Number	Request	Baffinland Response	Engagement Notes	Baffinland Second Response	Next Step
HC-01	Location and Characterization of Receptors A discussion identifying human receptors is necessary for an assessment of potential human health effects due to impacts of the Project, and HC advises including the following in the EIS: • Describe and characterize all potential human receptors, using maps to delineate their locations and the distances of communities, residences, temporary/seasonal residences, etc., to project sites and related infrastructure. If any potential receptors are excluded from the assessment, provide a rationale. If applicable, discuss the number of workers expected to be residing onsite or in workers' camp(s), and identify the distance between the camp(s) and the worksites. HC advises that an assessment of potential effects on human health to off-duty workers residing onsite or nearby be considered.	The land use report (Appendix 4C) provides a detailed description of land use. There are no human receptors that regularly occupy the areas around the Project sites. The number of workers on-site is provided in Table 3-1.1 (Volume 3). There will be no "off-duty" workers; workers are working or sleeping while at site, and are transported home to their communities during their off-rotation.	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	Figures 3.13 and Figures 3.14 are in the DEIS, Volume 4, Appendix 4C - 5 of 8. It should be noted that the travel routes refered to in the Land Use Report reflect travel routes that have been used at some point in the last several decades and may not represent consistent, seasonal or annual use. When BIM referred to "regularly", this meant that travel routes are not necessarily used in any consistent pattern. For example, the routes may have been used 50 years ago by one individual or may be used by a group of people every year. With respect to receptors occupying cabins, there is a cabin (original exporation camp) close to Sheardown Lake that is sometimes occupied by Inuit. This will need to be compensated for as it will no longer be able to be safely occupied if Project construction commenses. At Steensby Port there is a cabin that is not known to be utilized and is not expected to be within sufficent distance from Project activities for potential impacts. Non the less, consultation with HTO members in Igloolik is occuring to determine if a more suitable location is desired. At Milne Port on the east side of Milne beach there is a cabin that could provide shelter for people when out on the land. Consultation with Pond Inlet would determine if a more suitable location is required, but it is not expected that the location is within a potential zone of impact.	Response being reviewed by HC
HC-02	Air Quality It appears that human receptors are not identified in the Air Quality Assessment. HC suggests the receptors are located and characterized as discussed in the section above. This information is important in describing risk to human health. The Draft EIS does not appear to contain a rationale for excluding possible air quality contaminants that were not considered in this assessment. For example, Petroleum Hydrocarbons (PHCs) and diesel particulate matter (PM) were not included in this assessment, however project activities such as the use of diesel burning vehicles are associated with emissions of PHCs and diesel PM. Values for "Federal Air Quality Objectives" and National Ambient Air Quality Objectives (NAAQOs) are presented in multiple locations throughout the Draft EIS (e.g. Vol. 5, Table 5-2.5 "Ambient Air Quality Criteria, Standards and Objectives" p.33; p117; Appendix D-1 p.2, etc), and appear to list outdated categories and associated values for Air Quality parameters. The current interim NAAQOs are available on EC's website2. HC advises the use of the most current objectives and standards as applicable. Please clarify the reference on page 117, Vol. 5 (and elsewhere) cited as "Environment Canada. 2010b. National Ambient Air Quality Objectives".	The LSA is uninhabitated and no human settlements are foreseen in the near or distant future. Placing a focus on human health receptors is therefore not required. The focus of the air quality monitoring plan is therefore on air quality parameters susceptible to affect wildlife habitat. Please refer to Appendix 6G for the risk assessment related to exposure. PHC and PM emissions were not included in this assessment because vehicle engines will have the latest emission technology at the time of purchase.	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	BIM can confirm that the air qaulity assessment did take into account the relavent NAAQO's as per EC's webiste at the time the DEIS was written. The references pertaining to this IR will be clarified in the FEIS to include the webiste: http://www.ec.gc.ca/rnspa-naps/default.asp?lang=En&n=24441DC4-1.	FEIS

HC-03	Particulate matter (PM) varies in size. Particles of size 10 micrometers (µm) or less in diameter, called PM10, and particles less than 2.5 µm (PM2.5) are considered to be non-threshold substances, meaning that health effects may occur at any level of exposure. Canada Wide Standards (CWS) for PM recognize that any increase in exposure will result in an incremental population risk. HC advises this fact be considered in a comparison of predicted project related changes in ambient air quality to applicable air quality benchmarks relevant to human health (Canada-wide Standards, National Ambient Air Quality Objectives, territorial regulations, etc.), and a discussion of the potential effects on human health. HC notes the principles of "Keeping Clean Areas Clean" and "Continuous Improvement" are an important part of the CWS. In addition, HC notes that air quality criteria and standards should not be considered as thresholds below which health effects do not occur. Please note that HC does not verify air quality modelling results and assumes that correct and accepted and/or validated methods were used. HC relies on the expertise of Environment Canada for the review of air quality modelling results and the provision of related advice. If errors and/or gaps in the modelling are noted by Environment Canada, it is suggested that revisions be made to address them as indicated by Environment Canada. If the revised results differ from the originally submitted results, it is advised that the report be resubmitted to HC for review.	The project considered the current H&S requirements of Federal and provincial agencies. This is out of scope.	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	BIM is appreciative of the information provided for this IR. BIM will consider the points provided from HC in this IR in the FEIS.	FEIS
HC-04	Contamination of Country Foods The assessment of risk to human health due to the possible contamination of country foods appears to be limited in the Draft EIS and appendices. The discussion of possible contamination of country foods appears limited to the deposition of iron ore dust as a source of metals and only include a preliminary assessment of blueberries and caribou as country foods consumed that may be contaminated (Appendix 6G of the Draft EIS). However, the EIS identifies several other possible sources of contaminants (marine spills of fuel and other substances, transportation emissions i.e. trucks and trains, and waste rock handling) that are advisable to include in assessment of country food contamination as they may be operable pathways for contamination of country foods. Also these activities may be sources of contaminant types not discussed in Appendix 6G. The Draft EIS also states that "other berries (i.e. crowberries) and a number of marine mammals (i.e. ringed-seal, walrus, beluga whale, narwhal, polar bears) are also consumed"; but these country foods were not included in the discussion of contamination of country foods and risks to human health. It is also likely that fish from Mary River and surrounding lakes are consumed by populations in the area, and Volume 7 of the Draft EIS, p. 233 identifies that there are some exceedances of mercury values for Arctic char. Please note that the 2010 Government of Canada document "Risk Management Strategy for Mercury"3 provides up-to-date information and discussion on mercury, including values, recommendations and guidelines.	The assessment completed on blueberries is predicted to be representative of crowberries and other edible berries within the RSA. Appendix 10D-10 outlines management plans for shipping and marine mammals including preventative measures to be employed that will prevent contaminants from shipping activities. Furthermore, it is unlikely that marine mammals will spend significant amounts of their life within areas potentially impacted by project contaminants. Therefore it is unlikely that potential project contaminants will have a measurable impact on the meats of marine mammals and polar bears. Thank you for making reference to the Government of Canada's "Risk Management Strategy for Mercury". This document may be useful in relation to the baseline levels of mercury that were determined for freshwater arctic char in the RSA.	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	One point of clarification is that the report included in Appendix 6G did consider a suite of metals other than iron in the assessment. The evaluation of exposure potential from ore dusting for caribou and blueberries is considered to be representative for terrestrial mammals and vegetation within the RSA. BIM's assessment of potential impacts to marine water and sediment qaulity were evalutated as not significant for the LSA's. In consideration of the geographic range that marine mammals occupy throughout their life (described in Volume 8), BIM's committment to operate within applicable guidelines for water quality in the freshwater and marine environments, and the assessments presented in the DEIS for sediment and water quality within the freshwater and marine environment, it is not expected that contamination of country foods in the marine environment will occur. Specifically, Section 5.3 of Volume 8 states "The EIS Guidelines requested consideration of contaminant loading in marine mammals like seals and walrus, which are important local food sources. A review of contaminants in marine mammals of the Canadian Arctic was provided in Appendix 1 of the marine mammal baseline report (Appendix 8A-2). Contaminants from fossil fuel combustion and run-off from ore stockpiles were assessed in Sections 3.5 and 4.6. It was predicted that with mitigation measures in place, contaminants from the Project will not significantly affect prey (or prey habitat) of marine mammals." BIM notes HC's reference to the Risk Management Strategy for Mercury in the context of existing baseline levels of mercury determined for char.	Response being reviewed by HC

HC-05	Contamination of Country Foods Also, Appendix 6G does not provide an quantitative assessment of the risks to human health, nor does it seem to be included elsewhere in the Draft EIS. In order for HC to provide advice about the human health risks associated with contamination of country foods, HC suggests adding a section in the EIS that includes: • A discussion of whether country foods are consumed, or are expected to be consumed, in the potentially affected area (considering First Nations and Inuit people, local residents, hunters, fishers and trappers). Whenever possible, identify what country foods are consumed, which parts of the country foods are consumed if applicable (e.g. whether organs are consumed as well as the meat), and their consumption frequency using surveys of potentially affected people. • An inventory of all potential contaminants (including naturally-occurring contaminants such as methylmercury) and a determination of whether possible transport pathways of these contaminants into country foods will result from project activities. A contaminant with a pathway relevant to food sources is considered a contaminant of potential concern (COPC). • A further level of assessment (e.g. HHRA) if there is potential for contamination of country foods as a result of the project activities. An HHRA would consider adequate baseline data and/or modelling of COPCs in country foods prior to any project activities, a predicted impact of project activities on the concentration of contaminants in country	These points but are beyond the scope of this DEIS as per the NIRB guidelines. However, country food served at the camps will be obtained through Health Canada approved suppliers.	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	BIM's reference to "Health Canada approved suppliers" simply means that caribou or char, for example, that would be served at BIM's camps or operations would be sourced from suppliers that are subject to applicable HC regulations. The procurment of these foods could be compared to that of hotels and resturants currently in Nunavut.	Response being reviewed by HC
HC-06	Drinking and Recreational Water Quality HC has developed a detailed guidance document containing advice for drinking and recreational water quality related to human health and environmental assessments (enclosed for your convenience). The checklist (refer to Appendix A), may be useful to verify that the main components of a water quality assessment are completed. HC advises the following be considered in an assessment of water quality: • identifying all sources of drinking water (surface and groundwater), as well as water used for recreational purposes, within the area of influence of the project. • an indication of baseline levels of naturally-occurring contaminants (e.g. arsenic, metals) in order to assess impacts on drinking water. The level of naturally-occurring contaminants may already be elevated, and may be further influenced by project activities. HC advises an examination of the potential impacts on the quality of drinking water sources (physical and chemical parameters) during all phases of the project, as well as the potential for cumulative effects on the quality of these water sources. If any changes to water quality are predicted, HC suggests that the potential effects on drinking water quality and human health be discussed. The Draft EIS references “Health Canada. 2004. Drinking Water Quality Guidelines” (Volume 7, p. 301). It is unclear exactly what document the Draft EIS is citing, however HC advises consulting the current Guidelines for Canadian	Baffinland thanks HC for the document “Guidance for Evaluating Human Health impacts in Environmental Assessment: Drinking and Recreational Water Quality, DRAFT, January 2011. In response to the specific information requests Baffinland provides the following: • All of the known drinking water sources (surface and groundwater) in the Project Area are project-related (Phillips Creek, km32 Lake, Katiktok Lake, Camp Lake, Ravn Camp Lake, Cockburn Lake, 3km Lake, and 10km Lake). No other drinking water sources were identified through the Stakeholder Engagement Program. • Outside of the navigational uses described in Section 5 of Volume 9, no additional recreational water use in the freshwater environment was identified through the Stakeholder Engagement Program. • Baseline levels of naturally occurring contaminants are summarized in Appendix 7B – Water and Sediment Quality Baseline Report. • The protection of drinking water quality has been addressed by comparing baseline and predicted water quality against the CCME guidelines for the Protection of Aquatic Life (PAL), as they are more stringent than the Canadian Drinking Water Quality Guidelines for the identified Key Indicators. • For each of the Key Indicators that were used in the environmental assessment, a comparison between the threshold and the guideline values in Table 4 was completed. For all Key Indicators the threshold that were used were more stringent than the guidelines identified in Table 4. Table 7-3.8 (attached) has been updated to reflect the up to date threshold values provided in Guidelines for Canadian Drinking Water Quality (Health Canada, 2010).	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	Although not explicitly stated in the DEIS, a qualitative comparison of the baseline and predicted water quality to the drinking water quality standards was completed for non-point sources, and a quantitative comparison of the baseline and predicted water quality to the drinking water quality standards was completed for point sources. To clarify this point, statements to that effect will be inserted into relevant sections of the FEIS. Any of the Potential Effects listed in Table 7.3.8 have the potential to affect water quality at any of the project drinking water sources. As such all of the Key Indicators were measured at these locations and it is anticipated that monitoring will continue to be required while drinking water is drawn from these locations. In any case, all potable water used for the project will require treatment in order to meet the CDWQG, prior to consumption, which greatly reduces the potential for human health effects from consumption of potable water. To clarify this point, statements to that effect will be inserted into relevant sections of the FEIS. Reference to “Table 4” was a transcription error and was instead a reference to the Summary Table of the Guidelines for Canadian Drinking Water Quality (HC, 2010). An updated version of Table 7.3.8 with the appropriate reference (Note 3) is attached by email.	FEIS

New IR: HC-07	Noise Impacts HC suggests that potential human receptors are identified and characterized as discussed in the section above on Location and Characterization of Receptors. HC notes that there is an inconsistency in the text between statement in the second-to-last bullet on page 100 under "Construction" heading, Section 3.3.3.2 Milne Port, Volume 5; and Table 5-3.8 (same page), regarding the value of "45 dBA", i.e. clarify the text "above less than 45 dBA" from the bullet, to the information provided in Table 5-3.8.	N/A	BIM offered to meet with with HC in May to discuss IR's. HC declined and BIM will continue to engage HC as we are other agencies.	Please note the applicable regulation (Mine Health and Safety Regulations, amendment, Nu. Reg. 016-2003) that BIM would adhere to, described in Table 2-2.1 of Volume 2 in the DEIS.	FEIS

EC IR #	Request	Baffinland Response	Reviewer Comments	June 9 Meeting Minutes	Category	Action/Followup	EC Comments
EC-02-2	2) For each Species at Risk encountered during surveys, please identify potential adverse effects of the project on each species, how they will be mitigated and how the efficacy of mitigation measures will be monitored as required under S. 79 of SARA.	Based on EC's comments, Volume 6 requires further consideration to address potential impacts, specifically on Ivory Gull and Ross's Gull. Baffinland will conduct additional impact assessments on those species and provide prior to the technical meetings.	EC acknowledges reciept of the supporting information in response to this IR. We appreciate BIMC's efforts to provide this information prior to the commencement of the technical review period as it will certainly inform our assessment of the DEIS.	Complete. Submitted by BIM on May 31 2011	Volume 6	EC Reviewing	Agreed
EC-07-1	1) Please provide information on the density (number of individuals or detections) of each species of shorebird and songbird detected in surveys broken down by habitat type. Please indicate the sample size of survey plots and point counts in each habitat type and each year, provide the number of active nests recorded for each species by habitat type.	This is baseline information that did not contribute to the project's impact assessment or impact statement. Regardless of quantitative results, it is unclear how density estimates will be useful for impact assessment and mitigation planning. Protection of migratory bird habitat and nests will be implemented regardless of bird densities.	The information in the response is inadequate and implies that Baffinland already has this information in hand and, if provided, would support an independent assessment. The railway seems to pass through areas of higher wetlands concentrations and shorebirds and songbirds could be affected/displaced by contstruction and sensory disturbance/dust deposition during operations. Some of the shorebirds detected in surveys are known to be declining. At the very least, this information should be provided as a part of the baseline description of the terrestrial environment. We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM to advise on timeline on the data.Side Note: All comments related to birds are Canadian Wildlife Service. James Hodson.	Volume 6	BIM to provide mid August	Recognize that receiving this data so late in the technical review period will impede and possibly preclude a thorough review of the material by CWS staff.
EC-07-2	2) Please provide the density estimates for songbirds and shorebirds from the two studies that were cited in Volume 6 – Section 4 and Appendix 6E-1 (Weider and Hobaek 2000 and Morrison et al. 2001) for comparison with densities estimated from the baseline surveys.	This is baseline information that did not contribute to the project's impact assessment or impact statement. The baseline and impact assessment does allude to relatively low densities. Regardless of quantitative results, it is unclear how density estimates will be useful for impact assessment and mitigation planning. Protection of migratory bird habitat and nests will be implemented regardless of bird densities.	Same answer as above.	BIM to advise on timeline on the data.	Volume 6	BIM to provide mid August	Recognize that receiving this data so late in the technical review period will impede and possibly preclude a thorough review of the material by CWS staff.
EC-07-3	3) Please provide an assessment of the potential impacts to songbirds and shorebirds from construction and operations along the proposed transportation corridors linking the mine site to the two ports.	Songbirds and shorebirds were not VECs for reasons as justified in Volume 6, Section 4.2. effects on shorebirds and songbirds were addressed an assessment of general habitat loss, quantified by proportional loss of ELC units (as an index of vegetation units and habitat types). There are no project interactions known to disproportionally affect particular species of songbird or shorebird.	Same answer as above.	BIM to advise on timeline on the data.	Volume 6	BIM to provide mid August	Recognize that receiving this data so late in the technical review period will impede and possibly preclude a thorough review of the material by CWS staff.
EC-08-1	1) Please calculate Zones of Influence for each of the airstrips based on the expected aircraft types using each airstrip, the noise levels generated by each type of aircraft during take-off and landing and the area during which aircraft will be below an altitude of 650 m during take-off and landing.	This information will be provided separately from this IR response, prior to the technical meetings.	EC conducted a preliminary review of the information provided by Baffinland to NIRB on May 13/2011. We appreciate BIMC's efforts to provide this information prior to the commencement of the technical review period. However, several of the ZOI calculated for the airstrips provided in the maps are cut off by the map boundaires, so it is difficult to determine the full zone of influence. Furthermore, the actual area covered by each annulus of the ZOI at different noise levels is not provided, making it difficult to address information requested in EC-08-2. To this end, EC would appreciate if Baffinland could revise their response to EC-8-1 to address the above deficiencies and provide this information prior to commencement of the technical review period.	BIM to confirm the timing for this information.	Volume 6	BIM to provide mid August	Recognize that receiving this data so late in the technical review period will impede and possibly preclude a thorough review of the material by CWS staff.
EC-08-2	2) Based on this information, please update estimates of the changes in habitat effectiveness for each of the bird VECs based on revised estimates for airstips.	Effects of individual project components were not assessed. Habitat loss was determined assuming that habitat effectiveness would be reduced to zero within the entire Potential Development Area (PDA).	EC-08-02 continues to be outstanding as it was not addressed in the updated ZOI information provided by BIMC in response to to EC-08-1 We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM to confirm the timing for this information.	Volume 6	BIM to provide mid August	Recognize that receiving this data so late in the technical review period will impede and possibly preclude a thorough review of the material by CWS staff.

EC-20-1	According to Table 2.4 no lake water quality sampling was conducted to ascertain baseline conditions along the Milne Tote Road or at Milne Inlet and only one site (Mid-rail Camp Lake) was sampled for the whole railway corridor. Limited baseline data in these areas will make it difficult to discern what impact, if any, project activities are having on lake water quality along the road and rail lines and at Milne Inlet. Request: Environment Canada requests that baseline sampling be carried out to characterize the lake water quality along the Milne Tote Road and the rail corridor as well as around Milne Inlet	Mid-rail camp lake was sampled because it is a potential camp water supply source. Other lakes adjacent to the tote road and railway were not sampled as this was not required to complete the effects assessment.	EC maintains that baseline lake water quality data should be collected along the two transportation corridors and Milne Inlet so future project-related impacts can be assessed. This baseline data should be incorporated into the proponent's sampling plan for upcoming and subsequent field seasons. To ensure adequate coverage of these under studied areas and sufficient sample sizes, EC would like the opportunity to review BIMC's lake water quality sampling plans for the upcoming and subsequent field seasons as soon as possible, preferably before any future sampling effort is undertaken.	One point of clarification is that FEIS will include the framework for the AEMP. This was not a requirement for the DEIS. There will be no discharges at Milne Port and along the tote road during operations, only during construction. Road haulage has been dropped which will reduce the infrastructure at Milne Port and greatly reduce traffic on the tote road. Rail use remains the same. From EC perspective, the removal of road haulage does moderate the concerns, however baseline is important for spills. Power analysis is important to detmine required samples to detect a change. BIM will propose a sampling program for EC to comment on. BIM cautions that power analysis may result in a enormous amount of required samples that are impracticle or not warranted for the level of activities. Side Note: Waste water treatment regulations will come into effect in approximately 2014 (the regulations are the Wastewater System Effluent Regulation (WSER)). EC would just like to give BIM the heads up on this reg.	Volume 7	BIM to Engage EC on Future Plans/Field Work.	Agreed
EC 21-1	Stream water quality summary statistics reveal that the majority of sites sampled between the mine site and Steensby Port and the mine site and Milne Inlet were sampled only 4 times (Table 3.2) and 3 times, respectively (Table 3.3). Limited sampling in these areas is likely insufficient to capture natural variation in these study areas and will make changes that result from project related impacts difficult to identify. Request: Please describe how a realistic water quality baseline can be developed from the available data and any supplemental sampling, comparisons to baseline made and changes detected.	Sampling is being resumed in 2011 to continue to build on the existing data for the purpose of future monitoring.	EC would like the opportunity to review BIMC's sediment, water quality and biological monitoring plans for the upcoming field seasons as soon as possible, preferably before any future sampling effort is undertaken.	BIM to provide to EC for their input and recommendation. BIM will engage EC on future program design for their input.	Volume 7	BIM to Engage EC on Future Plans/Field Work.	Agreed
EC 22-1	According to Table 2.5 of Appendix 7B, no sediment samples were taken from lakes or streams for the railway corridor, Milne Tote Road or the Milne Inlet areas. Lack of this baseline data will make it difficult to discern what impact, if any, project activities are having on sediment quality in these areas when construction and operation activities are underway. Request: Please describe how a realistic picture of baseline sediment quality for the project area can be developed from the available information and/or further sampling.	Baffinland is continuing its baseline sediment quality collection program in 2011. Supplemental sediment quality sampling sites in the vicinity of Milne Port, Milne Inlet Tote Road and Railway Alignment will be added to the existing sampling locations to ensure that adequate baseline data is available for comparison with environmental monitoring data. There is an opportunity to collect up to two full years of supplemental lake water quality data prior to initiating development. Details regarding additional sediment sampling locations will be provided to clarify how further sampling will improve the coverage of the baseline data set and allow for comparison during environmental monitoring. See the EC-20-1 response for details regarding Aquatic effects Monitoring, Environmental effects Monitoring and environmental construction monitoring.	EC would like the opportunity to review BIMC's sediment, water quality and biological monitoring plans for the upcoming field seasons as soon as possible, preferably before any future sampling effort is undertaken.	BIM to provide to EC for their input and recommendation. BIM will engage EC on future program design for their input.	Volume 7	BIM to Engage EC on Future Plans/Field Work.	Agreed
EC-23-1	The data presented in Table 3.5 of Appendix 7B indicate that a very small number of sediment amples were collected at the sampling stations near the mine and near the Steensby Port Site. As a result, sediment sampling likely lacks sufficient sample size to characterize the variability of the mine and Steensby Port areas. Requests: 1) Please explain how a realistic picture of baseline sediment quality for these areas can be developed from the available information.	Sediment sampling carried out to date has been sufficient to establish a baseline for the effects assessment. Development of an aquatic effects monitoring program is ongoing and will include additional the establishment of additional sediment sampling stations and or additional sampling of existing stations.	EC maintains that a sample size of one is inadequate to characterize the natural variability of sediments in the lakes and streams sampled in the Steensby area and recommends more than one sediment sample per location be taken in the upcoming and subsequent field seasons. To ensure adequate coverage of the local study area and sufficient sample sizes, EC would like the opportunity to review BIMC's sediment sampling plans for the upcoming and subsequent field seasons as soonas possible, preferably before any future sampling effort is undertaken.	Future monitoring design is important to understand the value of the sampling.BIM will engage EC on future program design for their input.	Volume 7	BIM to Engage EC on Future Plans/Field Work.	Agreed
EC-23-2	2) Environment Canada requests that further baseline information be gathered to ensure the data is representative of natural conditions and is useful for comparison to post development monitoring data.	As described above, water quality sampling is resuming in 2011 to build on the existing data, and development of the aquatic effects monitoring program may identify the need to establish additional stations for long-term monitoring. Baffinland will compile the additional available weekly or biweekly compliance sampling and provide it prior to the technical meetings.	EC would like the opportunity to review BIMC's sediment, water quality and biological monitoring plans for the upcoming field seasons as soon as possible, preferably before any future sampling effort is undertaken.	BIM to provide to EC for their input and recommendation. BIM will engage EC on future program design for their input.	Volume 7	BIM to Engage EC on Future Plans/Field Work.	Agreed

EC-24-1	Page 3 of Appendix 7B indicates that samples were collected on a weekly basis in the mine site area (i.e. at sites, A0-10, C0-10, E0-03, E3-01, E4-01, F0-01, G0-01, G0-09, and L0-01) in 2007 and 2008 but that the 2008 results were not included in the draft EIS submission because they were collected to meet regulatory requirements. However we note that these locations are identified in Figure 1.2 which is entitled "Stream Water Quality Sample locations Mine Site 2005 -2008". It is unclear if the results for these samples were included when the summary statistics for the mine area were calculated (Table 3.1). From the information presented, the 2008 data would be a useful addition to the data used to develop the water quality baseline for the mine site area. Requests: 1) Please clarify if the 2008 samples were included in the stream water quality summary statistics for the mine area (Table 3.1)?	The baseline study presented seasonal (spring, summer and fall) sampling results for a large network of streams over a three year period (2006 to 2008). This provides a good baseline. Weekly (or biweekly) sampling was also carried out for compliance monitoring, as indicated in the baseline report. This was carried out within the Mary River only, and this data was not included in the baseline report. Baffinland will compile the additional available weekly or biweekly compliance sampling and provide it prior to the technical meetings.	EC acknowledges reciept of the supporting information in response to this IR. We appreciate BIMC's efforts to provide this information prior to the commencement of the technical review period as it will certainly inform our assessment of the DEIS.	This information was provided with BIM's IR response package.	Volume 7	Resolved	Agreed
EC-25-1	Page 1 of Appendix 7B indicates that baseline sampling at the mine site, along the tote road and at Milne Port was undertaken concurrent to exploration activities and mining of the bulk sample. Given the proximity to industrial activity the samples may not provide a true indication of baseline conditions. To detect/correct for these impacts it is customary to collect samples from reference sites comparable to the study area (e.g., in terms of bedrock composition, hydrology, nutrient status) with the number of reference sites being commensurate with the size of the project being undertaken. To that end, the proponent identified one reference lake, Candidate Reference Lake, located south of the mine site and east of Mary Lake (see Figure 4.1-11 of Appendix 7C for location). Unfortunately it would appear that only 2 water quality samples and that no sediment quality samples have been collected from the reference site. This sampling effort is insufficient for comparison to existing and future water and sediment monitoring results in the project area. Request: Environment Canada requests that the proponent collect sufficient referencesamples to ensure that a true baseline is determined. Water quality and sediment samples from both under ice and open water conditions should be collected from this reference site and from additional stream and lake reference sites outside the local study area.	As indicated in the EIS, one Candidate Reference Lake and several Candidate Reference Streams have been identified for the Project. Baffinland is continuing its baseline water and sediment quality collection program in 2011. Water and sediment quality sampling in the Candidate Reference Lake and several Candidate Reference Streams will be completed in order to verify the identified baseline conditions in the vicinity of Milne Port, Milne Inlet Tote Road and Mine Site. There is an opportunity to collect up to two full years of supplemental stream water quality data prior to initiating development. Details regarding the water and sediment quality sampling program will be provided to clarify how further sampling will improve the coverage of the Candidate Reference Lake and several Candidate Reference Stream baseline data set and allow for comparison during Aquatic effects Monitoring, Environmental effects Monitoring and environmental construction monitoring.	Given BIMC's acknowledgement that their baseline monitoring does not represent a 'true baseline' (since sampling was conducted concurrent to or post development activities) and the lack of sampling effort devoted to reference sites to date, EC would like the opportunity to review BIMC's reference site selections along with their sediment, water quality and biological monitoring plans for these sites as soon as possible, preferably before any future sampling effort is undertaken.	Reference site selection is important. Design is important in that efforts should not be spread over several years. Data should be temperal so that variability is reduced. BIM will engage EC on future program design for their input.	Volume 7	BIM to Engage EC on Future Plans/Work. BIM intends to have a draft AEMP complete and available for EC to view in March 2012	Agreed
EC-44-1	The quality of model predictions is dependant on the quality of the input data used in the model. The selection of model options and the configuration of model domains and grids can also affect the quality of predictions. To provide confidence in the air quality model predictions provided in the draft EIS, all input data and selected model options and configurations must be reviewed. Request: Environment Canada requests that the proponent provide all input and control files used in the CALPUFF model to generate the air quality predictions presented in the draft EIS. All files should be in a format that can be used directly into CALPUFF. Please include all output files in the raw CALPUFF format.	Baffinland will provide this data to Environment Canada prior to the technical meetings. The ASCII input files will be provided. The raw binary files will not be provided because they are voluminous (too large for DVDs), and the actual formats of the binary files are operating-system dependent (record delimiters) and processor dependent (byte order). This will includev all CALMET input data files so that EC can generate binary met files for use by CALPUFF. All CALMET & CALPUFF input Runstream files will be provided so that all simulations can be repeated. In addition, all CALSUM & POSTUTIL input files will also be provided as well as CASLPOST runstream files.	As per BIMC's May 5/2011 letter to NIRB, BIMC provided EC with a DVD that includes some of the input and control files that were requested. However, the CALMET output files (e.g. kplsi.jan.dat – used as input data for CALPUFF) and CALPUFF output files (e.g. CALPUFF.CON, DRY.COM, WET.CON) were not included in this package. EC requested these files for the purpose of re-running the models to verify the results presented in the DEIS. Without the aforementioned output files, EC cannot undertake this work. That said, reciept of these output files is critical to EC 's technical review of the DEIS and we request this information be provided prior to commencement of the technical review period.	Removal of Road Haulage has resulted in a need to re-model for the tote road and Mine Site and this will be presented in the FEIS. Information for volume 5 will be updated in the supplement. Dave Fox from EC is in Yellowknife will need the changes to modelling. Note that there are still some files missing that need to be provided to EC.BIM to get back to EC on when updates to modelling can be provided.	Volume 5	A hard drive was sent from EC to RWDI the week of July 18th so that RWDI could provide the missing files. As of July 26th, RDWI had not received hard drive from EC. RWDI have files ready to load and will return disc to EC when the hard drive arrives.	RWDI has shipped the data to EC on July 29 and the hard drive is currently in transit. As of August 3, EC has yet to receive the hard drive.
EC-45-1	1) Please provide detailed information regarding the calculation of air emissions used in the air quality assessment for each source type. Include all assumptions, emission factors, load factors, types of fuels and any other information used in the emission calculations.	The air emissions inventory used in the modelling is presented in Appendix 5C-4.	Further information is required; in particular, information on whether load factors were used in estimating truck emissions of SO2, NOx, CO and PM2.5. We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM to provide answer by June 30th.	Volume 5	Tier 2 emissions were used in AQ modelling. Tier 2 emissions do not use load factors.	Clarification of the load factor: The Tier 2 emission standard is used as an emission factor in the calcualtion of truck emissions. Were operational load factors applied in the emission calculations. If yes, please provide the numerical load factor used in the calculation and provide a justification/reference for using this load factor.

EC-45-2	2) Please provide information on the composition of the mine truck fleet and the emission Tier standards that the trucks are capable of achieving.	The mine truck fleet will be defined in the Feasibility Study, the truck engines will meet the latest Tier standard in effect at the time of purchase.	The response was not adequate as we need confirmation on whether the emission estimates for the mine fleet were based on U.S. EPA Tier II or III emissions standards. Is the Proponent comitting to using Tier II trucks? We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM to respond by June 30th.	Volume 5	Emission estimates for the mine fleet were based on Teir 2 emission standards.BIM will assume Tier 3 compliant engines for trucks in new AQ modelling	EC would encourage BIM to assume Tier 2 compliant haul trucks in the new air quality modelling as this would be more conservative than assuming Tier 3 compliant trucks. It is our understanding that Tier 3 compliant haul trucks are not currently available.
EC-45-3	3) Please provide emission estimates for ships transporting ore and supplies. Include the type of fuel expected to be used by the ships.	The design of the ore carriers is not complete yet. All engine emission levels will comply with the latest IMO guidelines when the vessels are ordered.	The response was not adequate. Please provide emission estimates for ships transporting ore and supplies. Include the types of fuel expected to be used by the ships. If the specific design of the ore carriers is not complete, please provide a range of potential emissions rates based on emissions from comparable ships. Include a discussion of typical fuels used by these ships. We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM to provide a range of emissions for comparable ships and the types of fuels expected to be used.	Volume 5	Engine specifications for ore carriers and the ships that will be used for transporting supplies are currently unknown. Marine grade fuel will be used by the ships. Ore carriers will be fueled in Europe and therefore the fuel would be subject to marine fuel standards of the European Union. It is estimated that Ships will use fuel with 500ppm S or less. BIM can provide SO2 emissions per unit of distance form assumptions on fuel consumption and vessel speed. BIM can also use NOx emissions per unit of distance using emissions data from the latest generation of engines available. It is anticipated that this information can be made available to EC by mid August.	EC will welcome the SO2 and NOx emission estimates and requests that BIM also provide PM emission estimates from transport ships.
EC-46-5	5) Please provide an analysis of the potential for ship emissions from the transport of ore and supplies to impact air quality along the coastline.	This information will be provided separately from this IR response, prior to the technical meetings. The Emissions inventory for Steensby port is provided. The only measureable impact of emissions from shipping is at port at Steensby. Emissions from the vessels while underway should be so dispersed as to be insignificant, especially since these will be latest generation of marine engines. May 13/11 response: Within Appendix 5C-4 of the DEIS, the emissions for ships idling at Steensby are presented and have been included in the modelling. Emissions from the ships when underway were not examined because it was felt that these will be transient and should be so dispersed as to be insignificant, especially since these will be the latest generation of marine diesels.	EC acknowledges receipt of the supporting information in response to this IR. Unfortunately, Baffinland's recent response dismisses en route shipping emissions as negligible and thus no air emission estimates were provided with respect to this activity. However, it is EC's understanding that ship emissions while in transport will be much greater than emissions from a ship that is idling. Ships can use various fuels (from ultra-low sulphur fuels to bunker C) that can greatly affect the types and quantities of air emissions. Other coastal regions have identified ship emissions as a contributor to air quality degradation. The request for information for ship emissions while in transport is to allow assessment of potential air quality degradation resulting from this project. EC maintains that this information is critical for our technical review and requests BIMC provide estimates of shipping emissions related to marine transport prior to commencement of the technical review period.	EC would like to get more information on the ship transiting rather than just idelling in Port. Qauntifying estimates would be beneficial for EC. EC has concerns related to impacts on air qaulity for communities.	Volume 5	Engine specifications for ore carriers and the ships that will be used for transporting supplies are currently unknown. At this point we are unable to use dispersion modelling because we have no met data for the passage route. However, BIM can provide SO2 emissions per unit of distance form assumptions on fuel consumption and vessel speed. BIM can also use NOx emissions per unit of distance using emissions data from the latest generation of engines available. It is anticipated that this information can be made available to EC by mid August.	EC will have further discussions regarding adequacy of response at the upcoming technical meetings
EC-48-2	2) EC requests that the proponent provide a list of alternative nonincineration methods for the disposal of sewage sludge. If the proponent decides to incinerate sewage sludge, a letter from the incinerator manufacturer stating that this equipment is suitable for burning this type of waste, should be submitted to the board.	Dewatered sludged will be incinerated. Vendor performance guarantees will be provided in the FEIS and Type A Water License application.	EC's IR is only partially addressed, i.e. what alternatives to incinerating of sewage sludge have been considered? We are of the position that this information is critical to the technical review and should be provided prior to the commencement of the technical review period.	BIM explains that landfilling is the only other alternative. BIM will elaborate on the alternative.	Volume 5	Landfilling of sewage sludge would require dewatering and chemical stabalization of the material. Landfilling would be a more costly alternative but is being considered as an alternative. Incineration of sewage sludge is the other alternative being considered. Incineration is widely used by other northern projects. BIM would ensure that proper methods and equipment are used so that all applicable regulations are met. BIM can provide a letter to the board from the incinerator manufacturer when the appropriate equipment is purchased as per this IR request.	EC will have further discussions regarding adequacy of response at the upcoming technical meetings

AANDC IR #	INAC Information Request	Baffinland's Response	INAC Comments on Response	Category
INAC-001	As per Section 2.6 of NIRB's Guidelines, INAC requires the Proponent to identify all significant gaps of knowledge as well as the steps taken to address these gaps.	These are identified throughout the DEIS. As an example, in Volume 8 it is acknowledged that there is a limited body of knowledge around whale response to the proposed level of shipping, and therefore a monitoring program is proposed to address this gap.	Our review found inconsistencies. We will follow up with more specific requests.	Information that can be provided later in the process
INAC-002	INAC requests the Proponent to provide specific references in the concordance table, including page or section references, as appropriate.	Baffinland referred to specific sections, figures, tables or appendices. Where NIRB guidelines were vague or all encompassing, Baffinland responded accordingly. If there are specific examples INAC has questions about, let us know.	more accurate and specific table would be of benefit to review efficiency	Information that can be provided later in the process
INAC-003	INAC requests the Proponent to describe its record (or otherwise lack of record) related to past experience, compliance, etc. as per Section 5.1 of NIRB's Guidelines.	This is addressed in Volume 1, Section 1.2 (page 4 regarding exploration and bulk sampling programs)	The following items from NIRB guidline section 5.1 remain outstanding: 1. Past experience in mining, railway and shipping, 2. Record of compliance with governmnetal policies and regulations pertaining to environment and socio-ec issues in past operations. 3. Honoring environment and socio-ec commitments in the event of planned or premature mine closure / changing ownership. 4. Record in incorporating environment and socio-ec considerations into construction, operations, temporary closure, final closure, post-closure. 5. Corrective actions undertaken in the past, distinguishing between those taken voluntarily and thos at	Information that can be provided later in the process
INAC-004	As per Section 5.1 of NIRB's Guidelines, INAC requests the Proponent identify and describe any obligations or requirements that it must meet to post a bond or other form of financial security to ensure payment of compensation and to ensure proper mitigation and remediation can be carried out in the event of accidents that directly or indirectly result in major damage by the Project to the environment, as well as to cover the cost of planned or premature closure, whether temporary or permanent.	This is addressed in Volume 1, Section 1.2 (page 4, regarding its current financial assurancy requirements and future anticipated requirements).	Some of this information is in the reference provided.	Information that can be provided later in the process
INAC-005	As per Section 5.1 of NIRB's Guidelines, INAC requests the Proponent to identify the safeguards that it will be putting in place to compensate for any lack of experience in similar environments.	This is addressed in Volume 1, Section 1.2. On Page 4, Baffinland summarizes the experience it gained to date on its exploration and bulk sampling activities. On page 5 it is indicated that Baffinland has identified a shipping partner, consultants and engineers with considerable experience in arctic shipping or mining to supplement its own team.	this is a limited response, more detail required will be requested at a later time	Information that can be provided later in the process
INAC-006	INAC requests that the Proponent provide clarification on why the concordance table indicates that sustainable development issues are not applicable to the DEIS.	We assume this is in reference to concordance indicating "N/A" to section 2.4 of the guidelines, which read: The EIS Guidelines are based upon three factors that the NIRB considers directly associated with sustainable development. These factors are…. We read the above statement to indicate that NIRB considered these factors in developing the guidelines, and this was not a concordance requirement. Volume 10 of the DEIS addresses the application of sustainability.		No outstanding information currently identified.
INAC-007	As per Section 5.2 of the NIRB Guidelines, INAC requests that Proponent's discussion on the regulatory regime include a discussion on mine closure. This should include a discussion of how the design has been developed to meet the regulatory requirements.	Volume 2, Section 2 describes the regulatory regime applicable to the Project, including closure, and the specifics of the regulatory regime applicable to mine closure is described in greater detail in Section 1 of the Mine Closure Plan (Appendix 10G). The regulatory process is well established for mine closure and Baffinland will adhere to this process. It requires the Proponent to regularly update and submit its closure plan for review. The Closure Plan presented in Appendix 10G presents the progressive rehabilitation approach Baffinland intends to adopt. The Closure Plan will be updated throughout the life of the Project.	Discussion on the regulatory regime in Vol 2, section 2 does not include a discussion on mine closure. A discussion of how the design has been developed to meet the regulatory requirements is also outstanding.	Clarification appears to be required. Information that can be provided later in the process. Information best provided before end of DEIS review.

INAC-008	INAC requests that the Proponent provide rationale for the temporal boundary only extending five years post-closure. Also required, are the mechanisms and/or measures which will be used to determine that the post-closure phase has been completed.	Five years was the identified length of the monitoring period in the post-closure phase. Section 6 of the Mine Closure Plan (Appendix 10G) describes the process by which it will be determined if the post-closure phase is completed. In summary, if the closure plan objectives have been met regarding physical and chemical stability, and if the water board deems closure activities adequate. This will be completed with a 5-year inspection and report.	Requested rationale not provided. Mechanisms and/or measures which will be used to determine that the post-closure phase has been completed are not provided in Section 6 of Appendix 10G and are still outstanding.	Information that INAC would like to receive as a priority, with sufficient time to review before the end of the technical review period of the Draft Environmental Impact Statement.
INAC-009	INAC requests that the Proponent provide additional information on land tenure, including summary information on land tenure by component as well as back-up detail.	Proposed lease boundaries on Inuit Owned Land (IOL) at the mine site are shown on Figure 2-2.2. It is expected that the land tenure requirements at the Milne and Steensby Ports will coincide with the PDAs shown on Figures 3-2.1 and 3-2.9. Quarry boundaries along hte tote road are shown on Figure 3-2.2. While not shown on the figure, the future road right-of-way for a lease or easement is expected to be same as the current IOL lease, 75 m either side of the road centreline. Proposed lease boundaries related to railway quarries are shown on Figures 3-2.4 through 3-2.8. Construction and operation phase lease boundaries for the railway are shown on the plan and profile drawings in Appendix 3C. We believe the information presented is appropriate for environmental review, and expect to provide more detailed mapping and coordinates during the permitting phase when these land tenure instruments are being negotiated.	Information on mineral claims area not provided	Information that can be provided later in the process
INAC-010	INAC requests that the proponent cross-reference those sections of the DEIS which are relevant to the draft water license application and any supporting documentation.	A completed concordance with the Nunavut Water Board supplementary information guideline (SIG), which formed Appendix C of the NIRB EIS guidelines, is included in Appendix 1C-3. Additional (mostly, more detailed) information required for the water licence application will be submitted with the FEIS.		Information that can be provided later in the process
INAC-011	INAC requests the Proponent provide a clear indication of the extent of traditional land use and harvesting in the interaction matrix presented in Vol. 2, App. 2C or provide alternative reference citation in Table 1C-1.1-Concordance of EIS Guidelines.	We are not sure which concordance item INAC is referring to. It is possible that a concordance item was incorrectly referenced. Traditional land use and harvesting is described in Appendix 4C (land use baseline report) and in Volume 4, Section 10. Traditional land use and harvesting were validated through a series of public consultation meetings in the communities adjacent to the Project area. The information presented in Volume 4C is the most comprehensive information available to date.		No outstanding information currently identified.
INAC-012	INAC requests that the Proponent provide a discussion of scientific uncertainty, including uncertainty regarding baseline data, modeling and impact predictions, including how this uncertainty is to be addressed, for example, by follow-up and monitoring activities.	Uncertainty in baseline, modelling and impact predictions is addressed in each impact assessment. For example, in the air quality impact assessment (Volume 5, Section 2) the certainty around the assessment is noted in Table 5-2.16, and the uncertainty around modelling is described in Section 2.6.6 Prediction Confidence.	Discussion on how uncertainty has been addressed was also requested. Further review of uncertainty as presented will be undertaken.	Clarification appears to be required. Information that can be provided later in the process.
INAC-013	INAC requests that the Proponent clarify all associated monitoring and/or mitigation plans to be implemented in each phase to eliminate or minimize adverse effects that might occur at various project stages for each Project element.	Volume 10 presents Baffinland's Environmental Management System. The specific environmental management plan attached as appendices to Volume 10 are the management that are already implemented or will be implemented as the activities of the Project ramp up. It is acknowledge that at some future date, additional activity specific management plans may be required. The EHS Management System is a dynamic framework and incorporates the principle of adaptive strategies. Refer to Appendix 10A.	The reference provided does not provide the requested information. We would like the proponent to clarify which monitoring and mitigations plans will be undertaken in each phase.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-014	The Proponent should provide clarification on whether the road haul option is considered an alternative or is part of the Project description and ensure that full results of required assessments are presented for any option that the Proponent considers as still possible .	The road haul option was evaluated as part of the Project in the EIS. The project description is based on both the 3 Mt/a road operation and the 18 Mt/a railway operation underway concurrently, and the impact assessments are accordingly based on both operations underway.	full results of assessments still outstanding.	Information that can be provided later in the process

INAC-015	INAC requests that the Proponent clarify or provide correct references for the sections 6.4.4.3 and 6.4.4.4 in Volume 3 of the DEIS as stated in Table 1C-1.3: Concordance of Addendum to EIS Guidelines.	These references should have been Sections 6.5.4.4 and 6.5.4.5 in Volume 3, where the 3 Mt/a trucking operation and 18 Mt/a railway operation are discussed as alternatives.		No outstanding information currently identified.
INAC-016	INAC requests that the Proponent provide alternative closure and reclamation options as part of the alternatives assessment presented in the DEIS.	It would be helpful to know what other alternatives INAC views are potentially viable options worth evaluating that were not considered in the DEIS. Refer to INAC-7 - the regulatory process for mine closure is well defined.	Section 6.1 of NIRB guidelines clearly require alternatives to be presented with respect to closure and reclamation. It is the Proponent's responsibility to present alternatives.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-017	INAC requests that the Proponent examine and assess different alternatives related and "on-going geotechnical exploration" components of the Project.	We believe this is a narrow interpretation of the first line of Section 6.1 of the guidelines, which could be interpreted require an exhaustive treatise of every possible alternative to each project component. The remainder of Section 6.1 outlines the project elements that NIRB required to be assessed, and these alternatives were therefore assessed in the EIS. Further, geotechnical investigations are a necessary component of the project.		No outstanding information currently identified.
INAC-018	INAC requests the Proponent explicitly evaluate the alternative of a rail line connecting the mine site to a seaport at Milne Inlet.	Railway viability is inextricably linked to port viability. This is why port location was assessed first within the alternatives section. Early engineering studies did consider a railway to Milne Port, and the railway itself was expected to be viable, although there were technical challenges to arriving into the port area itself and ground conditions (ice rich soils) were not ideal. However, the cost of a railway requires a large tonnage that can only be supported by year-round shipping (see Sections 6.5.3 and 6.5.3.6 of Volume 3), which was deemed not viable at Milne Port. A proponent only evaluates what is economically or technically viable.	Proponent has not provided an evaluation of this alternative, as required in the DEIS guidelines. The proponent's response indicates they have investigated this option. Their evaluation and the reason for their dismissal of this option should be provided as part of the EIS for the review of all interested parties.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-019	INAC requests the Proponent evaluate the alternative of year round shipping, with periodic suspensions during critical life periods of relevant marine wildlife species.	This is discussed throughout Section 6.5.3 and sub-sections. Road haulage and seasonal shipping during open water via Milne Inlet was determined to be viable, as well as year-round shipping supported by a railway via Steensby Inlet.	The assessment of the alternative of year-round shipping with periodic suspensions remains outsanding and is required in the NIRB EIS guidelines	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-020	INAC requests that the Proponent evaluate other reasonable Project development scenarios, including better addressing exploitation of other local deposits and justifying the 3 and 18 Mt/year split between road versus rail haul.	Only Deposit No. 1 has been sufficiently delineated to qualify as a ore reserves that can support a bankable feasibility study, and to develop a detailed mine plan. Other deposits, while showing promise, remain mostly in the "mineral resources" category. Therefore, sufficient exploration has only been carried out on Deposit No. 1 to support a mine plan. Rationalization of the 3 Mt/a road operation against the 18 Mt/a railway operation is provided in Volume 3, Sections 6.5.4.3 through 6.5.4.6.	future development scenarios required as per EIS guidelines. Road haul element no longer required.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-021	INAC requests that the Proponent justify the validity of the use of the summation of un-weighted rankings to select the preferred alternatives.	The alternatives assessment methodology involved assigning a "0" to unacceptable performance criteria, which results in an unacceptable (or not viable) rating overall. Beyond that, it was not necessary to add complexity to the assessment methodology by weighting criteria, as the methodology sufficiently and intuitively identifies preferred, acceptable and unacceptable alternatives.		No outstanding information currently identified.
INAC-022	INAC requests the proponent provide conceptual designs for the mine site for alternate development and future development scenarios.	Conceptual designs have not been developed for alternate and future development scenarios, nor are they deemed necessary to evaluate the project.	Simple drawings would be helpful for review.	Information that can be provided later in the process

INAC-023	INAC requests the Proponent provide a rationale for limiting the cumulative impact analysis to five years post closure.	These are the temporal boundaries identified for the Project.	Rationale not provided, it is still outstanding. We are looking for a justification of the adequacy of limiting the time scale to 5 years.	Information that INAC would like to receive as a priority, with sufficient time to review before the end of the technical review period of the Draft Environmental Impact Statement.
INAC-024	INAC requests the Proponent identify the associated cumulative effect of the alternatives considered as per Section 6.1 of the Guidelines.	It was not necessary to explore the cumulative effects of each alternative to support the selection of preferred alternatives. Cumulative effects were considered, if applicable, in the rating of the performance criteria, "effects to the natural environment".	cumulative effects of alternatives not identified. Required in NIRB guidelines Section 7.8.	Information that can be provided later in the process
INAC-025	INAC requests that the Proponent clarify how the Cumulative Effect Assessment Framework illustrated in DEIS Vol. 9, Figure 9-1.1 was applied in this Project.	The process followed is primarily the mainstem of the process flowchart, including the identification of projeCTA, valued componnents, determining overlap, defining the role of adaptive management, defining the methodology, interaction assessment, effects assessment, and summary of cumulative effects.	Explanation or correction of discrepancy between flowchart and text still not explained. Would appreciate clarity before technical review.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-026	INAC requests that the proponent include the project components of the road haulage option in the cumulative effects assessment.	The road haulage option is included in the effects assessment.	Road haulage removed from project, no longer necessary, we now need an assessment without the road haulage option.	No outstanding information currently identified.
INAC-027	INAC requests that the proponent provide Project Environmental Design Guidelines at a greater level of detail (e.g., specific numerical criteria instead of merely providing reference citations).	General environmental design guidelines are presented in Volume 10, section 3. Detail design criteria will be developed by the Engineering contractor at the onset of the detailed design stage. Some of these design criteria will be presented in support of the Type Water License application to be submitted with the FEIS.	Numerical criteria instead of merely references to other sources requested for FEIS.	Information that can be provided later in the process
INAC-028	INAC requests that the Proponent provide additional detail on the Environmental Protection Plan (EPP) that will be prepared for construction and operations, including a detailed annotated Table of Contents outlining the structure of the EPP and indicating, as required, major construction and operational activities, permit requirements, and associated mitigation measures and contingency planning. This includes a list of operational standards.	The EPP is currently being updated and the updated EPP will be presented in the FEIS. This update of the EPP will cover activities taking place during the initial construction period. Additional Operational Procedures will be added or abandonned as necessary, through the contruction and exploitation phases of the Project. Baffinland's intent is to publish the EPP as a field guide that can readily be used by contractors.	At a minimum, a draft/conceptual EPP for the proposed project is required for the DEIS to allow parties to review and provide comments to the Proponent. The EPP provided in the DEIS is NOT for the proposed project it is for the current exploration program.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-029	INAC requests that the Proponent address monitoring and mitigation in the event PAG material is left exposed in the borrow pit and/or quarries after construction materials have been extracted.	Refer to Appendix 10D-6 - Borrow Pit and Quarry Management Plan.	document does not contain requested information	Information requested with sufficient time to review before end of technical review of the DEIS.

INAC-030	INAC requests the Proponent provide an Emergency and Spill Response Plan for construction and operations phases which addresses both marine and land-based spills of all types and activities as well as hazardous materials and chemicals, including MSDS for hazardous materials.	The Emergency and Spill Response Plan (Appendix 10C-1) is a dynamic (living document) document that is updated regularly throughout the phases of the Project. It is reviewed and update annually, or in some instances, after a major spill event. The current Emergency and Spill Response Plan satisfies the needs of the current site activities. The Emergency and Spill Response Plan will be updated at the onset of the construction period. The updated plan will be submitted with the FEIS.	Draft Plan representative of the project in the DEIS not the current site activities is still outstanding.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-031	INAC requests the Proponent provide an Oil Pollution Prevention/Emergency Plan for Milne Port for the construction and operations phases.	A draft version of the Steensby Port OPEP (Appendix 10C-2) and the Milne Port OPEP (Appendix 10C-3) are included in the DEIS. These documents must be updated annually and approved by Transport Canada. Updated OPEPs will be submitted to Transport Canada as soon as a fuel delivery strategy is finalized for the first year of construction. Baffinland expects to submit these updated OPEPs with the FEIS.	The draft versions provided do not cover the construction and operations phases, as requested.	Information that can be provided later in the process
INAC-032	INAC request that the proponent provide a more detailed description of the roles and responsibilities of the shipping company and the Baffinland Spill Response Team, including during a major spill incident.	This information is provided in the updated OPEPs.	Information on roles and responsibilities and response in case of major incident should be provided before FEIS	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-033	INAC requests the proponent provide a description of the equipment that would be maintained at various Project locations in response to an emergency due to a spill.	This information is provided in the updated OPEPs.		Information that can be provided later in the process
INAC-034	INAC requests the Proponent provide Annexes 1 to 10 cited in Appendix 10C-3 of Volume 10.	The Milne Inlet OPEP completed with Annexes 1 to 10, is provided as Attachment 7.	Annexes 1-10 for Appendix 10C-3 (Steensby Port) are still outsanding. Appendix 10C-3 is for Steensby Port, the inforamation in Attachemnt 7 is only for Milne Port.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-035	INAC requests the Proponent provide Annexes 1 to 10 cited in Appendix 10C-2 of Volume 10.	The Milne Inlet OPEP completed with Annexes 1 to 10, is provided as Attachment 7.		No outstanding information currently identified.
INAC-036	INAC requests that the Proponent update their current Wastewater Management Plan to address the proposed operations and closure phases of the Project.	The Management Plans are "living documents" which are revised periodically in order to incorporate lessons learned from monitoring information (adaptive management strategies are incorporated within the plans).	The wastewater management plan in Appendix 10D-3 only represents the plan for the current exploration phase. A wastewater management plan is required for the proposed project. A conceptual draft at a minimum should be provided during DEIS review.	Information requested with sufficient time to review before end of technical review of the DEIS.

INAC-037	INAC requests that the Proponent identify the criteria, mechanisms and/or measures which will be used to determine that the post-closure objectives have been met and monitoring is no longer required.	The Closure Plan (Appendix 10G) presents the principles that will be followed for closure. Baffinland is committed comply will applicable regulations and to the implementation of best available management practices. Both the regulatory requirements and the management practices will evolve over the life of the Project. Prior to Closure, Baffinland will submit detailed Closure Plan to the regulatory authorities.	Section 9.0 of Appendix 10G states the post closure monitoring locations but the objectives are outstanding Criteria, mechanisms and measures that will be used to determine that post-closure objectives have been met have not been identified by the Proponent.	Clarification appears to be required. Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-038	INAC requests the Proponent to provide stability analyses of the waste rock and pit wall slopes.	The pit slope stability report is provided as Attachment 14.		No outstanding information currently identified.
INAC-039	INAC requests that the Proponent completes thermal modelling of the Project infrastructure including the waste rock pile to confirm the integrity of designs.	The concept of aggregation of permafrost into the waste rock pile (or any materials placed over the ground) over time is well understood and does not require modelling. Additionally, a conservative assumption with respect to increased active layer thickness over time has been applied. Finally, thermal modelling was deemed to provide little value due to potential inaccuracies in the model. Accordingly, Baffinland disagrees that thermal modelling is necessary to support stockpile designs.	further discussion required	Clarification appears to be required. Information that can be provided later in the process.
INAC-040	INAC requests the Proponent provide additional information on its planned medical facilities, equipment, supplies, staffing and procedures, including medivac.	The H&S Management Plan (Appendix 10E) provides an outline. The information requested by INAC is dependent on manpower levels. Additional details will be provided in the FEIS.	this information is required as per the NIRB EIS Guidelines.	Information that can be provided later in the process
INAC-041	INAC requests that the Proponent provide more information on the closure and reclamation plan. This includes clearly identifying issues, including potential acid rock drainage and metal leaching, reclamation methods and the rationale for their selection, long term treatment requirements, restoration, time frames, schedules, long term monitoring and maintenance, consultation and the updating mechanism.	The Closure Plan (Appendix 10G) presents the principles that will be followed for closure. Baffinland is committed comply will applicable regulations and to the implementation of best available management practices. Both the regulatory requirements and the management practices will evolve over the life of the Project. Prior to Closure, Baffinland will submit detailed Closure Plan to the regulatory authorities.	More information on closure and relcamation plan	Clarification appears to be required. Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-042	INAC requests that the Proponent provide the closure water balance as well as background report's) used to estimate the expected duration required for the pit to fill with water.	The closure phase water balance for the mine site is presented as Attachment 1. The memo evaluating the time for the open pit to fill with water is provided as Attachment 9.		No outstanding information currently identified.
INAC-043	INAC requests that the Proponent provide the water quality modeling for the open pit and the runoff from the waste rock dump for post closure as well as information on the proposed treatment.	See Appendix 6C-1 for water quality modeling that includes estimates for end of mine life. Refer to Appendix 10D-5 for the waste rock management plan. The closure plan for the Project will be updated throughout the life of the Project and will take into account actual results of monitoring data for runoff water quality from waste rock and the mine pit.	Incorrect reference, Appendix 6C-1 is the vegetation baseline Study report. Appendix 10D-5 does not address the runoff for the waste rock dump post closure.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-044	INAC requests that the Proponent provide an assessment of how project design will be affected by changes due to hydrological and marine ice flow regimes associated with potential climate change.	Refer to Volume 9, section 2.	It has already been stated that this volume does not contain this information.	Information that can be provided later in the process

INAC-045	INAC requests that the Proponent provide a description of how the precautionary principle has been addressed in project planning and management.	Refer to Volume 10, Section 1.2	This section only discussed PP in relation to management practices. Incorporation into planning and design outstanding.	Information that can be provided later in the process
INAC-046	INAC requests the Proponent clarify the camp man-power loading and scheduling needs. The Pre-construction schedule for early start construction activities may be not be reasonable, with a late delivery of construction materials/supplies in the autumn (open water season) of the first year of construction.	According to the current schedule, pre-construction activities will be initiated prior to the first sealift of the year in early August 2012, utilizing the equipment and fuel already at site. It is expected that current camp capacities will need to be respected, and it may be necessary to decrease or cease exploration activities temporarily to accommodate the pre-construction workforce.		No outstanding information currently identified.
INAC-047	INAC requests that the Proponent provide further detail on the hydro testing of large fuel storage tanks.	This is standard practice to test steel fuel tanks. Tanks are filled with water, one by one, and monitored for any leaks. The expectation is that a single water withdrawal will be necessary, and water moved between tanks to test each. Seawater will be used at port locations with the water returning to the ocean following testing, and Camp Lake will be utilized at the mine site with the water slowly decanted to Sheardown Lake.		No outstanding information currently identified.
INAC-048	INAC requests that the Proponent provide more detailed description of the borrow pit locations (map, ownership, principle geographic features etc, ground ice conditions and occurrence of massive ice.), plan of required construction materials (including quantities) and footprint of proposed borrow pits including complete geotechnical, hydro geological and geochemical assessments.	The information available to date is presented in Appendix 10D-6. The geochemical report for potential quarry sites is presented in Appendix 6B2 and Appendix 6B-3. More detailed information on material characteristics, quantities, quarry development plan and closure will be provided on a timely basis prior to the development of each borrow or quarry site.	The information in Appendix 10D-6 does not provide a description of borrow pit locations or the requested details.	Information that can be provided later in the process
INAC-049	INAC requests that the Proponent provide additional geotechnical information with respect to the proposed open pit design.	The pit slope stability report is provided as Attachment 14.		No outstanding information currently identified.
INAC-050	INAC requests that the proponent verify design drawings (even if only conceptual) reflect the appropriate specifications to allow for secondary containment capacity of 110% of the largest fuel tank.	Yes, the conceptual tank farm drawings in the appendices of Volume 3 are based on secondary containment capacity of 110%, in accordance with legal requirements. More detailed engineering drawings including sections and details will be provided with the FEIS.	We have re-verified and they are not. Further discussion to take place if Baffinland does not agree.	Information that can be provided later in the process
INAC-051	INAC requests that the proponent provide details and appropriate design drawings that verify the secondary containment and ice protection measures to be employed at the Steensby Island Fuel Storage area.	More detailed engineering drawings including sections and details will be provided with the FEIS.	Ice protection measured should also be included in the design.	Information that can be provided later in the process
INAC-052	INAC requests that the Proponent provide spatial documentation correlating soils, landforms and vegetation information outlined in their sections of the document.	Geotechnical site investigation reports are included as Attachment 2. Geotechnical programs are ongoing in 2011 and 2012 will continue to delineate sensitive landforms at a finer scale.	The information in Attachment 2 is not relevant to the IR, for this reason it is not clear if the information request was understood, information is still outstanding	Clarification appears to be required. Information that can be provided later in the process.
INAC-053	INAC requests that the Proponent provide information by how much, over what period of time and what physical modification may be required if the Project is extended. This can be done in general terms since it is realized that these will not be defined until a much later date.	The current project being assessed is a 21-year mine involving mining of Deposit No. 1 only. To contemplate what modifications to infrastructure may be required for extensions to the mine life is beyond the scope of this assessment.	This is required as part of the NIRB EIS guidelines, with respect to future development. Detailed assessment is not required, however some discussion and analysis is necessary.	Information requested with sufficient time to review before end of technical review of the DEIS.

INAC-054	INAC requests that the Proponent provide a detailed description of the main components of the Milne port site, in order to conform to the NIRB Guidelines as described in Section 6.5.1 and their corresponding cross-reference to the environmental impact assessment and management sections of the DEIS.	The detailed information INAC is seeking is located in various locations: - OHF plans and bulk fuel storage - OHF plans are included in Appendix 10C-2 and 10C-3. Bulk fuel storage is discussed in Volume 3, Section 2.1.8. - Equipment lists - construction equipment is listed in Section 2.1.5; equipment for the operations phase is mentioned throughout the operation phase project description in Section 3 - HSEC plan - see Volume 10, particularly Appendix 10A (EHS Framework) and Appendix 10E (HSE Plan) - water intake details - see Appendix 3C - annual volumes of waste - see the Waste Management Plan (Appendix 10D-4) We disagree with INAC that insufficient information on the project has been provided.	We expect that this will be clearly identified in the detailed update to be provided by Baffinland on the project without the road haulage option.	Information that can be provided later in the process
INAC-055	INAC requests the Proponent provide additional information on the stockpiling of ore for open water season shipping via Milne Port.	Stockpile design and operating conditions at Mary River will be similar to those at operating iron ore mines in Labrador.	No obvious outstanding information as question no longer relevant	No outstanding information currently identified.
INAC-056	INAC requests that the Proponent provide additional rationale for the design of the Milne Port seasonal ore handling facilities and why a permanent long term engineered solution was not considered.	INAC`s concern is that the ore stockpiles may be frozen, that ore may freeze in ships, and whether or not dust control has been provided for at the stockpiles. The material handling equipment has accounted for the cold temperatures - see INAC-55 above. Ore stockpiles will be consumed within 9 months. There is approximately 200 mm of moisture. Issues with frozen stockpiles are not expected. Dust control at stockpiles is provided at material handling transfer points.	No obvious outstanding information as question no longer relevant	No outstanding information currently identified.
INAC-057	INAC requests the Proponent provide additional information and contingency plan on the Milne Port dredge material quality, temporary storage areas, discharge management and final disposal location.	Volume 3, Section 2.2.5 states the following: Part of the dredged material will be used as fill to build the ore dock. The remainder of the dredged material will either be stored onshore and/or used as fill in the construction of the freight dock. No dredged material will be disposed of offshore. Information on sediment quality is provided in Appendix 8A-1, Section 3.2.2.2.	This response is no longer relevant as project has changed. Information still outstanding and required as per 6.5.8 of NIRB EIS guidelines.	Information that can be provided later in the process
INAC-058	INAC requests that the Proponent provide an inventory of the hazardous wastes to be shipped through the Steensby Inlet port facility.	Hazardous waste management is described in detail in Appendix 10D-4, Section 3.6. Types of hazardous wastes to be generated and storage and disposal methods are provided, and designated storage locations are identified.	Requested anticipated volumes/quantities of hazardous materials to be transported not provided, as required in NIRB guideline.	Information that can be provided later in the process
INAC-059	INAC requests that the Proponent provide further details on road cross drainage, the use of culverts for roadway drainage and the construction window for stream and river crossing.	This IR is vague and difficult to answer; we believe sufficient detail has been provided.	Information still outstanding.	Clarification appears to be required. Information that can be provided later in the process
INAC-060	INAC requests that the Proponent provide further details on the allowances that have been made to upgrade/maintain the existing transportation routes until the new permanent roadway/bridges are in place.	It may be necessary to close the Milne Inlet Tote Road temporarily during permanent bridge construction and culvert replacements. Additionally, heavy loads may bypass the sea container crossings during frozen conditions.		No outstanding information currently identified.
INAC-061	INAC requests that the Proponent provide information relating to permitting and land tenure issues associated with all access roads, specifically indication of the Crown and Inuit Owned Lands.	Land ownership in relation to the project overall is shown on Figure 2-2.1 in Volume 2 (also appears as Figure 3-1.2 in Volume 3). Land ownership relative to the tote road is shown on Figure 3-2.2, and land ownership and proposed lease boundaries at the mine site area is shown on Figure 2-2.2 in Volume 2. Baffinland`s planned permitting approach related to land tenure is described regarding both Crown and Inuit Owned Lands in Section 2.2.6 of Volume 2.	The information is located in Vol 2 Section 2 rather than Vol 3.	No outstanding information currently identified.

INAC-062	INAC requests that the Proponent provide further details on cross drainage, the use of culverts for railway drainage and the construction window for stream and river crossing.	This IR is vague and difficult to answer; we believe sufficient detail has been provided.	Information still outstanding.	Clarification appears to be required. Information that can be provided later in the process
INAC-063	INAC requests the Proponent provide further information on long railway tunnel ventilation requirements and power supply.	Ventilation will be provided as required, considering the operation of drills and gensets in the tunnels during their construction. Appropriate safety practices will be implemented.	More detailed information required.	Clarification appears to be required. Information that can be provided later in the process
INAC-064	INAC requests that the Proponent provide a copy of the document entitled "Water treatment options for Baffinland, Mary River Project" (AMEC, 2010B) cited in the DEIS.	A copy of "Water treatment options for Baffinland, Mary River Project" (AMEC, 2010B) is provided as Attachment 16.		No outstanding information currently identified.
INAC-065	INAC requests that the Proponent provide additional information regarding the proposed wastewater treatment scheme that may be necessary including expected performance and cost.	Wastewater treatment plant specifications are appropriate to support water licensing, and will be provided in the water licensing package in the FEIS.	Sufficient background information on treatment technology and performance should be provided.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-066	INC requests the Proponent provide a description of the sewage and gray water treatment (including system upsets/ malfunctions) for the operations phase of the Project.	This information will be provided in the FEIS.	conceptual description should be provided before FEIS at a minimum	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-067	INAc requests the Proponent provide a Waste Management Plan that conforms to the NIRB Guidelines as described in Sections 6.5.13 - Waste Management Facilities; 9.4.7 - Incineration Management Plan; and 9.4.11- Landfill Management Facilities.	Baffinland has provided a comprehensive Waste Management Plan in Appendix 10D-4 which covers all aspects of waste management. This is a practical, functional and effective approach for dealing with and managing waste. Detailed hands-on management instructions and procedures are deveoped for daily operation. Such operating procedures are in place for the existing approved landfill at Mary River and the existing incinerator also located at the Mary River Camp. Similar operating procedures will be developped for all future waste management facilities.	as per NG 6.5.13 Hazardous Waste Management, there is information missing in the plan including inventory, details regarding the destinations and details regarding training. Other information deficiencies may be identified after further review.	Information that can be provided later in the process
INAC-068	INAC requests the Proponent provide estimates of the types and volumes of non-domestic hazardous and non-hazardous wastes specifically related to all Project phases and sites and re-examine domestic waste generation rates.	A preliminary estimate of various waste streams is provided in Appendix 10D-4, Waste Management Plan. Quantities will be revised as the Project advances to the detailed design phase.	Reference does not contain requested information. Information still outstanding.	Information that can be provided later in the process
INAC-069	INAC requests the Proponent include the basis for selection of off-site disposal options for some hazardous wastes in comparison to on-site disposal options.	Thers are no hazardous waste treatment facilities in Nunavut. Baffinland is not in the business of treating or disposal of hazardous waste. Baffinland will ship all its hazardous waste to a licensed Canadian operators.	Asking for discussion of feasibility of on-site disposal is reasonable.	Information that can be provided later in the process

INAC-070	INAC requests the Proponent provide the conceptual design of the proposed landfill facility, including design capacity, landfill operations and existing landfill sites.	The design and operation procedures for the Mary River landfill have already been submitted and approved for operation. The information for the Steensby landfill site will be submitted with the FEIS.	Information still outstanding. If there will be no change to Mary River landfill for proposed project, this should be clearly stated.	Information that can be provided later in the process
INAC-071	INAC requests the Proponent confirm compliance of the proposed incinerator with air emission limits and the rationale for using emissions provided by a different incinerator supplier than the one selected for the Project for the air emission's inventory.	The Westland Environmental Services CY2000 series unit shown in the Waste Management Plan is what is currently at site. App 5C-4 Air Emissions Inventory quotes EcoWaste Solutions Thermal Oxidiser, so that emissions values could be obtained for input into the air quality dispersion modelling. The incinerator type/model has not been selected, but whatever unit is selected will comply with regulations on emissions.		No outstanding information currently identified.
INAC-072	INAC requests the Proponent provide information regarding the sizing of the incinerator, i.e., its waste handling capacity (e.g., tonnes/day) and waste types that are to be incinerated.	See Appendix 10-D4 Waste Management Plan, Section 3.4. 1 tonne capacity is equivalent of 90 kg/hr unit shown in Attachment 2 of Appendix 10-D4. This section describes what waste materials will be incinerated.		No outstanding information currently identified.
INAC-073	INAC requests the Proponent provide rationale why some hazardous waste incineration capacity was not selected for the Project given the difficulties associated with shipping hazardous materials off-site.	Baffinland's policy is to dispose of its hazardous waste at approved licensed hazardous waste treatment/disposal facilities.	Asking for discussion of feasibility of on-site incineration is reasonable - this is commonly undertaken at remote sites.	Information that can be provided later in the process
INAC-074	INAC requests the Proponent provide clarification of the waste management procedures/facilities for dealing with bio-medical wastes.	Incineration of biomedical waste requires special training. Depending on the operator available biomedical waste will either be incinerated or packaged and labelled and sent offsite for disposal.		No outstanding information currently identified.
INAC-075	INAC requests the Proponent provide a comprehensive Hazardous Materials Management Plan for the different phases of the Project and different Project sites (ports, mine and road/railway camps).	The Waste Management Plan presented in Appendix 10D-4 outline Baffinland's approach to waste management. Dedicated storage facilities will be constructed for the temporary storage of hazardous wate on site. Baffinland is evaluating the possibility of contracting out the handling and management of hazardous waste to a licensed disposal facility (storage, transportation and final disposal).	INAC is asking for a hazardous material management plan rather than hazardous waste management plan.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-076	INAC requests that the Proponent indicate whether the potential for increased erosion associated with channelization of flows on the alluvial fan has been considered and that appropriate designs and environmental mitigation are available.	Some consideration has been incorporated into the current feasibility-study level design. Sand blankets an rip rap need for stream realignment which covers the channelisation sites the drawing number is A1 –159952-5000-121-5029-01 in Appendix 3D. It is important to know that the alluvial fans that have been identified as needing channelisation are atypical in that they have already been substantially eroded of fine materials and are predominantly boulder fields. This is being looked at more closely during detailed design.	are appropriate designs and environmental mitigation available?	Information that can be provided later in the process
INAC-077	INAC requests that the Proponent provide a Stormwater Management Plan (SWMP) for the Mary River Project addressing all five major Project components (Steensby Port, rail alignment, mine site, road alignment and Milne Port) and associated sub-components. The SWMP can be incorporated into the Surface Water and Aquatic Ecosystems Management Plan.	The surface water management plan is presented in Appendix 10D-2 and it includes the aquatic ecosystems managmeent plan.	to be further reviewed	No outstanding information currently identified.

INAC-078	INAC requests that the Proponent update their data summaries and determine whether any new data collected since 2008 has the potential to redefine baseline conditions and potentially modify DEIS conclusions.	As indicated in Appendix 7B, summary data from the weekly sampling conducted at the mine site in 2008 was not included in the overall stream water quality summary statistics. Data and summary statistics from the weekly sampling conducted at the mine site in 2008 will be provided. The weekly sampling from 2008 is not expected to result in the modification of the DEIS conclusions, given that the baseline is well-established with three years of seasonal sampling and due to the conservative approach that was applied to the assessment of potential water quality impacts. The weekly sampling data that has been collected will be compiled and provided before the technical meetings.	weekly sampling data, along with assessment of whether it changes baseline conditions or DEIS conclusions still outstanding	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-079	INAC requests that the Proponent provide a copy of the document entitled “Evaluation of expected water quality from ore and waste rock Baffinland Mary River Project DEIS” (AMEC, 2010A) and a water balance for the ore and waste rock facilities.	Please refer to Appendix 6C-1 which includes the document requested.	Appendix 6C-1 is vegetation baseline report. Incorrect reference, please provide correct document.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-080	INAC requests that the Proponent provide a site water balance for the mine and port sites covering the construction, operations and closure phases of the Project.	Quantitative water balances have been developed for construction, operation and closure phases of the Milne Port, Mine Site and Steensby Port LSAs (Attachment 1).		No outstanding information currently identified.
INAC-081	INAC requests that the Proponent provide a summary related specifically to hydrogeology.	The hydrology of the Project area is presented in Appendix 7A. A brief summary is included in Volume 7, Section 2, Baseline Summary.	request was for hydrogeology summary, not hydrology. Request still outstanding.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-082	INAC requests that the Proponent provide hydrogeology/groundwater reports and data.	See Section 2.1.1.4 of Volume 6 and Figure 6-2.4. Permafrost extends well below the depth of mining, so hydrogeology studies were not required.	This should be explicitly addressed in FEIS as per NIRB guidelines.	Information that can be provided later in the process
INAC-083	INAC requests that the Proponent provide a clearer and more specific explanation of waste rock sample selection criteria. Information concerning the size, type and volume of the waste rock should be provided. Provide definitions for ore and waste rock.	The size, type, volume and schedule of production of waste rock is described in Volume 3, Section 3.4.5, and in greater detail in the Waste Rock Management Plan (Appendix 10D-5). Waste rock is rock that does not meet the ore cut-off grade of 64 % iron. The rationale for selection of waste rock samples is provided in the ore and waste rock geochemistry report in Appendix 6B-1.	criteria for waste rock sample selection do not appear to be in Appendix 6B-1and are still outstanding.	Information that can be provided later in the process
INAC-084	INAC requests further information on the timing and sequencing of the non-PAG and PAG materials mining.	Production schedules of PAG and non-PAG rock presented in Appendix 10D-5 are based on a preliminary mining plan, which will be further refine/evolve prior to the beginning of the mining operation. The Waste rock management plan presents the concepts for waste rock management that will be implemented. At this stage, this is sufficient for the impact assessment.	information on the timing and sequencing of the non-PAG and PAG materials mining is still outstanding	Clarification appears to be required. Information that can be provided later in the process
INAC-085	INAC requests that the Proponent provide details of additional humidity cell tests carried out and their results. Additional humidity cell tests should also consider simulating the cold conditions.	As part of on-going work to evaluate ML/ARD of future waste materials at the site, additional humidity cells are being initiated to provide a more comprehensive assessment that addresses the kinetic aspects of future drainage quality that cannot be determined by the static tests. These humidity cells are being carefully selected to supplement information obtained from 10 previously operated humidty cells. Details of the 2011 testing program are provided in Attachment 15.		No outstanding information currently identified.
INAC-086	INAC requests that the Proponent conduct a frequent monitoring of ore stockpile drainage and that geochemical loading calculations be provided.	Monitoring was attempted but there was no flow data to calculate loadings. This can be attempted again in the future.	Proponent should confirm this will be attempted again and results provided in the future.	Information that can be provided later in the process

INAC-087	INAC requests that the Proponent conduct appropriate simulation tests (on-site or in the laboratory) that will support the encapsulation of the PAG rock within the core of the waste rock pile dumps. Also, a summary table should be provided which includes: annual waste rock production by each type and their fate. The protective measures should be provided for both permanent and temporary waste rock dumps during the operation of the mine to prevent ARD and ML.	The production schedule is based on a preliminary mining plan, which will evolve over the life of the Project. Expected quantities of waste rock and their classification (PAG and non-PAG) are presented in Appendix 10D-5 Waste Rock Management Plan (Table 3.1). Only a portion of the waste rock is PAG and the conceptual management of this PAG material is also presented in the Waste Rock Management Plan. The geochemical properties of the ore/waste rock are described in Appendix 6A. Test work on ML/ARD is on-going.	simulation tests not addressed in response	Information that can be provided later in the process
INAC-088	INAC requests that the Proponent undertake more detailed drilling in order to determine the availability and boundary of suitable quarry and borrow pit locations.	The 2011 site investigations will focus on geotechnical drilling and also investigation of quarries to be exploited in the early phase of the construction. Detailed investigation of each quarry site will be carried out prior to development over the four year construction phase. Geochemical information on potential quarry sites is presented in Appendix 6B-2 and 6B-3.	Proponent should clarify expected level of detail to be presented after 2011 site investigations (in FEIS) .	Information that can be provided later in the process
INAC-089	INAC requests that the Proponent conduct ML/ARD tests on saw-cut samples collected along the Railway alignment.	The ARD/ML potential of saw-cut samples will be determined once the exact alignment of the railway is finalized.	When will this be?	Information that can be provided later in the process
INAC-090	INAC requests that the Proponent provide ground temperatures that have been measured in the installed thermistors between 2006 and 2008..	Geotechnical site investigation reports are included as Attachment 2		No outstanding information currently identified.
INAC-091	INAC requests that the proponent refine, if necessary, and provide more detail information on the operation and long term stability of the rock waste pile and provide conceptual design features that will minimize the appearance of slope failure and ARD and ML discharge.	Design features of the waste rock pile that provide operational and long term stability will be provided at a later stage of project design. Water from the waste rock pile will be diverted to ponds designed to discharge water within applicable regulations.	when will this be provided?	Clarification appears to be required. Information that can be provided later in the process
INAC-092	INAc requests that the Proponent provide vegetation unit delineation mapping for the mine site and port sites and furthermore this delineation mapping should incorporate baseline field data. Furthermore, the Proponent is requested to provide a breakdown of the vegetation loss by major unit for each of the five Project sites.	The impact assessment for vegetation assumes that all vegetation within Project Development Areas (PDA's) will be removed. Providing vegetation unit mapping for each of the PDA's would not alter predictions in the assessment.	further discussion required on information requirements with respect to vegetation	Information that can be provided later in the process
INAC-093	INAC requests that the Proponent provide further rationale for not carrying out vegetative restoration.	Arctic plant species can take decades to become established. With the objective of continuous improvement, Baffinland will review rehabilitation studies/experiments carried out in Arctic environment and Baffinland is committed to the use of best management practices as they apply to reclamation and closure activities. If and when effective revegetation techniques are developed for Arctic conditions, Baffinland will incorporate such techniques in its closure plan.	rationaled not provided.	Information that can be provided later in the process
INAC-094	INAC recommends that the Proponent describe the method and criteria used in selecting Key Community Concerns.	The key community concerns described in Volume 2, Section 1.6 is a distillation of the public consultation record in Appendix 2A-1. Table 2A-1.2 summarizes the number of times within the public consultation record a given key word was raised.	Adequate	No outstanding information currently identified.

INAC-095	INAC requests the Proponent provide a statement on how sustainable development objectives, such as preservation of biological diversity, intergenerational equity, and attainment of durable social and economic benefits will be addressed.	Sustainability is the objective of Baffinland. Refer to Volume 10 and all its appendices.	not adequate. It is noted Volume 10 is not indicated in the Table of Concordance as providing content on Sustainable Development. In Volume 10, section 1.1 Baffinland states it concurs with NIRB's interpretation of achieving progress towards sustainable development. Volume 10, Figure 10-1.2 provides Baffinland's Sustainable Development Policy. It would be preferable if the DEIS specifically addressed the NIRB guideline request to summarize how sustainable development objectives will be met with respect to the project.	Information that can be provided later in the process
INAC-096	INAC requests the Proponent provide additional information on the longer term strategic implications of the Project, such as the establishment of ports and transportation infrastructure, and potential related strategic benefits, such as strengthening Canadian arctic sovereignty.	Strengthening of Canadian sovereignty in the North is for the Federal Government ot address. In terms of longer term strategic implications/benefits of the Project, this issue is for the Government of Nunavut to determine.	Not adequate. While one interpretation of NIRB guideline 5.6 to provide "assessment of the longer term "strategic implications" of the Project, and how it may affect or lend to transportation networks (existing and proposed) in Nunavut, could include the issue of Canadian sovereignty, it is acknowledged this is not specifically requested in the EIS Guidelines. However, even if "strategic implications" is confined to the subject of transportation networks, the guidelines appear to require a broader discussion on implications to Nunavut. Neither of the EIS sections referenced in the concordance table provide this: Volume 1, Sec. 1.3 summarizes project schedule and project life, and Volume 9, Sec. 1.3.2.7 identifies potential induced developments at the Mary River project.	Information that can be provided later in the process
INAC-097	INAC requests the Proponent provide additional information on Project financing including anticipated requirement for reclamation and security.	We are not clear on the applicability this has to the review of the DEIS.	Not adequate. The applicability of this request is in section 5.6 of the NIRB guideline to "describe the current status of Project financing, and the Proponent's financial preparedness to meet the requirement for reclamation and security should the Project proceed. Neither of the DEIS subsections referenced in the concordance table address the requirement: Volume 1, subsection 1.2 is a paragraph overview of the project, and there is no subsection 2.10 in Volume 1. The applicability of the request with respect to the review of the DEIS is in regards to the Proponent providing the information indicated in the EIS Guidelines.	Information that can be provided later in the process
INAC-098	INAC requests the Proponent provide additional information on how social and economic criteria were considered in the analysis of project alternatives.	Two performance criteria were applied to consider socio-economic dimensions: community acceptance/preference, and the potential to enhance socio-economic benefits. These performance criteria are defined in Volume 3, Section 6.4 and are presented in Table 3-6.1. Not all alternatives had a bearing on socio-economic aspects.	Adequate	No outstanding information currently identified.
INAC-099	INAC requests the Proponent include a section describing levels of uncertainty and gaps in data for socio-economic components.	Section 1.2 of Appendix 4A provides a discussion of baseline data sources and constraints in the data.	Adequate	No outstanding information currently identified.
INAC-100	INAC requests that the Proponent include a section describing levels of uncertainty and gaps in data for socio-economic components.	Section 1.2 of Appendix 4A provides a discussion of baseline data sources and constraints in the data.	Duplicate IR	No outstanding information currently identified.
INAC-101	INAC requests that the Proponent describe how traditional knowledge (TK) or IQ was incorporated into the determination of VSEC's and document uncertainty with respect to VSEC determination.	Each impact assessment has a section called "issues scoping". Within this section is a discussion of how VCs and Key Indicators were identified, including results of IQ studies. Tables 3.2 and 3.3 in Appendix 2B (summary of community-based research) summarize the number of times key words were raised within the IQ and socio-economic meeting/interview databases.	Adequate for technical review. No further information requested. Suggested that the relevant sections on issues scoping within each impact assessment, as well as Appendix 2 B be included within the appropriate comment cell in the concordance table.	No outstanding information currently identified.
INAC-102	INAC requests that the Proponent provide a more comprehensive account of the influence of public consultation on the development of the Project.	Volume 2, Section 1.6 describes the key outcomes of public consultation, including five examples of how public consultation influenced major decisions on the project. This summarizes the nearly 700 page public consultation record in Appendix 2A. It is not clear to us how we could provide a more comprehensive account.	Adequate for technical review. While the DEIS addresses the requirements of the EIS Guidelines it is requested that additional examples of how public consultation influenced the development of the Project be included in Volume 2.	No outstanding information currently identified.

INAC-103	INAC requests that the Proponent summarize where Traditional Knowledge (TK) is incorporated into the DEIS.	Traditional knowledge is incorporated into each of the baseline reports in the appendices and in the baseline summary sections of the impact assessment. In some instances, Inuit knowledge was considered within the impact assessment, particularly with respect to signficance. Inuit knowledge was incorporated throughout the socio-economic impact assessment (Volume 4), and in regards to Inuit use of plants, birds, caribou, fish and marine mammals (Volumes 6 to 8).	Not adequate. The object of the Information Request was to assist readers identify where TEK was incorporated. Additional references to where TEK was incorporated in the DEIS are outstanding and should be provided in the concordance table.	Information that can be provided later in the process
INAC-104	INAC requests that the Proponent review, and provide a high-level discussion of the literature on the socio-economic effects of similar projeCTA and work systems.	Past experience is an important aspect of the baseline data and has been used to augment the impact assessment. The literature was reviewed during this work, and findings from the literature are presented under the topics where they provide particular insight. For example, Section 6.8.4 of Appendix 4A presents findings from Nunavut, other Canadian, and international experience related to challenges and family coping strategies associated with fly-in/fly-out work styles. Section 6.3.2 of Volume 4 draws on the literature to support understanding of how the Project may be expected to affect the well-being of children through effects on parenting. We agree that a substantial synthesis of knowledge related to the fly-in/fly-out style of work that is becoming prominent across Nunavut is merited. However, this essential public knowledge base would be appropriately carried out through public initiatives as it goes beyond the reasonable scope of a project-specific EIS.	Adequate	No outstanding information currently identified.
INAC-105	INAC requests the Proponent provide additional information and assessment of potential cumulative effects on harvesting of marine wildlife.	It would be helpful to know what INAC feels is inadequate about the CEA in this regard, in its request for additional information and assessment.	not adequate. It is indicated in Vol 9, section 1.4.4, that cumulative effects to marine mammals are possible. However, there is no discussion on potential cumulative effects on harvesting as directed by the EIS Guidelines. This information is still outstanding.	Information that INAC would like to receive as a priority, with sufficient time to review before the end of the technical review period of the Draft Environmental Impact Statement.
INAC-106	INAC requests that the Proponent identify potential gaps in baseline data on the socioeconomic environment, indicate the extent by which such data would be informative in the assessment of potential Project impaCTA, and outline methods used to address gaps in baseline data.	Section 1.2 of Appendix 4A provides a discussion of baseline data sources and constraints in the data.	adequate	No outstanding information currently identified.
INAC-107	INAC requests that the Proponent provide information on religious and cultural practices of communities within the RSA, including available data on religious orientation and religious practice.	Cultural practices are addressed in Volume 4, Section 11.3. As indicated in Appendix 10F-3, Section 2.1, it is Baffinland's policy that all employees be able to enjoy a work environment free from all forms of discrimination and harassment. Religious orientation is not considered to be relevant to the assessment of the Project. The issue of accommodation of workers' cultural values and practices is addressed in Appendix 10F-3, Section 6.7.1.	Adequate	No outstanding information currently identified.

INAC-108	INAC requests that the Proponent provide additional information on potential changes to and effects on demographic composition and stability of point-of-hire communities, including effects of in-migration from other communities within Nunavut and effects due to temporary change in demographic composition within LSA communities.	See Attachment 8 for a detailed response.	Adequate. INAC requests that the text from " Attachement 15" be included in the FEIS document.	No outstanding information currently identified.
INAC-109	INAC requests that the Proponent provide additional information on potential changes to and effects on demographic composition and socio-economic conditions due to temporary and final closure. This analysis should include an assessment of risk of temporary closure (due for example to change in demand/price of iron ore) and a review of literature on effects of temporary and final closure of resource operations upon northern Canadian communities.	The effects of "temporary and final closure" are addressed in Volume 4, Section 5.4. Those who lose their jobs due to shut-down would be subject to the social benefits available for such workers, such as EI. Since the operation is fly-in/fly-out, closures are not expected to lead to the kind of demographic effects that mine town closures, such as that of Nanisivik, tend to have. Further, the labour force for the project is expected to be drawn from several communities. This will further dampen the effects of temporary and final closures on any one community. The value of a synthesis of knowledge and experience related to the effects of temporary and final closures of fly-in/fly-out industrial projeCTA is recognized. However, such a project has a generalized public value and is considered to be outside the scope of a project-specific EIS.	Not adequate. While Baffinland's response describes what might happen if the mine were to temporarily or permanently close it offers little additional perspective on what the effects such a change of income may have on economically dependent communities. Lessons learned from similar projects are relevant to the socio-economic assessment of the Mary River EIS and should be incorporated into the EIS. Oustanding information includes the socio-economic conditions of the Project's point of hire communities.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-110	INAC requests that the Proponent provide additional descriptive information on the educational infrastructure and services of North Baffin communities, including physical infrastructure, method of education delivery, and extent by which students undergo remote education and/or travel outside their communities to complete their high school education.	(See also GN IR 81) Challenges related to education have been identified in studies such as that of Berger (2006) and North Sky Consulting Group (2009) as referenced in Appendix 4A, Section 5.4.2. The detailed assessment of the public education sector called for in this IR is considered to be outside the scope of a project-specific EIS.	not adequate . The Information Request would not involve a "detailed assessment of the public education sector", but rather the provision of additional basic information on the local education system, which is commonly included in the community profile sections of socio-economic impact assessments. This information is outstanding and is called for in section 8.2.2.1 of the EIS Guideline.	Information that can be provided later in the process
INAC-111	INAC requests that the Proponent provide additional descriptive information on the gender roles within the RSA, including division of household labour based on gender, and household decision-making.	The participation of men and women in the wage economy is presented in considerable detail in Appendix 4A, Section 4.3, 4.4 and 4.5. Employment of women in the project is addressed in Volume 4, Section 4.5.2. A structure to support employment of women is addressed within Section 6.7.4 of the Appendix 10F-3 HRMP. It is agreed that research to support insight into gender dimensions of household decision-making would be of general interest in understanding the functioning of Nunavut households. However undertaking research in this area of indirect relevance to the Project is considered to be outside the scope of a project-specific EIS.	Adequate	No outstanding information currently identified.
INAC-112	INAC requests that the Proponent provide additional information on arrangements for transporting workers from non point-of-hire communities to the Mary River project site.	BIM intends to maintain discretion, within the terms of the IIBA, to provide air pick-up service or to offset transportation costs of workers as it sees fit. This means that it may be the case that workers from communities other than those designated as points of hire will need to get to a point of hire community. Transportation from the point-of-hire community would be paid by Baffinland.	not adequate. Information on commuting options is oustanding, such as methods by which people from non point of hire communities could transport themselves to point of hire communities.	Information that can be provided later in the process

INAC-113	INAC requests that the Proponent provide additional information on anticipated changes in income earnings on patterns of savings, expenditures, and consumption values.	The Project's impact on personal expenditures, savings, etc is modeled in Appendix 4B. In addition, substantial qualitative data on "money goals and money management" is provided in Appendix 4A, Section 7.4. While quantitative insight about how North Baffin and Iqaluit households allocate their income may be of general interest, this would require reinstatement of a Nunavut Household Income and Expenditures Survey. Such a survey is, however, well outside the scope of a project-specific EIS.	Adequate	No outstanding information currently identified.
INAC-114	INAC requests that the Proponent include additional information on effect of project on local economic development, including renewable resource exploitation and self reliance.	Assessment of the general effects of the Project effect on economic development and self-reliance is presented in Volume 4, Section 5.0. More detailed information about specific effects of the project on jobs, education, business development, tax revenues and so forth are presented in other sections of the EIS. We believe that the information provided is substantial and will support understanding and assessment of the project.	Not adequate. Information Request was based on the Subsection 8.3.4.1 of the EIS Guideline that the Proponent provide an assessment of "…the traditional economy, current economic structure and development trends in the Project RSA and variability in potential impacted communities. " This information is outstanding and relevant given the potential for economic dependence by local communities. An assessment of the effect of the project on local economic development would be an important outcome of the EIS.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-115	INAC requests that the Proponent include additional information on the relative effects of the project on current and potential future tourist activities in the North Baffin area.	Assessment of the effects of the Project on "tourism" is presented in Volume 4, Section 5.0. We believe that the information provided is sufficient to support understanding and assessment of the project.	Adequate. Information on the nature of tourism in North Baffin Island should be incorporated in the FEIS.	No outstanding information currently identified.
INAC-116	INAC requests the Proponent provide additional information on diet and nutritional requirements and preferences of individuals in the RSA.	The Project will have only indirect interactions on diet and nutrition. The requested information may be of general interest in terms of its ability to inform public policy but is clearly outside the scope of a project-specific EIS.	Not adequate. The topic of food security is of high concern to INAC, and the Information Request was based on the adequacy of information provided in the DEIS with respect to Subsection 8.2.5.1 of the EIS Guidelines: ".description of the nutritional requirements and diet habits of residents in the RSA." Baseline information is oustanding on diet and nutritional requirements, from which it may be possible to assess how the project may affect household food consumption.	Information that INAC would like to receive as a priority, with sufficient time to review before the end of the technical review period of the Draft Environmental Impact Statement.
INAC-117	INAC requests the Proponent provide additional information detailing the existing infrastructure and health services available in the RSA, including its capacity to handle any additional Project or Project-related demands.	Issues of "human health" and "safety and security" are addressed in Volume 4, Sections 6.6.5 and 6.6.4, respectively. A significant positive impact on Human Health and Well-being is assessed (Section 6.7). Baffinland's plans to address health and safety are presented in Appendix 10E, "Health and Safety Management Plan." Meaningful data related to the capacity of Nunavut's health sector might be of general interest in understanding Nunavut's ability to provide care to its population. This would require access to internal government data related not only to physical infrastructure but also to staffing levels, work-load, and to community-specific demand. Such an analysis does not fall within the scope of a project-specific EIS.	Not adequate. As outlined in Subsection 8.2.5.1 of the EIS Guidelines, information on health care infrastructure and services is commonly included in the socio-community profile sections of environmental effects assessments and is still outstanding in the DEIS	Information that can be provided later in the process

INAC-118	INAC requests the Proponent include assessment and mitigation of cultural conflict into Volume 4.	As the reviewer correctly points out, the dimensions of this potential issue are presented in Appendix 4A, specifically Section 3.1.5, 3.1.7, and 3.1.8. While "cultural conflict" is not identified to be an assessment issue, the human resources management steps that have been put in place to create a "supportive work environment"---noted in Volume 4, Section 3.3 and described in Appendix 10F-3--- also address this area.	Adequate	No outstanding information currently identified.
INAC-119	INAC requests that the Proponent provide additional information on community infrastructure and services including, location and capacity of facilities, staffing levels, organizational structures and, where possible, assessment of capacity in comparison to national (or other relevant) standards to address both baseline requirements and additional demand should the Mary River project proceed.	Baseline data related to community infrastructure is presented in Appendix 4A, Section 8.3.2. Project effects on the demand for infrastructure are addressed in Volume 4, Section 7.4.2. The reviewer is correct in suggesting that a meaningful understanding of community infrastructure and services capacity requires insight not only into the physical structures but also into staffing, organizational structures and service levels relative to other regions. Such an analysis would be of general interest to the development of public policy and to support decisions related to the allocation of public investments in community infrastructure and services. Such an analysis does not, however, fall within the scope of a project-specific EIS.	Not adequate. Additional information on community infrastrucutre is outstanding. : Subsection 8.2.6.1 of the EIS Guidelines request that the Proponent provide baseline information on community services while Subsection 8.2.6.2 requests an assessment of how the Project may place additional demand on such services. INAC recognizes that Subsection 8.3.2 of Appendix 4A provides a summary table of the capital infrastructure owned by municipalities but detail on the facilities themselves is oustanding. Volume 4, Subsection 7.4.2 addresses the subject of potential Project effects on demand for infrastructure and services generated by the Project. However, without sufficient baseline information it is difficult to assess the significance of such potential effects.	Information that can be provided later in the process
INAC-120	INAC requests the Proponent provide a quantitative estimate of contracting and business opportunities during the construction and operations phases.	This data is not available. However, this is not considered to be a barrier to Project assessment. Preliminary data would be of questionable use for the purposes of business planning. Of greater value is the accommodation for procurement of goods and services from Inuit business, that is described in Appendix 10F-3.	Adequate	No outstanding information currently identified.
INAC-121	INAC requests Baffinland provide reference to where the relationship between cultural sites and social lives of local communities in LSA is described in the EIS or include this information.	Section 2.5 of Appendix 4D (Archaeological Baseline Report), and Section 9.2 of Volume 4, summarize this relationship.	Adequate	No outstanding information currently identified.
INAC-122	INAC requests the Proponent to provide additional information documenting the relative importance of different harvesting areas in the Study areas.	Various harvesting areas in the Study area are of importance to Inuit residents of northern and southern Baffin Island for a number of reasons. Assigning relative importance of harvesting areas is difficult, however the following analysis can be provided: One important marine harvest area for Pond Inlet is at the floe edge at the entrance to Pond Inlet during the period of mainly April through June each year. As noted in the DEIS (Volume 4, Section 10.4.2, pg. 161), ships will not be sailing to Milne Port during this period. Harvesting of narwhal during open water occurs throughout Pond Inlet, Eclipse Sound and Milne Inlet. Koluktoo Bay in Milne Inlet is recognized as an important summer habitat for narwhal, but harvesting does not appear to be concentrated in this location, and it is expected this is due to the large distance from the community. Harvesting close to the community is important only because the cost of harvesting increases with distance from the community. Potential to affect harvesting of these important harvesting areas is discussed in Volume 4, Section 10.4.	Adequate. Please incorporate Baffinland's response into the EIS	No outstanding information currently identified.
INAC-123	INAC requests that the Proponent provide a more detailed assessment of potential interactions between project activities and Inuit harvesting and analysis of associated effects.	We believe we have outlined the potential interactions and analyzed the effects of the project on harvesting in the appropriate level of detail.	Not adequate. quantitative estimates of potential effects to caribou harvesting and marine mammal harvesting is still oustanding. This would help to determine if the potential effects are negligible, moderate, etc.	Information that INAC would like to receive as a priority, with sufficient time to review before the end of the technical review period of the Draft Environmental Impact Statement.

INAC-124	INAC requests that the Proponent provide a more detailed assessment of potential effects to cultural and traditional values, lifestyles, etc related to changes in land use activities.	Volume 4, Section 11.0 acknowledges the importance of preserving and enhancing cultural well-being. The Project is not expected to adversely affect land use and harvesting activities and by extension the associated cultural preservation and well-being that may be derived from these activities. The Project is expected to have a positive effect on the ability of community members to participate in these culturally important activities. The pursuit of traditional land use activities is an expensive endeavour and lack of money limits people`s ability to participate. The Project will bring considerable additional money into the communities through wages and business opportunities, which will allow people to pursue such as activities with greater ease. The porposed 2 week rotation provides workers with time to pursue harvesting and spend time with family. Sharring networks present in the community (where one individuals income is used to supplement the traditional harvesting and land use activities of another, who then provides foods for both individuals) is expected to help in spreading the benefits within the communities.	Not adequate. An assessment of lilterature to help identify how projects similar to Mary River can interact and effect traditional lifestyles and cultural coherence is outstanding.	Information requested with sufficient time to review before end of technical review of the DEIS.
INAC-125	INAC requests that the Proponent provide additional information on the current status of the IIBA negotiations, and include anticipated timing for completion, and items being negotiated.	The IIBA is required to be completed prior to the commencement construction of the Project (not including pre development works). IIBA negotiations are confidential.	Not adequate. Guidelines Section 8.2.9 require that specific information regarding the IIBA be provided in the application, including the parties to the agreement, when negotiations are expected to be included, and items included in the agreement. This information is oustanding in the DEIS.	Information that can be provided later in the process
INAC-126	INAC requests that the Proponent provide discussion on why VSECs identified in Table2-3.2 of Volume 2 are not included in Table 10-2.1 of Volume 10.	Mitigation and monitoring for VSECs are covered under Section 8.0 of Volume 10. Table 10-2.1 only addresses the VECs and the environmental mitigation and monitoring plans related to each VECs.	Not adequate. Information on VSECs is oustanding from Table 10-2.1 in Vol 10.. Such a table would be similar to Table 10-2.1 in Vol 10 for environmental VECs that succinctly summarizes the connections between VECs, Issues/Concerns, and the Environmental Management Plans.	Information that can be provided later in the process
INAC-127	INAC requests that the Proponent provide additional information on how the socioeconomic monitoring plans and mitigation programs identified in the EIS will align with regional monitoring efforts conducted by the Qikiqtaaluk Regional Socio-Economic Monitoring Committee (SEMC).	Baffinland acknowledges that this committee is in the process of getting established. However, the Company has no control over the direction of this Committee, but will align and cooperate whenever reasonable.	Not adequate. Additional information on socio-economic monitoring for the Baffinland project is lacking. Economic and social criteria conducive to longer term monitoring should be identified and a plan for socio-economic monitoring included as an appendix to Volume 4.	Clarification appears to be required. Information that can be provided later in the process
INAC-128	INAC requests that the Proponent provide additional information on mine safety equipment and devices to be used at the Mary River mine site.	Refer to the Health & Safety Management Plan (Appendix 10E). Furthermore, as the Project advances through the detailed design, Baffinland intends to prepare a detailed field guide book for safe working methods related to mining operations and health, safety and environmental protection. Such field guide are in use at several mining operations are are used for training purposes and to reinforce safe working practices by employees. This information will not be available until the mining operation begins.	Adequate	No outstanding information currently identified.
INAC-129	INAC requests that the Proponent provide additional information on first aid training and occupational health monitoring, including the anticipated number of first aid attendants that will be on site, as well as required level of training. In addition, INAC requests more specific information on nature and frequency of occupational health monitoring that will be undertaken.	Refer to the Health & Safety Management Plan (Appendix 10E). Staffing levels will vary with the phases of the Project.	Adequate	No outstanding information currently identified.

INAC-130	INAC requests that the Proponent provide additional information that summarizes where community input influenced the design and implementation of monitoring plans and initiatives.	We have outlined the major ways in which community input influenced design in Volume 1, Section 4.5. Community input also influenced the implementation of monitoring plans and initiatives in the following examples: - aerial surveys for caribou were abandoned in part at the request of the communities - the socio-economic mitigation and Human Resources Management Plan emphasizes training to maximize local uptake of jobs, which is a priority of communities - to the extent possible, Inuit have participated in wildlife baseline and archaeological programs	Adequate Note: Volume 1 does not have a section 4.5, please provide correct reference for this information.	Information that can be provided later in the process
INAC-131	INAC requests that the Proponent provide additional information on pay schedules.	Pay schedules are not established yet. This information is not required for completing the assessment.	Adequate	No outstanding information currently identified.

IR No.	Request	Baffinland Response	GN Comments	June 8 BIM and GN Meeting	12 July 2011 Working Session with GN, INAC and QIA	Category	Action/Followup
GN-10	Volume 4, Pg. 141 "All identified archaeological sites with potentially direct effects are proposed to have been mitigated and/or staked and flagged in advance of construction" Please provide proposed detailed mitigation plans and timelines associated with the mitigation in reference to construction timelines and provide details relating to the construction activities which will take place in the vicinity of the archaeological sites (bulldozers, graters, explosives). The statement as-is does not provide enough detail to ensure that the archaeology will be properly mitigated well enough in advance of Baffinlands' construction plans, nor does it provide enough information to asses if the proposed mitigation is sufficient, considering specific effects of different construction techniques. While table 4-9.2 and associated text might have been aimed at addressing this issue, there is not enough detail in the table or associated text to draw appropriate conclusions.	This is information that Baffinland plans to submit to CLEY as part of a detailed mitigation plan, as part of a permit application. Baffinland believes the information presented in the DEIS is appropriate level for an environmental review, and provides a sufficient overview of the archaeology present, and the various types of approved mitigation methods that are expected to be applied at each of the sites that will require mitigation to allow for mine development.	This IR is not complete. There needs to be a commitment in the EIS by the proponent that all the sites which will be impacted by development need to be mitigated prior to a project certificate being issued. As such, the timelines for mitigation of sites, in reference to construction timelines, are required.	10F-2 deals specifically with mitigation of cultural and archelogical sites. CLAY is looking for specific statements. BIM has a 4 year construction phase and the archaeology has to be mitigated before the construction starts. CLEY also has to clear that the mitigation has been sufficiently done prior to the construction taking place. This means the archaeology mitigation must be done at least 1 year ahead of the plans for construction. This way BIM and CLEY can have a sense if BIM's timeline and mitigation needs are doable. It is best to figure that out early on so BIM is not held up.BIM agrees.	No discussion	Management Plans	FEIS
GN-11	Volume 4, Pg. 142 "Snow ploughing and dust suppression equipment will not leave the road right of way except to deliver snow to storage areas or to create snow berms to prevent snowdrifts on the road. Snow will not be blown over a distance greater than 30 m and dust suppression spraying will not extend beyond the road right of way. The Roads Management Plan (Appendix 10D-8) will include procedures for snow storage areas or snow berms to avoid any identified archaeological sites." Appendix 10D-8 - Road Management Plan The road management plan does not indicate where the snow storage areas or snow berms will be located. Please provide this information so that CLEY can be confident that the archaeological sites within the affected areas have been properly mitigated. The above stated activities pose a threat to archaeological sites; CLEY needs to determine if proper mitigation is being planned.	Along the roads, snow will be pushed over the side of the roads. At Milne Port, Mine Site or Steensby Port, dedicated areas will be established within the PDA to accept snow. All archaeological sites within the PDA will be mitigated prior to construction.	The information provided is not sufficient. Baffinland was given a concession regarding sites located along the tote road assuming summer use. There is typically a 30 metre buffer required between development and an archaeological site. CLEY was lenient and allowed a 15m buffer which means sites 15m and greater from the road have only been minimally mitigated. This concession saved Baffinland time and money, however these sites may no longer be safe. Therefore, the information requested is still required.	BIM to expand or validate concerns within Appendix 10D-8.	No discussion	Management Plans	FEIS
GN-19	Volume 5, Section 1.3 Atmospheric Environment – Climate Given that Nunavut's greenhouse gas (GHG) emissions total is expected to increase by 64% – 123% due to the Project, a greenhouse gas emissions management plan is warranted. • Describe the project design measures that will be aimed at the reduction of greenhouse gas emissions • Describe additional mitigation and follow-up measures that would be undertaken as part of an overall GHG emissions management plan. Despite emissions from the project being considered very small on a national level, the emissions from the project are are predicted to more than double overall territorial emissions. A project-specific management plan needs to be developed to address this increase in emissions.	Refer to Appendix 10D-1, Section 3.0 for measures aimed at GHG emission reduction. The Air Quality and Noise Abatement Management Plan addresses all air quality related issues associated with the project.	Given that Nunavut's greenhouse gas (GHG) emissions total is expected to increase by 64% – 123% due to the Project, a greenhouse gas emissions management plan is warranted. The proponent should make a commitment to the preparation of a GHG emissions plan and outline its scope so that it could be reviewed prior to the Pre-hearing Conference. The removal of the Road Haulage option for ore transport would affect this particular aspect of the project and the IR's response should take this in consideration.	Removal of RH will be addressed in supplemental document. A commitment to the GHG Plan will be made in the FEIS.	No discussion	Management Plans	FEIS
GN-21	Volume 5, Section 3.2 Please provide the rationale for the use of the Alberta Energy Resources Conservation Board (ERCB) Directive 038 guidelines. Justify their applicability to a treeless environment. In addition, identify which past and current development project in Nunavut were used as examples for the analysis, and how the project were used in the effects analysis. The most significant difference between most of Nunavut and other habitats in Canada is the absence of trees and forest community complexes. In the absence of forest assemblages the transmission of sound across landscapes can increase significantly. The extreme cold found in the North Baffin may also contribute to excessive noise transmission due to the decreased air density. The research conducted by the Alberta Energy Resources Conservation Board may be more appropriate for an area with a differing ecosystem than is found in the North Baffin. Current and past project provide matter-of-fact information and data on the types and quantities of noise emissions experienced at the project and surrounding areas. This information provides the opportunity for analysis for realistic and pragmatic noise modeling of the potential impacts on Nunavummiut and wildlife.	The ERCB Directive 038 is a noise directive which was referenced in the Meadowbank, Doris North and High Lake projects. The reference for Mary River is reasonable since these sites are all in the permanent permafrost zone and above the tree line.	The IR response is not adequated because the subject matter has been avoid. The Request was to provide the rationale for the use of the Alberta Energy Resources Conservation Board (ERCB) Directive 038 guidelines and to justify their applicability to a treeless environment. The use of the Alberta Directive in other projects in Nunavut was provided as requested, but this does not justify its use again if it is not applicable to a treeless environment.	GN is requesting a rational from BIM as to the use of this guideline.	No discussion	Noise	BIM to provid a rational for the use of this guideline
GN-40	Volume 6, Section 5.0 - The DEIS has only assessed potential Project effects on caribou. Section 5.0 discusses that other species, including wolves, foxes, hares, ermine, and other small mammals, occur in the area and are of importance to local peoples. Yet the potential Project effects on these species are not presented in the DEIS. Please include an impact assessment on these species at an appropriate level of detail, or, a full explanation and rationale as to why these species were not considered in the effects assessment. Wolves, foxes, and other small mammal species have the potential to be affected by Project activities. The current DEIS does not include an assessment of the potential impact, and does not include an adequate explanation as to why this assessment was excluded.	Terrestrial wildlife occur at low densities throughout the RSA. During baseline data collection biologist detected few species during surveys. Assessing the project impacts on animals that occur at such low densities would not inform the potential effect of the project. Consequently, the DEIS focus on a key indicator species – caribou – which is the most culturally valued species and is important local ecosystem. See Volume 6, Section 5.1.	Caribou is not representative of species at all trophic levels. Some additional analysis of wildlife species other than caribou is warranted, particularly with respect to contaminant and metal uptake effects and physical disturbances due to the PDA and transportation activities.	To be discussed at working session.	Mike Setterington explained that baseline data for other terrestrial animals (i.e. wolves, foxes etc.) was attempted, however, insufficient or no data was obtained due to scarcity or absence of animals. Therefore, caribou was the most suitable key indicator.	Volume 6	No action required
GN-42	Volume 6, Section 5.2, Pg. 129 - The DEIS is lacking information about the temporal distribution of harvested caribou and techniques used by hunters to locate caribou (ORV based searches, information from other people travelling on land, etc.). Please provide more data in this regard. Assessing the current level of habituation to off-road vehicles may help to better estimate and/or understand responses to future human activity along the Mile Inlet Tote road.	Caribou harvest is predominantly a winter activity because of easier access across the landscape using snowmobiles. Hunters in the area require the use of ORVs to access harvest areas. The project is not anticipated to result in a change from baseline harvest method conditions. As described in Volume 6, caribou generally show greater responses to humans travelling on foot or by dog teams.	The IR response is not adequated because the subject matter has been avoid. This response requires elaboration.	BIM to elaborate on rational in FEIS.	GN is looking for temporal differences in hunting and habituation with vehicles.	Volume 6	FEIS

GN-47	Volume 6, Section 5.2.1, Pg. 136 - It is assumed in the DEIS that caribou will easily pass under bridges and over tunnels associated with the railway. Please provide supporting evidence that caribou will use these crossing corridors. The value of bridges as caribou passages needs to be reassessed because caribou might not be as willing as other species such as deer or moose to move in between piles or head walls of bridges. How will the effectiveness of these mitigation measures be monitored? Against what specific baseline data for crossing 'structures' in a non-fragmented environment will the monitoring data be compared? Please provide clarification. North Baffin Island is a non-fragmented habitat, and roads/linear features are not familiar to caribou. Past experience has shown that caribou may react in different ways to linear features – they may be attracted to the roads, or they may be repelled. Potential barrier effects of the railway and the tote road on movements may be different if caribou are not using bridges. This information is necessary to adequately determine potential Project impaCTA, as well as the effectiveness of mitigation.	Caribou are expected to be able to cross the railway and pass under bridges if desired. The presence of infrastructure is not expected to be the primary reason for caribou avoidance behaviour, it is the human activity associated with the infrastructure. The railway will require 24 bridges which will make up a small portion of the total railway length. Tunnels along the railway are long, so caribou and other animals probably will not be aware that they are above tunnels should they be travelling in those locations. Furthermore, the tunnels only occur through the very steep hills around Cockburn Lake, not a location that contains much caribou habitat. The road and railway embankments are similar to many other geographic features in the area (e.g., eskers, moraines, boulder fields), so in most areas will not provide unique landscape features that the caribou will select. When the caribou population returns to historic population highs and caribou migrations start to occur, the railway and roadway are not expected to deter caribou movement, though caribou may be less likely to occur within the ZOI of these infrastructures.	The IR response is not adaquated because it does not answer the questions posed. How will the effectiveness of these mitigation measures be monitored? Against what specific baseline data for crossing 'structures' in a non-fragmented environment will the monitoring data be compared? Please provide clarification.	Refer to caribou working session.	Specific mitigation for known trails of caribou crossing will include finer grade material. Finer grade material will not be used for the enitre length of rail. Longer term monitoring will need to be conducted to understand what true effects the linear corridor will have on caribou movement. Mitigation for snow management along rail line needs to be supplemented along with potential monitoring. Transport agency suggests that emphasis be placed on monitoring and mitigation.	Volume 10	FEIS
GN-52	Volume 6-Appendix 10D-11 – Terrestrial Environment Management & Monitoring Plan- Please provide monitoring and management protocols for the avoidance of the introduction of alien species (i.e. inseCTA, mammals, etc.), their detection during construction and operations and contingency measures, should they be detected. These management protocols should not be limited to plants. The introduction of alien species is not limited to plants. While the Department of Environment agrees that revegetation using southern or commercial species may not be appropriate; there are additional species that can be introduced through multiple pathways (e.g., shipping containers, personal items like bags, shoes, camera cases, etc). A proactive measure would be for the proponent to develop a protocol for monitoring for alien species and limiting their impact when they are discovered.	Most alien plant or animal species accidentally introduced with cargo shipment will not survived in the harsh climatic conditions of the Project. Baffinland considers that the risk is low.	The IR response is not adaquated because it does not provide monitoring and management protocols for the avoidance of the introduction of alien species (i.e. insects, mammals, etc.), their detection during construction and operations and contingency measures, should they be detected.	GN requests commitment in management plans to address alien species. BIM agrees - management plan will be updated for the FEIS	Management plans to be updated.	Volume 10	FEIS
GN-54	Volume 7, Section 4.3.1, Pg. 241 The DEIS provides baseline data on invertebrates in the project area but no impact predictions or statements are provided for invertebrates. The DEIS's assessment of aquatic impacts focuses exclusively on potential interactions between the project and Arctic char and more importantly, the DEIS identifies Char as the only key indicator for aquatic biota and habitat. Please explain why benthic invertebrates are not included as key indicators for project effects on aquatic biota and habitat, and explain why no impact statement is provided for benthic invertebrates. In addition, please describe the nature and magnitude of potential impacts to benthic invertebrates (e.g. using metrics such as invertebrate species diversity, relative abundance) resulting from the project, and outline measures to mitigate these effects.	As noted in Section 4.3, p. 241, lower trophic level biota – including benthic invertebrates – were extensively considered and discussed in the DEIS. As indicated on p. 241, potential effects of the Project on lower trophic level biota and aquatic habitat were assessed and are described within Key Issue #2: effects on Arctic char habitat in the DEIS (Section 4.5). See for example, Section 4.5.3.7 (p. 256) in which potential effects of the Project on benthic invertebrates and other lower trophic level biota are described for the Milne Port Study Area. Mitigation of Project-related effects on water and/or sediment quality and aquatic habitat also provides mitigation for aquatic biota, including benthic invertebrates. Mitigation is described in Section 4.5.2 and in Tables 7-4.12 to 7-4.16.	Potential impacts on lower trophic level biota are not elaborated in the DEIS in sufficent detail. For example, the 4.5.3.7 states that "Dust deposition may affect benthic invertebrate abundance and other aspects of lower trophic Level biota (e.g., biomass of attached algae) in waterbodies located within the Dust ZOI (Phillips Creek and tributaries to Phillips Creek and Milne Inlet)." (p.256) Specifically how might lower trophic level biota be impacted by dust, and how will these impacts be monitored? Similarly in Table 7.1. Freshwater Biota and habitat Effects Assessment Summary – All Phases. effects on lower level biota are identified repeatedly for various key issues. The direction and nature of the change is simply listed as Negative effect on productive capacity of Arctic char habitat. Again the potential impacts on the status of lower trophic level biota are not elaborated in any meaningful detail. Designing effective monitoring and mitigation programs for lower trophic level biota will require a detailed description of potential impacts on the status of lower trophic levels organisms, describing specifically how the status of lower trophic communities (attributes such as species diversity, richness, and invertebrate abundance) might be impacted by specific project activities. Simply indicating that an effect may occur does not allow an informed assessment.	GN suggested that consultation with Nunavut Research Institute go through DoE.	No discussion	Volume 7	GN to communicate to BIM
GN-55	Volume 7, Section 4.5.10, Pg. 297 - Please provide a detailed plan and timeline for development and completion of the Aquatic effects Monitoring Plan (AEMP). For example: • What provision will be made for the GN and other regulatory bodies to review and comment on the draft iterations of the AEMP to ensure that it is designed appropriately to meet its goals, especially the need to monitor for compliance with regulatory requirements and to verify the accuracy of impact predictions and mitigation measures? • What measures will be implemented to engage community residents and to incorporate Inuit Qaujimanituqangit and local observations in designing and conducting the monitoring program?	The AEMP will be developed and submitted for approval prior to the operations phase of the Project. Similarly, the Environmental effects Monitoring Program will be completed in a manner which is consistent with the MMER Regulation under the Fisheries Act.	How long before commencement of operations will the AEMP be finalized and available for review? Who will approve the AEMP? Will an opportunity be provided to the GN to comment on draft iterations of the AEMP prior to its finalization. The AEMP will be the principle tool to assess accuracy of impact predictions is verified, to monitor regulatory compliance, and to determine whether mitigation measures are effective. A finalized AEMP is thus a critical component of the EIS and without it the EIS is incomplete.	These concerns are being addressed through DFO and EC. GN would like to have review of draft document when it becomes available.	No discussion	AEMP	BIM will forward minutes of discussions with DFO and EC to GN when appropriate.

GN-66	Volume 9, Section 3.8.5.3, Pg. 88 Impact on Marine Mammals The DEIS discusses the potential for polar bear mortality due to consumption of oil-contaminated prey, direct ingestion due to cleaning oil from their fur, or suffer from adverse effect thermal insulation. It is not clear if the loss of polar bears from oil contamination will be deducted from the TAH, and if appropriate compensation will be provided to hunters. The manner in which such mortality will be monitored and reported remains unclear. Please clarify. Polar bear mortality from any project-related activity should be handled in the same fashion, and compensation provided to hunters.	We concur that polar bear mortalities that can be attributed to the Project, whether from defence kills or from an accidental event such as a spill will be deducted from the total allowable harvest and compensation provided to hunters. Oil contamination is not anticipated as ships will operate as per Appendix 10D-10.	This IR response is not responsive to the request "The manner in which such mortality will be monitored and reported remains unclear. Please clarify. "	Compensation related to potential impacts on polar bear will be negotiated under aspects of the IIBA	No discussion	Volume 9	No action required
GN-67	Volume 10, Section 4.3 Vegetation clearing and management – Operational Standards and Procedures Section 4.3 identifies Operational Standards and Procedures contained within the Environmental Protection Plan. Detailed Operational Standards are provided in Appendix 10B. There are no Operational Standards or Procedures related to vegetation clearing or management. As such, it is not possible to fully understand the effectiveness of the Environmental Protection Plan with regards to managing vegetation resources. It is requested that a Vegetation Clearing and Management Operational Standard, inclusive of the appropriate procedures, be developed and included as part of the Environmental Protection Plan. The Vegetation Clearing and Management Operational Standard and procedures should be supportive of the General Mitigations for reducing effects of the Project on vegetation, as described in Section 3.1.1 of the Terrestrial Environment Management and Monitoring Plan SD-EMMP-011 (Appendix 10D-11). It should also provide specific activities in support of the monitoring requirements described in Section 6.1 of the Terrestrial Environment Management and Monitoring Plan, as well as any additional activities developed as a result of the IR process. The proponent has a number of activities throughout the DEIS that relate to vegetation managing, including vegetation clearing and control of invasive species. It is therefore necessary to understand how these activities will be undertaken in the context of the Project's management approach and daily operating procedures.	Many of the EPP Operational Standards address site preparation prior to development and activities required to minimize disturbance. Most of the sites under consideration for the Project are denuded of vegetation (exposed rocky surfaces for quarries or exposed granular materials). Vegetation on these site is limited to sparse lichens or non existent. For most sites with the PDA, clearing of vegetation wil be limited.	This IR response does not adequately address the information requested.	DoE will follow-up with BIM	No discussion	Volume 10	GN to follow up with BIM
GN-68	Appendix 10B, Section 2.10 Polar bear encounters Please provide greater detail regarding the polar bear safety and awareness training that will be provided to employees and confirm that the execution and implementation of this training using local expertise and IQ. Workers should be educated about the risks and safety measures related to encounters with polar bears. Bear safety and training awareness will reduce the risk to human life by wildlife, reduce destruction of property by wildlife, and reduce the number of defence kills. The use of local expertise and IQ is anticipated to add value to safety and awareness training programs.	Safety concerns as it relates to polar bears encounters is an integral part of the site induction program for all new employees. In addition, acceptable response by employees should such encounters occur are routinely discussed at weekly/monthly health and safety meetings. EPP Operational Procedure dealing with polar bear encounters is presented in Appendix 10B - EPP#2.10.	The information contained in the Appendix is not adequate. The IR requested "Please provide greater detail regarding the polar bear safety and awareness training that will be provided to employees and confirm that the execution and implementation of this training using local expertise and IQ."	BIM to provide procedures or induction currently being utilized at site so that the GN has a better idea of the measures to be taken.	BIM to provide	Volume 10	BIM to transmit document to GN
GN-70	Appendix 10B, Section 2.8, Aircraft Flights There is no mention of aerial surveys or use of GPS-collared females to locate potential or existing calving sites during construction and operation in volume 10 EHS Management, Appendix 10D-11 Terrestrial environment management and monitoring plan, SD-EMMP-011. Anecdotal reporting will mainly provide useful information along the mine site, the tote road and the railway. Please describe how project biologists will locate caribou calving sites so they can be avoided by aircraft pilots. If helicopter surveys are to be used, please describe the flight ceiling restrictions, their seasonality, how they will be established geographically, and how these will be managed and enforced. Female and calves are very sensitive to aircraft disturbance and it may affect recruitment. This information is necessary to adequately determine potential Project impaCTA, as well as the effectiveness of mitigation.	No caribou calving sites have been identified within the various Project PDAs where the disturbances will occur. Baffinland wishes to avoid harassement of animals and as such no additional aerial surveys or collaring of caribou are proposed. Baffinland's Wildlife Management Plan (Appendix 10D-11) will focus on employee reported observations along the Project corridors and PDAs.	The IR does not give the information requested. " If helicopter surveys are to be used, please describe the flight ceiling restrictions, their seasonality, how they will be established geographically, and how these will be managed and enforced. "	BIM has stated that no helicopter surveys will be conducted which satisfys this IR request	QIA is suggesting that BHP is considering use of high level flights with high resolution cameras. This could be considered although it is agreed that flight surveys is somewhat of a trade off. BIM will consider best methods of survey based on proven technology and caribou abundance.	Volume 10	Further discuss monitoring alternatives with GN if ecosystems biologist is available. Potential revisions to Vol. 10 as monitoring plans develop.
GN-71	EPP, Appendix 10B, Section 2.19 Road Traffic Management Should any movements either by a single caribou or a female-calf pair be sighted in the vicinity of the road be reported to the Environmental Superintendent instead of "Any substantial movement"? A definition of "substantial movement", or a specific procedure for people to follow is required. Please clarify and provide further information. Given the low numbers of caribou likely to range in the RSA, any sighting of movements should be reported and documented.	Employees are required to report all wildlife sightings to the EHS Department. The EHS Superintendent,or his designate (or a designated identity as agreed to under the terms of the IIBA) will guide decision making as it relates to caribo migration and encounters with project activities.	The IR does not give the information requested. " A definition of "substantial movement", or a specific procedure for people to follow is required. Please clarify and provide further information."	BIM to provide definition on substantial movement.	No discussion	Volume 10	Further discuss with GN if ecosystems biologist is available. Potential revisions to Vol. 10 as monitoring plans develop.
GN-75	Volume 10 Appendix 10C1 – Emergency & Spill Response Plan, Section 4.1.6 Please provide a spill response plan that will be implemented by the shipping company. It is stated that any spill on water during shipping will be the responsibility of the shipping company. This plan has not been included in the DEIS and thus a complete review of impacts as a result of any and all spills, including those during shipping, cannot adequately be carried out.	SOPEP are proprietary to ship owners and cannot be provided by Baffinland. It is a legal requirement for all ship navigating in Canadian Waters to have a Transport Canada approved SOPEP.	More information is required. A sample SOPEP would be sufficient.	BIM is unable to provide GN with any further information on this IR request.	No discussion	Volume 10	No action required

GN-77	Volume 2, Section 2, Table 2-2.1, pg. 17 List the Responsible Agencies for the Territorial ACTA and Regulations. The list is incomplete and does not include territorial departments or agencies.	We acknowledge the listing of agencies responsible who administer territorial leglislation is not included. We don't believe this information is necessary to carry out a review of the DEIS.	This response is inadequate. It is necessary for the GN to see that the company understands the legislative environment within which they are expected to work. The GN requests, again, that the company list the Responsible Agencies for the Territorial Acts and Regulations in Vol. 2, Section 2, Table 2-2.1, pg. 17 in the same way they have done for the Federal Acts and Regulations.	BIM to provide missing list of territorial departments or agencies.	No discussion	Volume 2	FEIS	
GN-78	Volume 3, Section 1, Table 3-1.1, pg 3; Volume 3, Section 5, and Table 3-5.1, pg 123 There is a discrepancy between the total workforce for the operations phase between Table 3-1.1 and Table 3-5.1. Adding up the numbers in Table 3-5.1 results in a total of 1257, not 1057 as identified in the table. It appears to the reviewer that the total numbers in Table 3-5.1 have been miscalculated, and as a result do not match Table 3-1.1. • Provide clarification on the total number of employees during the operations phase, including which employees are full time and part time. • Provide a similar breakdown of employee estimates for the construction phase. • Confirm on which employment numbers the economic analysis (Appendix 4B) was based. • Re-calculate the economic analysis if based on the incorrect employment numbers. • Redo the cumulative effects evaluation, if based on incorrect employment numbers. To provide consistency and to clarify the discrepancy of 200 onsite employees	Correct, there are transcription errors in Table 3-5.1. A revised Table 3-5.1 is presented as Attachment 14. The table has been revised also to reflect the removal of the road haulage option from the Project. The economic impact model was prepared using the employment numbers drawn from the 2008 definitive feasibility study (18 Mt/a railway project only). We noted that employment earnings are a minor contribution to the Project's economic impact; the royalties accrued to NTI, payments to the QIA and taxes by the territorial government comprises most of the Project's economic contribution. Since the road haulage option is no longer being pursued by Baffinland, the revised employment numbers in Table 3-5.1 match the employment numbers applied in the economic impact model (i.e., the 18 Mt/a railway operation only).	This IR response is incomplete. The GN requested that the proponent provide a breakdown of estimated part time and full time employees, and a similar breakdown for employment estimates for the construction phase. Further, the company made no reference to the cumulative effects evaluation and whether it was based on incorrect employment numbers. Finally, a need for clarification: the company indicates in the revised Table 3-1.1 that a peak of 5622 construction employees are required, and the economic impact model is based on 21,080 person years of employment for the project life. Clarification on how these person years are broken down to construction and operation employment estimates are required and clarification on what changes to impacts/benefits of the project due to altered employment estimates are necessary to clearly show the employment numbers for a project that does not include the road haulage option.	GN is looking for breakdown on full time, part time, contract. Table 3.5.1 to be updated to show construction and operational phases. GN suggests this could be addressed in supplemental document.	Revisions in employment estimates for the Project associated with removal of road haulage are addressed in the supplemental document. With regard to the question related to full-time and part-time employment: The mode of employment will be full-time shift work on a fly-in/fly-out rotation. Remote industrial jobsites are not conducive to supporting on-site workers who work only part time. This is standard practice at remote industrial sites. With regard to contract versus direct Baffinland employment, that is an operational issue that will be settled further along in the project development process. The nature of the employment contract does not affect the assessment.	Volume 4	BIM feels the response is adequate to support assessment. Further detail will evolve as the Project proceeds post-EIA.	General Notes: More transparency in models is requested from GN. Without the GN understanding BIM's understanding of the Nunavut economy, the GN cannot assertain if predictions are correct. GN would like to see economic assumptions within the models. BIM asks the GN how this understanding will inform the agencies review of the assessment. BIM advises that followup discussions are required to understand what data is required immediately versus what should be gathered in the future. Paul (Mayor of Igloolik) is concerned about loss of 100 000lbs of the potential commercial fishery at Steensby Port. BIM ackowledges this concern and will work with communities to address this under habitat compensation. GN wants to see how tax benefits are calculated. BIM commits to speaking with Howe to obtain a sense on what information he is willing to provide with regards to methodology in his work. Generally INAC and GN is interested in understanding the basic fundamentals of arriving at levels of signifigance. BIM suggests that the benefits of project infrastructure could
GN-79	Volume 4, Section 2.3.2, pg. 15-17 and Pg. 109 The discussion of the potential for in-migration/out-migration as a result of the Project was not actually evaluated in the DEIS. Rather scenarios were presented as to types of migration that could take place, in order to define at what point the demographic change might be negative. The analysis merely confirmed the issues the communities raised as possibilities. The key issues are the indirect effect of migration; namely, "brain drain", loss of key community members such as hunters and trappers, social cohesion changes, housing availability). The DEIS requires a thorough analysis of in-migration/out-migration. This requires: • an analysis on the possibility of brain and skills drain and changes in social cohesion • an analysis of the impact to community infrastructure and services, and for housing stock in all communities where in-migration is anticipated (i.e., five RSA communities and Iqaluit) • Describe the monitoring program that would be implemented by the proponent with respect to in and out migration and its associated effects. The EIS Guidelines require the consideration of the Potential for Project-induced demographic changes in population, migration, redistribution and the effects of those changes, including interactions between local residents and non-residents; (8.2.1.2). It is unclear whether the Proponent completed an evaluation of the effects of changes as a result of demographic changes caused by the project. Rather, it would appear that this issue will be monitored for in the event that it might happen. Some preliminary evaluation of the potential effect needs to be understood in order to know what to monitor.	A description of theoretical migration interactions between the Project and North Baffin communities is presented in Section 2.2 and 2.3. The assessment, or "evaluation," of these effects is presented in Section 2.3.3 of Volume 4. With regard to in-migration, the analysis indicates this will be of low magnitude and not a significant effect. Since significant levels of in-migration is not anticipated, it is unlikely that there will be significant associated effects on local infrastructure, services, or housing. With regard to out-migration from North Baffin, the Project will enable some who would have moved away to stay, and some who would have stayed to move. The Section 2.3.3 analysis again leads to a determination that the effect will not be significant, so there is no need to analyze effects that are not expected to take place. Monitoring related to migration is addressed in Section 2.3.5---this includes company-generated change-of-residency data as well as occasional interviews of local residents/key people to identify perceptions related to migration issues. The details of this monitoring program need to be developed in partnership with the other stakeholders who will be involved in monitoring.	This IR response is incomplete. The GN requires that a more complete analysis be provided on the impacts of migration due to the presence of the project. This includes analysis on 'brain and skills drain' in those communities anticipated to lose community members, the impacts of any loss of key community members, and the pressures in-migration could have on infrastructure and services. Further, a housing stock in those communities where in-migration is anticipated was requested and is still required.	This IR will be referred to working session. Appendix 10F-3 helps to address the management of some of these concerns.	Monitoring of migration is incorporated into the monitoring framework set out in Volume 4, Table 4--14.2. In addition to Baffinland generating data directly arising from its activiites we support a collaborative process to advance general understanding of factors that determine migration decisions in the LSA.	Volume 4	BIM feels the response is adequate given the available baseline data and the nature of Project interactions. The issue should be carried forward into monitoring.	
GN-80	Volume 4, Section 2, and Section 4.3.2 Volume 10, Appendix 10F-3, Section 6.5 The size of the project and potential workforce can accommodate a large number of northern residents who may be interested in employment at the Mary River Project. The DEIS states that Baffinland will seek to provide employment to Nunavummiut outside the point of hire communities (vol. 4, pg. 45). Further, the DEIS identified in the Human Resources Management Plan (App. 10F-3, pg. 13, 14) that if a significant number of people from other communities are employed at the project, additional points of hire may be created. Please provide clarification on the following two points: • How many people will have to be hired from a community before it becomes a point of hire? • What support/compensation will Baffinland provide employees to travel to points of hire? While mitigation measures, such as the inclusion of Iqaluit and Ottawa as a point of hire, may reduce the potential for southerners to reside in North Baffin points-of-hire communities, the size of the project and potential workforce may attract people from across the RSA and the north, which may lead to an influx of residents into the current northern points-of-hire communities.	Transportations costs will be paid for by Baffinland for workers from the five designated North Baffin communities. The mode of transportation for workers from these communities will be dependent on the numbers. Baffinland has indicated that it intends to use charter flights from points of hire but if the number of staff is lower than appropraite for charter, then we could use scheduled commercial flights. A decision on covering costs of travel from non points of hire will be made as the project advances.	The IR requested clarity on how the proponent expected to mitigate in-migration of employees not in the identified points of hire, while providing accessible employment opportunities. Based on Vol. 4, pg. 45 of the DEIS, Baffinland has committed to providing employment opportunities to communities outside the LSA. Therefore, the GN requires clarification as to how many people will Baffinland require be hired from a community before it becomes a point of hire, or whether there will be other forms of support for potential employees. Commitments to make these decisions should also include a timeline as to when these decisions will be made.	GN can wait for a decision on this IR but would like to have BIM provide the threshold or number of potential hires it would require in a community in order to become a point of hire.	The specifics of transportation policy will be operational decisions that will be made based on recruitment patterns experienced as the Project proceeds. The information we have provided is the best available at this time. The topic should be pursued within the context of monitoring and follow-up.	Volume 4	BIM feels the response is adequate given the available baseline data and the nature of Project interactions. The issue should be carried forward into monitoring.	

GN-82	Volume 4, Section 7, pg. 114 There does not appear to be an assessment of the potential impact to Iqaluit or other points of hire communities of the additional air traffic and airport use in communities. In addition, there does not appear to be consideration of weather or other emergencies/mechanical issues unexpectedly grounding flights carrying employees. • Provide an assessment to consider potential impacts of increased air traffic through the point of hire communities. • Provide an assessment to account for the possibility of unexpected grounded flights in communities. • Identify mitigation measures to address the possibility of unexpected grounded flights. An influx of several employees into a community or a few hundred into Iqaluit may not easily be accommodated, putting pressures on accommodations, food services, and grocery stores. This may particularly be enhanced in the case of a weather delay, where cargo cannot come into communities for resupply.	The number of regular flights into and out of the point-of-hire communities will be low based on the total flights into the mine sites as described in Table 3.1-1 of Volume 3. There are no impacts anticipated from these flights. With regard to unexpected grounded flights, the following considerations are noted. First, the local North Baffin flights are less than an hour in duration. A flight that could not expect to successfully land at the destination point-of-hire community would be cancelled, with the workers remaining at camp. In-coming flights to the Project have built-in alternates since there are landing facilities at both Steensby and Mary River. Baffinland recognizes that the communities do not have accommodations for a plane-load of unexpected guests, as do the commercial airlines. With regard to the regular jet service to the mine, a flight that was unable to land at the mine site would return to Iqaluit and then back to Ottawa. Residents from Iqaluit likley would get off there before the flight continued south.	Please define 'low'. Please provide mitigation measures for the possibility of one of these flights being unexpectedly grounded in a community.	GN requires consideration of what might be the plan to deal with stranding of aircraft.	More discussion required between GN and BIM (Doug B. to initiate)	Volume 4	FEIS
GN-85	Volume 4, Section 5.0, Pgs. 65 - 73 Section 5.0 is only a literature review of Nunavut's existing economic environment. No real analysis or consideration is given to the project's effect on the territory's economy. The DEIS must provide best estimates of the effects the project may have on Nunavut's Real Gross Domestic Product, rate of GDP growth, Consumer Price Index, import/export and trade balance of goods, personal savings rate, and business investment. These types of analyses should be provided for Nunavut's economy as a whole and for Nunavut's major economic sectors (for example, the major sectors in the North American Industry Classification System). This information provides a complete representation of how the project is contributing to Nunavut's economy, and will enhance the local and regional economic analysis. The "Impact Statement" (5.5 Page 73) merely states "VSEC are assessed ... to be positive". What are the reasons, data, analyses or considerations? The proponent should carry out a thorough analysis and include the results of that analysis. The Government of Nunavut requires quantitative "best" estimates of the economic effects of the project on its economy as a whole, including the various economic sectors, in order to understand the project's benefits versus costs.	A portion of the GN's request is addressed in the Economic Impact Report prepared by Professor Eric Howe, Appendix 4B, and cited as Howe, 2010. The GN's request for quantitative analysis of the effects of the project on the GN economy is beyond the scope of the EIS guidelines, and is not required to support the conclusions of the EIS that the Project will have a substantial positive effect on the territorial economy.	This IR is inadequate. The GN will continue to request the proponent provide best estimates of the effects the project may have on Nunavut's Real Gross Domestic Product, rate of GDP growth, Consumer Price Index, import/export and trade balance of goods, personal savings rate, and business investment. The GN expects the proponent to complete a thorough analysis and report on the results.	GN requires this information for the technical review period. BIM to respond to GN on these IR's	The data provided in Appendix 4B are the best estimates of the Project's effects on Nunavut's economy from a quantitative modeling perspective based on the data and assumptions available at the time. As explained in Appendix 4B, these estimates are based on the Arctic Impact Model, a 44-equation macroeconomic simulation model of the economy of the Canadian arctic. The reviewer has suggested that additional analysis related to the effects of the impacts identified by the AIM model and baseline conditions as they play out in the Nunavut economy should be included. We will review the relevant material included in the DEIS, particularly in Volume 4, Section 5.3 to see how additional analysis might be of value for inclusion in the FEIS.	Volume 4	Resolved. BIM agrees to include additional analysis for inclusion in the FEIS. GN agrees to provide an outline by July 29th of the kinds of questions related to the economy they feel are important.
GN-86	Volume 4, Section 5.1.2, Pg. 68 Statements made in Section 5.1.2 appear to be incorrect. Based on the GN's interpretation of available data, Nunavut did not experience the creation of 10,100 jobs in 2008. Further, the Conference Board of Canada does not expect that 11,800 jobs will be created by 2020. The following table shows the CBoC's estimated level of employment (number of jobs) existing in the territory: (see original submission) Nunavut experienced a decrease of 400 jobs in 2008, not an increase of 10,100. The estimated level of employment in 2020 is only 13,000, an increase of 2,600 from 2010. Please revise the EIS reflect accurate data. The DEIS does not provide an accurate interpretation of data.	The Conference Board forecast is based on the publication that is cited in Section 5.1.2, and included in the Section 15 References. This is available online at: http://www.nunavuteconomicforum.ca/public/files/library/REPORTSO/Northern%20Outlook%20January%202010.pdf. The reviewer's attention is directed to "Table 1: Key Economic Indicators: Nunavut" found on page 7 of that document. This is the basis for the employment numbers that are cited as the Conference Board of Canada's forecast for Nunavut. This citation is accurate. The source of the data suggested by the reviewer as the "correct data" is, unfortunately, not cited---it may be older or more recent than that cited. The reviewer's interpretation that Section 5.1.2 states that Nunavut experienced the creation of 10,100 new jobs is unfounded based on the text. The conclusion of this section is that based on the forecasts, "under baseline conditions, the Nunavut economy is expected to add 1,800 jobs..." over the forecast period. While these numbers are interesting, it is noted they are simply forecasts.	Section 5.1.2's first sentence verbatim is as follows: "Nunavut's economy generated some $1.1 billion (in 2002 dollars) in economic activity in 2008, with some 10,000 jobs being created." The GN's comments are a reflection of what is stated in that sentence, not an interpretation or misunderstanding. It is simply the case that the Nunavut economy did not create 10,000 jobs in 2008. The GN requests that the DEIS be updated to reflect the accurate data. The GN has no quarrel with the proponent's statement of 1,800 jobs added as we recognize the CBoC regularly updates their forecasts. We are currently using more recent forecasts performed by the CBoC which can be found for free in the Centre for the North's (http://www.centreforthenorth.ca) northern outlooks for 2011.	GN requires this information for the technical review period. BIM to respond to GN on these IR's	Wording will be revised in the FEIS.	Volume 4	Resolved. Will make revision in the FEIS
GN-87	Volume 4 Dollar figures used throughout the DEIS are inconsistently represented, switching from 1997 to 2002. In order to provide an accurate economic analysis with Real Dollars, the proponent should use a consistent base year. The economic analysis requires revision to reflect a consistent base year. The Government of Nunavut requires a quantitative analysis of the economic effects of the project on its economy as a whole in order to understand the project's benefits versus costs using a consistent base year. The GN notes that Statistics Canada currently chains Canadian dollars to the year 2002.	The economic impact model completed for the EIS is sufficient to support the assessment and conclusions. The use of 1997 dollars arises from application of the Arctic Impact Model (AIM), as described in Howe (2010)-Appendix 4B. The AIM is regularly updated, with the most recent update being completed in 2010. The 2010 version of AIM uses 2002 dollars. However, this was done following completion of the modelling runs used in the impact analysis prepared for the Mary River EIS. The benefits of presenting model conclusions in updated constant dollar figures (2002 versus 1997) is not considered to justify the cost involved with re-running the model.	The Mary River Project is a multi-billion dollar project going through an incredibly important impact assessment. Providing out of date research on its economic impacts is not adequate when performing an environmental impact assessment. Therefore, the GN still requests a quantitative analysis of the economic effects of the project on Nunavut's economy as a whole, using a consistent base year.	GN requires this information for the technical review period. BIM to respond to GN on these IR's	The economic model presented in Appendix 4B was carried out using a consistent base year of 1997 dollars.	Volume 4	Resolved. No action required

GN-88	Volume 4, Section 12.3.1, Pg. 182 Section 12.3.1 is vague and does not provide a rationale for the level of tax revenues expected to flow to the GN from the project. The proponent should show an analysis and a more detailed breakdown of these tax revenues. Please provide more information on how these figures were estimated and a breakdown of where these taxes are flowing. The GN's estimation of tax revenues received from this project are inconsistent with EIS figures. Figures stated without rationale. Inconsistencies with organizational expectations	Section 12.3.1 presents the level of tax revenues that are predicted to accrue to the territorial government during the construction and operations phases of the project. Clear reference is made to the source of these estimates---Howe (2010). The detail of these estimates are laid out in the Howe (2010) Economic Impact Report which is referenced in the Section 12.3.1 text. The reviewer is referred to Appendix 4B for the details that are sought. Inconsistency with the reviewer's expectations cannot be addressed since details of these expectations have not been shared.	Howe (2010) does not provide any rationale, proof of calculation, method of calculation, data source information or an adequate discussion of the proponent's estimation of tax revenues. Tax payments by the proponent to the GN are simply stated in both the Draft EIS and the accompanying Appendix 4B. The GN requests that the proponent show the detailed analysis and a more detailed breakdown of these tax revenues.	GN requires this information for the technical review period. BIM to respond to GN on these IR's	Estimations of direct tax and royalty payments are based on the projected production rate of 18 Mt/y with various assumptions related to costs, revenues, and taxation leading to estimates of pre-tax and after-tax cashflows. These data were used as inputs to the AIM model. Additional tax revenues generated through indirect and induced effects are generated by the AIM model. It is reasonable to anticipate that assumptions related to costs and revenues will evolve over time as Project-specific details are refined and as global scenarios continuously change. However, the fundamental story that the Project is a big project that will generate substantial tax and royalty returns is not expected to change.	Volume 4	Essentially resolved. Doug will check with BIM to see if it is possible to get some break down of tax and other financial assumptions.
GN-89	Volume 4, Section 12.4.3 A complete economic analysis requires the consideration of effects on expenditures as well as revenues. The DEIS does not provide a complete understanding of the types nor levels of expenditures the GN may incur from the project. Please provide the estimated levels of expenditures that the GN may incur due to the project. Please provide data and identify how this data was derived. Data is missing from analysis. GN expectations on expenditures do not align with those expressed in the DEIS	A conceptual model for the effects of the Project on territorial expenditures was developed and presented in Section 12.4.3. A high-level estimate of the project's impact on government revenue and expenditure is provided in the Howe Economic Impact Report (Appendix 4B). To provide more detailed quantitative estimates for these categories would require the Proponent to gain access to a detailed level of internal government data. It would also require assumptions related to government policy and political decisions related to discretionary spending decisions. Not only is it felt that this request goes beyond the scope of what is a reasonable expectation for this EIS, it is also felt that the outcome would be highly dependent on assumption and estimation as to be unuseful in advancing the ability to undertake a complete assessment of the Project.	Section 12.4.3 is already based on assumption and estimation, yet proof of a complete understanding of the effects of the project is not apparent. Table 4-12.1 claims "Income Support" and "Social housing expenditures" will decrease due to the project. These claims are not properly discussed or legitimized in Howe (2010), yet the proponent states serious claims which have a profound impact on government expenditures. The Information Request does not ask that the proponent estimate the broad topic of government expenditures - however, the GN requests that the proponent legitimize their assumptions by showing the adequate details of the economic analysis. The proponent states Income Support expenditures will decrease because of the project. Why and how? The proponent states Social Housing Expenditures will decrease because of the project. Why and how?	GN is requesting rational for BIMs line of thinking behind these claims. AN example of impacts to increases to GN infrastructure would be the use of GN health services for emergencies at Mary River.	The relationship between increased employment levels and declining social entitlement expenditures such as income support and social housing is agreed to be non-controversial. However, subsequent to the meeting BIM agreed to provide some additional text in the FEIS to spell out these relationships. The potential for territorial involement in medivac flights involving Project workers has been identified by GN HSS. Further discussion of the implications is merited on this point.	Volume 4	Mostly resolved. Include text in FEIS. Doug to work through with GN on the medical transportation effect.
GN-91	Details on construction phase training: will training be offered in advance of construction commencement, what efforts will be done to overcome the additional challenges of construction (faster pace, etc.)	The Company has been running training programs over the past 4 years and will increase training efforts through 2011 although the Project is still in the feasibility stage and a firm construction schedule has not been finalised.	Several items have been requested by the GN, where the proponent has suggested that these items will be developed at a later date. The GN requests that the company commit to providing these items once they have been developed.	GN requests BIM to commit to providing these plans once they become established.	To be addressed off-line with GN outside the EIA process. BIM to provide GN with plans when they become established.	Volume 4	Post FEIS
	When will the HR Plan and Inuit HR Strategy be available to the public? Will there be consultation with stakeholders (such as the Department of Education)?	There is on-going discussion with stakeholders. The final details of the HR Plan and Inuit strategy will not be made public until the IIBA agreement is finalized.		GN requests BIM to commit to providing these plans once they become established.			
	What are conditions for opening training to non-employees (Vol 4 s.3.4.3)? What are the plans for training for non-employees, particularly during project growth, to train community members in the LSA to become eligible for employment?	Refer to the HR Management Plan (Appendix 10F-3). Baffinland is committed to work with the QIA and other instutions to support efforts on education and training. Training initiative may include training programs at the high school or post secondary level. In certain cases training wil be made available to those who are considered as potential future employees.		GN requests BIM to commit to providing these plans once they become established.			
	Details on cross-cultural training, orientation and other mandatory general training components (duration, delivery agent/qualifications, assessment, etc).	Refer to Appendix 10F-3. Fulls details of these training programs will be developed as the Project evolves to the construction phase.		GN requests BIM to commit to providing these plans once they become established.			
	The HRMP identifies (s.6.4.2) that prior learning recognition 'might' be offered. Under what conditions, for what purposes (if limited), and using what methodology?	The HR Management Plan (Appendix 10F-3) outlines the policies that will be adopted by Baffinland. The detailed implementation plan will be finalized as construction activities get underway.		GN requests BIM to commit to providing these plans once they become established.			
	What is the size or the expected scope and reach of the education and training fund (in dollar terms or in terms of participants). Is the fund for employees, for community training, or both?	This will be determined to a large extent by the IIBA Executive Committee which will not be established until the IIBA is finalized.		GN requests BIM to commit to providing these plans once they become established.			
	Under what conditions will the employer pay for post-secondary training for employees?	These programs will be developped at a later stage, once the Project Certificate is granted.		GN requests BIM to commit to providing these plans once they become established.			
	What detail can be provided on plans to promote education amongst the K-12 population? Specifically, what will be done to expose youth under the age of 18 to the mine operation in a tangible and realistic way? While the broad statements provided are very encouraging, in many cases there is very little detail to determine the timing and scope of some initiatives and it is difficult to ascertain the true value of the proposal without this detail.	These programs will be developped at a later stage, once the Project Certificate is granted.		GN requests BIM to commit to providing these plans once they become established.			
GN-94	Appendix 1B-2, Section 8.2; Volume 3, Section 6.1.5, pg 126 Appendix 4A, page 6 It was noted that Appendix 1B-2, Sec 8.2 and Volume 3, section 6.1.5 identify 70% of the population in Nunavut is under the age of 25. However, Appendix 4A, page 6 identifies 58% of the population is under 25 in 2006. • Please clarify whether the 70% figure is for a different reporting year. • If one of the figures is incorrect, please clarify which one, and revise the DEIS to reflect the correct information.	The discrepency is acknowledged. The 2006 Census data indicates that 58% of North Baffin residents are under the age of 25 years.	This IR is incomplete, as it is necessary that the discrepancy be more than acknowledged. What is the implication of the incorrect numbers on the DEIS?	The correction has been made. No implication for the DEIS.	No discussion	Volume 4	Resolved

GN-96	Describe how the provision of country food at the site will affect the availability of country food in communities (i.e community freezers, country food that is donated to elders etc.)?	Country food provided at the site must be through a Health Canada licensed facility. Baffinland will therefore purchase the country food through established suppliers, preferably located in Nunavut.	This IR response is inadequate as it does not answer the question. How will Baffinland's provision of country food onsite affect the availability of country food in communities?	Refer this IR to Socio-economic working session.	Paul (Igloolik) suggests that the GN provide insight from the health care center in Iqaluit and how they deal with this issue. BIM suggests that the IR can be responded to but it will need input from the QIA and GN on what information they have with regard to impacts to communities from shortages of country food as they relate to large institutions.	Volume 4	Working session with QIA, INAC, GN and BIM required.
	Will the company provide country food only to Inuit employees or to all employees?	Country food will be focused on Inuit, however, under certain circumstances it may be made availabel to all.		Refer this IR to Socio-economic working session.	Paul (Igloolik) suggests that the GN provide insight from the health care center in Iqaluit and how they deal with this issue. BIM suggests that the IR can be responded to but it will need input from the QIA and GN on what information they have with regard to impacts to communities from shortages of country food as they relate to large institutions.		Working session with QIA, INAC, GN and BIM required.
	Describe how country food will be provided to employees The high number of employees at the mine site may impact the availability of country food for Nunavummiut, including those not working at the Project	Country food provided at the site must be through a Health Canada licensed facility. Baffinland will therefore purchase the country food through established suppliers, preferably located in Nunavut.	This IR response is inadequate as it does not answer the question. How will Baffinland provide country food to employees?	Refer this IR to Socio-economic working session.	Paul (Igloolik) suggests that the GN provide insight from the health care center in Iqaluit and how they deal with this issue. BIM suggests that the IR can be responded to but it will need input from the QIA and GN on what information they have with regard to impacts to communities from shortages of country food as they relate to large institutions.		Working session with QIA, INAC, GN and BIM required.

IR #	QIA Information Request	Baffinland Response # 1 (April 2011)	BIM Response #2 (June 2011)	BIM/QIA Phone Call (7 July)	Working Session (week of July 11)	Category	Next Step
QIA-01-1	It is requested that harvesting and associated cultural meaning be reconsidered as a Key Indicator and that it is treated to a full impact analysis and cumulative effects assessment. Given the many statements made by Inuit and recorded in the DEIS that emphasize the importance of wildlife harvesting to Inuit, the impact assessment should include an exploration of levels of acceptable risk to harvesting activities from an Inuit perspective	Harvesting was addressed as a Key Indicator (Volume 4, Sections 10.3 and 10.4), as were the key wildlife species that are harvested. Cultural well-being was assessed as a subject of note owing to its multiple dimensions, of which ability to harvest (practice a traditional activity) is one dimension. As stated in the DEIS quantification of effects to cultural meaning or well-being is very difficult.	We believe discussion on this between QIA and Baffinland is necessary to understand and try to resolve differences in perspective.	Deferred to working session (week of July 11)	QIA would like to ensure that management plans start to develop now with relavent agencies and communities to ensure that methodologies are in place and can proactively ensure that impacts do not occur or are minimized. This relates to QIA-03-2. QIA, INAC and the GN would like BIM to begin a more detailed plan with input from the agencies and communities so monitoring can begin sooner than 6 months after the commencement of operations as stated in the guidelines. BIM is willing to start engaging on the development of a plan with parties.	Volume 4	Agreement to Progress via Working Sessions Doug will also prepare a supplement document on the net effects on Inuit harvesting.
QIA-02-1	It is requested that the Proponent assess the distribution of impacts within and between communities as a Subject of Note, including any potential effects on community cohesiveness. The discussion should refer to data from the Project Definition phase as well as experience from other relevant ProjeCTA such as the Raglan Mine in Nunavik and Voisey's Bay in Labrador.	Baffinland's Human Resources Management Plan (Appendix F-3, section 13) describes the joint management structure that will be established within the framework of the IIBA to administer and monitor the potential effects of the Project on communities. The socio-economic effects assessment presented in Volume 4 identified the affected individuals or groups within a community and between communities.	The distribution of effects within and between communities was addressed in each socio-economic impact statement in the significance rating and were discussed in the accompanying text. Geographic extent was a significance rating used to describe the extent of effects between communities, and social extent described the distribution of effects within communities (i.e., individuals, families, community-wide). The equity of an effect was evaluated to describe if for example a negative effect was felt by a different demographic group that received a positive benefit from the Project. References were made to experiences from the project definition phase, and other projects.	Deferred to working session (week of July 11)	The issue stems from a disparity that can result from increased and decreased wealth within a community. The communities are requesting of QIA that these potential effects be monitored. What specifically would be put in place to enable to hunters to practice their right to hunt in the event that impacts to animals occur. Contaminants of wildlife is also included in this concern. Crime and Inuit family and community cohesiveness are inlcuded in the concern.	Volume 4	Doug to draft a SoN for inclusion in the FEIS, probably under Section 6.6. The supplement on harvesting will also be relevant here.

QIA-03-1	It is requested that the Proponent survey northern mines or relevant projects in other locations that have implemented mitigation measures similar to those proposed by the Proponent, and compile the lessons learned about their effectiveness and actual outcomes.	Proposed mitigation related to optimizing socio-economic effects (increasing benefits while minimizing negative outcomes) are identified in Appendix 10F-3. These measures have been included in the IIBA negotiated with QIA and are believed to reflect the evolution of best practice. Through the IIBA, there is funding and a management structure established to fund, implement and monitor the effectiveness of these mitigation measures. The value of a synthesis of knowledge and experience related to socio-economic mitigation in the mining sector is recognized. However, such a project has a generalized public value and is considered to be outside the scope of a project-specific EIS.	While we appreciate the QIA's interest in such a comprehensive literature search of mitigation measures and their success, this is a substantial undertaking and one that is beyond the scope of NIRB's EIS Guidelines. We believe, at least in the context of the review process, that Baffinland should be judged against the EIS guidelines, which were publicly reviewed before being issued. The EIS guidelines did not require this request to be completed. Nor have other projects been required to complete such a compilation. Baffinland re-iterates that it has not prepared its EIS in a vaccuum, and believes it has applied current best practices in developing mitigation plans. We consider that the mitigation measures described in the DEIS reflect best practices and that these, combined with the described monitoring program, are adequate to support assessment of the Project.	Deferred to working session (week of July 11)	BIM suggests that work related to this request can be done in collaboration with other agencies and that this work can be done outside of the EIS process. Mitigation measures employed from other projects can supplement discussion on what has worked and what hasn'tBIM can begin working with agencies to start an ongoing process to build monitoring that will feed back into management plans later in 2011..	Volume 4	Agreement to Progress via Working Sessions
QIA-03-2	It is requested that the Proponent provide an analysis of potential risks to the effective implementation and outcomes of proposed mitigation measures and management plans, and what can be done to reduce these risks.	Risk analysis is included in Volume 4, under the headings "prediction confidence and risk analysis." Generally, the monitoring and management programs—described in Appendix 10F-3 and in Volume 4, Section 14.2—will be implemented to assess the effectiveness of mitigation measures and to respond appropriately. The management structure described in Appendix 10F-3, Section 12 identifies the structure for response related to those areas under the control of IIBA-related initiatives. In areas where the appropriate response needs to arise from entities outside BIM/QIA, the monitoring program should help in detecting the need and in building partnerships where effective response can be initiated.	Each assessment concluded with a section entitled, "Prediction Confidence and Risk Analysis", which addresses QIA's comment. We are not clear how this does not meet the QIA's information request. Additionally, the proposed joint Baffinland-QIA Executive Committee to oversee monitoring and mitigation identified in the IIBA, will be well positioned to track the success of mitigation and address through the life of the Project.	Deferred to working session (week of July 11)	What is the management decision and threshold that will trigger action to be made if impacts to VEC's did occur. At what point is a decision made that action needs to be taken and how will this be monitored.It is requested that BIM provide a over arching management plan that includes the link to impacts to VECs and what action can be taken in advance of impacts to VSECs. Conversation needs to occur soon to determine how this plan comes together before the FEIS so that information can be incorporated into the management plans. GN would like to be engaged on management plan development.	Volume 4	Agreement to Progress via Working Sessions

QIA-06-2	Given the significant increase in vessel traffic, it is requested that the Proponent and NIRB confirm whether other Canadian waters outside the Nunavut Settlement Region are considered as part of the LSAs and RSA.	The assessment focused on the NSA. The effects extending beyond the NSA were discussed in the Transboundary effects Assessment (Volume 9, Section 4).	Baffinland can answer only from the perspective of Proponent. The DEIS (Vol. 8, Sec 2.2 and Fig.8-2.1) described the LSAs and RSA. As noted: " The LSA for the sea ice assessment refers to the area that includes the shipping corridor and a 50 km wide zone on either side of it. This includes all of Steensby Inlet, the central part of Foxe Basin, and the northern and central parts of Hudson Strait." Note, waters outside the Nunavut Settlement Region were fully assessed where a potential interaction was identified. As described in the Transboundary Assessment (Vol.9 Sec.4.5.1): " as a general approach, the environmental effects assessment undertaken for each VEC and VSEC, has included a detailed consideration of the full effect of each identified interaction, including any possible instances where the zone of influence associated with the interaction extends beyond the boundary of the NSA. " Note as well, from the Transboundary Assessment (Vol 9) "The analysis undertaken to predict the zone of influence of the largest ship used for the Project was presented in the marine mammal impact assessment (Volume 8). Given the width of Hudson Strait compared with the zone of influence of Project ships, no transboundary impacts are anticipated from shipping activities within Nunavut." Thus, the DEIS incorporated into the assessment of shipping effects, a reasonable set of assessment boundaries and was consistent with the requirements of the Guidelines. Baffinland acknowledges that in rare circumstances depending on ice conditions, icebreaking ships may have to navigate Hudson Strait using a more southerly route for safety purposes. Hudson Strait is a well established shipping route. There are established shipping lanes for community resupply accessing the communities of Hall Beach, Igloolik, Cape Dorset and Kimmirut. In addition, the	Deferred to working session (week of July 4)	The concerns stem more from impacts to marine mammals that could effect the livelihoods of people in surrounding regions.	Volume 8	Include in work for QIA-01-1
QIA-06-3	It is requested that clarity be given as to how will concerns over impacts to marine habitats and biota outside the RSA and LSA be considered.	The assessment focused on the NSA. The effects extending beyond the NSA were discussed in the Transboundary effects Assessment (Volume 9, Section 4).	As desribed in the Transboundary Effects Assessment (Vol. 9, Sec. 4 Table 9-4.2) effects on marine mammal habitats and biota (movement, mortality and health) were addressed within (i.e. "subsumed" by) the main assessment. Where assessment boundaries are less than the full range, e.g. of a migratory species, the calculated effect will be conservatively estimated. Where the effects predictions are population- based the reference population is usually far smaller than the total population of the affected species, thus the predictions will over-state any transboundary effect. In cases where species of concern have been considered, the evaluation has included relevant factors affecting the subject population, including transboundary factors. In this manner, the consideration of all such VECs has encompassed transboundary effects assessment. Within the tables, the term “subsumed” has been used to refer to this treatment of a VEC within the EIS.	To be discussed at working session. DFO meetings (week of July 4) may add context.	MTP explains NIRB consultation with Coral harbour and Makavik. BIM did receive IR's from Makavik and BIM did respond. Both regions are involved with the process. NIRB has done regular consultation over a broad area. KIA document includes much of the consultation for regions outside of the NSA.	Volume 8	No action required

QIA-06-4	It is requested that the Proponent clearly indicate the entire length of all proposed shipping route(s), from point of ore loading, to point of ore off-loading, for the entire project lifespan. If delivery ports are uncertain they should be ranked in order of greatest likelihood and frequency of visits.	The assessment focused on the NSA. The effects extending beyond the NSA were discussed in the Transboundary effects Assessment (Volume 9, Section 4).	The most likely delivery port is Rotterdam, the Netherlands. The travel distance from Steensby Port is approximately 6200 km (3 400 nautical miles). Rotterdam is one of the busiest ports in the world, handling approximately 34 000 ocean going vessels and 100 000 inland vessels per year (portofrotterdam.com).	To be discussed at working session. DFO meetings (week of July 4) may add context.	BIM explains that other shipping routes, if determined, would be required to go through an assessment in that jurasdiction.	Volume 8	No action required
QIA-08-4	It is requested that the Proponent produce a series of impact predictions demonstrating the influence that the number of vessel tracks has on impact predictions for pack ice. Impact predictions should be presented for lower and high shipping frequencies than suggested in the Project Description.	Volume 8, p. 156 states that pack ice will be temporarily changed by ice breaking; evidence of ships track will quickly disappear due to movement of ice by wind/tides (Enfotech 2010 – Appendix 10D-10). It is estimated that approximately 76.4 km2 of pack ice will be moved by a single transport in Steensby Port (which is less than 1% of all the pack ice in the area).	The dynamic nature of pack ice means that interactions with transiting ships will be transient and not discernable from natural ice dynamics. Lower shipping frequencies (e.g. one half) will result in fewer interactions; higher shipping frequencies (e.g. double)would increase the rate of interaction. At these rates, the area of ice affected by an individual pass as well as the total area of interaction would still be in the order of less than 1% of the pack ice in the area. The effects predictions would remain the same. Note, that the Project description and hence the effects assessment was based on the shipment of 18 000 mt per annum from Steensby Port.	To be discussed at working session. DFO meetings (week of July 4) may add context.	This relates to a sensitivity analysis on sea ice which all agencies agree needs to be completed. BIM will take a closer look at bythemetry data to inform on sea ice sensitivity. Additionally, BIM will also determine what ice data they can bring in from Canadian Ice Service website for the last 30 years from a temporal and spacial extent related to the ship track. The concern from the agencies perspective is that the assessment in the DEIS does not include variation in ice size temporarly and spacially. BIM suggests that this additional data in the assessment will inform on utilization of sea ice for marine mammals and potential impacts on the sea bed.	Volume 8	BIM to advise on timing

QIA-09-2	It is requested that the Proponent produce a series of impact predictions demonstrating the influence that the number of vessel tracks has on impact predictions for landfast ice. Impact predictions should be presented for lower and high shipping frequencies than suggested in the Project Description.	This estimate of disruption to landfast ice (Volume 8, Section 2.6.2.1) is based on a conservative set of assumptions, that the area of disruption would be a maximum of 1.5 km in width, due to use of various channels. The actual area of disruption will likely be much smaller. Given that the shipping route through landfast ice cover is approximately 90 km in length, an estimated area of 136 km2 of landfast ice could be disturbed by ships approaching Steensby Port. The percent of disrupted ice in Steensby Inlet will therefore range from 1.5% (January) to 6.1% (July). This estimate, which represents the maximum disruption to ice, was used to produce impact predictions for disruption to landfast ice. The shipping frequency as described in the Project Description has been assessed. It is outside the scope of the Guidelines to assess lower or higher shipping frequencies.	The interaction between a transiting vessel and landfast ice will generally be confined to the ships width, with most of the ice broken as the ship passes through the ice. The broken pieces of ice will pass along below the ships hull. While some pieces will be pushed off to the side and float up to rest under the ice at the side of the vessel track, most of the ice pieces will emerge at the stern of the vessel to result in a mixture of small pieces of ice and frazil (slush ice) that will quickly refreeze. Repeated passes along a ships track will be possible as the re-frozen track will generally comprise ice that is less thick and consolidated than the surrounding landfast ice. It is estimated that approximately 20 ships passes through the same track will be practical for the ore carriers. The effects predictions in the DEIS are, therefore, highly conservative. Effects predictions for lower shipping frequencies (e.g. one half) would result in an area of disturbance estimated at 68 sq. km. and the resulting percent of disturbed ice would also be reduced to a range of 0.75 to 3.05 %. Higher shipping frequencies would not likely result in a proportionate increase in the area of landfast ice affected. At most, an increase (e.g. double) in shipping frequency would affect an area of up to 204 km. sq. The percent of disrupted ice in Steensby Inlet would then range from 2% to 9% of the landfast ice in the LSA. The effects prediction at a lower or higher shipping frequency would remain as `Not significant`. Note, the Project description and the DEIS is based on shipping a total of 18 000mt per year from Steensby Port. Any potential increase in the rate of shipping would only occur following regulatory approvals and application of any necessary environmental assessment process.	To be discussed at working session. DFO meetings (week of July 4) may add context.	This relates to a sensitivity analysis on sea ice which all agencies agree needs to be completed. BIM will take a closer look at bythemetry data to inform on sea ice sensitivity. Additionally, BIM will also determine what ice data they can bring in from Canadian Ice Service website for the last 30 years from a temporal and spacial extent related to the ship track. The concern from the agencies perspective is that the assessment in the DEIS does not include variation in ice size temporarly and spacially. BIM suggests that this additional data in the assessment will inform on utilization of sea ice for marine mammals and potential impacts on the sea bed.	Volume 8	BIM to advise on timing
QIA-11-1	It is requested that the Proponent describe all possible adaptive management measures that would be feasible as means of mitigating vessel impacts from the Project.	Credible management measures have been identified in the Shipping Management Plan (Appendix 10D-10)	Credible management measures have been identified in the Shipping Management Plan (Appendix 10D-10). It should be noted that the provision of Inuit Advisors onboard selected vessel transits could enable the identification of adaptive management practices for consideration and implementation as necessary and practical. Local residents with extensive knowledge of the area may be called upon to assist in an advisory capacity to the ship's Master and provide information such as: local tidal information; environmentally sensitive areas or life cycle of birds and mammals activities along the route and possible means to avoid them; harvesting cycles and fishing activities; travel patterns and level of activity; land mass identification; local ice information; and communication with ice monitors.	To be discussed at working session. DFO meetings (week of July 4) may add context.	Adaptive management sessions will need to focus on specific provisions of the IIBA later in the process (likely in FEIS)	Volume 8	FEIS

QIA-11-4	It is requested that the Proponent describe whether the application of mitigation measures specific to land fast ice formation have been considered.	As stated in Section 2.6.5 Vol. 8. mitigation measures specific to land fast ice are considered under Adaptive Management to reduce large pieces of ice from leaving the Inlet prematurely as a result of ice breaking. The viable mitigation measures include:· modifying the route through land fast ice (during spring only);· following a zig-zag pattern; and· reduction of ship speed .	Mitigations measures specific to landfast ice formation have been considered. Some specific measures related to landfast ice formation include: maintenance of vessel transit mid-channel through passages and along deeper water along the general route. During the period when landfast ice is first forming, speed limitations might be applied to vessel transits to reduce bow wave and wake effects along the forming ice. Ships will maintain a corse within the existing ship track where possible to avoid disturbing more landfast ice on either side of the ship track. These mitigations measures will ensure the smallest impact to landfast ice possible along the shipping route.	To be discussed at working session. DFO meetings (week of July 4) may add context.	This IR has been captured under several responses and discussions related to DFO.	Volume 8	BIM addressing through DFO IR
QIA-15-5	It is requested that the Proponent describe what anti-fouling will be used on the ore carrier hulls. This includes describing the types of chemicals, their quantities, and the risk they may pose to biota in the environment along the ship track and in port.	The low-friction coating on the ice-breaking ore carrier is considered an anti-fouling coating. This coating is non toxic (see MSDS).	One candidate anti-fouling paint also serves as a low friction hull coating to reduce friction in ice. This product is Intersheild 163 Inerta 160. As shown on the MSDS sheet for this product, it is not based on toxicity to repel biota, but its smooth surface which resists the establishment of marine biota that attach to surfaces such as ships hulls. http://datasheets.international-coatings.com/?Market=Marine&MarketFilter=M&PDS=1&product=Intershield%20163%20Inerta%20160	To be discussed at working session. DFO meetings (week of July 4) may add context.	QIA indicates that this IR has been satisfied at this point.	Volume 8	BIM addressing through DFO IR
QIA-17-2	It is requested that the Proponent describe how winter ice breaking and maneuvering by ships arriving in ballast, working to maintain ice, and loaded with ore or supplies been factored into the habitat disturbance estimates provided in Table 8.4-11 (DEIS Vol. 8, pg. 110).	Areas of general disturbance due to propwash effects were estimated around the ore and freight docks based on buffer zones that account for ship size and the various activities that would be occuring at each port site during all phases and seasons of the Project. These are captured in the estimates of post-construction disturbance area (2.67 + 1.04 ha for Milne and 6.77 + 0.75 ha for Steensby shown in table 8.4.11	In order for ships to access the port, ice breaking, ship maneuvering and ice management will be required. However, ice breaking will only occur when ore carriers are approaching or departing the docks. Therefore, during times when ore carriers or freight ships are not approaching or departing the port, ice management and ice breaking will be kept to a minimum. The distrubance area considered for Steensby and Milne Ports (refer to previous response) in the assessment of the DEIS is considered to be an over estimation based on winter shipping frequency and expected disturbances from propwash, ice breaking and ballast water.	To be discussed at working session. DFO meetings (week of July 4) may add context.	Impacts from ballast water are being addressed through DFO IR's. Special working sessions are planned to better understand potential impacts from ballast water on benthics and to determine what work is required by BIM that will enable agencies to complete their reveiw. A follow up to this meeting would be to plan a EEMP that would compliment the assessment.	Volume 8	BIM addressing through DFO IR
QIA-17-3	It is requested that the Proponent describe how extensively planned activities will disturb sediment spread in summer at both ports, and in winter under the landfast ice of Steensby Inlet.	Areas of general disturbance due to propwash effects were estimated around the ore and freight docks based on buffer zones that account for ship size and the various activities that would be occuring at each port site during all phases and seasons of the Project. These are captured in the estimates of post-construction disturbance area (2.67 + 1.04 ha for Milne and 6.77 + 0.75 ha for Steensby shown in table 8.4.11	As per our previous response to QIA-17-3, we have provided a summary of the potential disturbance area as a result of shipping (ore and frieght) activities in Milne and Steensby Port. It is not expected that sediment disturbance will be extensive outside of the area assessed. It is also predicted that disturbance to sediment in proximity to the dock as a result of propwash will degrease overtime since finer particles will be more easily transported from propwash disturbance resulting in larger particles that are less likely to be affected by propwash overtime.	To be discussed at working session. DFO meetings (week of July 4) may add context.	This IR relates to the assessment of benthic organisms that have been raised by DFO. See QIA-17-2 related to working session on ballast discharge. Igloolik in particular is concerned with impacts to lower trophic levels and this is an issues that will need to be resolved prior to the FEIS. QIA would like to know how BIM calculated the areas of disturbed habitat.	Volume 8	BIM to followup with Hatch

QIA-19-1	It is requested that the Proponent confirm if consideration was given to following the more precautionary 50 kPa threshold for assessing blasting impaCTA?	As noted in Section 4.4, p. 246, a detailed blasting management plan will be developed, which will follow DFO blasting guidelines (Wright and Hopky 1998). It is also indicated that if any issues associated with meeting these guidelines are identified, they would be discussed with DFO prior to undertaking blasting activities	Please advise what information is missing from the response provided.	To be discussed at working session related marine	This is being addressed through DFO IR 0-1. Action: DFO will provide relevant information and guidance	Volume 10	No action required
QIA-14-1	Significance of aircraft disturbance to VEC's in the project area cannot be determine without detailed information related to daily noise from fixed-wing large aircraft and helicopters (e.g., DEIS Vol. 8, pg. 165). It is requested that the Proponent provide a map detailing the proposed runway alignment and approach plate for all airstrips in the project area together with a noise contour map.	During construction there may be relatively frequent flights in and out of the airport. However, once the mine is in operation flights should be relatively infrequent. Noise generated from aircraft landing and take-off will be insignificant relative to the noise generated from machinery and mobile equipment at the Mine Site and Steensby. The expected noise contours for the Mine Site and Steensby Port are presented in Volume 5, Section 3.0.	Please advise what information is missing from the response provided.	To be discussed at wildlife working session	This is being addressed through Environment Canada IR 08-1.	Volume 5	Will be completed by August 15 2011
QIA-14-2	It is requested that the Proponent develop a map detailing the proposed flight paths for all aircraft (including helicopters) for the life of the project including on-going exploration activities. Maps should be prepared for both the LSA and the RSA. Maps should be supported by text describing flight path frequency.	Project-related air traffic is described in Volume 3, Section 2.7 and is shown graphically on Figure 3-2.10.	Please advise what information is missing from the response provided.	To be discussed at wildlife working session	QIA to advise BIM on what additional information is required	Volume 5	QIA to advise BIM

QIA-18-1	It is requested that the Proponent confirm what studies will be conducted on the Candidate Reference Lake to assess whether it is suitable as a control site for comparison with lakes impacted by the Project?	As noted in Section 4.5.10 (p. 298) a screening exercise was undertaken to identify an appropriate reference lake for the Mine Area and field sampling was undertaken in 2008 in the Candidate Reference Lake identified through this exercise. The desktop screening exercise considered a variety of criteria including lake surface area, geology, location in relation to current and potential future disturbances, drainage basin, lake size and shape, and shoreline development ratio. Field sampling was initiated in 2008 to assess its suitability as a reference lake and information was collected on aquatic habitat (substrate and water depth), water quality, and the presence/absence of Arctic char. The Aquatic effects Monitoring Program (AEMP) will provide descriptions of monitoring activities, including monitoring in reference area(s). In addition, the Metal Mining Effluent Regulations (MMER) specify site-specific monitoring that is required of the aquatic environment, including reference areas, and the monitoring program will address these and other MMER requirements. Please also refer to EC-26-1.	As part of the AEMP, Baffinland will be required to select and conduct monitoring activities for reference. Reference locations will be selected in a area that is outside of predicted Project impacts from air, water and any project infrastructure. There will be a number of studies that will be completed to ensure that the reference area is a suitable control site for comparison with lakes/streams potentially impacted by Project activities. These studies will include, but will not be limited to, determining lake surface area, geology, location outside of current and future Project disturbances (such as air, water or project infrastructure), hydrology information to ensure that the reference area will not be impacted by water from Project activities, and shoreline development ratio. To ensure that the reference area has comparable habitat suitabiity and biota in relation to locations potentially impacted by the Project, studies will include but will not be limited to substrate and water depth, water quality and the presence or absence of Arctic char. Baffinland recognizes that the above mentioned studies will be subject to review to ensure that the selected reference location is suitable for AEMP purposes. The AEMP will need to be submitted and approved prior to Project operations. As such, there is adequate time for the selection and review of a reference lake in the future.	To be discussed at working session	This is being addressed through EC-26-1.	Volume 7	No action required
QIA-20-1	It is requested that the Proponent confirm what amount of explosives will be used and how much nitrogen will be residual afterwards such that it may enter the aquatic environment?	Expected quantities of explosives required are summarized in Table 3.1 of Appendix 10C-4 (Explosives Management Plan). Since the mining pit will be mostly dry throughout the year, amonia or residual nitrogen is not expected to cause a problem for the aquatic environment. During the freshet and summer months, any residual explosives washed away by precipitation will report to the waste rock pile (by trucking of waste rock, or pumping of the mine pit water to the waste rock pile). Runoff from the waste rock pile will be channeled to a sedimentation basin prior to discharge to the environment. The quality of the sedimentation pond discharge will be monitored to ensure its complies with water quality guidelines of the MMER.	We have attached a memo prepared in April 2007 that evaluated the potential for runoff of ammonia from the proposed bulk sample pits. This memo would be applicable to the early stages of mining. The memo notes that spillage from poor handling practices of ammonium nitrate fuel oil (ANFO) explosives is the primary source of residual ammonia that has the potential to enter the aquatic environment. This underscores the importance of following good operating practices and adherence to the Explosives Management Plan. Under normal operating circumstances, using a conservative assumption that 10% of the ammonium nitrate is not consumed in the explosion, that the CCME criterion for ammonia will not be exceeded. In terms of residual ammonia in runoff from the waste rock stockpile, this runoff will be captured, sampled and treated if necessary.	To be discussed at working session	QIA to advise BIM on what additional information is required	Volume 7	No action required

QIA-20-2	It is requested that the Proponent confirm whether sublethal effects of nitrates (e.g., endrocrine disruption of fish) been considered in the effects assessment?	As described in Section 3.4.1.1 in the water quality effects assessment, water quality thresholds were identified from various published sources, including the Canadian Council of Ministers of the Environment (CCME) water quality guidelines. This included the interim guideline for nitrate for the protection of freshwater aquatic life. As described in Section 4.5.1, effects of the Project on the health and condition of the key indicator (Arctic char) were described through consideration of the CCME water quality guidelines for the protection of freshwater aquatic life – including the interim guideline for nitrate.	Mine effluents from the Project will be subject to the Metal Mining Effluent Regulations, which will require Baffinland to carry out aquatic toxicty testing as required under the AEMP. For potential impacts associated with other aspects of the Project (i.e., not mine contact water Environmental construction monitoring will be relied on during construction activities that have the potential to affect water and sediment quality. These construction activities tend to occur when work is located in or around water or when surface materials are exposed. This form of monitoring aids in ensuring effectiveness of mitigation measures and compliance with applicable water quality criteria. Monitoring will be consistent with standard monitoring practices that rely on the comparison of data collected from an upstream non-impacted reference location to a downstream potentially impacted location.	To be discussed at working session	QIA to advise BIM on what additional information is required	Volume 7	No action required
QIA-22-1	It is requested that the Proponent provide in detail the probability of caribou calving during lows and highs in the abundance cycle relative to terrain, vegetation and proximity to mine infrastructure.	Baffinland expects that habitat preference is similar during population highs and lows. Collar data did not indicate calving season habitat preferences that are different from the remainder of the growing season; therefore, calving and growing season data were grouped. The results of the resource selection probability function model indicate that caribou select for slope of approximately 15˚, habitats closer to water and areas where there is more vegetation during the growing season. Baffinland will update this analyses with data that became available from the GN.	With respect to population highs and lows, it is not expected that the selection of caribou calving areas will differ. Our studies indicated that calving season habitat preferences were not different from the remainder of the growing season. In other words, there was no preference shown for particular habitats during the calving season when compared to other times in the growing season. Habitat selection during the calving season and the remainder of the growing season included a preference for slope of approximately 15 degrees, habitats closer to water and areas where there is more vegetation. It is not expected that caribou numbers within the RSA will change this preference as caribou will likely have a preference to areas that supply vegetation, water and preferred slope aspec regardless of population numbers.	To be discussed at working session	QIA is looking for a recognition on uncertaintly due to potential changes in habitat selection that may occur due to gregarious caving behaviour etc. QIA suggests that this can also be reflected in management plans and mitigation.	Volume 6	FEIS
QIA-22-2	It is requested that the Proponent provide more results from the June 1994-97 caribou surveys conducted by GN-DoE.	Baffinland has made this request to the GN.	Baffinland received more caribou collar data from the GN on April 7. This data is being used to re-model relavent portions of the assessment and will be provided for reviewers as stated in our supplemental information request submitted to NIRB. It is not within the proponents mandate to incorporate data not available during the writing of the DEIS, therefore, Baffinland is making every effort to be accomodating in this IR request.	To be discussed at working session	Complete with data BIM has received from GN. GN may have more data from northern reconassonce. QIA suggests that fedility data could be pulled in either to supplement the FEIS or monitoring plans. QIA suggested that updating data for every bit of new information is not required.	Volume 6	FEIS

QIA-22-3	It is requested that the Proponent provide a map of calving locations (during approx. 15-21 June) based on the GN DoE collar program from June 2009 and June 2010.	Based on our discussion on the ecology of north Baffin Island Caribou (from IQ and limited collar data availability) there is very little discernible seasonal movement. Restricted movements, typically observed in migratory barrenground caribou during the calving season was almost indistinguishable from the other seasons for these data, as summarised in the wildlife baseline report (Volume 6F, discussed throughout). The GNDoE provided additional collar data on 7 April, 2011, but analyses could not be completed in a reasonable time period. Data will be re-analyzed using RSPF analyses to determine possible calving area preferences.	The GNDoE provided additional collar data on 7 April, 2011, but analyses could not be completed in a reasonable time period. Data will be re-analyzed using RSPF analyses to determine possible calving area preferences. It is not within the proponents mandate to incorporate data not available during the writing of the DEIS, therefore, Baffinland is making every effort to be accomodating in this IR request. It is requested of the QIA to state why RSPF analyses to determine possible calving area preferences utilizing data provided by the GNDoE on April 7th is not adequate for QIA 22-3.	To be discussed at working session	BIM has received data from GN up to 31 December 2010. Recognized that GN may have distribution data from northern reconnaissance, but not during calving season. QIA suggested that updating data through to submission may not be reasonable (e.g, cut-off date should be identified in reporting).	Volume 6	FEIS
QIA-22-4	It is requested that the Proponent clarify if they anticipate providing details of monitoring and mitigation for caribou calving.	No effect of the project is expected to be unique during calving, so mitigation and monitoring actions identified are the same for all seasons. Observations of calving caribou and caribou with young will be of particular interest during operations because of the infrequent observations of such during the baseline studies. No specific caribou calving surveys are identified.	Baffinland remains committed to providing mitigation for caribou during all life stages including calving periods as per Appendix 10D-11 in Volume 10. Our monitoring and mitigation plans provide an adaptive framework that enables mitigation to be flexible where necessary for the protection of caribou and their calves and other wildlife. Adaptive management enables future mitigation to account for unexpected impacts which could include caribou caving.	To be discussed at working session	It is agreed that monitoring and mitigation plans need to be updated and become more robust as the project advances so that issues are not left to the end. Monitoring and mitigation sessions need to commence prior to potential impacts. QIA suggests that a fall 2011 workshop could focus on monitoring. PC identifies that the management decisions need to be included for the threshold at which mitigation needs to begin.	Volume 10	FEIS
QIA-24-1	It is requested that the Proponent provide an assessment of the risk of caribou exposure to dust based on analyses of the probability of caribou distribution for both historic and current distribution, the proposed Zone of Influence and the annual and cumulative dustfall (Total Suspended Particulate isopleths).	The ZOI identified in Volume 6, Section 5.2.1 was developed to reflect the response of caribou distribution to dust deposition within the RSA. No historic caribou distribution data are available for the RSA. Predicted dustfall is described in Volume 6, Section 3.2.2.2.	In addition to our previous response "The ZOI identified in Volume 6, Section 5.2.1 was developed to reflect the response of caribou distribution to dust deposition within the RSA. No historic caribou distribution data are available for the RSA. Predicted dustfall is described in Volume 6, Section 3.2.2.2". Appendix 6G, provides an evaluation of exposure potential from ore dusting in caribou. This assessment was conservative in its approach in that it considered cummulative metal concentrations in soil over the life of the project and used maximum expected concentrations of dustfall on soil and assumed no reductions is metal concentrations in those soils over time. Therefore very conservative estimates are built into the assessment which are expected to be precautionary assessments for caribou and plant health.	To be discussed at working session	QIA is requesting more specifics on ZOI on calving distribution specifically. More recognition on higher likely distrubance to calves and cows is requested. This can include hightened monitoring.	Volume 6, Volume 10	FEIS

QIA-24-2	It is requested that the Proponent provide an assessment of the risk to caribou from annual and cumulative levels of metals from dust affecting forage plants in the caribou diet.	Please refer to Volume 6G of Volume 6 for this information.	The proponent requests that QIA provide definative statements as to the inadeqacy of the assessment contained in Appendix 6G of Volume 6 as it pertains to this IR.	To be discussed at working session	BIM is working on getting additional AQ work completed as it relates to this IR	Volume 6	Technical Review period
QIA-25-1	It is requested that the Proponent provide an assessment of iron and other metals toxicity in plants, especially mosses and lichens and for caribou.	Appendix 6G of Volume 6 includes an assessment of metal toxicity to plants using threshold regulatory guidelines considered applicable to vegetative species.	The assessment on the VEC Vegetation included an assessment of iron and other metals and their potential toxicity to plant associations that include mosses and lichens. The vegetation classes that were assessed and known to have lichens and mosses occurring in those habitats were, but not limited to, wet sedge - Graminoids and bryoids (Moss association, sedge-moss wet meadow) and sparsely vegetated bedrock (Lichen-rock associations).	To be discussed at working session	This IR will be addressed through development of more detailed monitoring plans.	Volume 6	FEIS
QIA-26-1	It is requested that the Proponent obtain data on levels of metals in lichen and snow relative to the predicted isopleths for dustfall from Ekati and Diavik for Baffinland and re-assess the dustfall effects on lichens.	The potential for dustfall to affect caribou as an important harvest species is addressed in Appendix 6G, Evaluation of Exposure Potential from Ore Dusting	The proponent does not feel that obtaining data on levels of metals in lichen and snow relative to the predicted isopleths for dustfall from Ekati and Diavik has bearing on the assessments that were completed for the Mary River Project. The assessment on the VEC vegetation included and assessment of vegetation classes known to occur in the RSA. Wet sedge - Graminoids and bryoids (Moss association, sedge-moss wet meadow) and sparsely vegetated bedrock (Lichen-rock associations) were among the vegetation classes included. Our assessments considered the fact that some vegetation classes may be more sensitive to metals depositions. The aforementionedvegetation classes were inlcuded in the more sensative classes. The assessments considered potential impacts on the diversity and distribution of these classes as well as potential impacts to the health of these classess.	To be discussed at working session	This IR will be addressed through development of more detailed monitoring plans.	Volume 6, Volume 10	FEIS
QIA-27-1	It is requested that the Proponent provide a more comprehensive baseline for birds from which a proper evaluation of potential project impacts, mitigation measures, and monitoring can be assessed.	Baffinland collected 3 years of comprehensive bird baseline data - we disagree that the baseline is not comprehensive. Some information requests specific to the bird baseline are addressed in response to Environment Canada's IRs. Raptor locations are based on data from 2008 and earlier. Consequently, Baffinland will be updating raptor nest locations in 2011 so that a monitoring program can be initiated.	The proponent remains confident that three years of comprehensive bird baseline data presented in the baseline study is adequate for evaluation of potential project impacts, mitigation measures and future monitoring (note that raptor nest locations will be updated in 2011 for monitoring purposes). It is requested that QIA identify what specific issues are not adequate.	To be discussed at working session	Use plot data to calculate rough densities by habitat type. Surveys on raptors not summarized correctly. Raptor team on site in 2011 will clean data and confirm nest sites. EC is requesting revisions to bird baseline. QIA is not as concerned with birds as they are with marine mammals and caribou. However, birds in marine ecosystem are a concern.From PC perspective, geese may be the only link to the integrity of ecosystems within the park. Not a lot of bird movement in and out of the park.	Volume 6	Technical Review Period

QIA-11-2	It is requested that the Proponent clearly describe how sensitive the Project is to changes in the routing, timing, and number of vessel transits.	The project viability is contingent on year-round shipping. Variations in vessel transits have been addressed in Volume 3, Section 6, Project Alternatives.	Please advise what information is missing from the response provided.	To be discussed at working session. QIA to provide further context	QIA is not requesting further information on this IR	economic viability	No action required
QIA-16-1	It is requested that the Proponent clarify whether the Project Description in the DEIS (Vol. 3) accurately reflects how the Project would be constructed, operated, and closed under current Project ownership.	The change in Company ownership does not change the Project description for the 18 Mt/a railway operation. As discussed in Baffinland's covering letter to these IR responses, the company has decided not to pursue the 3 Mt/a road haulage operation . The description of the 18 Mt/a railway operation remain unchanged.	Please advise what information is missing from the response provided.	To be discussed at working session. QIA to provide further context	QIA is not requesting further information on this IR	economic viability	No action required
QIA-16-2	It is requested that the Proponent describe whether changes in the Project Description will alter parameters used for impact prediction.	No changes to the project description are proposed.	Please advise what information is missing from the response provided.	To be discussed at working session. QIA to provide further context	QIA is not requesting further information on this IR	economic viability	No action required
QIA-05-1	It is requested that the Proponent produce a summary list of the project certificates and attached terms and conditions granted to mines in Nunavut and the Northwest Territories over the last 20 or so years.	This information is out of scope and available in the public domain.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-06-1	It is requested that the Proponent clearly confirm their understanding of LSA and RSA boundaries for the marine environment. The use of maps is encouraged.	The LSA and RSA are defined in accordance with NIRB guidelines, and in Volume 8 are found in Section 13. Maps of the LSA and RSA are presented in each of the assessment volumes of the DEIS, and are presented separately for each VEC in Volume 8.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	methodology	No action required at this time
QIA-28-1	It is requested that the Proponent revise the conformity tables to point to the specific information that satisfies the EIS guidelines, and to avoid referencing entire volumes or appendices unless it is unavoidable.	Where NIRB guidelines were specific, BIM referred to specific sections or Tables or Appendix. Where NIRB guidelines were vague or all encompassing, BIM responded accordingly.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-28-2	It is requested that the Proponent comply with the EIS guidelines, and revise the conformity tables to include specific page numbers.	Where NIRB guidelines were specific, BIM referred to specific sections or Tables or Appendix. Where NIRB guidelines were vague or all encompassing, BIM responded accordingly.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time

QIA-29-1	It is requested that the Proponent revise the SIG to point to the specific information required for the water license application with proper referencing (section and page number).	The DEIS is prepared on the basis on the Project conceptual design. At this stage of the Project, much of the detailed design required to satisfy the requirement of the Water License application are not available. It is the intent of Baffinland to provide the detail design of all SIG requirements for water licensing in a separate water licensing package in the final EIS. We will provide section and page referencing.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-29-2	In the event that the information required by the water license is present in the DEIS, but is too fragmented to be referenced succinctly, it is requested that the Proponent consolidate the information and submit it in a separate document.	The DEIS is prepared on the basis on the Project conceptual design. At this stage of the Project, much of the detailed design required to satisfy the requirement of the Water License application are not available. It is the intent of Baffinland to provide the detail design of all SIG requirements for water licensing in a separate water licensing package in the final EIS. We will provide section and page referencing.	A consolidated separate document will be submitted with the FEIS in accordance with the NIRB and NWB's coordinated process framework. We note that the water licensing package is required to support permitting and not environmental assessment. The DEIS is the requisite document for environmental assessment. We respectfully suggest that this is a request for re-packaging of the information provided, and not an information request.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-33-1	It is requested that the Proponent provide additional information, to define how the act(s)/regulation(s)/policy would apply to each project component (i.e., road, railway, sea route, fuel storage, abandonment and reclamation etc.). Where possible reference to where further context has been provided within DEIS should be provided, including section and page number.	Refer to DEIS Volume 2 for a list of the applicable ACTA and Regulations (Table 2-2.1). Volume 10 contains management plans applicable to all project activities and lists relevant applicable aCTA/regulations and guidelines.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-38-2	It is requested that the Proponent confirm whether this provision of the NBRLUP was taken into consideration during the drafting and submission of the DEIS.	NBRLUP was considered in the drafting of the DEIS.	Please advise what information is missing from the response provided.	Regulatory working session may be required	QIA to advise BIM on next steps	administrative	No action required at this time
QIA-31-1	It is requested that the Proponent take a proactive approach in ensuring that all water licence application materials are available for review by Interveners and Interested Parties prior to DEIS distribution for public technical review.	Baffinland has provided concordance of the DEIS to Appendix C of the EIS guidelines (the NWB's Supplemental Information Guideline). However, not all information is available at present, at least in the level of detail requested. Our understanding of the coordinated process is that a detailed water licensing package with the missing level of detail is expected to accompany the FEIS.	A consolidated separate document will be submitted with the FEIS in accordance with the NIRB and NWB's coordinated process framework. This was not a requirement of the DEIS. We note that the water licensing package is required to support permitting and not environmental assessment. The DEIS is the requisite document for environmental assessment. We respectfully suggest that this is a request for re-packaging of the information provided, and not an information request.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time

QIA-32-1	It is requested that the Proponent commit to drawing materials from the DEIS for the purpose of producing a plan language discussion related to shipping route sensitivities. The document should contain both text and supporting visual material such as diagrams and maps and should include full Inuktitut translation. The document should also describe the entire length of all shipping routes associated with the project with the intention of developing a clear understanding of where zones of sensitivity with identifiable parameters exist. The discussion should be guided by the following factors: o Description of ice interaction ☐ Reference should be given to spatial and temporal features of ice interactions	Volume 1 of the DEIS provides a plain language summary of the entire EIS, including key maps and figures translated in Inuktitut.	Please advise what information is missing from the response provided.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
QIA-34-1	It is requested that the Proponent confirm if additional DEIS materials will be made available in Inuktitut.	Volume 1 has been translated in Inuktitut and be made available. The popular summary translated into Inuktitut was also provided to the Hamlet Office of each affected community.	It is not clear how this information request has not been adequately addressed. As stated by Baffinland in its initial response, Volume 1 was translated into Inuktitut, although it was not required by the EIS guidelines. Additionally, Baffinland has since produced 1-page summaries of the impact assessment for each biophysical VEC in a similar fashion to VSEC summaries produced by the QIA themselves, for the QIA to distribute to the communities.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
QIA-34-2	It is requested that the Proponent confirm how the DEIS has been distributed within the communities.	Initial distribution to the communities consisted of one complete hard copy (with DVD) to each of the following hamlets/municipalities: Arctic Bay, Cape Dorset, Clyde River, Hall Beach, Igloolik, Kimmirut, and Pond Inlet. Additionally, a hardcopy of the Popular Summary, in each Inuktitut and English, were provided to each of the HTOs in the same community. An Inuktitut version of Volume 1 has subsequently been generated and has been issued to each of these hamlets and HTOs.	We request to engage with the QIA on this, as it is not clear to Baffinland how this IR was not responded to adequately. See additional response to QIA-34-1 above.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time

QIA-34-3	It is requested that the Proponent confirm whether additional efforts to ensure DEIS materials with the most relevance to the concerns of each community have been introduced and made publically available.	Baffinland provided popular summaries including a CD copy of the entire DEIS to Hamlets of each affected community. Additionally, NIRB has posted the entire DEIS on their public website.	We request to engage with the QIA on this, as it is not clear to Baffinland how this IR was not responded to adequately. See additional response to QIA-34-1 above.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
QIA-34-4	It is requested that the Proponent confirm whether the types of documents and the level of Inuktitut in the DEIS can be viewed as limiting the ability of community members to fully comprehend and participate in the formal review process.	Baffinland has made efforts to make a highly-technical EIS available in Inuktitut that will be widely comprehensible. However, in an oral culture, community meetings are equally important to reach out to community members and to bring forth an understanding of the project and its effects. Baffinland carried out public meetings following issuance of the DEIS, and plans to participate in upcoming NIRB meetings as well.	We request to engage with the QIA on this, as it is not clear to Baffinland how this IR was not responded to adequately. See additional response to QIA-34-1 above.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
QIA-34-5	It is requested that the Proponent produce thematic guides based on the larger DEIS to facilitate discussions within the communities in advance of the technical review process.	Various presentation materials have been and will continue to be develop for presentations at community meetings. The popular summary of the DEIS and all supporting figures provide good summaries of information and visual interpretations.	This was completed in April in accordance with the QIA's request.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
QIA-34-6	It is requested that the Proponent produce summary reports related to terrestrial environment, marine environment, shipping operations, fisheries, and, aquatics in advance of the technical review process.	These summaries are presented in the Popular Summary, the Executive Summary and Volume 1 of the DEIS.	In addition to the existing summaries on the terrestrial, marine and aquatic environment and shipping that are presented in the popular summary, executive summary and Volume 1, the thematic guides were prepared by Baffinland as requested by QIA in QIA-24-5 above.	These items are perferary to working sessions. QIA to advise on adequacy of response to date.	QIA to advise BIM on next steps	communication	No action required at this time
New	Use of Steensby Island by caribou. What are the implications of ice breaking to caribou travelling on ice from Nuvuit to Steensby. Sea ice may be important for caribou movement.				This needs to be assessed for the final EIS. Include islands as habitat loss and potential mortality. GN has information on caribou use of sea ice (Peary Caribou). May not be applicable.	Caribou on Island	

	Assessment did not utilize Diavik and Ekati study to full potential. More details needs to be teased out.				QIA states that reduction in numbers that Mike used was only 30% when it should have been 75% reduction in numbers. Use re-run of Calpuff model to compliment TSP predictions of dust impact. QIA suggests knocking back ZOI along rail line to 3 km. Was TSP done in DEIS??	Dust ZOI	
						QIA requests that basica information on operating specs be provided for ships (i.e. stopping distance, volumes of ballast water, draft of ship loaded and unloaded)	

IR #	Parks Canada IR	Initial IR Response	Post June 9 meeting Action	Next Steps
PC-1-1	a) Please assess the implications of the project on 'wilderness' experience', particularly in the context of the presence of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area.	We note that this request is outside of the scope of the EIS guidelines.	PC specified EIS Guidelines subsection 8.2.4.2 Potential impact on tourism from mine development which impairs the "wilderness experience" of tourism in the Project region. BIM will provide a more complete explanation and rationale that includes the proximity of the Park in relation to the project activities and includes a variety of perspectives. The number of eco-tourists is not seen as the only factor as a Park should be available for the "wilderness" experience no matter who chooses to come. A brief description of the shipping frequency is required. As well, it may be appropriate to offer to mitigate the potential surprise someone may have in expecting wilderness and seeing the ships by informing Parks when shipments are expected so they can pass on that information to visitors. In addition, there is a concern around the potential for frequent over flights of a key fjord in the Park by flights from Mary River to Pond Inlet. A better understanding of the frequency of these flights, altitude over the fjord and options for moving this path outside or to a more remote part of the Park may be considered. John Olyslager provided the following considerations he would like to see addressed: Based on information provided by Baffinland, it appears that the air-route between Pond Inlet and Baffinland crosses Oliver Sound and Paquette Bay. Oliver Sound in particular is used by people from the community, and there has been interest in use of this area by kayakers. We know from feedback from visitors to Auyuittuq National Park that the air traffic between Pangnirtung and Qikiqtarjuaq detracts from the wilderness experience, particularly anually. Feedback from visitors at Gwaii Haanas National Park Reserve also identifies air traffic as a negative influence on their experience, especially as the sound is amplified over water.	To provide during Technical Review Period, August 15
PC-2-1	a) Please provide Appendix 8C-3.	Appendix 8C-3 is provided as Attachment 6.	It is anticipated that this would be information regarding the rationales for the establishment of thresholds of significant change but this is not in this document. The threshold (10%) is one half of natural variability. However, this provides virtually no ecological context. For example, even if this 10% is used, is it from when the population is at a peak? Or added to the bottom of a population trough? Additionally, from an ecological point of view, can the population withstand a 10% drop. And all species? So what are the ecological implications, and commensurately what is ecologically acceptable? Is it ecologically appropriate to be measuring against the entire population in the region? Or should the local sub-population (stock) be used? Please note that the precautionary principle would dictate that a difficulty to measure something would mean taking a more cautious approach, rather than using the extent of the great uncertainty as a criteria/threshold. Finally, from a societal point of view, is a 10% drop acceptable? (10%) is one half of natural variability. However, this provides virtually no ecological context. For example, even if this 10% is used, is it from when the population is at a peak? Or added to the bottom of a population trough? Additionally, from an ecological point of view, can the population withstand a 10% drop. And all species? So what are the ecological implications, and commensurately what is ecologically acceptable? Is it ecologically appropriate to be measuring against the entire population inthe region? Or should the local sub-population (stock) be used? Pleasenote that the precautionary principle would dictate that a difficulty to measure something would mean taking a more cautious approach, rather than using the extent of the great uncertainty as a criteria/threshold.Finally, from a societal point of view, is a 10% drop acceptable?	Table being prepared as action from July 6 meeting
PC-3-1	a) In the context of each population's distribution range, migratory patterns, and seasonality, please provide information to indicate the importance of the habitat that is being used by marine wildlife and birds (those with a marine component) which may be disturbed or displaced by the project.	The DEIS provides a description of available habitat, habitat use and relevant importance to life cycle needs for each VEC and indicator species.	The key question is: Will displaced animals do as well as they do in their current location; are there any risks to their survivability and overall health?	To provide during Technical Review Period, August 15
PC-3-2	b) Please assess the availability and accessibility of alternative suitable habitat which is not already being occupied to full capacity	This request reflects a different approach to the environmental assessment than has been taken by Baffinland. It also implies the availability of alternate, unoccupied (under-occupied) habitat. Baffinland stands behind the approach taken in the DEIS and notes that the availability of alternate habitat has been incorporated into the assessment.	The key question is: Will displaced animals do as well as they do in their current location; are there any risks to their survivability and overall health?	To provide during Technical Review Period, August 15

PC-3-3	c) Commensurately, please use this information to assess the impact on marine wildlife and birds (those with a marine component) not just to the extent of presence, absence, and mortalities, but also population health, and local and regional ecological integrity.	This request reflects a different approach to the environmental assessment than has been taken by Baffinland. It also implies the availability of alternate, unoccupied (under-occupied) habitat. Baffinland stands behind the approach taken in the DEIS and notes that the availability of alternate habitat has been incorporated into the assessment.	The key question is: Will displaced animals do as well as they do in their current location; are there any risks to their survivability and overall health?	To provide during Technical Review Period, August 15
PC-3-4	d) Similarly, please use this information to assess the health and stress of individual marine wildlife and birds (those with a marine component), even if they do 'habituate'. Also, please clarify the evidence and probability for 'habituation'	This request reflects a different approach to the environmental assessment than has been taken by Baffinland. It also implies the availability of alternate, unoccupied (under-occupied) habitat. Baffinland stands behind the approach taken in the DEIS and notes that the availability of alternate habitat has been incorporated into the assessment.	The key question is: Will displaced animals do as well as they do in their current location; are there any risks to their survivability and overall health?	To provide during Technical Review Period, August 15
PC-4-1	a) Please ensure that all issues raised by the Arctic Council are addressed, and that this is done in the context of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area. Please include in this assessment the following specific matters: I. Safe navigation in ice-covered waters depends much on the experience, knowledge and skill of the ice navigator. Currently, most ice navigator training programs are ad hoc and there are no uniform international training standards. To the extent that the project will entail travel through waters that are ice covered for a major part of the year, and may have ice present even in 'open water' season, please discuss how safe navigation will be ensured in these waters. IV. Migratory marine mammals such as bowhead, beluga, narwhal and walrus have wintering areas in the southern extent of the sea ice zone, and spring migration routes into the Arctic through systems of leads and polynyas that are also used by many seabirds, ducks and other marine birds during spring migration. These migration corridors correspond broadly to the proposed main shipping routes and travel through geographic chokepoints. Hudson Strait and Eclipse Sound are such areas. What best practices and management measures is the project proposing:a. to deal with noise disturbance in sensitive periods, around major bird colonies and marine mammal concentration areas, etc.?	We note that this request is outside of the scope of the EIS guidelines. Management plans for marine mammals and birds are presented in the EIS. Specifically: Marine mammals: Volume 8, Section 5.6, 5.7, 5.8, 5.9, 5.10 and 5.11. Appendix 10D-10: Shipping and Marine Mammals Management Plan. Marine Birds:Volume 6, Section 4.0. App 10D-11: Terrestrial Environmental Monitoring Management and Monitoring Plan	No discussion	No action required at this time
PC-4-2	b. to deal with icebreaker disturbance (i.e. artificially opened water channels can be problematic for marine mammals and other species, which confuse them for polynyas and can get trapped too far from the ice edge as the channel eventually refreezes)?	In assessing the question of marine mammals following the ice-breaking ore carriers into leads created behind the vessels, it is important to distinguish stable fast-ice from constantly moving pack-ice. The pack-ice environment is extremely dynamic with ice floes and pans constantly moving. In areas such as Hudson Strait and Foxe Basin, leads regularly open and close as the ice moves in response to wind, currents and tides. The marine mammals that winter in this habitat are accustomed to the constant opening and closing of open water areas where they can surface to breath. The passage of the ore carriers through this dynamic environment will have little effect on the already moving ice and will not create leads in the ice that can be followed by the marine mammals that winter in this habitat. Species that winter in the pack ice of Hudson Strait include bowheads, narwhals, belugas, walruses, bearded seals, and ringed seals. Fast-ice habitat is much more stable than pack-ice habitat. When icebreakers enter fast-ice, they leave a narrow track that is completely filled with small pans and brash ice. The ice in the track quickly refreezes (within a few hours) in cold weather (A.P.P. 1981). It has also been shown that most arctic marine mammals will avoid close proximity to moving ships. Therefore, it is unlikely that marine mammals would follow ships into the fast ice before the ship's track has refrozen. Observations of belugas and narwhals along the Admiralty Inlet ice-edge in spring confirmed that they did not follow an ore carrier into the fast-ice (LGL and Greeneridge 1986). It is relevant to note that virtually all cases of whales being trapped in the ice have occurred because the whales have not left an area before freeze-up in the fall. The recorded cases of entrapment have not involved whales getting caught because they enter an area too soon (e.g. Porsild 1918; Freeman 1968; Kapel 1977). A.P.P. 1981. Integrated Route Analysis. Report by Arctic Pilot Project, Petro-Canada, Calgary. 3 vols. Freeman, M.M.R. 1968. Winter observations of beluga (Delphinapterus leucas) in Jones Sound, NWT. Canadian Field-Naturalist 82:276-286. Kapel, F.O. 1977. Catch of belugas, narwhals and harbour porpoises in Greenland, 1954-1975, by year, month and region. Rep. International Whaling Commission 27:507-520. LGL and Greenerdge. 1986. Reactions of beluga whales and narwhals to ship traffic and ice-breaking along ice-edges in the eastern Canadian high arctic: 1982-1984. Environmental Studies Report No. 37, Dept. Indian Affairs and Northern Development, Ottawa. 301 p. Porsild, M.P. 1918. On "Savssats": a crowding of arctic animals at holes in the sea ice. Geog. Rev. 6:215-228.	No discussion	No action required at this time
PC-4-2	II. The accidental release of oil, toxic chemicals, or other deleterious substances can be considered one of the most serious threats to Arctic ecosystems as a result of shipping. Concentrated aggregations of birds and mammals, often in confined spaces such as leads and polynyas, increase the risk to the animals in the case of an oil spill in the Arctic. Even small spills can have large consequences if they occur where wildlife and birds are concentrated. How will the project evaluate and monitor these concentrations? How will the project mitigate in the event of an oil spill? Will the project have oil spill response capability in strategic locations along the shipping routes?	The Emergency and Spill Response Plan is presented in Appendix 10C-1. The Oil Pollution Emergency Plans for both the milne Port and Steensby Port are presented in Appendix 10C-2 and Appendix 10C-3.	No discussion	FEIS
PC-4-3	c. to prevent vessel collisions with marine mammals in areas where shipping routes coincide with seasonal migration and areas of aggregation and with more vulnerable species such as bowhead whales which are slower to react?	As noted in the DEIS, mitigation measures to minimize the probability of vessel collisions with marine mammals include: 1. Ore carriers transiting the northern shipping route will decrease shipping speed from 26 km/h to 18.5 km/h in Milne Inlet. 2. • All vessels will maintain a constant course and speed whenever possible. It should be noted that the southern shipping route avoids the bowhead whale nursery area in northwestern Foxe Basin. Marine mammal observers will be onboard on some passages of the vessels but it should be noted that it will not be possible for the large ships to take avoidance reactions if whales are seen ahead. It will be up to the whales to avoid the vessels.	No discussion. See related DFO response.	No action required at this time

PC-4-3	III. The introduction of invasive species into the Arctic marine environment from shipping can occur and the risk may be enhanced due to changing climate, possibly making conditions more favourable to some species. The most risk exists where a transfer of organisms from ecosystems of similar latitudes and conditions can occur. Introduction can occur through both ballast water and hull fouling. The project has explained that ballast water will be exchanged offshore, apparently before the ships enter the Lancaster Sound region or come into port. What precautions are being considered with respect to hull fouling?	The low-friction coating on the ice-breaking ore carrier is considered an anti-fouling coating. This coating is non toxic (see MSDS).	The concern was not related to the specific steps being taken to prevent the introduction of invasive species but did Baffinland consider other ways that invasive species could get into the environment and if so, what would be the mitigation? No further follow-up needed for IR specific to ballast water and hull-fouling approaches.	FEIS
PC-5-1	V. Ship emissions to the air (i.e. CO2, NOx, CFCs, methane, particulate matter, etc.) have been associated with climate change effects and in the Arctic could have significant regional impacts on both human and environmental health. For example, black carbon, a component of particulate matter produced by marine vessels through the incomplete oxidation of diesel fuel, has been shown to accelerate ice melt. Effective reduction of ship emissions can be achieved through the application of feasible and best available technologies, through air emissions reduction techniques and through effective implementation of relevant International Maritime Organisation (IMO) regulations. What is the project proposing to evaluate, monitor, and mitigate these potential effects?	The design of the ore carriers is not complete yet. All engine emission levels will comply with the latest IMO guidelines when the vessels are ordered. The Air Quality Management Plan (Appendix 10D-1) is under review/revision and an update of this plan will be updated prior to construction.	No discussion	No action required at this time
PC-6-1	VI. Please also clarify what typical discharges will occur both during transit and while in port, and assess the implications of these discharges. Alternatively, can the proponent unequivocally state that there will be no intentional discharge in Canadian waters? Notwithstanding the latter alternative, please address the matter of uncontrolled discharges such as Stern Tube Oil Release, including in the context of accumulations in the relatively narrow on confined leads that may be used as open water.	There will be no intentional discharges from the dedicated ore carriers in Canadian waters. As noted " The intention is to have zero discharge in the north, except of course ballast water. In addition as a further mitigation, the stern tube would be lubricated with biodegradable oil (such as we have in the UMIAK, a vegetable based product) so that in the event of an unplanned discharge, the environmental impact is minimised." (T. Keane, Fednav pers.com. April 4, 2011). There is a selection of such biodegradable, non-toxic produCTA available in the market. Any incidental releases from the Stern Tube would be minimal in any case.	No discussion	No action required at this time
PC-7-1	VII. The EIS does note that coal dust near the ore docks has the potential to be deposited on ice or snow surfaces, and to subsequently decrease the ice's albedo and increase the short wave radiation absorption, potentially resulting in an accelerated melt during spring. Please assess the impacts and mitigation arising from a similar deposit of black carbon throughout the length of the shipping transit through the study area.	The design of the ore carriers is not complete yet. All engine emission levels will comply with the latest IMO guidelines when the vessels are ordered. Emissions from the vessels while underway should be so dispersed as to be insignificant, especially since these will be latest generation of marine diesels.	No discussion	No action required at this time
PC-8-1	a) Please reassess the implications of the project on birds. Please include in this reassessment a closer consideration of such matters as disturbance during sensitive nesting and fledgling seasons, displacement, spills, and release of oily bilge waters or other contaminants. Please do so in the context of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area.	Birds were considered no more sensitive in the National Park than they are anywhere else in the RSA. Baffinland does not suggest any different assessment criteria within the park than anywhere else.	For Parks areas there is a greater standard of care required to ensure the populations remain strong and healthy. There is a specific requirement to maintain the ecological integrity of the Park area. EC is also pursuing some concerns around bird populations and linkages will be made to that work to determine to what extent it addresses these issues. Any additional information on birds to address EC concerns will also respond to this request. Note the concept of " greater standard of care" in vicinity of Parks areas. Key point: Bird baseline and assessment is being revised for FEIS.	FEIS
PC-9-1	a) Please clarify what is meant by 'open water'. Include in this clarification any enhancements to open water, such as pushing aside of ice flows (for example, during break-up, or when winds cause an accumulation) or encouragement of break-up (for example, when most of the route is open, but some sections of the route are slow to break-up).	According to Environment Canada (http://ice-glaces.ec.gc.ca/WsvPageDsp.cfm?ID=11744&Lang=eng): 'open water' is defined as "a large area of freely navigable water in which sea ice is present in concentration less than 1/ 10. No ice of land origin is present". This definition is used in the EIS. Ice conditions in the Milne and Steensby areas were examined as part of an Ice and Marine Shipping Assessment in support of the Project (Enfotech 2010, Appendix 3F-1).	No discussion	No action required at this time
PC-9-2	b) Please also include a discussion of the effects of ship transit on peripheral ice (ice that is not in the channel used by the ships, but is still present along the periphery of the channel), and the consequent effect on seasonal habitat. Similarly, please assess the implications to ice-break up and ice-formation arising from such influences as ship wake.	As noted in Volume 8 of the EIS, as the ship passes through the ice, "the ice itself is broken into small pans, rubble, and brash ice. Generally, most of the broken ice remains in the track after the ship passes, but a smaller portion is forced down and under solid ice alongside the ship track, where it subsequently freezes. The ship track will immediately begin to refreeze following each passage of the ship. With frequent repeat passages, ice rubble builds up within the track until eventually the ship has to move to adjacent, undisturbed ice in order to make progress." This results in peripheral ice to the side of the channel becoming thicker with more frequent passes of the ship. It is noted in the EIS (In Volume 2, Section 2.6.2.1) that ice breaking could delay formation of a continuous, competent ice surface due to repeated disturbance of newly formed ice, however, given the variability of the timing of freeze-up, it was concluded that any localized disruption in the timing of ice formation would be restricted to a small area around the ship track, (1.5 to 6.5% of Steensby Inlet) the effects of which would be minimal in the context of the natural occurring variability in the timing of formation and in the spatial context of landfast ice development in Steensby Inlet.	No discussion	No action required at this time
PC-9-3	d) Commensurately, please assess the environmental impacts of such actions and changes to ice.	The potential effect of the disruption of landfast ice due to ice breaking activities was evaluated as " Not Significant".	No discussion	No action required at this time

Number	IR Request	Initial Baffinland Response	CTA Comment May 20th	CTA Written Comment July 28	Next Step
CTA-02	How would human and material resources be quickly deployed to the site of a train derailment where fuel would have been spilled in proximity to a water body along the railway corridor? The EIS should describe tangibly how resources can be deployed to respond to environmental emergencies. This should include the deployment of Baffinland personnel and of outside resources when required.	Various spill scenarios are discussed in the Emergency and Spill Response Plan (Appendix 10C-1). In the event of a derailment, resources (first responders) could be deployed by helicopter. Baffinland will draw from the experience gained at ArcelorMittal's Mount Wright-Port Cartier railway operation to finalize the Emergency Response Plan for the railway operation.	The Emergency and Spill Response Plan describes roles and responsibilities regarding emergencies and summarizes some measures that would need to be put into place in the case of a spill of hazardous material. Given the severity of the weather at times, the DEIS and the response do not fully address the particular challenges of quickly getting experienced spills management specialists to a train derailment and a hazardous material spill. Having access to the documentation regarding the experience of ArcelorMittal referred to in the response will also be pertinent.	It is difficult for Agency staff to evaluate the pertinence of ArcelorMittal experience to an isolate high Arctic environment until the documentation is reviewed.However, we did specify that what is needed are tangible elements of how Baffinland staff would quickly and effectively respond to an environmental emergency during storm conditions and without the assistance of outside specialists whom major railway companies call upon when responding to such incidences. (In a meeting at the Agency in May, Mathew Pickard stated Baffinland planned to be self-sufficient regarding emergency responses - given the remoteness of the proposed mine, rail and port installations.) A particular concern of training and human resources specialists is how to attain and maintain an adequate level of expertise without having the opportunity to acquire considerable experience. (No one expects Baffinland staff to have numerous opportunities to acquire such experience.)	Technical Review Period
CTA-04&05	Volume 5 - Atmospheric Environment, page 88 of 136, third paragraph states "...consideration should be given to these dwellings, as it is important for worker health to maintain an adequate sleep environment....due to the nature of this project, a rating of NCB 33 or less is recommended for the work camps". Potential mitigation measures include relocation or reorientation of the dwellings, berms or noise walls, and upgraded building construction. Then on page 103 of 136, predicted worst-case sound levels at the worker accommodation building are presented in Table 5-3.9 as overall dBA values (which are assumed to be 1-hour outdoor Leq values). There is a disconnect between pages 88 and 103 because the sound levels are presented as different units. Although there is reference to an indoor criterion of NCB 33, an evaluation of indoor noise at the worker accommodation building was not presented. The proponent should provide indoor sound levels at the worker accommodation building. Please describe if any of the proposed mitigation measures will be implemented into the design.	There are no "dwellings" in the project LSA. Page 88 includes recommendation for noise levels inside worker accommodation although this was not modelled. Page 103, table 5.3.9 refers to a worst case predicted noise level in dBa at Steensby port. All worker accommodation will meet OHSA standards which apply. During Detailed Design phase is the appropriate time to confirm which mitigation measures will be applied to ensure that the noise level inside the worker accommodaion meets the recommended criteria of NCB 33.	The proponent should provide indoor sound levels at the worker accommodation building. Please describe if any of the proposed mitigation measures will be implemented into the design	Baffinland's commitment to the NCB 33 noise criteria can be reiterated in the final EIS document	FEIS

CTA-06	ISO and CSA standards suggest that certain noise characteristics may affect how people perceive sounds (e.g. low frequency content, tonality, and impulsiveness). These noise characteristics can be annoying and disruptive to people. Please indicate if any adjustment factors were applied to the predicted noise levels. Please provide a rationale if adjustment factors were not considered.		Concern re:noise levels at worker accomodation	The questions of potential railway noise and vibration in proximity to the workers' accommodations have been addressed.	No further action required for this IR
CTA-08&09	Volume 5 - Atmospheric Environment, page 103 of 136, states that the "Worst-case predicted operational noise levels are summarized in Table 5-3.9. Graphical representation of summer and winter operations is provided in Figures 5-3.9 and 5-3.10, respectively". According to Figure 5-3.9 on page 101 of 136, there does not appear to be any activities occurring in the rail yard, next to the accommodation complex. Please clarify why rail yard activities were not included in the worst-case operating scenario for the accommodation complex. It should be noted that a worst-case scenario of the Local Study Area (LSA) is not necessarily a worst-case scenario at the accommodation complex.	All worker accommodation will meet OHSA standards which apply. During Detailed Design phase is the appropriate time to confirm which mitigation measures will be applied to ensure that the noise level inside the worker accommodaion meets the recommended criteria.	Worker accomodation related	The questions of potential railway noise and vibration in proximity to the workers' accommodations have been addressed.	No further action required for this IR
CTA-10	Volume 5 - Atmospheric Environment, pages 89, 90, and 92 of 136, state that construction noise may be “moderate to loud”. Given the location of the Milne Port and Steensby Port along the shoreline, there is some concern that noise due to construction may travel efficiently over water (due to reduced absorption and the effects of wind and temperature inversions). Please indicate if there are any noise sensitive receptors across or along the shoreline of the Milne and Steensby Ports, beyond the 3 km LSA.	There are no noise sensitive receptors identified across or along the shoreline of the Milne and Steensby Ports, beyond the 3 km LSA.	Worker accomodation related	The questions of potential railway noise and vibration in proximity to the workers' accommodations have been addressed.	No further action required for this IR
NEW	Has a train simulation been done for a loaded train of 144 cars coming down from the mine on that particular stretch of track to see what would be the behaviour of a train?	We have not modelled a 144 wagon train in large part because under the 32.4 tonne axle load scenario this would need 3 locomotives and is not very cost effective. In 2007-2008 we modelled a 2-loc-126 wagon fully loaded train at 60kph over the entire alignment and 3-loco-168 wagon train. In the last week we ran a 2-loco-150 wagon train loaded to 30 tonne axles and 2-loco-138 wagon train loaded to 32.4 tonne axles. All with nothing that indicated any propensity for train failure or derailment. What is important to emphasise is that gradients have been limited to 0.5% compensated in the loaded direction and 1.5% in the empty direction. What this means is that in areas on gradients the gradient in any curves has been limited - from the train operations point of view there are no extreme gradients on this line.		The IR was about a stretch of 12.5 km of track in which the profile will go down by 150 m. The question was in relation with the combination of long trains and extremely cold temperatures and slippery rails due to snow and frost operating on that particular stretch of track. It is a known fact in Canada that under extreme temperature the train length is reduced because of difficulty to maintain the air pressure in the train brake lines. For reference purpose, please read the following report from the Transportation Safety Board of Canada (TBS): Railway Investigation Report Main-Track Derailment Canadian National Freight train Mile 106.20, Edson Subdivision Peers, Alberta 18 December 2008 Report Number R08E0150, available at the following address: http://www.tsb.gc.ca/eng/rapports-reports/rail/2008/r08e0150/r08e0150.asp	BIM to follow up

Number	Request	Baffinland Response	Clarification on Information Request	Comment/Action
DFO-01	DFO requests additional information to confirm if blasting will occur under ice cover and if the guidelines of 50kPA will be followed.	As per the EIS, blasting is planned to occur under the ice (see sec.) Appropriate mitigation and monoitoring measures are described. The applicable DFO Guideline is 100 kPA.	DFO has developed additional recommendations for the use of explosives under ice cover in the Northwest Territories and Nuavut. DFO recommends that the proponent use 50 kPA as the threshold for instantaneous pressure change when blasting under ice cover.	**BIM will evaluate and, as appropriate, incorporate any Guidance issued by DFO once the** relevant information and guidance has been issued by DFO.
DFO-02	DFO requests that the proponent provide assessment of the potential habitat use in the impacted area by local fish species present.	Marine coastal areas are likley to provide forage, nursery and spawning habitat for the majority of marine fish species that are present. Arctic char feed in the nearshore coastal waters.	The construction of the infrastructure for the port at Steensby Inlet will result in the harmful alteration disruption or destruction (HADD) of approximately 59,805m2 of fish habitat. It is not clear in the DEIS whether this habitat is spawning, rearing or nursery habitat and which species would likely use these areas based on their life histories. Consideration should also be given the invertabrate species which have colonized these areas. Since such a large componenet of the HADD associated with the project is in the marine environment DFO needs a better understanding of the habitat which will be lost in order to adequately compensate for the HADD.	The DEIS includes a description of a broadly based program of field data collection that enables the characterization and quantification of the potentially affected marine fish habitat . Shallow water benthic habitat surveys were conducted to map near-shore biophysical features. Primary producers were characterized in terms of Chlorophyll a levels. The algal community was characterized threough videography supplemented by sample collections. Secondary producers were chraracterized through plankton tows. Epifauna distribution and abundance was characterized through videography and sampling. Benthic infauna were characterized through transect surveys. Fish species presence was determined through a program of sampling and examination of stomach contents. These data formed the basis for the environmental assessment, and will be utilized for the purposes of classifying and quantifing the fish habitat that will comprise the "HADD". The process of HADD determination is to be carried out in accordance with DFO guidance, however formal guidance is still a work in progress. The information collected to date has, however been consistent with requirements for the general stages of marine habitat assessment and evaluation as described by DFO (e.g. for Pacific and Newfoundland Regions). The focus of information requirements tends to be directed towards an understanding of the physical and chemical features of the marine benthic environment, and is not heavily reliant on sample collection to characterize finfish or invertebrate habitat usage. Rather, reliance is placed on the identification of life history characteristics based on literature reviews , e.g. Life History Characteristics of Marine Finfish Occurring in the Newfoundland and Labrador Region (Grant and Grant In progress) and Life History Characteristics of Marine Invertebrate Species Occurring in the Newfoundland and Labrador Region (Christian et al. 2008). The information collected to date can be organized and presented to DFO in accordance with their anticipated Guidance such that an adequate habitat quantification is provided as a basis for determining the anticipated HADD. The process of HADD determination is to be carried out in accordance with DFO guidance. The information collected to date has been consistent with requirements for the general stages of marine habitat assessment and evaluation as described by DFO (e.g. for Pacific and Newfoundland Regions). The focus of information requirements tends to be directed towards an understanding of the physical and chemical features of the marine benthic environment, and is not heavily reliant on sample collection to characterize finfish or invertebrate habitat usage. Rather, reliance is placed on the identification of life history characteristics based on literature reviews , e.g. Life History Characteristics of Marine Finfish Occurring in the Newfoundland and Labrador Region (Grant and Grant In progress) and Life History Characteristics of Marine Invertebrate Species Occurring in the Newfoundland and Labrador Region (Christian et al. 2008).
DFO-02a	Justify why such limited sampling was carried out for marine fishes.	Adequate sampling (66 gillnet sets) was carried out to support the assessment.		
DFO-02b	Justify why sampling was limited to gillnetting.	Gillnetting is a capture technique that provides most comparable quantitative fish collection data over the range of depths, fish species and habitat conditions present.		
DFO-02c	How will the limited sampling be used as a baseline to assess impacts of the Project?	The baseline is adequate for effects prediction. Additional baseline will be collected as appropriate to support EEM programs.		
DFO-02d	Why was sampling not carried out using standard survey methods (e.g., stratified random sampling)?	Sampling locations were selected to cover the range of habitat conditions and locations over which the full range of potential marine habitat disturbance is expected to occur.		
DFO-03a	Please provide an assessment of potential impacts to marine fishes and invertebrates using appropriate representative marine VECs. Examples of marine fishes could include Arctic Cod, Greenland Cod or sculpin.	Potential impacts on marine invertebrates and fishes are captured in the assessment of potential effects (losses/alteration and disruption) on coastal marine habitat as described in Volume 8 Sections 4.4 and 4.5.	Volume 8 sections 4.4 and 4.5 do not provide baseline data/information on which to assess potential impacts on marine invertebrates and fishes. Arctic Char is an anadromas fish rather than a marine fish and is not an appropriate species to be used as an indicator for marine fishes or for the Arctic ecosystem. DFO would like to see an assessment of arctic cod and/or a bivalve to cover lower trophic levels. BIM does not agree to add new species like arctic cod at this stage. Both BIM and DFO noted that adding a new VEC now would be very difficult but DFO feels that it should be considered. BIM will provide more explanation on why Arctic Char was chosen and its utility as an indicator.	The EIS is thorough in application of accepted Environmental Assessment methodologies. The selected VECs were chosen through an extensive process of consultation and following regulatory (NIRB) guidance. For each of the identified VECs a relatively large number of Key Indicators were selected. These KIs reflect species/populations of cultural, ecological and scientific relevance. For each selected KI all credible Project interactions and effects pathways have been identified and evaluated in a manner that is quantitative wherever the data or available knowledge (e.g. availability of predictive mathematical model) permits. The selection of Arctic charr as a key indicator is justified by its value as a cultural, subsistence and commercial resource. The species is one for which there is considerable IK information available. There is also considerable literature on habitat requirements, life cycle stages, diet and food chain linkages. This literature supports the importanc eof this species in the marine food chain. The species is known to utilize shallow intertidal/sub-tidal zones of the type potentially affected by such Project features as dock shoreline construction. During the HADD determination process, Arctic charr will also almost certainly be selected by DFO as a primary species for the purpose of calculating Habitat Suitability Indices as input to the calculation of Habitat Equivalence Units.

DFO-03b	How will potential effects to invertebrates be monitored and assessed?	As noted in the DEIS (Section 4.5.10, p. 298), an aquatic effect monitoring program (AEMP) will be developed in which details of the EEM monitoring programs will be provided. It is anticipated that the EEM programs will include invertebrate monitoring.	Describe the level of uncertainty with the current level of baseline information used to make conclusions in the DEIS.	Dialogue required on EEM design and collection of baseline data to support monitoring program. Ballast water effects is seen as a key concern and requires better definition of benthic biota (bivalves). A rationale is sought for chosing a particular species for study. Action: BIM to produce a draft within 2- 21/2 weeks. Status: It is worth noting tha the approach taken in the EIS was to address pathways for effects, and hence the assessment of the marine environment incorporated potential effects on invertebrates by considering both pathways - water and sediment quality, as well as marine habitat and biota. A suite of Key Indicators were addressed for sediment quality and modelling was used to identify water and sediment quality changes associated with ballast water discharges. Other sources of water and sediment quality impairment were also considered and evaluated. Thus any contaminant input to the food chain (including invertebrates) was assessed. Marine habitat changes that would affect invertebrates were also assessed, both in terms of habitat loss (Project footprint) as well as habitat alterations and disturbances in all the various possible forms. Thus effects to invertebrates has been assessed adequately in the EIS. The Level of uncertainty associated with the quantity of baseline information (and associated field data collections) is reflected in the effects prediction As described in the Environmental Assessment Methods (Vol 2 Sec 3.8, see Table 2-3.3) the level of certainty is an attribute of the effects prediction process reflecting the "Level of confidence in the knowledge or analysis that supports the prediction, in particular with respect to limitations in overall understanding of the ecosystem, and limitations in the ability to foresee future events or conditions". Where the level of certainty is not high, the prediction is subject to environmental effects monitoring. With respect to environmental effects monitoring (EEM), BIM has produced an EEM Framework that includes the following features: 1. lays out the principles for selection of candidate EEM programs - based on predicted effect, confidence in predictions, regulatory requirements; 2. describes a process for reporting and feedback to adaptive management; 3.describes the various forms (levels) of monitoring (research, surveillance, effects monitoring); 4. establishes a protocol for EEM design, and starts the process of EEM study selection and design. This framework is suggested as a starting point for examination of the monitoring needs associated with ballast water effects and will consider invertebrates as a potential monitoring target.
DFO-03c	Justify why no primary or secondary producer VECs or indicators were chosen to assess impacts on the benthos or food chain components for the LSAs or RSAs.	The assessment methods are consistent with Guidelines and currently accepted EA practice. The Guidelines were followed in the selection of VECs and Key Indicators. The assessment described trophic levels and inter-relationships. The effects analysis incorporated the primary and secondary trophic levels and their interactions with the benthos into the assessment.		
DFO-03d	Provide a rationale for why harp seals, killer whales, minke and humpback whales were not considered VECs.	As noted in Volume 2, Section 3.5.1 of the DEIS, the use of indicators is a pragmatic approach to conducting environmental effects assessment, where evaluating every species within the marine mammal VEC is not practical. The six marine mammal species used as indicator species were selected because of their cultural and social significance to Inuit and many of the species are under consideration by SARA or are listed as Species of Concern or Threatened by COSEWIC. In addition, the VEC's and key indicators were confirmed with potentially affected communities during public meetings convened by Baffinland in April 2010. NIRB also independently identified the VECs adopted by Baffinland.		
DFO-03e	Given the importance of Bearded seals within the Project area, especially in the areas of Steensby Inlet, Foxe Basin and Hudson Strait, revise the EIS to include bearded seals as a VEC. The assessment should include the effects the Project will have on the species, with particular focus on habitat change, disturbance, call masking (particularly during breeding season in spring) and pup mortality.	It is acknowledged that bearded seals are a notable component of the ecosystem and that this species has distinct biological attributes relative to other pinnipeds in the RSA that may make it susceptible to effects from the Project. Nevertheless, Baffinland feels that the marine mammal species seleceted as Indicators provide a comprehensive and adequate assessment of the Marine Mammal VEC.	There are several strong reasons why Bearded Seals should be a VEC in the DEIS including their importance in the marine trophic food web and high densities in Foxe Basin, their requirement for sea ice-benthic coupling and their cultural importance to Inuit. DFO considers the exclusion of Bearded Seals as a VEC to be a significant omission.	BIM will provide an assessment on Bearded Seals. BIM to advise on timing.
		Ship strikes have been identified as a major cause of mortality for the endangered North Atlantic right whale. The small remnant population of ~ 325 individuals inhabits areas within or near important shipping lanes (Waring et al. 2009). More than half (53%) of the documented right whale deaths are the result of ship strikes (Campbell-Malone et al. 2008).		

DFO-04a	Provide a discussion of what is known regarding North Atlantic Right Whales and whale-vessel collisions, and how this information relates to the assumptions adopted within this EIS for Bowhead Whales.	While nearly all species of large whale have been victims of collisions with ships (Laist et al. 2001; Glass et al. 2008), right whales are especially vulnerable likely because of certain characteristic behaviours during which they may be less aware of their surroundings. These behaviours include: surface active group (SAG) activity (individuals interacting at the surface with frequent physical contact); skim feeding (swimming slowly at the surface with mouth open); and logging (resting motionlessly at the surface), an activity frequently observed in nursing mothers (Knowlton 1997). Bowhead whales are not noted for their surface activity in groups; they do rest at the surface and occasionally skim feed at or near the surface. There is evidence suggesting that a greater rate of mortality and serious injury correlates with a greater vessel speed at the time of a ship strike (Laist et al. 2001; Vanderlaan and Taggart 2007; Vanderlaan et al. 2009). Most lethal and severe injuries to large whales resulting from documented ship strikes have occurred when vessels were travelling at 26 km/hr or greater (Laist et al. 2001), speeds not uncommon among large ships and not limited to high-speed vessels. Vanderlaan and Taggart (2007) found that if vessel speeds are less than 28 km/hr, the probability of a lethal injury (mortality or severely injured) due to a ship-strike substantially decreases. In a review of 58 large whale ship strikes in which the vessel speed was known, the average speed of vessels involved in ship strikes that resulted in mortality or serious injuries to the whale was found to be 34.4 km/hr (Jensen and Silber 2003). In the only two documented right whale ship strike mortalities in which the vessel speed was known with some degree of certainty, the vessels were travelling at 40.8 km/hr and 28 km/hr (NOAA Fisheries 2004). The North Atlantic right whale appears on a per capita basis to be more prone to vessel strikes than all other large whales (Vanderlaan and Taggart 2007). Controlled exposure experiments in the right whale summer feeding area in the Bay of Fundy showed that right whales did not respond to the playback of the sound made by a 120-m container ship passing within 100 m in spite of the fact that they were apparently able to hear it (Nowacek et al. 2004). There are several possible explanations for the reactions of North Atlantic right whales to shipping noise (Laist et al. 2001; Wright et al. 2007). One of the most likely is that right whales off the eastern coast of North America spend much of their time in areas of heavy vessel traffic (Kraus 1990), and they may have habituated to the sounds of approaching vessels at greater distances (Richardson et al. 1995; Terhune and Verboom 1999; Laist et al. 2001). Additionally, vessel noise received by whales at or near the surface may be complicated and/or attenuated due to the effects of the physical properties of the ocean on sound propagation. Campbell-Malone R., S.G. Barco, P.Y. Daoust, A.R. Knowlton, W.A. McLellan, D.S. Rotstein and M.J. Moore. 2008. Gross and histologic evidence of sharp and blunt trauma in North Atlantic right whales (Eubalaena glacialis) killed by vessels. Journal of Zoo and Wildlife Medicine 39:37–55.	No quantitative information is provided about surface behaviours for Bowhead Whales, in particular for cow-calf groups which are common in Foxe Basin. Action: BIM will provide data on bowhead whale surface behaviour and a quantitative assessment of vessel/bowhead whale collision risk (see also DFO -18a) –by – July 29.	DFO requested that quantitative information be provided about surface behaviour of the bowhead whale, in particular for cow-calf pairs. The only quantitative data that we are aware of was summarized in Richardson et al. (2002). These authors summarized behaviour data from several studies of bowhead whales conducted in the Canadian and Alaskan Beaufort Sea by LGL Limited. The behaviour data were collected using a standard aerial technique developed by those authors. The results are summarized in Table 14.2 from Richardson et al. (2002) and are reprinted here. Reference Cited: Thomas, T.A., W.J. Richardson, W.R. Koski, and B. Würsig. 2002. Surfacing, respiration and dive cycles of bowhead whales in the Beaufort Sea: calves, subadults and adults. p. 14-1 to 14-20 In: W.J. Richardson and D.H. Thomson (eds.), Bowhead whale feeding in the eastern Alaskan Beaufort Sea: update of scientific and traditional information, vol. 1. OCS Study MMS 2002-012; LGL Rep. TA2196-7. Rep. from LGL Ltd., King City, Ont., for U.S. Minerals Manage. Serv., Anchorage, AK, and Herndon, VA. Vol.

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DFO-04b	Provide further evidence to support the assumption that Bowhead whales in Foxe Basin and Hudson Strait avoid oncoming vessels and as such, no mortalities would be expected to occur.	Jensen and Silber (2004) assembled a database of whale strikes reported throughout the world. Of the 292 records of confirmed or possible ship strikes to large whales, most were reported in North America, but this may be an artifact of data collection procedures and/or decreased reporting in other global jurisdictions. The probability of a ship strike resulting in a lethal injury (mortality or severe injury) of a large cetacean increases with ship speed (Laist et al. 2001; Vanderlaan and Taggart 2007). Most lethal and severe injuries to large whales occur when vessels travel at 14 kt [26 km/h] or faster, and the probability of severe or lethal injury to a whale approaches 100% in the event of a direct strike when a ship is traveling faster than 15 kt [28 km/h](Laist et al. 2001; Vanderlaan and Taggart 2007). The probability of a ship strike is a function of vessel density, animal density, and vessel speed. The bowhead whale is an ice species that spends most of its life in the presence of ice, except for a brief period during the summer when the ice melts. During the October to June period, the ore carriers will be travelling through pack-ice and some fast-ice. At those times, the ship speed is expected to range from 5.5 to 8 km/h. At those low speeds, bowheads will have little difficulty avoiding the oncoming ships which will be detectable many km away. During the open water period, the ore carriers will travel at a maximum speed of 26 km/h although in Milne Inlet, the speed will be reduced to 18.5 km/h. These speeds are at or below the minimum speeds that have resulted in whale/ship collisions based on the worldwide experience. Most of the fatal ship strikes occur at speeds substantially higher than 26 km/h. Bowheads have had little direct experience with shipping and little information is available. However, it is instructive to examine the information from the Canadian Beaufort Sea where a large bowhead whale population summers. The offshore Beaufort Sea was subject to intensive offshore oil and gas exploration from the mid 1970s to the mid 1980s. During the peak of the activity, there were as many as 50-60 vessels operating including large drillships and dredges, icebreakers, supply ships, fast crew boats, seismic vessels, research vessels, plus the regular community re-supply vessels (Brouwer et al. 1988; Richardson and Finley 1989). During this 10-year period, there were no reports of ship strikes involving bowheads or any whale species. Any such strike would have been reported because the intensive research on bowheads that was ongoing in the region during the industrial period. The lack of strikes indicates that bowheads are able to avoid ships during the open water period. Brouwer, P., J.W. McDonald, W.J. Richardson and R.A. Davis. 1988. Arctic industrial activities compilation—Volume 3/Canadian Beaufort Sea: seismic and sounding surveys, vessel movements, helicopter traffic and site-specific activities 1980 to 1986. Can. Data Rep. Hydrog. Ocena Sci. 32. Canada Dept. Fisheries and Oceans, Sidney, B.C. 170 p. Jensen, A.S. and G.K. Silber. 2003. Large whale ship strike database. U.S. Department of Commerce, NOAA Tech. Memo. NMFS-OPR-25, Nat. Mar. Fish. Serv., Silver Spring, MD. 37 p. Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. Mar. Mamm. Sci. 17:35–75.		

		Richardson, W.J. and K.J. Finley. 1989. Comparison of behavior of bowhead whales of the Davis Strait and Bering/Beaufort stocks. OCS Study MMS 88-0056, LGL Rep. TA833-1. Rep from LGL Limited, King City, Ont., for U.S. Minerals Manage. Serv., Herndon, VA. 131 p. Vanderlaan, A.S.M. and C.T. Taggart. 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed. Mar. Mamm. Sci. 23(1):144-156.		
DFO-04c	Provide a quantitative assessment of the potential for vessel-whale collisions.	It is not possible to provide a meaningful quantitative assessment of the potential for vessel-whale collisions for the species in question in the areas of interest. There are no quantitative data from these specific situations. However, the information on bowheads and other baleen whales summarized in the preceding response (DFO-4b) is directly relevant. Also, all of the relevant studies in the Canadian Arctic have indicated that belugas and narwhals avoid oncoming ships at distances of several km (e.g. LGL and Greeneridge 1986; Cosens and Dueck 1988; Miller and Davis 2002). It seems unlikely that there will be ship/whale collisions associated with the Baffinland project and hence a quantitative assessment would not be very useful. Cosens, S.E. and L.P Dueck. 1988. Response of migrating narwhal and beluga to icebreaker traffic at the Admiralty Inlet ice-edge, N.W.T. in 1986. p. 39-54 In: W.M. Sackinger et al. (eds.), Port and ocean engineering under arctic conditions. Vol II. Geophysical Institute, Univ. Alaska, Fairbanks. 111 p. LGL and Greenerdge. 1986. Reactions of beluga whales and narwhals to ship traffic and ice-breaking along ice-edges in the eastern Canadian high arctic: 1982-1984. Environmental Studies Report No. 37, Dept. Indian Affairs and Northern Development, Ottawa. 301 p. Miller, G.W. and R.A. Davis (eds.). 2002. Marine mammal and acoustical monitoring of Anderson Exploration Limited's open-water seismic program in the southeastern Beaufort Sea, 2001. LGL Report TA2618-1. Rep. from LGL Limited, King City, ON and JASCO Research Ltd., Victoria, BC for Devon Canada Corp., Calgary, AB. 199 p.		
DFO-04d	Identify the mitigation measures proposed to reduce the probability of bowhead-whale – vessel interactions.	Given that no significant bowhead/vessel interactions are predicted, no specific mitigation measures for bowheads are proposed. The one exception is that the speed reduction form 26 km/h to 18.5 km/h in Milne Inlet in the open water season will reduce the potential for interactions with bowheads although the reduction is in place to protect narwhals. In the early stages of project operations, marine mammal observers will be present on some vessel passages to monitor the close responses of marine mammals to the vessels.		

DFO-05a	That the proponent consult with DFO in order to update walrus distribution maps based on the most current available survey and IQ information. The proponent is further encouraged to consult with DFO on appropriate survey methods in order to collect accurate baseline information which will also serve to inform future monitoring programs.	DFO biologists (Rob Stewart 2011, pers. comm.; Stacey Frame 2011, pers. comm.) in Winnipeg were contacted for walrus distribution maps derived from aerial surveys and IQ interviews. DFO has stated that HTAs in the area of interest have partial ownership of this information (including the aerial survey data) such that they control the release of the information. The HTAs need to approve release of the information before we can review it or incorporate it. We are waiting to hear back from DFO whether they were successful in getting approval for the use of the aerial survey and IQ information in the DEIS. Stewart, Rob. 2011. Personal Communication. Research Scientist, Marine Mammal Productivity, DFO, Winnipeg, Manitoba. Phone 204 983-5023. E-mail rob.stewart@dfo-mpo.gc.ca.Frame, Stacey. 2011. Personal Communication. Fish Habitat Biologist, DFO, Winnipeg, Manitoba. Phone 204 983-0186. E-mail stacey.frame@dfo-mpo.gc.ca.		Action: DFO will provide walrus map and survey data. Action: QIA will make available new IQ data on walrus haul-out BIM will provide further analysis of known walrus haul-out sites relative to the nominal shipping route and alternate shipping routes
DFO-05b	Please provide a thorough effects assessment using the current survey data with respect to the "no significant" impacts conclusions reached in 5.7.2.2 (Disturbance) in section 5.0 (pp. 176-182). For example, fig. 4.18 in app. 8A-2 shows locations of numerous walruses within approx. 3-20 km of the proposed Steensby Inlet port.	See LGL Response to DFO IR #5-a. The current DFO walrus survey data are not available at this time. According to DFO (Rob Stewart 2011, pers. comm.), the primary survey data were counts of walrus at widely separated haul out sites. Specific haul out sites mentioned were North and South Ooglit Islands, Bushnan Rock (Koch Island), southwestern Foxe Basin and the north shoreline of the Foxe Peninsula. All but the Bushnan Rock (Koch Island) sites are far from the shipping route.	Regardless of whether the DFO survey data are available, Baffinland's surveys demonstrate that Walrus use Steensby Inlet which contradicts their conclusion of "no significant" impacts. A thorough effects assessment is required.	Action: DFO and BIM experts to meet in next couple of weeks on key gaps in baseline and what could possibly be done to fill essential gaps for making impact predictions. DFO lead in arrangements
DFO-05c	Walrus were identified as a VEC, yet it is noted surveys to count walruses on haul-outs were not conducted, specifically in Steensby Inlet and Foxe Basin. Given that this is an important behaviour of the species and would represent the period and areas where project-species interactions would be considered most likely, please provide baseline survey data to support the EIS conclusions and future monitoring programs.	Walrus were counted whenever they were seen, including at haul out sites at Bushnan Rock and Manning Island. During systematic surveys of Steensby Inlet the aircraft would transit along the shoreline between east-west transect lines allowing a large percentage of the shoreline to be surveyed for hauled out walrus. In addition, shoreline surveys of northern Foxe Basin including the Koch, Rowley, and part of Bray Islands were completed in August, September, and October of 2008; no haul out sites were observed in Steensby Inlet or northern Foxe Basin during these surveys.	Please provide smaller scale maps showing Walrus survey results for each survey conducted for each of the following three areas: Steensby Inlet, east Foxe Basin and Hudson Strait. Also provide actual date(s) for each survey.Impact of ballast water impact on food chain and therefore on walrus populations discussed. Action: BIM will provide smaller scale maps--by July 15	Baffinland has arranged for the smaller scale maps to be provided to DFO. Provided on July 26th, 2011.
DFO-05d	Provide justification for this trade-off and the additional risk of impacts to walrus as a result of this routing.	The closest distance between the southern vessel route option and Salisbury Island remains >20 km (see Figure 8-5.6). The northern route remains the shortest and preferred route.		
DFO-05e	Justify why disturbances caused by the low altitudes of the Boeing 737s would not pose a significant risk to walruses in Steensby Inlet at times when walrus haul out in significant numbers, as was the case in September 2006 (appendix 8A-2, fig. 4.18).	We did not observe substantial numbers of walrus hauled out in Steensby Inlet during frequent aerial surveys in 2007-2008 (see Response to DFO IR #5c). Noise levels produced by aircraft will be monitored at the port site and at select haul out sites for a brief period during the construction and operational phase of the Project. Noise levels and walrus behaviour at haul out sites that are close to the flight path will be examined. During the winter Steensby Inlet is covered with fast ice and, therefore, in that season walrus disturbance from aircraft overflights will be negligible within Steensby Inlet. The aircraft altitude when it crosses the fast ice edge into pack ice of Foxe Basin would be approximately 9100 m above the water/ice surface. A preliminary analysis of possible in-air noise levels at a haul out location on Koch Island closest to this flight path estimated that the sound level from the aircraft will be 73 dB in the one-third octave band centred on 100 Hz. Other frequencies have lower received sound levels. No change to the conclusion reached in the DEIS is necessary.	Explain why the survey results from 2007-2008 are considered and not the results from 2006.	Action: BIM will provide information including aircraft noise estimates, aircraft flight paths and altitudes, and further consideration of the 2006 surveys. BIM to advise on timing of this information.

DFO-05f	What mitigation measures would be undertaken to prevent impacts to walrus during these events?	See “Planned Mitigation for Aircraft” in Section 5.7.2.2 of the EIS.	Section 5.7.2.2 doesn't describe adequate mitigation for commercial jets and other similarly sized aircraft. Please define "brief period" as described in IR 5e. Please define unacceptable impacts to Walrus and what actions will be implemented if noise levels or Walrus behaviour at haulout sites close to the flight path are found to be unacceptable.	Action: BIM will provide more information and advise on timing of this information.
DFO-05g	Provide information on what is known about long term chronic exposure of walrus to ongoing disturbance.	There is no literature regarding effects of chronic exposure to disturbance on walrus. The lack of this literature is not considered serious for two reasons. First, there are many cases of pinnipeds adapting to chronic exposure to human activities of many kinds including noise disturbance. Second, there is no evidence to indicate that any of the interactions with the Project will be significant to the walrus population,		
DFO-05h	Provide an assessment of the potential impacts to walrus from repeated disturbances over the life of the Project.	Disturbance from aircraft overflights would be limited to the construction phase of the Project (48 months). During the construction phase, there will be fast ice in Steensby Inlet and walruses would not be in the area. Thus, there would be no disturbances for 7-8 months of the year. Therefore, there are limited possibilities for disturbance from overflights during the construction phase and almost no possibilities during the operation phase of the project. There is no likelihood of any long-term effects from aerial overflights on walruses.	The request was not limited to aircraft overflights. Discussion pointed out that walrus respond differently to disturbances than others. Explanation was sought about other disturbances beyond aircraft.	Action: BIM will provide more information and will advise on timing of this information.
DFO-05i	Provide justification as to how the effects of disturbance on walrus are “fully reversible” given this species is known to be sensitive to disturbance and would be subject to chronic disturbance over decades from this Project.	The potential disturbance will not result in physical harm to walrus (i.e. contact with the animals, hearing impairment, etc.). It is unknown if walrus would experience a physiological stress response to aircraft overflights, but the limited literature available on physiological stress response of marine mammals suggests a return to baseline conditions shortly after the stressor is removed. The literature is full of examples where marine mammals have habituated to the presence of regular, non-threatening disturbances associated with human activities. There is no reason to assume that walruses will be any different.	The request was not limited to aircraft overflights. Action: BIM will further investigate walrus literature to ascertain whether further information can be teased out of the results; particularly pertaining to potential long-term chronic effects by July 20.	Long-Term Behaviour of Walruses: During the meeting in Winnipeg on 6 July 2011, the point was made that walruses could abandon haulout sites because of disturbance in the long term even though there had been little or no short-term responses to disturbance. A report from the Igloolik-Hall Beach area in Foxe Basin was cited in support of this hypothesis. This situation is discussed below. Igloolik-Hall Beach: The work of Hugh Brody was cited at the Winnipeg meeting with regard to long-term walrus behaviour in response to industrial activity in the Igloolik-Hall Beach area in the 1950s. We can find no direct reference to disturbance as a cause of haulout abandonment in the published work of Brody. We contacted Mr. Brody who could not recall having reached such a conclusion but referred us to P. H. Beaubier (1970) who had conducted a study of Inuit hunting patterns and observations in the area. During the 1950s and 1960s, there was a reduction in the numbers of walruses in the vicinity of Igloolik and western Foxe Basin. Beaubier (1970:185) noted “In the mid 1950’s heavy construction was underway twenty miles to the south of Foster Bay. The din of construction work and the ceaseless coming and going of airplanes bringing in men and material to the D.E.W. Line site at Hall Beach is thought to have had a disturbing effect on walrus.” However, there are many other factors that were affecting walrus numbers in the area at that time. In the 1940s and 1950s, Inuit from the Repulse Bay area moved north into western Foxe Basin because the walrus population in Repulse Bay had declined significantly because the area was ‘hunted out’ in the 1930s (Beaubier 1970). This increased the number of walrus hunters in western Foxe Basin. In addition, the establishment of a Hudson’s Bay Company post at Igloolik in 1937 and the later establishment of a community at Hall Beach led to concentrations of the Inuit population. During the 1940s and 1950s, most of the boats used for walrus hunting became motorized, thereby greatly increasing the range and efficiency of the hunters. Beaubier (1970:183) stated that “One of the most significant changes in the seasonal cycle and operational ranges of the Igluligmiut began to show up from the late 1940’s on. The change is reflected in a shift in the walrus hunting territory.” By the 1950s, the large walrus herds that used to summer in Foster Bay [between Hall Beach and Igloolik] and haulout on the Ooglit Islands were no longer recorded there. Beaubier (1970) stated that there were no references in the literature to explain why the walrus left the area but that “the hunters themselves feel that it resulted from an increase in the hunting and travel activity in the area of Foster Bay and along the whole coast.” (Beaubier 1970:184). It is apparent that changes in walrus distribution in western Foxe Basin were well underway before construction of the D.E.W. Line site began at Hall Beach and that these changes were a result of the increasing numbers and efficiency of the Inuit hunters. There is no evidence that there were long-term changes in numbers and distribution of walruses in the area specifically as a result of disturbance associated with the construction of the D.E.W. Line site. Reference Cited: Beaubier, P.H. 1970. The hunting pattern of the Igluligmiut, with emphasis on marine mammals. Unpubl. M.A. thesis, Dept. Geography, McGill University, Montreal, PQ. 248 p.

DFO-05j	Provide further justification for statements made within Section 5.7.2.2.	Based on the literature reviewed in Section 5.7.2.2 – Vessel Traffic: "For walruses hauled out on ice, the response to a vessel is dependent on distance from the vessel (Brueggeman et al., 1990, 1991, 1992) and vessel speed (Fay et al., 1984). When an icebreaker was underway in open water, more than 50% of walruses hauled out on ice pans responded by entering the water or becoming attentive when the vessel approached within 460 m; at distances >460 m, a lower percentage of walruses responded (Brueggeman et al., 1990, 1991, 1992). Fay et al., (1984) reported that walruses responded at farther distances when a ship approached from the downwind direction compared with upwind, and that walruses in water show less reaction than those hauled out on ice"	Agree - technical review can proceed. It was asserted that walrus show delayed long term responses even in the absence of short term observable avoidance/ disturbance behaviour.	Action: BIM to review and comment.
DFO-05k	Further define what is meant by "temporary".	"Temporary" is used in the context of a walrus exhibiting avoidance behaviour in reference to an oncoming ore vessel, for example by diving into the water, 'perhaps at distances of 400-500 m or up to several kilometers'. The avoidance behaviour would cease when the noise disturbance would cease or the noise level was below a level causing the minor behaviour reaction (as a result of the noise disturbance moving away from the animal or the animal moving away from the noise disturbance, or a combination of both). The term "temporary" refers to the amount of time it would take before the walrus returned to its previous condition, i.e. the vessel has passed by and is no longer affecting walrus behaviour. At a ship speed of 6 kts (11.1 km/h) it would take approximately 5-6 minutes for the vessel to travel 1 km. If distance were 'several' kilometers (~11 km), then it would be approximately 60 minutes. Therefore this phenomenon could last between 5 and 60 minutes.	Agree - technical review can proceed	
DFO-05l	Provide published information and expert opinion that support claims that walruses will not likely leave terrestrial haul-out sites in response to passing ore carriers at distances of 4.6-8 km (table 8-5.6).	Provided in DEIS literature review from Section 5.7.2.2 – Vessel Traffic.	How was the published information used to make the conclusions in the DEIS. Provide comparison (e.g., size, power and amount of noise) produced by icebreakers in literature cited with the ore carriers that will be used for this project. There is limited discussion on ice breakers in the DEIS. DFO noted that there are some background studies that indicate that walrus response to disturbance could build up over time.	Action: BIM will look into this work and clarify and comment.
DFO-05m	Please explain this apparent contradiction.	Challenging a ship does not make a walrus more susceptible to vessel collisions. It does not imply physically attacking the ship. This statement also does not imply that this is a systematic behaviour observed from all walruses. In addition, if a walrus challenges a vessel, it also implies that the animal is aware of its presence and unlikely to be struck by it. "Risk of vessel collisions with marine mammals is considered low given their avoidance of ships" is a statement concerning marine mammals and their general response, as a group to the presence of vessels based on the literature review provided in Sections 5.6 to 5.11 of the EIS. The general avoidance response to vessel traffic as it relates specifically to walrus is also described in Section 5.7.2.2.		
DFO-05n	Provide a more thorough explanation for how maintaining a constant vessel	The predicted residual effect of vessel traffic on walruses would be non-significant without the inclusion		

DFO-06	Explain why the interaction between narwhal and shipping activity is limited to Milne Inlet when it was stated that narwhal are thought to overwinter in Hudson Strait.	The EIS includes a detailed effects assessment of shipping activity on narwhals in Hudson Strait during the winter period in Section 5.9.2.2 ("Icebreaking" and "Residual effects of Icebreaking").		
DFO-07a	Provide amount of habitat which will no longer be usable by Arctic Char due to reduced discharge.	As discussed in Section 4.5.5.10 (page 266), the proportion of a given basin that will be diverted was used as a surrogate for the amount of flow to be diverted within that basin, and this same number was used as a surrogate for predicting alterations in the amount of physical habitat available to Arctic char within a particular water body. This approach was based on the information that was available at the time of writing and, although Baffinland recognizes that it is somewhat simplistic, it is considered to provide a conservative estimate of potential alterations to habitat availability.	The DEIS states that there will be moderate to high impacts on the quanity of Arctic Char habitat within the impacted tributaries and lakes. If Arctic Char are no longer able to use these tributaries for feeding/rearing and migratory routes then this may be considered a HADD of fish habitat. DFO requires the requested information to determine the extent of the HADD and the acceptablility of the HADD resulting from these diversions. Require validation of this approach through modeling.	As part of the HADD quantification, BIM will carry out hydrological measurements and calculate the wetted perimeter effects of the identified diversion on downstream habitat. This work will be conducted in compliance with DFO requirements for Habitat quantification. Interim copmmentary is provided below. Five streams, two tributaries to Camp Lake (tributaries 1 and 2) and three tributaries to Sheardown Lake (tributaries 1, 9 and 12), will be affected by stream diversions during the open-water season. The diversions will result in flow reductions during each month of the open-water season, ranging from 16% to 28%, with the exception of Camp Tributary 1 which will experience a flow increase of 67% in July to accommodate releases from the waste rock runoff treatment pond. The magnitude of effects caused by these flow alterations have not yet been determined, but the types of effects could include reduced stream productivity, reduced amount of available habitat, reduced access to habitat and/or fish stranding. The total amount of potentially affected habitat, including stream and pond habitat within each watershed, has been calculated and is summarized in the table attached. These areas represent estimates of the total amount of habitat currently available in each watershed. In all cases, habitat usage is limited to rearing and feeding habitat for juvenile Arctic char, and the relative quality of that habitat is determined by flow (i.e., affected by inter- and intra-annually variable); distance from the overwintering lake; presence of partial, full or intermittent fish passage barriers; and, to some extent substrate and hydraulic characteristics (regarding the latter, these characteristics are generally similar among streams and stream reaches). For the purposes of the DEIS, and as discussed in Section 4.5.5.10 (page 266), the proportion of a given basin that will be diverted was used as a surrogate for the amount of flow to be diverted within that basin, and this same number was used as a surrogate for predicting alterations in the amount of physical habitat available to Arctic char within a particular water body. This approach was based on the information that was available at the time of writing and, although Baffinland recognizes that it is somewhat simplistic, it is considered to provide a conservative estimate of potential alterations to habitat availability. More precise estimates of type and magnitude of effects will be provided as additional information becomes available.
DF0-07b	Amount of habitat which will no longer be usable by Arctic char due to physical barriers or barriers caused by shallow water.	No stream sites were identified in the affected Mine LSA streams that potentially could become barriers to upstream fish movement as a consequence of flow alterations.		
DFO-07c	Will the reduction in discharge result in increased stranding of fish?	As discussed in Section 4.5.5.14 (page 270), the diversion of flows for at least some months in two tributaries to Camp Lake and three tributaries to Sheardown Lake has the potential to strand juvenile Arctic char as they move downstream to overwintering habitat in Camp Lake and Sheardown Lake during late summer and fall. However, specific sites that potentially could become downstream barriers were not identified on the bases of existing information. As described on p. 270, the effects of the Project on fish stranding due to water diversion at the Mine LSA was considered to be negligible with mitigation. Potential mitigation is described on p. 270 (see also response to comment DFO-7e).		
DFO-07d	Will the predicted decrease in productive capacity impact the use of these watercourses as feeding and rearing habitat?	As discussed in Section 4.5.5.11 (page 268), Camp Lake tributaries 1 and 2 and Sheardown Lake tributaries 1, 9, and 12 will experience a reduction in productive capacity due to loss and alteration of habitat upstream and downstream of existing fish barriers, in combination with water and sediment quality changes. Decreased productive capacity is unlikely to preclude the use of any of these streams, but a moderate reduction in the productive capacity is predicted for Camp Lake tributaries 1 and 2 and Sheardown Lake Tributary12. A high level effect is predicted for the productive capacity of Sheardown Lake tributaries 1 and 9.		
DFO-07e	Any measures that can be implemented to mitigate impacts to fish habitat and/or fish passage.	Section 4.5.5.14 (page 270) provides a discussion of potential measures that could be implemented to mitigate the effects on fish stranding and loss of access to habitat resulting from stream diversions. It is unlikely that reduced productive capacity resulting from habitat reduction can be mitigated.		

DFO-08	DFO requests additional information to confirm if blasting will occur under ice cover and if the guidelines of 50 kPA will be followed.	As noted in Section 4.4, p. 246, a detailed blasting management plan will be developed, which will follow DFO blasting guidelines (Wright and Hopky 1998). It is also indicated that if any issues associated with meeting these guidelines are identified, they would be discussed with DFO prior to undertaking blasting activities. Blasting will not be conducted in-the-wet under ice cover in freshwater fish habitat.		
DFO-09	DFO requests an assessment of alternative water crossing designs which would avoid the loss of upstream fish passage.	Crossing designations (i.e., culverts vs. bridges) and designs were developed initially on the basis of feasibility and practicality. This was followed by an iterative process involving design engineers and project biologists to minimize the number of crossings that were left with residual fish passage issues. This process was served by ongoing biological and geophysical data collections (2007-2010), particularly at locations where notable fisheries concerns were identified (e.g., the South Cockburn Alluvial Fan). In some cases culvert designs were replaced with bridges; in others culvert designs were modified to improve fish passage potential. Volume 7, Section 4.5.6.3 provides an extensive discussion of crossing design constraints and culvert design options that were considered and will be implemented where feasible to maximize fish passage potential.		
DFO-10	DFO requests additional information on the water extraction plan for Phillips Creek with details on proposed locations, timing and volumes to be extracted and details on the criteria or process that will be used to determine the amount of water to be extracted relative to baseline flows conditions for Phillips Creek.	This has been evaluated in Volume 7, Section 2.3.2. Table 7-2.23 shows that the proposed water takes from Phillips Creek are almost immeasurable relative to the flows.		
DFO-11a	The proponent uses the terms: suitable fish habitat preferred spawning habitat and suitable overwintering habitat throughout the DEIS. DFO requests that the proponent define these terms and provide the references which were used to define them.	Habitat suitability for the various life history components for each of the two freshwater fish species were based on an extensive review of existing scientific information that is provided in Appendix 4.4-3 of Appendix 7C (A generalized life history description for Arctic char and ninespine stickleback with emphasis on Baffin Island populations). Fish species habitat requirements are also summarized in the Mary River Project railway/access road watercourse crossing assessment protocol (in Appendix A of Appendix 5.1-1 of Appendix 7C).	Clearly defined thresholds rather than qualitative descriptions are needed. Quantitative descriptions will be required during the regulatory review phase.	As part of the formal "HADD" process, BIM will issue a revised Habitat Quantification document with respect to freshwater habitat for Arctic charr and ninespine stickleback. Terminology will be defined and expressed in quantifiable terms. An interim response is provided below. Habitat suitability for the various life history components for each of the two freshwater fish species were based on an extensive review of existing scientific information that is provided in Appendix 4.4-3 of Appendix 7C (A generalized life history description for Arctic char and ninespine stickleback with emphasis on Baffin Island populations). Fish species habitat requirements are also summarized in the Mary River Project railway/access road watercourse crossing assessment protocol (in Appendix A of Appendix 5.1-1 of Appendix 7C). Information from the scientific literature was also supplemented with knowledge gained by the field staff through conducting hundreds of stream surveys in the region between 2007 and 2010 (i.e., professional judgement). Stream surveys were extended upstream and downstream, on foot or by air, to locate definite or probable fish passage barriers. Barriers were generally caused by waterfalls, high gradient/velocity, or discontinuous surface flow. In cases where habitat at a survey site appeared suitable but no fish were captured due to downstream barriers or excessive distance to potential overwintering habitat, those sites were classified as No Fish Habitat.
		See Attachments 4, 5 and 17.		

DFO-11b	The sample design for fish seems to vary from year to year and site to site. DFO requests that the proponent clarify the general approach and methodology by providing the references noted above as well as explaining variations noted in the sampling protocols from year to year and site to site.	Our interpretation of the request is that it refers primarily to stream surveys. These surveys were conducted over a number of years and to some degree the sampling methodology evolved over time as understanding of conditions improved. In some cases methodologies were changed or refined to reflect changing priorities or objectives. For example, the 2007 stream survey along the railway corridor was intended primarily as a reconnaissance survey to maximize the area that could be covered in the relatively short open water Arctic season. As stated in Appendix 7C (Section 5.1.1.1; page 93), the 2007 assessment protocol was intended to provide preliminary information regarding the observed/potential fish habitat at each site, and identify locations at which additional and more detailed assessments could be required. This information was then used to develop the more intensive protocol used in 2008. The same protocol was used again in 2010 where information gaps were identified for potentially fish bearing streams (e.g., due to railway re-alignments). As part of the 2008 field program, in recognition that onset of winter might preclude a survey of all sites along the railway and access road corridors, the study team conducted a prioritization exercise in which all streams with any reasonable potential to support fish were surveyed first. As a result, a large number of streams and the majority surveyed in 2010 were not fish bearing and were subjected to a less intensive survey regimen.		
DFO-11c	Length stratified sample of ages is not useful in terms of characterizing fish populations and following changes in age structure of Arctic Char as development proceeds. Ideally a random sample (over space and time) should be used. DFO requests the rationale for the approach used over a random sample approach.	The relevant statement (Appendix 7C; Sec. 4.4.1.1; page 64) is incorrect and should be re-worded to read: "Ageing structures (otoliths) were collected from all gillnet-caught Arctic char mortalities and fish sacrificed for metals analysis from all Mine Area lakes, and from a length-stratified sub-sample of electrofishing-caught fish from Mary River." Generally speaking, fish studies were designed and implemented to obtain a reasonable amount of biological data, while minimizing fish mortalities. Mortalities were limited to unavoidable gill net mortalities and fish sacrifices necessary to acquire tissue samples. Electrofishing surveys on the Mary River resulted in no Arctic char mortalities. A small subsample of Arctic char was therefore sacrificed to obtain tissue samples for metals analysis, and otoliths were collected to provide supporting age information. Since the objective of aging structure collection was to support the metals analysis and not to characterize the population (i.e., the captured fish were all juveniles with narrow fork length and age ranges), and given the need to collect a small sample spanning the available length range, a length stratified approach is considered appropriate.		
		The relevant statement (Appendix 7C; Sec. 4.4.2.1; page 69) is misleading and should be re-worded to read: "All hoopnet-caught fish, or a minimum of 50 fish per day when larger numbers were captured, were measured for fork length."		

DFO-11d	With the hoop net sampling, only the first 50 fish were measured each day. This may introduce biases in data. DFO requests clarification on why fish were not sampled randomly at intervals throughout time.	As presented, the statement is consistent with the field sampling protocol which specified that only the first 50 fish were to be measured each day at each hoopnetting location. However, this number was meant to be interpreted as “at least 50 fish” and was intended to ensure a reasonable sample size, while at the same time allowing the field staff some discretion in determining how many fish could be sampled safely without causing undue stress to fish in the holding container (i.e., stress due to crowding, increasing water temperature or oxygen depletion). Of the 109 hoop net sampling sessions conducted in 2007 and 2008, only 23 (21%) were actually sub-sampled for fish measurements. Of the 5,926 Arctic char captured in hoop nets, 3,979 (67%) were measured. Ninespine stickleback were much less abundant and all were measured. The hoop nets were only checked once daily, and the contents were first emptied into a holding container. Unusually large or small fish (typically very few) were measured to obtain a daily size range, and the remaining fish were sampled randomly, up to a minimum of 50 individuals per day. Measurements were therefore effectively random and representative.		
DFO-11e	The report states that they attempted to achieve good temporal and spatial coverage for fish sampling on lakes. DFO request clarification on the spatial coverage that was used to verify presence/absence of fish.	Excluding the large Mine LSA lakes, which were surveyed extensively (Volume 7; Appendix 7C), determination of fish presence/absence generally involved relatively small lakes or ponds within the various freshwater LSAs. To determine fish presence/absence, field crews typically set one or two gill nets. If these initial sets failed to capture fish, additional sets were placed in alternate habitats or depths. Gillnetting was supported in all cases with nearshore electrofishing targeting ninespine stickleback and smaller juvenile Arctic char. Electrofishing surveys were extensive, and were carried on until the field crews were confident that fish presence/absence had been established. Unavoidable logistical constraints and the large number of waterbodies requiring surveys dictated that not all lakes and ponds could be gillnetted. Of the lakes that were selected for fish presence/absence determination only, several large, deep lakes (e.g., in the Steensby Port LSA) were assumed to support Arctic char and were not gillnetted. Smaller lakes that presented a reasonable expectation of providing adult, overwintering or spawning Arctic char habitat were gillnetted. All lakes and ponds that were selected for fish presence/absence determination were electrofished, with the exception of the smallest shallowest ponds where presence/absence could be verified easily through visual inspection. As a rule, field crews were able to capture fish easily and in abundance wherever fish were present. Where fish were not captured early, they were not captured at all regardless of effort.	Need to provide details on what is meant by "extensive" coverage for the electrofishing surveys and precisely how field crews determined they were "confident that fish presence/absence had been established".	Excluding the large Mine LSA lakes, which were surveyed extensively (Volume 7; Appendix 7C), determination of fish presence/absence generally involved relatively small lakes or ponds within the various freshwater LSAs. To determine fish presence/absence, field crews typically set one or two gill nets. If these initial sets failed to capture fish, additional sets were placed in alternate habitats or depths. Gillnetting was supported in all cases with nearshore electrofishing targeting ninespine stickleback and smaller juvenile Arctic char. Electrofishing surveys were extensive, and were carried on until the field crews were confident that fish presence/absence had been established. Confidence was based on experience gained from conducting a very large number of surveys in the region between 2007 and 2010. Fishing effort was dependent on waterbody size and amount of nearshore habitat suitable for electrofishing, but generally ranged from 120 to 550 seconds. Unavoidable logistical constraints and the large number of waterbodies requiring surveys dictated that not all lakes and ponds could be gillnetted. Of the lakes that were selected for fish presence/absence determination only, several large, deep lakes (e.g., in the Steensby Port LSA) were assumed to support Arctic char and were not gillnetted. Smaller lakes that presented a reasonable expectation of providing adult, overwintering or spawning Arctic char habitat (i.e., depth > 3 m, based on regional experience) were gillnetted. All lakes and ponds that were selected for fish presence/absence determination were electrofished, with the exception of the smallest shallowest ponds where presence/absence could be verified easily through visual inspection and/or electrofishing of inlet and outlet streams that provided connectivity to confirmed overwintering habitat. In other words, any shallow ponds that were deemed to be accessible from overwintering waterbodies were assumed to provide summer rearing habitat, whether or not fish were actually captured or observed. As a rule, field crews were able to capture fish easily and in abundance wherever fish were present. Where fish were not captured early, they were not captured at all regardless of effort.

DFO-12	Provide an analysis of potential compensation option, taking into consideration the hierarchy of preferences outlined in the No Net Loss Policy and Practitioner's Guide to Habitat Compensation. The analysis will need to include feasibility of the various options, and/or supported rationale for dismissal, prior to proceeding to the next compensation approach in the hierarchy. Consideration should also be given to compensation options in the marine environment since fish habitat loss and alteration is also predicted to occur in the marine environment.	At the present stage in Project planning, and consistent with the EA Guidelines, a No Net Loss Plan has been developed and tabled as Appendix 10D-7. The Plan addresses the items identified in the EIS Guidelines. The Plan addresses the policy requirements of DFO. It includes an estimate of total fish habitat loss and describes the methods used for estimation of both marine and freshwater habitats. The document includes the identification of three candidate options for Fish Habitat Compensation. Note, as the Project moves through the various stages of evaluation and regulatory approval, a decision will be made by the Miinster of Fisheries as to the acceptability of any loss of fish habitat and whether to issue an Authorization which permits this loss to occur. A binding agreement on fish habitat compensation will need to be reached between the Minister and the Proponent. Baffinland is working cooperatively with DFO to develop a detailed FHCP and Agreement, however the information provide in the EIS is responsive to the EIS Guidelines and adequate for the purposes of impact assessment. Baffinland will complete the FHCP and Agreement along a schedule to be worked out jointly with DFO, and as a separate approval process from the EA.	Baffinland did not provide the requested analysis of the compensation options presented in the No Net Loss Plan. Since a large component of the HADD assoicated with the project is in the marine environment Baffinland, DFO recommends that the proponent consider compensation options in the marine environemnt consistent with the assessment requested in IR #2 .	Until DFO has made a HADD determnation for both freshwater and marine fish habitat, it will not be possible to prescribe the required scale or nature of compensation options. At a conceptual level, BIM has identified one possible compensation approach that would occur in freshwater. Additionally, a review has been completed of marine fish habitat compensation works completed throughout Canada. This overview has included a consideration of suitability/applicability with respect to the Mary River Project. Potentially suitable concepts include: artificial reefs, excavated habitat, eelgrass planting, shellfish habitat creation, saltmarsh restoration, debris removal, removal of abandoned infrastructure/fishing gear, shoreline enhancement and freshwater works. Once the quantification of total (marine and freshwater) habitat loss has been established, concepts for compensation works will be developed. As well, stakeholder consultations, especially with Inuit communities will need to be carried out by both DFO and Baffinalnd in order to receive input and to confirm the suitability and appropriateness of the identified candidate compensation works.
DFO-13	Describe how the monitoring plans are sufficiently sensitive to allow detection of incremental or cumulative changes in the environment (e.g., reductions in marine mammal abundance or distribution, changes in species composition) in response to the Project.	Baffinland has developed Environmental Monitoring and Mitigation Plans (Sec 7.0 Volume 10) which focus on measuring the effects of the Project on the environment and on establishing the effectiveness of mitigation measures which are intended to reduce or eliminate potentially negative effects. The described framework lays out design principles and defines the various categories of project-induced changes that can be detected through effects monitoring. Environmental effects monitoring will, of necessity, be designed to differentiate non-Project change from Project - induced change. However monitoring programs will not be designed to attribute a cause to any such non-Project changes. That is not normally an objective of a Project EEM, nor is it a requirement of the EIS Guidelines, which state that : "The Proponent shall present environmental management plans developed to eliminate or mitigate potential negative impacts of the Project on the biophysical environment ..... The Proponent shall also identify any residual effects after appropriate mitigation measures are implemented. These management plans shall target identified VECs"	Limited baseline data and no monitoring plan limits the ability to assess impacts of the project .	DFO asserted that baseline data for impacts prediction inadequate and this will come out in technical review. DFO noted that one of the largest gaps was surveys of marine mammals' food chain and the biggest effect could be when ballast water dumps repeatedly on the bivalves which are a critical component of the walrus diet. These indirect effect and need to be monitored. Action: Meeting 1: Before July 15 selected experts to discuss gaps in data that affect the ability to review impacts' assessments and how Baffinland can move forward to collect baseline for impact prediction and developing monitoring plans - DFO to arrange. Baffinland is developing an Environmental Effects Monitoring Framework that will be employed in the selection of monitoring targets and in the design of stastically valid monitoring programs. Discussions have been held with DFO and an ongoing dialogue has been proposed to examine in greater detail the suitable targets for monitoring, appropriate monitoring design (before-after comaprison; gradient-to-background; control-exposure comparison) and timing for such work, keeping in mind that baseline data may still be collected if the EEM design requires such data. Baffinland will share its EEM Design Framework with all interested parties upon its completion.
DFO-14	DFO requests that the potential impacts on marine mammals of opening new leads due to shipping be fully assessed.	This question is addressed in the response to PC IR #4-2. No new leads are predicted to occur as a result of ice breaking associated with the Project. Within the landfast ice large pans of fast ice are not expected to break loose because of the limited number of leads that form naturally within the Steensby Inlet landfast ice (Vol. 8, Section 2.6.2.1).	Agree - technical review can proceed	
DFO-15a	DFO requests clarification of the term "nominal" shipping corridor?	The term "nominal" is defined as "according to plan or design". Thus the nominal shipping corridor is in accordance with the current plans for the Project. As noted, during operation, the ships Master may chose to vary the route from the identified corridor as required to ensure the safety of the crew, the vessel and its cargo.	How far from the identified corridor can the ships Master chose to vary the route? Are there bounds to where the Master can decide to go? What strategy is in place to assess alternate routes? BIM will provide additional information on nominal shipping route including when the master will or can choose to move off the route.	There are no proposed alternate routes, except that, through the development of detailed bathymetric charts, some minor route adjustments may be required inorder to assure safe passage, all of which will be within the identified corridor. As a rule, the vessels will adhere to the designated route since it will provide the most direct and best charted alternative. The Master is, however ultimately responsible for the safety of the crew, the vessel and its cargo. In the execution of these duties, the Master may vary from the route as required in order to ensure safe passage. As well, a vessel can be called upon to participate in a Search and Rescue response. Otherwise, the vessel can be expected to remain within the assigned shipping corridor and will be required to do so, to the extent such instruction does not interfere with the responsibilities of the Master.
DFO-15b	Please verify that the "nominal" shipping corridor is 1.5 km wide as is indicated in Figure 8-2.2.	The "nominal" shipping corridor is 1.5 km wide as indicated in Figure 8-2.2.		

DFO-15c	Further, how was the shipping route defined?	The shipping routes are described in Volume 8, Section 1.2.1, and was defined using various literature sources for typical sea ice conditions, and an ice and marine shipping assessment was conducted in support of the Project to determine viable routes for shipping (Enfotech 2010; see Appendix 3F-1).	Based on the information provided in Appendix 3F-1, ice was the primary factor considered in determining the shipping route. How was water depth considered as part of the assessment of the shipping routes? Please provide the bathymetric data. BIM will review bathymetry re shoals near Steensby, and effect of this on route selection. BIM will provide more information as to the reasoning behind the choice of the shipping route within Foxe Basin.	BIM couriered electronic copies of Bathymetry maps to DFO on June 21 2011. In planning the route, considerations were distance, ice conditions, community concerns and navigability (including water depth of nearshore sections). Water depth was evaluated based on available charting. Since the available charting was not always adequate, additional survey work was identified by Baffinland. Some survey work was completed in 2008; additional surveys are to be conducted in 2011. As new bathymetric mapping is completed, minor adjustmments to the detailed route may be required. As well, in areas of relatively shallow water or narrow channels navigation aids and routing will be prescribed by regulators and passages defined. Baffinland has provided DFO with the the bathymetric survey data collected in 2008.
DFO-15d	Please describe whether the LSA shipping route as shown in Figure 8-2.1, is fixed or somewhat flexible in response to other factors (e.g., weather, safety concerns).	The shipping route is defined; however it is not fixed, and shall be flexible in response to safety and weather factors. This is outlined in the Shipping and Marine Mammals Management Plan (Appendix 10D-10), Section 3.2.2.3 (Safety) the Master of the ship ultimately has the responsibility for the safety of the ship, crew and cargo, and protection of the environment, and therefore has the authority to adjust speed, or deviate from the route if necessary.	How far from the identified corridor can the ships Master chose to vary the route? Are there bounds to where the Master can decide to go? What strategy is in place to assess alternate routes?	There are no proposed alternate routes, except that, through the development of detailed bathymetric charts, some minor route adjustments may be required inorder to assure safe passage, all of which will be within the identified corridor. As a rule, the vessels will adhere to the designated route since it will provide the most direct and best charted alternative. The Master is, however ultimately responsible for the safety of the crew, the vessel and its cargo. In the execution of these duties, the Master may vary from the route as required in order to ensure safe passage. As well, a vessel can be called upon to participate in a Search and Rescue response. Otherwise, the vessel can be expected to remain within the assigned shipping corridor and will be required to do so, to the extent such instruction does not interfere with the responsibilities of the Master.
DFO-15e	DFO requests that the proponent verify that the data used are appropriate and correct.	The ice data used to define the extent of landfast ice cover in Figures 8-2.1 and 8-2.2 is from a 10-year average from satellite images from 2000 to 2009. Markham (1981) and Prinsenberg (1986) and also ENFOTEC (2010) were used to provide a written summary of typical ice conditions across Foxe Basin. We believe the various sources of information are both reasonable and correct.		
DFO-15f	DFO requests the rationale for not including the 10/10 class of ice be provided.	The authors eliminated the 1/10 and the 10/10 ice cover to calculate the amount of disturbance to pack ice along the shipping route in the RSA. Section Table 8-2.1 (2.5.4 Vol. 8). It was assumed that there would be no measurable disturbance to these ice densities from ships passage.		
DFO-15g	DFO requests that the proponent verify whether the text or the table is correct.	The title of fourth column of Table 8-2.1 should read Proportion of Pack Ice Disrupted by a Single Ship Track. Because the disruption is temporary and does not temporally overlap with successive transits, this represents the maximum aerial disturbance to ice at any given time.		
DFO-15h	DFO requests that the proponent conduct an impact assessment for this effect (disruption of pack ice near polynyas), including possible mitigation measures and monitoring.	No response	Action: BIM will prepare a response by July 15	Baffinland is in the process of preparing a background report that will include mapping of major polynas and enable a comparison with the nominal shipping route. A background commentary will be included on the causative factors in polyna presence - currents, upwelling, winds. A discussion will be presented with respect to the potential effect of ship transit on polynas locally at point of entry, exit and when track is proximate (distance?) to a polyna. Based on the evaluation completed to date, it is Baffinland's conclusion that there will be no measurable effect on polynas as a consequence of ships' passage.
DFO-15i	DFO requests that FedNav experience with winter shipping in the Arctic with cape-class ore carriers be provided to support the estimates.	Fednav has not operated cape-class ore carriers in the arctic. All operations have been with smaller sized ships. Having said this, Fednav remains one of the most experienced ship operators in the Canadian arctic.		
DFO-15j	DFO requests verification on whether >10/10 was used or only CIS fast ice. Further, was 10/10 included in the pack ice?	No response	BIM to advise.	The calculated spatial extent of “fast ice” includes CIS fast ice, as well as some portion of the 10/10 ice concentration area that CIS has deemed to be fast ice. Similarly, some portion of the 10/10 ice concentration area that CIS has determined to NOT be fast ice (i.e. consolidated pack ice) would be included in the determination of the spatial extent of pack ice.

DFO-15k	Impact of ship movement during freeze-up will result in a rougher surface then would be formed under calm conditions. What will be the effect of multiple tracks forming new leads on the stability of the landfast ice? Will it increase the likelihood of large pieces of landfast ice breaking free?	No response	What effect if any will ship waves hitting Islands have on ice build-up along shorelines during freeze-up and shoreline erosion? Action: BIM will prepare a response by July 15	Ice freeze up occurs during periods of low temperature and calm seastate (no winds). Under these conditions, ice forms quickly and the newly formed ice then acts as a buffer to retard wind-induced wave formation. During this period of rapid ice formation, high winds or other phenomena can act to break up the newly formed ice and cause it to raft and otherwise break up. Eventually, the low air temperature and even brief periods of calm water will result in formation of an ice cover that is thick enough to resist these disruptive forces and the ice continues to grow, both in thickness and aereal extent. At the outer edge of landfast ice, the dynamics of air temperature and wave /current conditions can affect the sina and this area of interaction between landfast and pack ice can result in an area of ice build up and a moving edge. In mild winters the sina will be closer to shore; in colder winters the sina will extend seaward. Vessel passage during the period of ice freeze up (see VBNC EIS) can act to delay ice formation and can produce relatively rough ice surface within the area affected by ships passage. The delay would be in the order of hours to days, depending on the air temperature and presence of calm (low wind, waves) conditions The effect can be moderated by reducing ships speed as it passes through areas of landfast ice formation. Once landfast ice has formed, ships passage will have a local effect, essentially confined to the width of the ship. At the point of entry into the landfast ice, under conditions where pack ice is clear of the edge of the landfast ice (usually an offshore wind and/or a falling tide), there can be a drift of ice from the ships track into the open water. This ice will consist of small, rounded pans. On occasion, the seaward edge of the landfast ice can break off and the ice pans so formed will become a feature of the pack ice, a natural phenomenon that may be enhanced by the presence of the transiting vessel. The bow wave and wake from the passing vessel will be greatly moderated by the presence of landfast ice. Once a continuous landfast ice cover has formed, there will be no propogating wave that will reach the shore. In extreme conditions (Spring tide) the vessel passage can result in shoreline cracks or leads, where the vessel speed exceeds about 7 knots. Thius effect can be reduced or eliminated by reduced ships' speed.
DFO-15l	What will be the effect of multiple tracks forming new leads on the stability of the landfast ice? Will it increase the likelihood of large pieces of landfast ice breaking free?	No response	There is a need to consider the changes in pack ice from ship passage – pan size under the various ice covers including the quality of ice (once broken and re-frozen) and the implication of the use for that ice by marine mammals.	Ships passage through landfast ice is not predicted to result in creation of leads within the landfast ice. The track behind the vessel as it transits landfast ice will be filled with the broken pieces of landfast ice that has passed along the hull of the ship as it passes through the ice. A relatively small portion of the broken ice will pass to the sides of the vessel and rest at the margin of the ships track. The area behind the ships track will, therefore comprise a mixture of small ice pieces and slush. Any interstitial water will quickly refreeze into a relatively rough surface. Only in circumstances where ocean swell is present and winds are offshore would there be potential for pieces of the edge of the landfast ice to break off. Only under such conditions would the presence of a transiting vessel tend to facilitate such a phenomenon.
DFO-16	Please provide greater in-depth analyses of the effects of ice-breaking on sea ice and interactions with CVC.	No response	Action: BIM will prepare a response by July 15	The effect of ice breaking on sea ice (pack ice) was addressed as a Subject of Note in the DEIS based on the relative degree of interaction between Project activities and pack ice. Baffinland will complete a more detailed review of this interaction, and provide an order-of-magnitude estimate of the changes in pan size that will occur as a condsequence of vessel passages through Hudson Strait and Foxe Basin. This evaluation will include a consideration of interactions with polynas (see DFO IR # 15h). The results of this consideration will be presented during the Technical Review stage of the Environmental Assessment process.
DFO-17a	Provide revised duration times of the short, medium and long term criteria which reflect “how long an effect will continue to affect those who experience it” for the majority of VECs, as opposed to phases linked to the project.	No response	Explain why revised duration times of the short, medium and long term criteria are linked to project phases rather than "how long an effect will continue to affect those who experience it".	The Duration criterion, in common with established EA methodology addresses the duration of the effects interaction, and consequently is expressed in terms of the Project life cycle. See also response to DFO IR# 17b (below).
DFO-17b	Revise the effects assessment for each VECs of the Project based on the revised duration criteria and taking into consideration the length of critical life stages for a VEC, a species expected lifetime, or the number of generations likely to be affected, within these defined short, medium and long term periods.	No response	Explain why the effects assessment does not consider the length of critical life stages for VECs, a species expected life time or the number of generations likely to be effected, within these defined short, medium and long term periods.	Not all VECs are species, however where the effects assessment is with respect to a specific species, the assessment is ecosystem-based and takes into account all potentially affected life cycle stages. Thus, the effects assessment does incorporate life cycle stages and the lifespan of species under evaluation. The Duration criterion, in common with established EA methodology addresses the duration of the effects interaction, and consequently is expressed in terms of the Project life cycle.

DFO-18a	Provide a quantitative risk analysis for the accidents and malfunctions events contemplated in the EIS, including but not limited to marine mammal-vessel collisions, vessel groundings, and accidental spills.	Accidents and malfunctions are unpredictable events in terms of exact location of occurence and quantities of materials spilled. A qualitative risk analysis is presented in Section 3 of Volume 9. The Emergency and Spill Response Plan (Appendix 10C-1) presents an analysis of the most likely spill scenarios. Appendices 9A, 9B and 9C presents spill modelling scenarios for Steensby Port, Milne Port and along the shipping lane.	The quantitative risk analysis requested was not provided. TC noted a requirement for a risk assessment as well may provide some guidance. Availability of data constraint is observed. Action: BIM will consider what can be done to obtain a useful set of data to undetake a quantitative risk analysis and respond by July 31.	Baffinland has considered tha availability of relevant and applicable data on probability and consequences of a marine mammal collision, a vessel grounding or an accidental spill. Such data would be a necessary prerequisite to any quantitative risk assessment of the noted events. A consderation (attached) has been developed for bowhead whales pointing out the absence of any such data and the pitfalls of attempting to quantify such an event. For the purposes of environmental assessment, Baffinland has identified such events as "unplanned" and not likely to occur. Nevertheless, environmental management plans have included Emergency Response planning to respond to such events. The potential consequences of such events has also been identified and evaluated within the EIS. Consequently Baffinlands questions the relevance of this request to the process of environmental impact assessment. It has been requested to provide a quantitative risk analysis of marine mammal/ vessel collisions. It is not possible to conduct a formal risk analysis of this event that would have any validity. The species of most concern regarding vessel collisions is the bowhead whale. It is theoretically possible to map year-round bowhead distribution and to determine the probability that a particular ship passage is likely to strike one of the bowheads. Then, adding the information for each ship passage, it would be possible to determine an annual probability of a bowhead being struck by a vessel. However, there are two overwhelming problems with such an approach. First, there are no data on the distribution of bowheads that could be used to determine the likelihood of a strike and it is unlikely that such data could ever be gathered. Second, the implied assumption that bowheads would not move to avoid the vessel is violated. There have been several quantitative studies of the responses of bowheads to a variety of vessels and vessel noises. Many of these studies were reviewed in Volume 8 of the DEIS for the Baffinland project and are not repeated here. Richardson et al. (1995) provided the following summary of bowhead whale reactions to ships and boats: "In general, bowheads react strongly and rather consistently to approaching vessels of a wide variety of types and sizes. Bowheads interrupt their normal behavior and swim rapidly away." All subsequent studies and observations have been consistent with the above statement. Therefore, it is highly unlikely that ore carriers will strike bowheads. However, that does not mean that strikes are impossible. A very small percentage (<1%) of the bowheads taken in the Inupiat harvest in Alaska contain scars from previous non-fatal encounters with vessels, including whaling vessels. Such scars are permanent on the whale and since bowheads may live for over 100 years, the annual strike incidence must be very low and is not always fatal. Reference Cited: Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson. 1995. Marine Mammals and Noise. Academic Press, San Diego, CA. 576 p.
DFO-18b	Justify the risk rating of moderate for events that will have catastrophic environmental impact although the likelihood of occurrence is rare or unlikely.	Volume 9, section 3.8 discussed the outcome of a major diesel fuel spill either at Steensby Port or along the shipping lane. It is important to note the natural weathering process of a diesel spill (section 3.8.2). Although such a spill would be serious, it effects would be of short duration due to this natural weathering process. Appendix 9C discusses the potential effects of such a spill. Table 4.2 of this appendix summarizes the sensitivity and risk of such a diesel spill along the shipping route. The qualitative analysis undertaken indicates that all ecosystems, at worst, the effects of a diesel fule spill would be felt for a period of weeks to months. For this reasons, the rating is considered moderate.		
DFO-18c	Table 9.3-2 indicates that a major diesel spill at sea has a “very low” risk rating. Stating the likelihood as “unlikely” results in the impact according to Table 3 in Appendix 10A-2 being considered “insignificant”. Please further describe the measures that are proposed to be taken to reduce the likelihood of a major spill and provide the criteria used to determine the significance of a major diesel spill based on established EA practice (e.g. magnitude, duration, reversibility etc.) and how these were applied in determining the significance of this effect.	Major fuel spills at the ports or along the shipping lane are discussed in Volume 9, Section 3.8 and Appendices 9A, 9B and 9C. Magnitude, duration and reversibility associsated with a fuel spill events are presented for what is considered a very large spill scenario. The measures proposed to reduced the likelyhood of such spills are presented in the Emergency and Spill Response Plan (Appendix 10C-1), the Steensby Port OPEP (Appendix 10C-2) and Milne Port OPEP (Appendix 10C-3).		
DFO-19a	Provide information on the cumulative effects models considered and how they were incorporated, or rationalize why the assessment relied on “professional opinion” alone to support significance determinations.	The cumulative effects assessment was qualitative and did not involve modelling because detailed analysis was not required to support the conclusions.		
DFO-19b	Provide further justification for the methods used to assess and assign significance of cumulative effects and explain how the varying effects from a number of stressors were considered together in the cumulative effects assessment.	The cumulative effects assessment used the same asssessment methodology as the rest of the EIS. See Volume 9, Section 1.2.5.		

DFO-20a	Explain the rationale for the threshold values used and provide supporting evidence that they are precautionary.	This information is provided in each assessment. Refer to the specific Volumes of the EIS (Volumes 4 through 8).	The only criteria for which rationale is provided is in Table 7-4.4 - Criteria for determination of the magniturde of effect on direct morality of Arctic Char. BIM will provide rationale for thresholds: Table by VEC and Key Indicator; threshold chosen; rationale for the threshold with spatial and temporal considerations included by 20 July	Consistent with NIRB Guidelines, Thresholds have been established established for measurable parameters in order to set an "alert" level for a potential effect and to provide a boundary assigning levels to the magnitude of an effect. Where available, specific values are used, e.g. a water quality parameter such as Arsenic levels; sedimentation rates as per Table 7-4.4. In other cases thresholds are established as a proportion or ratio. In reviewing the DEIS Tables where threshold values are presented for determining the magnitude of effects, it is noted that explicit definition of time frame is often not provided (although usually implied in the context of the discussion). In general the timeframe is the Project Life for habitat efects; for other effects, the timeframe is a single season or year. The summary rable below addresses specific thresholds for Volume 8 Marine Environment The environmental effects assessment characterization includes Duration as a category. Where Duration is described as "short" "medium" or "long" term , this is, in general within the context of the Project Life. not with reference to the life cycle, e.g of a receptor organism. The latter issue is considered in evaluating the exocosystem context of the effects assessment. Refer to attached Table.
DFO-20b	Tables 8-5.4, 8-5.8, 8-5.11 (construction phase), 8-5.14 (construction phase), 8-5.17 (construction phase) give “high” levels of confidence in all cases except one (moderate for narwhal). Please provide rationale for the “high” levels of confidence given the admission that “there is expected to be much variation in response to sound type and level”.	The variation expected in marine mammal responses to various sound types and levels is not the key factor in determining the level of confidence in an effects prediction. As noted for each marine mammal indicator species, measurable parameters were derived to provide guidance in assessing changes in habitat, behaviour, and health. The selected threshold for each measurable parameter was intended to identify a level of what would be considered unacceptable change. In situations where thresholds were well below the indicated value or negligible, confidence level was generally considered high. In situations where thresholds were approached or exceeded confidence levels were rated as low to medium. Confidence levels were also judged to be low or medium in situations where available data were lacking to support the assessment. Of note, the reviewer(s) is incorrect when they state “Tables 8-5.4, 8-5.8, 8-5.11 (construction phase), 8-5.14 (construction phase), 8-5.17 (construction phase) give “high” levels of confidence in all cases except one (moderate for narwhal).” The EIS (Table 8-5.17) acknowledges that there is a medium level of confidence regarding masking effects of bowhead whales during the Construction Phase.		
DFO-20c	Explain how the effects assessment in the EIS accounts for these scenarios.	We are unaware of evidence that supports the “ripple effect” theory of disturbance presented by the reviewer. Based on available information, most indicator species assessed in the EIS exhibit temporary and localized avoidance responses to disturbance sources. In situations where there was much uncertainty regarding the nature and duration of an avoidance response, a low or medium level of confidence was assigned and follow-up monitoring was recommended.		
DFO-20d	Explain the implications of marine mammal segregation by age and sex on the effect assessment in the EIS.	The assessment process undertaken for this EIS considered sensitive life stages and important areas (e.g., feeding, nursing, breeding, or haul-out habitat) for marine mammals. For all indicator species, measurable parameters and threshold levels focused on these aspects of a marine mammal’s life history. Distances and estimated underwater sound levels from Project activities relative to important habitat was provided when possible and effects were assessed based on this information.		Action: BIM will provide further response (including the potential for mother/calf seperation).

DFO-21a	Given that climate change could also cause changes in animal and environmental conditions in the LSAs and RSAs, how will the proponent distinguish these from localized or cumulative effects caused by the operations themselves? Similar monitoring in adjacent/similar areas should be undertaken to ascertain if animals are displaced from the mine operations area, or if density or behavioural changes are climate-related.	Suitable reference (or control) sites will be selected during the preparation of the final Monitoring and Mitigation Plan that will be developed in consultation with appropriate regulators. Surveying similar sites away from an area potentially affected by Project activities should allow researchers to account for the influences of "natural" covariates (including ice cover and type) on marine mammal distribution and abundance. Monitoring of reference locations as per the AEMP should serve to differentiate between potential project affects and those potentially caused by external factors such as climate change.		
DFO-21a	Given that climate change could also cause changes in animal and environmental conditions in the LSAs and RSAs, how will the proponent distinguish these from localized or cumulative effects caused by the operations themselves? Similar monitoring in adjacent/similar areas should be undertaken to ascertain if animals are displaced from the mine operations area, or if density or behavioural changes are climate-related.	The effects of the environment on the Project (including climate change) are discussed in Volume 9, Section 2. The effects of climate change on the behaviour of the animals is beyond the scope of this EIS.		
DFO-21b	Explain how ongoing environmental changes were considered in the cumulative effect assessment.	Changing ice-conditions attributable to climate change are not expected to affect our impact predictions. The assessment of Project activities on marine mammals did not show any significant effects during either the ice-covered or open-water seasons; therefore, changes in the length of these seasons are not expected to change the predictions made in the DEIS.		
DFO-22a	Provide a complete assessment of underwater noise modelling for SI, FB and HS and potential impact on marine mammals.	The impact predictions in the EIS were based, in part, on underwater noise modelling for Steensby Inlet, Foxe Basin and Hudson Strait. The noise modelling was conducted by JASCO Research and included as Appendices 8C-1 and 8C-2 in the DEIS. We have included Appendix 8C-3, omitted from the DEIS, as Attachment 6.		
DFO-22b	Provide a full explanation/justification of how high uncertainty in sound propagation model inputs contributes to the level of uncertainty in the model outputs.	Conservative assumptions have been made with respect to any sound propogation model inputs. As a consequence, the model outputs also reflect a similar level of conservativism (i.e. err on the side of cautrion) and will overstate any output values.		
DFO-23a	Provide further information on the approach that will be used to acquire acoustic signature measures for these carriers in different ice and bathymetric conditions.	The details of the acoustic measurement program will be provided in the final Monitoring and Mitigation Plan for the Mary River Project. The Plan will be developed and finalized after consultation and input from DFO, other regulators, and community members. Standard and scientifically credible procedures will be followed.		
DFO-23b	The EIS says that the icebreaking ore carriers will be designed using the best technology to be silent but there is no support provided for this. On the contrary, Table 4 in Appendix 8C-1 states the carriers will be equipped with 2 x controllable pitch nozzled propellers, 4 blades, 8.3 m diameter. It is understood that variable pitch propellers are not efficient with regard to radiated noise and should be avoided for noise-	Variable pitch propellers enable the effective operation of an ice breaker by providing the combination of propulsion power and maneuverability required to penetrate ice effectively. Specifically, the variable pitch propellers allow the vessel to shift from forward gear directly to reverse without any change in power to the propellers. The vessel will be designed using noise reduction technology wherever practical, however variable pitch propellers are a necessity.		

DFO-23c	What effect will icebreaking have on sound pressure?	In general, icebreaking produces stronger and more variable sound levels than would normally be produced by a ship transiting in open-water (see Section 6.2.3 in Richardson et al. 1995). Physical crushing of ice contributes little to the overall increase in noise during icebreaking. Based on several field studies, icebreakers pushing ice radiate noise about 10-15 dB higher than when underway in open water, primarily due to stronger propeller cavitation (Richardson et al. 1995). In general, spectra of icebreaker noise are wide and highly variable over time given the alternating periods of ramming and backing. For purposes of the EIS, sound levels from an icebreaking ore carrier (Cape-size) were modelled at Steensby Inlet, Foxe Basin and Hudson Strait during periods with thin and thick ice cover (Matthews et al. 2010); these modelling results were incorporated into the assessment for marine mammals. Matthews, M. N. R., M. Zykov, and T. Deveau. 2010. Assessment of underwater noise for the Mary River iron mine: construction and operation of the Steensby Inlet Port Facility. Tech. rep. prepared for LGL Limited by JASCO Applied Sciences. Richardson, W. J., C. R. Greene, Jr., C. I. Malme, and D. H. Thomson. 1995. Marine Mammals and Noise. Academic Press, San Diego, CA. 576 p.		
DFO-24a	The EIS reports that "Any masking that might occur along the shipping route, as a vessel passed by, would occur for only a short time (2-3 h)". A few hours represents a significant period of time in terms of masking of mother-calf communication especially if, say, walrus abandon a haul-out in response to ship noise. In Volume 8, section 5.7.2.3	The current worst-case estimate indicates that the communication space for marine mammals could be affected for a time period of approximately 6.3% (3 h of every 48 h) due to vessel traffic. This is the maximum amount of time for an animal that was close to the ship track. Animals further away from the track will be exposed to potential masking conditions for smaller amounts of time depending upon the perpendicular distance from the ship track. Based on the established impact assessment criteria alone, this warrants a "non-significant" impact assessment rating. In addition, the biological significance of communication masking for marine mammal species and species-specific adaptations to changes in ambient noise levels (distance of communication space required, hearing directivity) are unknown, including for walrus mother-calf communication. It would therefore be impossible to determine what would represent a biologically "significant period of time in terms of masking of mother-calf communication" for either individuals or a population. The mother-calf bond in animals is very strong. It is likely that mother-calves would remain in close proximity to one another, compared to the distance separating them from the vessel, and in close proximity to the haul-out site. It is highly unlikely that a mother and her calf would become permanently separated. The closest distance that the vessel route is planned with respect to known walrus calving sites in the northwestern portion of Foxe Basin (according to IQ as indicated in the Marine Mammal Baseline report, Appendix 8A-2) would be > 10 km for one site to the west of Koch Island, with the majority of calving sites being much farther from the shipping route. In addition, Koch and Rowley Islands would provide a partial noise barrier to calving sites on their western sides as the vessel route passes on their eastern side. The combination of these factors would also act to further reduce the maximum extent of masking described in the assessment, and consequently, the potential impact.		

	noise. In volume 6, section 5.7.2.3, justify how potential masking of walrus calf- juvenile calls (300-450 Hz), "which are distinct and used for mother-calf communication", by ship noise warrants a non-significant rating (in table 8-5.8).	Furthermore, many marine mammal species such as killer whales (Holt et al. 2009), blue whales (Di Iorio and Clark 2009), right whales (Parks et al. 2007), harp seals (Serrano and Terhune 2002), and Weddell seals (Terhune et al. 1994) have adapted acoustic communication strategies to compensate for changes in ambient noise. These strategies can include increasing the amplitude of calls, increasing calling rate, shifting calling frequency, and increasing the duration of calls. It is unknown, but possible, that walrus, including mother-calves, use one or many of these strategies to adapt to changing ambient noise levels and counter the potential reduction of their communication space, in the unlikely scenario that such a reduction in communication space occur. Di Iorio, L. and C.W. Clark. 2009. Exposure to seismic survey alters blue whale acoustic communication. Biol. Lett. doi: 10.1098/rsbl.2009.0651. Holt, M.M., D.P. Noren, V. Veirs, C.K. Emmons, and S. Veirs. 2009. Killer whales (Orcinus orca) increase their call amplitude in response to vessel noise. J. Acoust. Soc. Am. 125:EL27-EL32. Parks, S.E., C.W. Clark, and P.L. Tyack. 2007. Short- and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication. J. Acoust. Soc. Am. 122:3725-3731. Serrano, A. and J. M. Terhune. 2002. Antimasking aspects of harp seal (Pagophilus groenlandicus) underwater vocalizations. J. Acoust. Soc. Am. 112(6):3083-3090. Terhune, J. M., N.C. Grandmaitre, H.R. Burton, and K. Green. 1994. Weddell seals lengthen many underwater calls in response to conspecific vocalizations. Bioacoustics 5:223–226.		
DFO-24b	While the duration of masking may be short relative to the interval between transits, it is still significant to the species in question in terms of its behaviour and life history. Provide more thorough examination of the effects of shipping noise for all marine VECs along the shipping route over a period ranging from several minutes to several hours for species that depend on social communication for mating, group cohesion, etc. and acoustic sonar for feeding.	The available information regarding the effects of shipping noise for all marine mammal species is thoroughly covered in the EIS. There is currently little information about the biological significance of masking, or lack thereof, in terms of behaviour and life history. For many species, there would be no, or very little, frequency overlap between the vessel noise and the vocalizations used as described in the EIS. Acoustic sonar frequencies are of much higher frequency than those produced by shipping vessels and are not a concern when considering the impact of masking from shipping noise. Again, the available information is summarized in the DEIS.		

DFO-24c	The EIS frequently states that call masking by shipping noise is unlikely because the sounds important to that marine mammal species are predominantly at higher frequencies than the shipping noise (e.g., Vol. 8, section 5.7.2.3, top of p. 186). The most uniformly effective mask is broadband noise such as the broadband (10-2000 Hz) sound fields used in the underwater noise modeling for the ore carriers (appendix 8C, table 16). For human speech, when a masking source with noise spanning 20 Hz to 4 kHz is present, the signal must be 12 dB louder than the broadband noise to achieve 80% word recognition. Provide better justification for rating masking effects as low magnitude, especially for low-frequency specialists like bowhead whales.	See Response to DFO IR #24a.		
DFO-25a	As described in Tables 8-5.3 and 8-5.7, what are the frequency characteristics and source level of the proposed acoustic deterrent systems? For some such systems, at close ranges some animals could be exposed to sound levels loud enough to cause TTS after even a short exposure.	The proposed short-term acoustic deterrent system has not been selected at this stage in the Project. This type of information will be included in the final Monitoring and Mitigation Plan for the Mary River Project. The Plan will be developed and finalized after consultation and input from DFO, other regulators, and community members. An example of an acoustic device that successfully deterred harbour seals from an area with salmon is provided in Yurk and Trites (2000). Yurk, H. and A.W. Trites. 2000. Experimental attempts to reduce predation by harbor seals on out-migrating juvenile salmonids. Transactions of the American Fisheries Society 129: 1360-1366.		
DFO-25b	Some mitigation measures will be based on sound modeling. Given the time to analyze acoustic data can be lengthy, when would new “safety radii” be adopted, if the results warranted this?	Modelling for noise levels can be developed and run when detailed engineering design and construction methods have been developed. This can be completed in advance of actual construction. Once construction commences, an adaptive management approach will be applied.		
		The effects of shipping noise on fish are discussed in Volume 8, Section 4.5.2.2 (Habitat Alteration). As already discussed in this EIS section, results of studies on the effects of shipping noise on fish show mostly short term behavioural effects, and are localized, short-lived and completely reversible. Short-term effects of avoidance behaviour have been shown; however longer-term effects on distribution have not been proven (Bowles et al. 2007). Fish have been known to move out of the area when a vessel is present, and return to normal activities when the vessel has left. Handegard and Tjostheim (2005) showed that fish avoided the area approximately 15 minutes before the passage of a vessel, while Draštik and Kubečka (2005) demonstrated that, while smaller fish avoided the vessel, larger fish did not. Information on the physiological effects of shipping noise on fish is also limited (Bowles et al. 2007).		

DFO-25c	What effects would shipping noise have on key fishes? How will it be monitored and mitigated?	As was specified in the EIS, mitigation measures for fishes in the area are difficult to maintain for shipping, beyond minimizing vessel traffic in key areas. The vessels will be specifically designed to reduce noise output. Other mitigation measures to reduce noise output in both the Steensby and Milne ports, such as reduced shipping speed, and minimize engine idling at the ports, will also be employed to mitigate effects of shipping on fishes, and these have already been outlined for marine mammals such as the Ringed Seal (see Volume 8, Section 5.6). References Bowles, A., S. Graves, and T. Yack. 2007. Aquatic Noise Pollution from Oil Tankers and Escort Vessels in Prince William Sound, Its effects and impacts on the Marine Environment of the Sound - Literature Search from 1980 to Present. Report by Hubbs-SeaWorld Research Institute for Prince William Sound Regional Citizen's Advisory Council on Project 854.07.1 Draštik, V., and J. Kubečka. 2005. Fish avoidance of acoustic survey boat in shallow waters. Fisheries Research 72(2-3):219-228. Handegard, N.O., and D. Tjostheim. 2005. When fish meet a trawling vessel: examining the behaviour of gadoids using a free-floating buoy and acoustic split-beam tracking. Canadian Journal of Fisheries and Aquatic Sciences 62(10):2409-2422. There are no mitigation or monitoring measures proposed to address effects of noise on fishes.		
DFO-25d	In section 5.7.2.3 it says that "The amount of masking will be a function of how close to the ship's path the walrus is". Provide quantitative analysis to indicate how the walrus' communication space will change in response to the distance between it and the ship. [A paper by Clark et al. 2009 (Mar Ecol Prog Ser, vol. 395: 201–222) presents an analytical paradigm to quantify changes in an animal's acoustic communication space as a result of spatial, spectral, and temporal changes in background noise, providing a functional definition of communication masking for free-ranging animals and a metric to quantify the potential for communication masking. This paper may be useful.]	A quantitative analysis indicating how the walrus' (or other marine mammals') communication space would change in response to the distance between it and the ship could theoretically be performed. It would involve a number of assumptions, but the actual impact on the individuals or populations could not be determined from such a quantitative analysis. At best, such a study might provide a more realistic measure of the worst-case scenario for loss of communication space for individuals rather than assuming the more severe case of complete masking for 3 h out of every 24 h (see also Response to DFO IR #24a). The analysis would require calculating the communication space in the absence of the masking noise (ore carrier in this case) and calculating the reduction in communication space in the presence of the masking noise. The analysis would need to consider (or make assumptions regarding) the ambient noise level without the masking source, the noise level and frequency range of the masking source along with the corresponding transmission loss, the frequency and duration of masking events, the source level and frequency range of the vocal signal from the sender and its corresponding transmission loss, the density of conspecifics (potential receivers) and their distance from the sender, and the species' recognition differential (which considers the detection threshold, directionality index, and signal processing gain). There are no reliable data on almost any of the above parameters needed for useful modelling to be conducted.		

DFO-26a	Provide in-air audiograms and a description of walrus hearing abilities.	To the best of our knowledge, there is no in-air audiogram available for walrus. Kastelein et al. (1993) showed that walruses react to airborne sounds at 0.25 to 8 kHz, but absolute thresholds were not determined. The underwater hearing abilities of walrus are summarized in Section 5.4.1.3 of the EIS and provided in detail in Kastelein et al. (2002). Kastelein, R.A., C.L. van Ligtenberg, I. Gjertz and W.C. Verboom. 1993. Free field hearing tests on wild Atlantic walruses (Odobenus rosmarus rosmarus) in air. Aquatic Mammals 19: 143–148.		
DFO-26b	Provide an assessment of the potential impacts to walrus due to airborne noise resulting from Project activities.	An assessment of the effects of aircraft overflights on walruses was completed (Volume 8, Section 5.7.2.2), including a review of available information on walrus response to aircraft overflights. A meaningful quantitative assessment similar to that conducted for cetacean response to underwater noise sources is not possible given that there is no available in-air audiogram for walruses and that in-air sound levels from aircraft overflights that elicit avoidance responses by walruses are lacking. Therefore, results of a quantitative assessment of this nature would be at best speculative. The DEIS notes that Steensby Inlet is not considered an area where walruses haul out in high numbers. However, it is acknowledged (Volume 8, Section 5.7.5) that there is uncertainty about how many walruses use Steensby Inlet during the open-water period and how walruses that may occur there will respond to daily overflights of Boeing 737s during the Construction Phase. Given these uncertainties, monitoring will be undertaken as per Appendix 10D-10 at the Steensby Inlet Port site during the Construction Phase to document walrus occurrence and the potential response to site activity, including aircraft overflights.		
DFO-26c	Provide an assessment of the noise generated by jet-engine aircrafts and potential impacts to marine mammals, or provide further justification as to why jet-engine aircraft should not be included in the assessment.	The reviewer is referred to Response to DFO IR #26B regarding the assessment of walrus response to aircraft overflights in Steensby Inlet during the Construction Phase. In addition to the information provided in that response, the probable flight path of 737 jets arriving from and departing Steensby Inlet for Iqaluit were examined. The aircraft would be at an approximate altitude of 8500 m at its closest horizontal distance to Koch Island where walrus are known to haul out in relatively high numbers. It would be at an approximate altitude of 9100 m when it crosses the landfast ice edge into pack ice between Koch Island and the Baffin Island shoreline. A preliminary estimate of the sound level at the air/water surface in both these locations would be about 73 dB at the 100 Hz frequency. Noise levels from passenger jets at near cruising altitudes are almost undetectable from the ground. Walruses and other marine mammals are unlikely to respond to these noise levels.		
DFO-26d	Please provide justification to support the conclusion that hearing impairment that may last for minutes, hours or days would not pose a significant risk to a	This conclusion was not reached. As stated on p. 185 of Volume 8, walruses in Steensby Inlet are not predicted to be exposed to in-air sound levels from aircraft overflights (Boeing 737) that exceed thresholds for hearing impairment in pinnipeds (149 dB re 20 µPa (peak)(flat) or 144 dB re 20 µPa2 • s (Mpa) in air (Southall et al., 2007).		

DFO-28	would not pose a significant risk to a marine mammal in its avoidance of predators, passing ships or other potential threats.	Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene Jr., D. Kastak, D.R. Ketten, J.H. Miller, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine mammal noise exposure criteria: initial scientific recommendations. Aquatic Mammals 33(4):411-522.		
DFO-27	Text in section 5.4.1.3, it states that "harbour and ringed seals are close relatives, and hearing abilities of phocinid seals as a group appear to be similar, it has been assumed that both the underwater and in-air hearing abilities of ringed and harbour seals are similar".	Audiogram data (in water) exist for ringed seals as well as the following additional pinnipeds: harbour seal, harp seal, northern elephant seal, Hawaiian monk seal, grey seal, northern fur seal, California sea lion, and walrus (see Southall et al. 2007 for a review). There are no data on the sensitivity of ringed seals to airborne sounds. Of the species with audiometric data, available evidence indicates that the ringed seal is most closely related to the harbour seal (see Árnason et al. 1995). Additional reasons for selecting the harbour seal for comparison are that more hearing studies, including some of those considered to have produced the "highest-quality" data, have been conducted on the harbour seal than on any other pinniped species.		
	Harbour and ringed seals are ecologically different enough that it is not safe to assume they have similar communication abilities. The in-air audiograms of harbour and harp seals demonstrate they are not especially similar. The underwater audiogram for the harbour seal is noticeably different than the in-air audiogram indicating that one does not provide a close indicator of what the other will be. Provide additional references to support the assumptions identified above.	Árnason, Ú., K. Bodin, A. Gullberg, C. Ledje, and S. Mouchaty. 1995. A molecular view of pinniped relationships with particular emphasis on the true seals. Journal of Molecular Evolution 40:78-85.		
		Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene Jr., D. Kastak, D.R. Ketten, J.H. Miller, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine mammal noise exposure criteria: initial scientific recommendations. Aquatic Mammals 33(4):411-522.		