified quantity of accumulated ash. This information should be conveyed in the next revision of this Plan.	Appendix 10D-4, p. 24	The TCLP Procedure Test method 1311 (US EPA) will be the preferred method to analyze the residuals as this test is designed to simulate the processes a material would be subjected to if placed in a landfill.
3.8	Analyses tested in contact water from Milne Inlet landfarm	EC recommends that Baffinland test and if necessary treat Milne landfarm contact water for the F3 fraction and update Annex 5 accordingly.	Appendix 10D-4, Annex 5	Noted. Will be captured in the next revision.
3.9	Uncertainty in runoff and streamflow estimates at the Baffinland Mine and associated works	EC recommends that both Baffinland and NIRB recognize and consider the implications of the uncertainty in the runoff and streamflow estimates used in project design. EC notes that while Baffinland has done an admirable job with the tools and data available, the noted uncertainty makes it difficult to define the risk of either underdesign or overdesign of engineering works on site (i.e. wastewater collection ponds, railroad stream crossings, etc.) and the uncertainty will vary depending on the catchment.	EIS Volume 7 Freshwater Environment Appendix 7 Regional Hydrology; Spence, C. and A. Burke, 2008. "Estimates of Canadian Arctic Archipelago Runoff from Observed Hydrometric Data", Journal of Hydrology 362: 247-259.	BIM understands the uncertainty in estimating runoff and streamflow due to: 1. Probabilistic feature in rainfall/snow/snowmelt processes 2. Short data series available (only about 5 years flow measurements for selected locations, and no long term precipitation measurements on site) BIM realize's that there are uncertainties in the design on stormwater control, culverts and bridges. Reliable flood estimates require at least 30 years of data and therefore flow measurement to verify the design parameters will be continuous.
3.10	Air Quality and Noise Abatement Management Plan	EC recommends that Baffinland: a. Develop the Air Quality and Noise Abatement Management Plan in consultation with EC and that the monitoring plan include dustfall monitoring along the railway corridor, and continuous ambient monitoring of SO2 at the Steensby Port;	FEIS Volume 5, Section 2.6.3.3, Appendix C5-4, Appendix 5C-5 Part IV; FEIS Volume 10 Appendix 10D-1 Air Quality and Noise Abatement Management Plan; FEIS Volume 10 Appendix 10D-11 Terrestrial Environmental Effects Framework; Response to EC IR-18b, IR round 2; Volume 5, Section 2.0, Page 32, Table 5-2.5.; Design Basis – Environmental Design Basis, Table 6-3 & Section 6.1.1	BIMC will update/revise its Air Quality and Noise Management Plan to satisfy the NIRB recommendations # 7, 10, and 14.
		b. Adopt the Alberta objectives as threshold values where appropriate; and		Noted: This will be considered
		c. Provide an annual report on the volume and sulphur content of fuel consumed.		Noted: This will be considered

3.11	Incineration Management Plan	EC recommends that Baffinland: a. Develop and implement an incineration management plan in consultation with EC incorporating the advice provided in the EC Technical Document for Batch Waste Incineration. Annual reports summarizing incineration activities and operational data should be submitted to the Board; and	FEIS Volume 10 Appendix 10D-4: Waste Management Plan for Construction, Operation, and Closure.; Design Basis – Incinerator, Pages 1-7; Design Basis – Solid Waste Management Operational Standards, Pages	Noted.
				Noted.
		b. Complete stack emission testing for all incinerators to ensure compliance with the CWS for Dioxins and Furans and the CWS for Mercury. The stack tests should be completed using typical project waste streams including dewatered sewage sludge.		BIM will adhere to relevant Project Certificate conditions.
Clarifications/Considerations				
4.1	Ore crushing facilities and conveyer system for Milne Port trucking operation	EC seeks clarification on whether this facility is still part of the mine site plan.	Appendix 10D-2, Table 6.2	Ore crushing facilities and conveyor system for Milne Port are not part of the project description.
4.2	Hydroelectric site	EC seeks clarification on whether Baffinland is investigating the development of hydroelectric power in the local study area.	Appendix 10D-2, Figure 5.3	BIM will continue to explore alternative sources of energy production once the Project receives approval and is operational. Hydroelectric power is one option and the feasibility will have to be investigated. Environment Canada's reference is incorrect.
4.3	Waste Rock Management	EC requests that Baffinland clarify if consideration was given to "blending" the non-PAG & PAG waste rock prior to encapsulation and the justification used to reject it.	Vol 3, Appendix 3B, Attach 4 -Mary River Mine Site docs - Waste Rock Design Criteria - Sections 3.3 and 3.6.; Vol 3, Appendix 3B, Attach 5 - Waste Rock Management Plan Table 3-1	Blending and encapsulation were considered as two separate waste rock mangement techniques. It is not considered necessary to use tem in conjunction with one another.
4.4	Waste Rock Management	EC requests that Baffinland clarify what mitigations could be put in place to prevent the release of ARD/ML if the permafrost in the PAG rock core thaws.	Vol 10, Sec 7.2.4.1; Vol 3, App 3B, Attachment 5 - Waste Rock Management Plan	The design of the waste rock facility will enable BIM to direct all runoff to the sedimentation pond and monitor quality prior to discharge. As stated in the Waste Rock Management Plan, treatment of the runoff can be implemented if runoff quality does not satisfy discharge criteria.
Water License Term				
5.0	Water License Term	EC recommends a shorter term for the water license in the range of 10 to 12 years.	Type A Water License Application	Baffinland requests a water licence for the duration of the Project's construction and operation life.

Natural Resources Canada				
Number	**Issue**	**Comment**	**Reference**	**Baffinland Response (October 12th, 2012)**
Acid Rock Drainage and Metal Leaching				
1	There is missing information regarding management of Pontential Acid Generating (PAG) waste rock, specifically segregation of PAG and non-PAG material.	Further information is requested on the segregation criteria for PAG and non-PAG. The FEIS notes that additional geochemical studies are underway to better understand the kinetics of potential acid leaching behaviour, and to refine the expected drainage quality and metal leaching behaviour from materials. However, this information should be provided for evaluation of the waste rock management plan.	FEIS, Volume 6, Appendix 6B-1 NWB Type A Water Licence Application. Attachment 5, Annex 3: Waste Rock Geological and Geochemical Characterization Program, Mary River Project (2012)	This work is in progress.
2	Further information on field lysimeters requested.	NRCan notes that two field lysimeters are in operation. The most recent monitoring information for these tests was not located in the documents provided. NRCan requests that this information be provided for geochemical evaluation of waste rock material.	NWB Type A Water Licence Application. Attachment 5: Waste Rock Management Plan. Appendix 10D-5. Section 3.1.3.4 Kinetic Testing	An update for the waste rock characterisation program of 2012 will be provided when available.

Qikiqtani Inuit Association				
Number	**Issue**	**Comment**	**Reference**	**Baffinland Response (October 12th, 2012)**
Application Process, Events, and Timeline				
i		On February 29, 2012 the NWB requested comments1 from interested parties on the proposed Type A water license review process. Additional correspondence from the NWB on March 2, 20122 expanded on the NWB's proposed water license review process. In response to this request, QIA had sent comments on the application process to the NWB.3 There has not been any further written correspondence from NWB concerning these comments, or the proposed review process. As a result, there is uncertainty regarding the review process and timeline. It is requested that the NWB detail the review process steps up to the completion of the public hearing and the expected timeline for each step.		Directed at NWB
ii		During the Nunavut Impact Review Board's (NIRB) technical meetings in Iqaluit on May 1-3, 2012, NWB Director of Technical Services David Hohnstein gave direction regarding the NWB review process via teleconference. From this direction it is QIA's understanding that: a) There will not be a NWB technical meeting that runs consecutively with the NIRB Final Hearing. b) The NWB technical meeting would be held 1 to 2 weeks after the NIRB Project Certificate workshop, which will be held around September 22, 2012. It is requested that the NWB affirm this understanding.		Directed at NWB
Meetings with BIMC External to the Water Licence Application Process				
i		A clear understanding of waste discharge locations and characteristics is needed to assess the impacts of waste discharge to the environment, and adequately monitor ongoing environmental effects. Discharges need to be controlled, to ensure that waste of unknown quality and quantity does not enter freshwater systems. To facilitate the understanding of waste discharge locations and characteristics:		Directed at NWB
		a) Each discharge of waste should have the expected total yearly volume and expected discharge quality clearly listed and defined. This should include water that has been in contact with waste rock and ore.		
		b) All waste discharge volumes should be measured via appropriate means. Volumes and concentrations should be reported annually.		Directed at NWB
		c) Ensure all water that has come into contact with waste at the Mary River and the proposed Steensby Inlet landfills be controlled, and only discharged to the environment if the effluent meets discharge criteria.		Directed at NWB
ii		Secondary containment areas (which include lined laydowns and fuel storage areas) and landfills have the potential for runoff water to collect, and thereby come into contact with contaminants. The discharge water, if not managed and treated appropriately, may impact receiving waters. It is recommend that monitoring occur at all runoff water effluent discharge locations associated with lined laydown areas that contain hazardous goods, secondary containment areas, and landfills, and if applicable, treat runoff water to the appropriate discharge criteria. It is recommended that monitoring results be annually reported.		Directed at NWB

iii		Preliminary monitoring points and waste discharge criteria have been presented in BIMC's Type A Water license application. Monitoring of mixing zones and receiving environments have not been detailed in the application. While the production of an Aquatic Effects Management Plan (AEMP) has been committed to in the water license application, the specifics contained in the plan are unknown. Appropriate selection of water sampling locations and water quality criteria in the receiving environment, down-gradient of the last point of control, is an integral component of a monitoring program. If water sampling locations and receiving water objectives are selected improperly, greater than predicted impacts to the environment could occur. It is recommended that BIMC develop a monitoring program for receiving waters and mixing zones. This program should include a well-defined sampling program, water quality objectives for receiving waters and mixing zones and a comprehensive Aquatic Effects Management Plan. QIA should be engaged during the development of this monitoring program for receiving waters and mixing zones.		BIM will engage with QIA during AEMP development.
iv		Understanding of how a project affects water quantity and quality in the aquatic ecosystem is dependent on assumptions that are made regarding the final design of the project. As the final design of project components is finalized, final engineering reports and drawings are needed to ensure that the monitoring programs and management plans presented in the Type A water license adequately regulate discharge of waste to freshwater. As such: a) Prior to construction, performance and design specifications, engineering analysis to support design and final design drawings approved for construction for each installation or facility should be submitted for review by interested parties.		Directed at NWB
		b) As-built drawings and associated reporting for each installation or facility should be submitted for review by interested parties.		Directed at NWB
v		An explosives management plan is included in the Type A water license application; however, it is limited to the management of the manufacturing of explosives and the storage of raw explosives materials. The management of blasting, and blasting residue discharges to the environment is not specifically considered in this plan. Blasting can result in discharges of substances such ammonia, nitrate and nitrite to water. As such: a) A Blasting Management Plan should be produced and will integrate mitigation and monitoring practices to ensure blasting residue contamination of the environment is minimal. The monitoring practices should be designed to provide confirmation of the effectiveness of the mitigation strategies in place.		At this point in time a Blasting/Expolsives contractor has not been chosen for the Project. Once Baffinland has awarded this contract, BIM will work closely with the relevant contractor(s) to create an updated Explosives Management Plan to address these concerns.
Additional Issues				
i		a) It is requested that BIMC produce a table that clearly defines which activities and project components will be covered under the revised current Type B License, the Type A Water License Application and the proposed Type B Water License Application.		The activities covered under the Type A Water Licence are listed in Appendix 3B, Attachment 1. Refer to the existing Type B Water Licence for activities covered within.
		b) Clarification from the NWB is requested on the suitability of multiple water licenses for the same project, and how these multiple water licenses may affect the application review and ongoing monitoring of the project.		Please direct this response to the NWB.
		c) It is requested that AANDC provide guidance on how enforcement of similar activities under two water licences will be completed.		Please direct this response to the AANDC.

ii		It is requested that BIMC use the CCME Water Quality Guidelines for the Protection of Aquatic Life for the selection of criteria for waste discharge.		CCME Water Quality Guideline were used for selelection of criteria for waste discharge. Discharge criteria are covered in Volume 3, Appendix 3B, Attachment 5, Environmental Monitoring Plan.
iii		a) It is requested that in developing a blasting residue management plan, BIMC take into account the following areas: - Mary River Construction and Operation - Railway Construction, including breakdowns relative to railway locations - Steensby Port Construction		Noted. These areas will be considered.
		b) It is requested BIMC state the total yearly amount of explosives expected to be used during the construction, including breakdowns by location.		For the construction period, actual use of explosives depends on the quantities of cut and fill required for the construction of the Project infrastructure. Only crude estimates of explosives quantities are available at this early stage of the Project. The Explosives Management Plan and the Emergency Response and Spill Contingency Plan provide an estimate of the quantities of explosives that will be shipped and stored on site annually.
		c) It is requested that BIMC state the expected yearly amount of explosives used during operations, including breakdowns by location.		BIM has committed to implementing the Explosives Management Plan as well as developing a detailed Blasting Management Plan . This management plan will requiire contractors to develop detailed blasting procedures for use of explosives on land or in/near water. In addition, the Blasting Management Plan will contain specific techniques to ensire minimal losses of explosives. An overview of the content of the Blasting procedures is presented in Volume 10, Section 4.3.1.
		d) It is requested that BIMC provide an estimate of the expected monthly loss of explosives during construction and operation, including breakdowns by location.		BIM will implement best management practices for the use of explosives and will develop a Blasting Management Plan that will incorporate lessons lerned from other northern mines.
		e) It is requested that BIMC determine what the acceptable explosives loss is for blasting operations and provide this value.		BIM will implement best management practices for the use of explosives and will develop a Blasting Management Plan that will incorporate lessons lerned from other northern mines.
		f) It is requested that BIMC commit to monitor and report the monthly loss of explosives. This value should be compared to the expected monthly loss estimates.		Noted. This will be discussed with the selected explosives contractor. If considered reasonably practical, this data will be provided.
		g) It is requested that BIMC provide an adaptive management trigger criteria that provides a clear method to determine if the performance of blasting management is adequate.		Noted. This will be discussed with the selected explosives contractor. This data will be provided.
		h) It is requested that BIMC commit to modeling blasting residue loss and migration in the environment if adaptive management trigger criteria is exceeded.		Modeling is not required as best management practices as implemented at other northern mines indiacate that blasting residues are not significant.
		i) It is request that BIMC commit to identifying project areas where impacts associated with blasting residue are predicted to be relatively higher. Identification of potentially high impact areas should take into account; the sensitivity of the receiving environment, amount of explosives, the applicability of mitigation measures, and, the ability to effectively monitor explosive loss.		This discussion has been provided in the FEIS and is summarized in the Waste Rock Managment Plan and the Explosives Management Plan.

ii		BIMC has committed to providing an Interim Closure and Reclamation Plan for the Mary River Project. As much of the project infrastructure is still at the conceptual phase, the closure plan is formulated using significant assumptions related to costing and infrastructure. If the closure plan is not updated regularly as the development of the Mary River project proceeds, it may not accurately capture activities that are required for closure and reclamation activities. If BIMC is rendered insolvent during construction, and the Closure and Reclamation Plan is dated, QIA may be exposed to liability in excess of posted financial security as a significant portion of the project is on Inuit Owned Lands. As such, the plan will need to be updated as the project progresses. Therefore:		See below.
		a) It is requested that BIMC commit to having the Closure and Reclamation Plan adhere to the most recent QIA Abandonment and Reclamation Policy for Inuit Owned Lands. The plan will include a financial security assessment that delineates financial security associated on land and water by land-owner.		Agreed. Closure and Reclamation Plan will be updated regualarly and will adhere to the most recent QIA Abandonment and Reclamation Policy for Inuit Owned Lands.
		b) It is requested that BIMC commit to updating the Interim Closure and Reclamation Plan prior to the construction of mine components, prior to mine operation, and on a regular basis to reflect current site liability.		Agreed. All management plans will be updated prior to construction and opertaion of mine components.
Mary River Project Committee Concerns and Recommendations				
Impacts to Freshwater Wildlife				
		Fish populations in lakes and waterways should be quantified before construction starts. Without knowledge of fish populations in specific water bodies close to the railway, BIMC will be unable to determine if fish populations are decreasing as a result of mine waste discharges.		This work is not required.
		There is uncertainty on how much iron ore dust will enter waterways near the rail way. There is a concern that there has been an insufficient level of study into this area.		See NIRB Final Hearing Report condition # 10.
		Dust should be monitored all along the rail route, to ensure it does not enter the nearby water bodies, and affect fish. Mitigation plans (such as covering the ore rail cars more securely) should be put into place if it is found that dust is affected fish.		Dust will be monitored along the first, 3km, of the rail route. Based on this monitoring, management plans will be updated accordingly.
Harmful Alteration, Disruption or Destruction of Fish Habitat				
		There has been the suggestion by BIMC that manmade lakes, and other constructed structures will be used to produce an equivalent amount of fish habitat. It is recommended that BIMC monitor these manmade habitats to ensure that an equivalent amount of fish stock is replaced.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalized with DFO accordingly.
		There is significant concern that ice jamming in culverts and bridges could impede fish movement, and thereby negatively impact fish stocks.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalized with DFO accordingly.
		It is recommended that BIMC conduct more in depth study in to the effect bridges and culverts will have on fish stocks, and present this information to the community. It is felt that communities are being told that there will be very little effects to fish from these water crossing structures, but that only limited field testing has been completed to prove this issue at Mary River.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalized with DFO accordingly.
		It is recommended that BIMC make a concerted effort to keep culverts and bridges in good repair, because culverts have been found in the past to be in poor repair, and that could be an impediment to fish movement.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalized with DFO accordingly.
		While it has been stated in the FEIS that equivalent fish habitat will be constructed to compensate for destroyed habitat, it is important to the Inuit that the constructed habitat be equivalently easy to fish and use as they would traditionally. It is recommended that BIMC consult with Inuit before construction of such habitat, to ensure Inuit would be able to use it.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalized with DFO accordingly.

		Ongoing monitoring of fish stocks by Inuit should be commissioned by BIMC for impacted water bodies. A mitigation plan should be in place if it is found that fish stocks are impacted, with compensation being a component of such a plan.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and is not within the scope of the Type A Water Licence. Where required, applicable studies will be conducted by BIM with Inuit participation.
		Wastewater treatment systems should be built far from beaches. Wastewater should not be dumped into lakes and rivers.		The development of a Harmful Alteration, Disruption or Deisctuction plan for Marine and Freshwater environments has been developed as part of the FEIS and will be finalize with DFO prior to construction activity. Wasterwater will be treated and discharged within appropriate regulations.
Blasting Activities Around Fresh Water				
		There is uncertainty in the thresholds BIMC has selected for blasting noise underwater. It is recommended that BIMC conduct research into what thresholds would be appropriate for the Mary River Project specifically, instead of applying literature values from southern Canada.		Noted. This issue will be investigated further as per conditions in the NIRB Final Hearing Report.
		There are concerns regarding bubble curtains and what effect they might have on fish. It is recommended that BIMC explain their blasting strategy to the communities, and outline the effects it may have on freshwater fish.		Noted. BIM will consult on these items.
		There is concern regarding BIMC's proposal to using blasting to construct the tunnels near the Cockburn Lake area. This concern stems from worry about blasting residue entering the lake system near this area, and potentially effecting fish.		These concerns will be addressed in the Blasting Management Plan.
		Due to the level of uncertainty regarding the thresholds chosen for blasting noise levels, it is believed that fish could be harmed or killed from blasting noise. It is recommended that BIMC use tunneling equipment instead of blasting, so impacts to fish could be lessened.		This is not feasible. The tunnels are simply to short to utilize a tunnel borring machine.
Fuel Storage and Handling				
		The monitoring of fuel storage is of paramount importance, to insure that leaking tanks and accidents are discovered promptly.		Agreed.
		Fuel sites should be properly restored after they are no longer in use.		Agreed.
		The bladder storage systems in use at Milne Inlet and the Mary River camp should be decommissioned and remediated as soon as possible.		Agreed. In progress.
		Funds should be held in escrow for compensation and remediation in the event of a major hydrocarbon spill.		BIM will ensure that the necessary resources are available to respond in the appropriate manner in the unlikely event of a major hydrocarbon spill.
Infrastructure				
		Culverts and bridges should be left in place along the Tote Road when the mine closes, so that hunters and Inuit can continue to use the road.		This will not be possible as these culverts require a considerable amount of time and money to perform proper maintenance. Without this maintenance the culverts will block with ice and washout, and the bridges may become unsafe.