Bathurst Inlet Port and Road Draft Environmental Impact Statement (DEIS) Information Requests

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Water Quality

IR #1: Hold times for water samples

DEIS Reference: Vol. IVb, Appendices C-6 and C-8

Concern: Hold times for water samples collected during the 2001 and 2007 baseline monitoring are not mentioned. Delays in analyses may result in alterations in concentrations of nutrients and other parameters (e.g., alkalinity, conductivity, pH, turbidity, total dissolved solids, total suspended solids), therefore affecting the accuracy of baseline and predicted water quality characteristics.

Rationale: This information is required for QA/QC assessment.

Request: It is recommended that Bathurst Inlet Port and Road Joint Venture Ltd. provide the hold times (period between water collection and analyses) for water samples collected in 2001 and 2007.

Air Quality

IR #2: Air Quality Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality/Meteorological/Noise Impacts (Physical and Biological Impacts)

DEIS Reference: Section 13.1, pages 52–53; Supporting Document Volume III, B-1

Concern: The Proponent has indicated in Section 13.1 and in Appendix III that "the delivery of fuel to existing mines via the port and road will reduce emissions by replacing part of the current overland trucking route with ocean transport, which produces fewer emissions".

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: To support this evidence provide specific details of the GHG emission inventory including; i) the spatial and temporal boundaries of the inventory for both the proposed port and road option and the current overland route; ii) the absolute amounts of GHGs emitted per annum for both options; and iii) the GHG emission intensity (CO_{2eq} / tonne delivered) for both options.

IR #3: Air Quality Mitigation and Management

EIS Guideline Reference: 4.7.5 Mitigation

DEIS Reference: Section 13.1, pages 52–53; Supporting Document Volume III, B-1

Concern: The Proponent has not discussed and evaluated the effectiveness of the proposed mitigation measures and assessed the likelihood of mitigation failure and the potential severity of the consequences.

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: To support this evidence, provide specific information on similar mitigation methods used with similar projects and the degree of success achieved. All uncertainties related to the mitigation measure should be clearly described and, if possible, quantified. Discuss in detail how the four general design features and practices that will minimize CO_2 emissions will be executed.

IR #4: Monitoring Program

EIS Guideline Reference: 4.10 Monitoring

DEIS Reference: Section 13.1, pages 52–53; Supporting Document Volume III, B-1 and B-5

Concern: The Proponent states that some form of weather and climate data gathering will continue throughout the life of the Project, but does not satisfy all requirements of the NIRB Guidelines with respect to the monitoring program.

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: To support this evidence, provide specific information as required in the NIRB Guidelines (Section 4.0):

a) integration of monitoring results with other aspects of the Project including adjustments to operating procedures and refinement of Mitigation measures;
b) procedures to assess the effectiveness of monitoring programs, Mitigation measures, and recovery programs for areas disturbed by the Project;
c) methodology of evaluation of monitoring results, including thresholds levels to trigger management responses;
d) details regarding management responses; and
e) the relationship between monitoring and Environmental Management Plans (Section 4.8 of NIRB Guidelines).

IR #5: Air Quality Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: 14.2, page 53-54; Supporting Document Volume III, B-2 & B-4

Concern: The Proponent has indicated that ships up to 50,000 tonnes, barges and tugs will deliver cargo to the port during the 100 to 110 day ice-free season in July to October. The proponent has also indicated that the dispersion model scenarios were set up to represent worst-case scenarios that could occur at any point during operation or construction. The proponent states that the CALPUFF model was run only for the road operating season (January to April) because maximum air contaminant concentrations will occur during this period. Emission estimates provided by the proponent related to shipping that were not included in dispersion modelling indicate potential SO_2 emission rates ranging from 0.6 to 18 g/s per ship, while the SO_2 emission rates for the assessment scenarios applied in dispersion modelling represent SO_2 emissions of 0.031 to 0.084 g/s.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: To support this evidence provide specific details of the effects of the operation of the port facility during the ice-free period including: Update effects assessment

a) Expected emissions during the ice-free period including ship transport, manoeuvring, hotelling/cargo unloading, barge and tug operation, and all onshore port operations expected during the ice-free period.

b) Quantitative dispersion modelling to assess air quality effects of the port operations during the ice-free period including operations from ship during transport, manoeuvring, hotelling/cargo unloading, barge and tug operation and onshore port operations.

IR #6: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: Section 14.2, page 53-54; Supporting Document Volume III, B-4

Concern: The Proponent has indicated in Volume III, B-4, that the grid resolution applied in the CALPUFF modeling domain was 1.0 km by 1.0 km. Best modelling practices, such as those found in the British Columbia Ministry of Environment Guidelines for Air Dispersion Modelling in British Columbia or that of the Alberta Environment Air Quality Dispersion Model Guideline recommend minimum receptor/grid spacing in order to delineate areas of highest predicted concentration. Both of these guidelines recommend receptor spacing to a minimum of 50 m as part of a regular system of receptors as well as a minimum of 20 m along project boundaries and areas of maximum predicted concentration.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: To support this evidence, provide specific detail as to the receptor grid applied in the dispersion modelling and as to whether or not it is consistent with the best practices outlined in the British Columbia or that of the Alberta Environment Air Quality Dispersion Model Guidelines. If dispersion modelling was not completed consistent with the above requirement, please provide specific detail as to the change in predicted concentration if these best practices are followed.

IR #7: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: Section 14.2, page 53-54; Supporting Document Volume III, B-2 & B-4

Concern: The Proponent has indicated that the CALPUFF model was run only for the meteorological period of January to April of 2002 and 2003. The proponent has also indicated that construction activities and, shipping and port operation will occur outside of this January to April time period. The proponent has only completed dispersion modeling representative of meteorological conditions during mainly 24-hour darkness, stable atmospheric, winter conditions. These meteorological conditions are not representative of spring, summer and fall periods when increased mixing heights and atmospheric turbulence may cause elevated plumes to mix towards the ground more readily causing higher concentrations from certain types of emission sources.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: To support this evidence provide specific details of the following:

a) Summary of dispersion meteorology showing the seasonal variations in atmospheric stability/turbulent and mixing heights in all seasons.
b) Quantitative dispersion modelling results that incorporate the full range of meteorology representative of the full year of meteorology (winter, spring, summer and fall) that coincide with project activities.

IR #8: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: Section 14.2, page 53-54; Supporting Document Volume III, B-1 & B-4

Concern: The Proponent has indicated that the CALPUFF model was run using measured meteorological data such as wind direction and wind speed collected at an onsite meteorological weather station located near the port facility. The proponent has indicated that the average wind speed measured at the port site meteorological station was 5.7 m/s and the average percentage of calm conditions was 3.4% of the time. The proponent has also presented a summary of wind speed and direction at the Lupin and George Lake meteorological stations located much further inland. These two stations indicate average wind speeds of 4.7 and 4.8 m/s and average calms of 9.2% and 13.3% of the time respectively. Wind speeds at the inland station were observed to be 16 to 18% less than that measured at the port site meteorological station. The proponent has applied meteorological data collected at the port site for the dispersion modelling of both project activities that occur at the port site and those that occur inland along the road.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: Provide a description of the expected change in predicted maximum and average concentrations relative to the concentrations predicted for the Road Operation assessment scenario given that meteorological data collected at the port site overestimates the wind speeds and underestimates the periods of calm winds. Comment on its significance relative to the National Ambient Air Quality Objectives.

IR #9: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: Section 14.2, page 53-54; Supporting Document Volume III, B-2 & B-4

Concern: The Proponent has indicated that dispersion modelling has predicted that maximum 1-hour, 24-hour average NO_2 concentrations are predicted to exceed the National Ambient Air Quality Objectives during port construction. The Proponent has also indicated that dispersion modelling has predicted that maximum annual average NO_2 concentrations are predicted to exceed the National Ambient Air Quality Objectives during port construction and Port operation, but that “even though runtime average values exceeds the guideline, the annual average value will likely meet it”. The

Proponent has indicated a low significance associated with the predicted changes in NO_2 concentrations.

The proponent has also indicated that maximum predicted 24-hour TSP concentrations are predicted to exceed the Nunavut Ambient Air Quality Guideline during Road Operation. The Proponent has indicated a moderate significance associated with the predicted changes in TSP concentrations.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: To support this evidence provide specific details of the following:

a) Provide additional detail such as the frequency and meteorology typical of predicted exceedance of the 1-hour and 24-hour National Ambient Air Quality Objectives or Nunavut Ambient Air Quality Guideline for NO_2 and TSP in hours or days per year during Port Construction.
b) As the simplified assessment method indicated potential for annual average NO2 concentration greater than the National Ambient Air Quality Objectives, provide revised predicted annual average NO_2 concentrations that more realistically account for the changes in project emissions and meteorology over the calendar year.

IR #10: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality / Meteorological / Noise Impacts (Physical and Biological Impacts);

DEIS Reference: Section 14.2, page 53-54; Supporting Document Volume III, B-4

Concern: The Proponent has indicated that acid deposition is another potential air quality effect to consider for the Project. The proponent also indicated that use of ultra low sulphur diesel fuel will result in negligible SO_2 emissions and that acid deposition derived from sulphate formation is therefore limited. It is also stated that the formation and kinetics of nitric acid deposition are not well understood and due to uncertainty are not included in the air quality model study.

Rationale: In order for NIRB to assess the comprehensiveness of the air effects assessment, additional information is required.

Request: To support this evidence provide specific details of the following:

a) Compare the annual SO_2 emissions from all shipping related activity which was excluded from dispersion modelling to that of the emission source included in the dispersion modelling and effects assessment.
b) Given the emission estimates in part a) of this question, please confirm that SO_2 emissions from this project are negligible.
c) Given that the majority of SO_2 emissions from shipping occur in summer when precipitation is greatest, please provide specific detail or references to confirm that sulphate formation would be limited.
d) Given that estimates of nitric acid deposition are routinely performed as part of most air quality model studies for similar projects and that the CALPUFF model has a simplified routine to assess atmospheric chemistry and deposition of NO_x emissions, please provide specific detail or references to support the conclusion that model uncertainty prevents the proponent from quantitative estimates of acid deposition.

IR #11: Monitoring Program

Issue: Monitoring Program

EIS Guideline Reference: 4.10 Monitoring, Evaluation

DEIS Reference: Section 14.4, page 55; Supporting Document Volume III, B-2 & B-4

Concern: Dispersion modelling predicts exceedances of the National Ambient Air Quality Objectives and Nunavut Ambient Air Quality Guidelines for both TSP and NO_2. However, the Proponent does not propose any ambient air quality monitoring during construction and operation of the Port and Road.

Rationale: In order for NIRB to assess the comprehensiveness of the monitoring program, this information is required.

Request: To support this evidence, provide the following:

a) Please provide additional detail as to why some form of ambient air quality monitoring for TSP and NO_2, both of which dispersion modelling simulations predicted exceedances of the National Ambient Air Quality Objectives and Nunavut Ambient Air Quality, is not proposed.

Noise Management

IR #12: Environmental Setting

EIS Guideline Reference: 4.6.2.4 Air Quality and Noise

DEIS Reference: Appendix B-3, pages 2–4

Concern: The Proponent presents background sound level data that are not relevant to the Local Study Area,. For determining the background sound level in the areas of concern, an assumption of Leq (24 hours) was made based on collected data at different sites. Background noise should be measured at site and quantified in various terms, not assumed.

Any noise impact assessment should consist of fundamental information that can help determine the accuracy of the results and help provide realistic conclusions and valid recommendations. These necessary noise assessment fundamentals are not included in this study under review and should include an applicable noise level criteria for planning along with recently measured background sound level data and acoustic modeling of future noise levels at representative receptor locations in the vicinity of the project.

Rationale: In order for NIRB to assess the comprehensiveness of the consultation efforts, this information is required.

Request: Provide background sound level measurements representative of Bathurst Inlet, the road, and the shipping route These measurements should be capable of describing the existing conditions of the acoustic environment before the start up of construction, and before the beginning of operations of port and road.

IR #13: Methodology

Issue: Methodology

EIS Guideline Reference: 4.7.3.3 Air Quality/Meteorological/Noise Impacts (Physical and Biological Impacts)

DEIS Reference: Appendix B-3.1, pages 4 and 5

Concern: The Proponent has used guidelines that are suitable for oil and gas utilities in Alberta but are not suitable for the assessment of traffic noise and complex port projects. A specific acoustic model for this project has not been completed.

Rationale: In order for NIRB to assess the comprehensiveness of the consultation efforts, this information is required.

Request: Provide construction noise models for the road and the port to quantify the noise impact on the environment due to construction. Also, provide operations noise models for the road and the port to predict the increase of noise level in the environment. Should there be any excess above a noise criteria limit, then mitigation measures are to be specified in the models.

IR #14: Effects Assessment

Issue: Effects Assessment

EIS Guideline Reference: 4.7.3.3 Air Quality/Meteorological/Noise Impacts (Physical and Biological Impacts)

DEIS Reference: Appendix B-3.1, pages 5–8

Concern: The Proponent uses impact rating values that are not contained in Guideline 38-Noise and does not reflect the response of humans to noise and vibration.

Rationale: In order for NIRB to assess the comprehensiveness of the consultation efforts, this information is required.

Request: To establish the magnitude of noise excess above the pre-existing ambient sound level and the rating in terms of human response to noise increase in the environment, provide an acceptable provincial or federal noise rating criteria. It is suggested here that the magnitude of noise problem be established based on accepted human response to noise increase in the environment. The rating criteria should be based on a generally-accepted rating and magnitude of noise problem, similar to the Ontario Ministry of the Environment well-established methods to determine the representative magnitude and the rating.

Trans-boundary Effects

IR #15: Potential Effects of the Project Outside of Nunavut

EIS Guideline Reference: 2.2.2 Spatial Boundaries

DEIS Reference: Volume I, Section 33, Volume II - Report A5- Effects Assessment Methodology, Volume VIII – Report G-3 Trans-boundary Effects Analysis

Concern: Individual VECs effects analysis treats the trans-boundary nature of the geographic extent of residual effects in an inconsistent manner, resulting in at least one VEC with a residual trans-boundary effect not being reported in the trans-boundary effects analysis. As a result of inconsistent application of methodology the potential for additional unreported residual trans-boundary effects exists.

Rationale: The Trans-boundary Effects Analysis (Document G-3, Volume VIII) documents the proponent's assessment of potential trans-boundary effects resulting from the project. Table 6.4.1 in the Effects Assessment Methodology (Document A-5 Volume I) states that the geographic extent of a residual effect will be rated as **trans-boundary** if the effect extends beyond Nunavut. Accordingly, the effects assessment for each VEC or VSEC includes a spatial or geographic analysis. Some effects assessments refer to a residual effect being trans-boundary whereas others refer to the effect occurring in the Local or Regional Study Area. The proponent has identified the following VECs or VSECs subject to potential trans-boundary effects: caribou grizzly bears, wolves, migratory birds, marine mammals, air quality and climate change, and social and economic. As wolverine is attributed the same geographical rating as caribou, it is not clear why the residual effect for wolverine has not been carried forward to the trans-boundary effects analysis. Given the inconsistent application of the trans-boundary ratings in the effects analysis there is potential for additional VECs or VSECs to have a trans-boundary residual effects and not be reported in the trans-boundary effects analysis.

Request: The proponent is requested to review the geographic extent rating criteria for all VECs and VSECs where a residual effect is identified, confirm where there is a trans-boundary geographical extent and carry all residual trans-boundary effects forward to the trans-boundary effects analysis.

Project Alternative

IR #16: Alternative Methods of Carrying out the Project

EIS Guideline Reference: 4.4.1

DEIS Reference: Volume I, Section 5.6, Volume II- Report A2- Feasibility Study Sections 2.3 and 5.2, Volume VIII, Report G-1 Project Alternatives Report

Concern: The proponent has carried forth a discussion of the 3 highest rated alternatives of the 17 alternatives for transportation to the SGP reported by EBA. Rationale for the selection of the BIPAR project over the other options is provided. Additionally, the review of alternative road alignments is well documented and the rationale for selection of the preferred route is provided. However, while design requirements for the port are identified, an analysis of alternative locations has not been provided in the DEIS or supporting documents.

Rationale: The EIS Guideline requires the proponent identify alternatives to the project and alternative methods to carry out the project. The proponent is also required to provide the rationale for selection of the preferred alternative and rejection of others.

Request: The proponent is requested to outline the alternative port locations considered and rationale for the selection of the preferred site in comparison to other locations.

Legislation and Regulation

IR #17: Legislation Applicable to the Project

EIS Guideline Reference: 4.2 Regulatory Context

DEIS Reference: Volume I, Section 10

Concern: The proponent has identified most legislation applicable to the project in Section 10 of the DEIS, however legislation or regulations applicable to wildlife (which are documented in the Wildlife Mitigation and Management Plan of the Wildlife Effects Assessment, Document D3) is not referenced

in this section. Additionally, the Spill Contingency Planning and Reporting Regulations under the Nunavut *Environmental Protection Act* are not referenced in the DEIS.

Rationale: The EIS Guideline requires the proponent to identify all federal and territorial and related laws that require compliance in respect to the Project. The proponent is also required to provide a list of currently held permits and licences.

Request: The proponent is requested to identify all territorial legislation with which the project must comply.

Wildlife

IR #18: A reference is given to an Appendix 1 for full results of the species search

DEIS Reference: Vol. 5a, Section 2.3.3

Concern: The list of species identified as *unlikely* and *very unlikely* in the project area is not provided in Appendix 1. This appendix may be misidentified or misplaced.

Rationale: In order to assess the appropriateness and value of the species categories, the full results of the species search is required.

Request: The GN recommends that Bathurst Inlet Port and Road Joint Venture Ltd. provide the missing appendix.

Cumulative Effects

IR #19: Climate

EIS Guideline Reference: 4.7.2 Cumulative Effects Assessment; 4.7.3.3 Air Quality / Meteorological / Noise Impacts

DEIS Reference: Section 35.3, page 124; Supporting Document Volume VIII, G-5, 3-1 to 3-2

Concern: The Proponent has indicated in sub-section 35.3.2 (Climate) that that the delivery of fuel to existing mines via the Project facilities may reduce GHG emissions by replacing part of the current over-land trucking route with ocean transport, which is less emissions intensive. They also state that a "complete life-cycle analysis of diesel fuel produced for, shipped to and used by the existing mines would be required to quantify the potential reduction in emissions.".

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: To support this evidence, incorporate the findings of Climate IR #1 (same issue) into this cumulative effects assessment.

IR #20: Air Quality

EIS Guideline Reference: 4.7.2 Cumulative Effects Assessment; 4.7.3.3 Air Quality / Meteorological / Noise Impacts

DEIS Reference: Section 35.3, page 124; Supporting Document Volume VIII, G-5, 3-2 to 3-4

Concern: There is a lack of quantitative analysis supporting the conclusion that the magnitude of potential air quality effects will increase in proportion to future increases in truck traffic and shipping. While the expected increases in traffic is stated, there is no dispersion modelling to support the conclusions. There is also a failure to support conclusions respecting the air quality effects of the project vs. the potential increase in traffic on the current overland route.

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: To support the conclusions respecting the magnitude of potential future air quality effects and the conclusions respecting the project effects vs. the current overland route provide i) dispersion modelling results for the cumulative effects case, and ii) an annual emission estimate for all substances of concern comparing the project effects vs. the current overland route.

IR #21: Noise

EIS Guideline Reference: 4.7.2 Cumulative Effects Assessment; 4.7.3.3 Air Quality / Meteorological / Noise Impacts.

DEIS Reference: Section 35.3, page 124, Supporting Document Volume VIII, G-5, 3-4 to 3-6

Concern: The Proponent presents evidence that increased traffic volumes on the road and near the port facility may result in increased 24-hour average and maximum noise levels, but will not exceed the guideline value of 40 dBA. They do not present quantitative evidence such as site-specific noise modelling for the operations and future cases to support specific conclusions.

Rationale: In order for NIRB to assess the comprehensiveness of the environmental effect assessment, this information is required.

Request: Provide operations noise models for the road and the port for the operations and future cases to predict the increase of noise level in the environment. Should there be any excess above a noise criteria limit, then mitigation measures are to be specified in the models.

Spill Contingency Planning

IR #22: Spill Planning and Response

DEIS Reference: Vol. I, Environmental Effects Assessment, Section 34, Volume VIII, Appendix G-4 “Environmental Management Plan for Road, Port, Camp and Shipping

Concern: The project is being proposed to provide transportation alternatives for the shipment of approximately 3 million tonnes of fuel and operating supplies annually. The project will involve the use of ocean going ships, barges and trucks to transport the material, requiring the storage and multiple transfer of significant volumes of fuel and dry goods. While the proponent will own and operate the

infrastructure, third parties will own the fuel and operational supplies and contractors will be hired to transport the fuel and supplies. Multiple parties and interests are involved during the operational phase, responsibility for spill planning and response need to be clearly established and communicated

Rationale: While detailed Spill and Emergency Response Plans can be prepared during the permitting stage, responsibilities need to be confirmed during the environmental review.

Request: It is recommended that Bathurst Inlet Port and Road Joint Venture Ltd. clearly document responsibilities for spill planning and response for all activities and phases of the project.

Waste Management

IR #23: Sewage Sludge Management

DEIS Reference: Vol. I, Environmental Effects Assessment, Section 7.3, Volume VII, Appendix A3-Feasibility Study, Sections 4 and 6.

Concern: The method of managing sewage sludge has not been confirmed by the proponent. The proponent intends to use prefabricated sewage treatment plants at both the port site and Contwoyto Camp during construction and operation phases. Discharge of treated effluent will be to the marine and freshwater environment, respectively. The terms of reference requires documentation of how sewage sludge will be managed. On Page 4-49 of Document A3, the proponent states " Sludge from the STP will be removed to a suitable storage facility approximately every 2 months." The DEIS does not provide an indication of what is a suitable storage facility or what volume of sludge will be generated.

Rationale: The assessment of potential effects of sewage sludge management cannot be completed until the volume of sludge method of management is identified.

Request: It is recommended that Bathurst Inlet Port and Road Joint Venture Ltd. clearly document the method for managing sewage sludge.

IR #24: Solid Waste Management

DEIS Reference: Vol. I, Environmental Effects Assessment, Section 7.3, Volume VII, Appendix G4 Environmental Management Plans, Section 7.

Concern: Management of solid wastes from the project is not documented. The EIS Guidelines required the proponent to document how all types of waste will be handled, stored, transported and disposed of. The DEIS does not address this requirement. Section 7 of Document G4 provides some general direction on waste management but does not present a Waste Management Plan. The volumes, types and waste disposal methods are not identified in the DEIS or supporting documents.

Rationale: The project has the potential to generate a variety of wastes during construction and operational phases. Proposed volumes, types and methods of managing the wastes should be identified to enable a full assessment of potential effects.

Request: It is recommended that Bathurst Inlet Port and Road Joint Venture Ltd. clearly identify the volume, types and locations of waste generated during each phase of the project and the proposed methods for managing the waste.

Hazardous Materials

IR #25: Hazardous Materials Management

Issue: Hazardous Materials Management has not been addressed in the DEIS

DEIS Reference: Vol. I, Environmental Effects Assessment, Section 7.3,

Concern: The EIS Guidelines require the proponent to identify the types and volumes of hazardous materials to be used or produced during the project. Additionally, a Hazardous Waste Management Plan was to be prepared. The proponent has addressed the main hazardous material to be stored and transported during the project, diesel fuel, but has not identified what other hazardous materials may be used/generated/transported, etc.

Rationale: The project has the potential to use/produce/transport a variety of hazardous materials during construction and operational phases. A full assessment of potential effects requires understanding of the types and volumes of hazardous materials involved and methods to manage them.

Request: It is recommended that Bathurst Inlet Port and Road Joint Venture Ltd. clearly identify the volume and types and hazardous materials involved in the project and management strategies to mitigate potential environmental effects.

Socio-Economic Issues

IR #26: Work Rotations

Reference:

Draft Social and Economic Impact Assessment (SEIA), Section 4: Page 10

Issue:

In the section *Effects Assessment* under *Effect Statement: Potential for rotational work schedules to disrupt aboriginal family unit/cohesion* it notes that the workforce rotation would be based on two weeks on, two weeks off format based on the current industry norm for Nunavut and Northwest Territory mining developments. While it is understood that this rotation is current industry standard it would be interesting to know if the Proponent considered other workforce rotation options for this project or consulted with individuals in the region in terms of the format of the rotation.

Recommendation:

The Proponent should provide some details on whether other workforce rotations were considered and whether consultation on the proposed workforce rotation occurred in the region.

IR #27: Area of Influence

Reference:

Vol. I, Page xvi

Issue:

In the section *Socio-economics* it notes that 15 communities within Nunavut and the Northwest Territories may be affected by the project. Further analysis throughout the DEIS notes various ways that these communities may be impacted by the development of the Bathurst Inlet Port and Road. It should be noted that for certain aspects of the project this area of influence may need to be expanded as there will be impacts on other communities, outside of these 15, that will be impacted. In particular, employees will come from other communities outside of the 15 noted and thus impacts will be felt in these origin communities.

Recommendation:

In the course of outlining the impacts of the project in the DEIS the Proponent should consider increasing the area of influence for certain aspects of the project.

IR #28: Treatment of Mining Developments in the Framework of the Project

Reference:

Vol. I, Page xix

Issue:

In the section *Socio-economics* it notes that "it is predicted that proposed and potential future developments including Gahcho Kue, Hackett River, Hope Bay deposits and Izok Lake will use the Project facilities to import supplies and export products." On what basis does the Proponent make the inference that these projects will actually use the Bathurst Inlet Port and Road facilities? Has the Proponent has discussion with the Proponents of these potential mining developments? Given imperfect information related to the nature of how these projects might use BIPR facilities, the timelines of these proposed projects and activities associated with these projects it could call into question assumptions associated with BIPR development.

Recommendation:

The Proponent should provide details on the information that was used to determine what projects might use BIPR facilities and what project's development might be positively impacted by BIPR development.

IR #29: The Proponent's Industrial Benefit Commitments are Limited and Unclear

Reference:

Vol. VII, Appendix F-7: Page 36/4

Issue:

Community economic development and the evolution of local and regional economies have been identified as important local concerns, and Wage Employment Opportunities and Economic Development is one of the assessment VSECs. Industrial benefits planning (respecting, for example, bid packaging, the arrangements for providing local companies with timely information about requirements and procurement processes, and any local preference policy) will be a key contributor to success in delivering local and regional economic benefits. However, the draft assessment provides limited operations phase-only discussion of the business opportunities and the Proponent's commitments respecting delivering local opportunities.

Recommendation:

The Proponent should provide a concise list of its construction and operations phase industrial benefits planning commitments in the DEIS in order to assess the Proponent's commitment to, and likely success in, delivering local business benefits.

IR #30: Impacts on Nunavummiut

Reference:

Vol. VII, Socio-economic Impact Analysis

Issue:

The socio-economic analysis in the DEIS does not clearly outline the socio-economic costs and benefits that could accrue to Nunavummiut. The DEIS often presents the costs and impacts in terms of Nunavut and the Northwest Territories combined.

Recommendation:

The Proponent should include more discussion of the impacts on Nunavut solely as this is of most importance for the purposes of the Government of Nunavut's review.

IR #31: Rationale for 20-Year Project Life

Reference:

Vol. I: Page 5

Issue:

The discussion under the section *Project Cost and Schedule* notes that the analysis is done on a project-life of 20 years.

Recommendation:

The Proponent should provide some rationale for why only a 20-year life of project was used for the analysis when intuitively one might expect the time-frame of study for this road and port project to be longer.

IR #32: Insufficient Use of Literature on the Socio-economic Effects of Northern Resource Development and Infrastructure Projects

Reference:

Volume VII, F-8 Page 769 (and References), F-9 Page 844 (and References)

Issue:

A review of references listed in the supporting documents for the Proponent's Social and Economic Assessment suggests that it has made only limited use of the extensive documents currently available on the socio-economic effects of northern resource development and infrastructure projects. The 2006 Review of Socio-economic Impacts states that in identifying and assessing VSECs of the Project, it made use of, among other things, a "comparative analysis of socio-economic reports for comparable projects impacting the same communities such as Doris North." Yet, the only report it cites is the analysis prepared for the Doris North project. Similarly, the 2003 Review of Socio-Economic Dimensions states that: "Based on the experiences in other northern areas, it is known that projects of this nature have certain known human and financial costs on families, community life and the demands for public services." However, it cites only one study undertaken for the National Round Table on the Environment and the Economy in support of its assessment of the potential impacts of the Project.

Recommendation:

The Government of Nunavut needs to be assured that the Proponent has adequately reviewed and taken into account the experiences of other northern development projects in assessing the effects of the proposed BIPR Project on the key VSECs that it has identified in its Social and Economic Impact Statement. As such, the Proponent should conduct a more comprehensive review of the existing literature on the socio-economic effects of northern developments and provide an accessible summary of its main findings. Particular attention should be given to concerns that have been raised about the socio-economic effects of developments similar to the proposed BIPR Project, as well as to the various policies, programs and initiatives that have been undertaken to address them.

IR #33: Requirement for a More Detailed Analysis of Project Impacts

Reference:

Vol. II, A-4; Vol. VII, F-2 Subsections 4.2.2 and 4.2.3, F-8 Page 30

Issue:

The Draft Social and Economic Impact Assessment identified a number of potential cultural and social effects from the BIPR Project anticipated for Nunavut communities. It also highlights the need for various mitigation measures to address these effects; these will be undertaken by the Proponent working together with other public and private agencies. Concerns about increased "strains on community services" and about "community preparedness" are articulated in the Proponent's *Report on Community Consultation* and in the 2006 *Report on Socio-economic Impacts*. But, beyond this, the analysis gives little attention to the Project's effects on the programs, services and institutions that will be responsible to deal with social issues arising at the community and regional levels during its

construction and operations phases. It says very little, in particular, about the capacity of existing programs and institutions in Nunavut communities to address the effects that may be generated by the proposed Project.

Recommendation:

The Proponent should prepare a more detailed analysis of the effects of the BIPR Project on community programs, services and institutions. Particular attention should be given to the ability of community institutions to effectively address the cultural and social impacts resulting from this Project.

IR #34: Requirement for More Analysis of Traditional or Land-based Harvesting

Reference:

Vol VII, F-2 ss.4.2.2 Pages 4-13 to 4-15, ss. 4.2.3 Pages 4-21 and 4-27; F-8 Pages 48-51 and Pages 87-89, F-9 Pages 15-17.

Issue:

The *Social and Economic Impact Assessment* discusses potential effects of the BIPR Project on "traditional pursuit skill levels" and on "participation rates in traditional pursuits" among residents of impacted Nunavut communities. Supporting documents briefly analyze the role of the "traditional economy" in the so-called mixed economy which currently supports Nunavut communities. However, this assessment fails to deal with the traditional economy or traditional activities in an integrated or holistic fashion. It neglects the crucial role of households and extended families in structuring the harvesting activities of community members, and of ensuring the coordination and distribution of income and other economic benefits from subsistence and commercial harvests. Also, it doesn't incorporate the findings of the extensive literature on the traditional or land-based economy in Nunavut, in particular, the detailed analyses of the dynamics of this economy, the conditions making for its viability, its contribution to household income, and its function in sustaining Inuit culture.

Recommendation:

The Government of Nunavut will be unable to adequately assess the Proponent's predictions about the effects of the BIPR Project on traditional activities in Nunavut communities until it is provided with a more detailed account of the dynamics of and role played by the traditional economy in Inuit community life. As such, the Proponent should prepare a more detailed and comprehensive analysis of the continuing role of the traditional economy in Nunavut communities, with attention to the crucial part played by households and extended families in structuring this economy. In undertaking this analysis, the Proponent should make use of the growing literature on the land based or traditional economy in Nunavut.

IR #35: Access Control and Monitoring Program for the Road

Reference:

Vol. 7, Appendix F-2; Appendix 1 (No. SE-NU-O-14)

Issue:

It is unclear how the Proponent (or any other entity which may seek an investment in the project in the future) will control access to the proposed road and continuously monitor tourist use of the road at the Contwoyto Camp, including the intended activities of tourists in Nunavut. Access to the road includes both the use of the road itself as well as crossing the road by foot/skidoo etc. In addition, it is unclear as to the nature of conditions that will be requested in any permit that may be issued to for the road. Of the 211 km of the proposed road, 82 km passes over Inuit Owned Lands and 129 km crosses Crown land.

The proposed access control and monitoring program may effectively eliminate the potential for locals and tourists to use the road throughout the entire year, potentially having a great impact on tourism and other activities in the region.

Recommendation:

The Proponent should describe in greater detail their proposed access control and monitoring program including the provision of additional information regarding the importance of an access control and monitoring program to the stakeholders consulted. In addition, it is recommended that the Proponent describe the nature of conditions that will be requested as part of the permitting process for the road. Depending upon the scope of the proposed access control and monitoring program, there may be additional jurisdictional questions that need to be addressed.

IR #36: The Need for Additional Wildlife Officers

Reference:

Vol. 7, Appendix F-2; Appendix 1 (No. SE-NU-O-14)

Issue:

The extent of consultation regarding the proposed solution of hiring of additional Wildlife Officers to patrol during prime hunting season is not described in the DEIS. Hiring additional Wildlife Officers will imply a budgetary commitment on the part of the GN that needs to be addressed. The extent of the current documentation on consultation does not indicate that these discussions have occurred. In order for the GN to assess its ability and/or willingness to support this proposed solution further information is required.

Recommendation:

It is recommended that the extent of these consultations and their outcomes be included in the consultation summary portion of the DEIS.

IR #37: Need for Tourism-related Discussion in the Baseline Report

Reference:

Vol. 7; Appendix F-7; Page 32

Issue:

Many communities within the area of influence have identified growth in the tourism industry as a goal for local economic development initiatives. Without an understanding of the extent to which the tourism industry is currently operating in Nunavut, the potential implications of the proposed project on the tourism industry cannot be determined.

Section 1.3.1 in Volume 7; Appendix F-7 identifies that the baseline report will consider tourism. Section 1.3.10 in Volume 7; Appendix F-7 notes that "Nunavut is focusing on the diversification of the economy through tourism", and includes a listing of popular tourist attractions within the area of influence. However there is little qualitative and no quantitative tourism-related information in the baseline report.

Recommendation:

It is recommended that baseline conditions for the tourism industry be described in greater detail and included in the DEIS and that the comprehensiveness of the impacts assessment portion of the DEIS be re-evaluated in the context of this information.

IR #38: Impacts on Local and Regional Transportation Patterns

Reference:

Section 5.3 "Implications for Regional and Territorial Transportation Networks". Abridged Feasibility Study, Document A3, Section 3.0 Port and Road Users. Socio-Economic Assessment, Document F2.

Issue:

The DEIS and supporting documents do not clearly state the changes to the existing transportation patterns on either the barge service or traffic patterns on the Tibbit to Contwoyto Winter Road that will result from the project or present an analysis of potential impacts to existing transportation systems and patterns.

Section 5.3 of the DEIS acknowledges difficulties with the Tibbit-Contwoyto Winter Road and benefits provided by the project; however an analysis of transportation pattern shifts is not presented. Tables 3.4-1 and 3.5-1 in the Abridged Feasibility Study appear to indicate that all diesel fuel and operating supplies currently being delivered by existing barge and winter road infrastructure will be delivered through the project. Section 3.5 states that only 10% of operating supplies to Nunavut communities will be delivered through the project with the remainder being transported on the existing barge system.

Recommendation:

The Proponent should provide an analysis of the potential impacts to local and regional transportation pattern shifts resulting from the project.

IR #39: Impacts on West Kitikmeot Barge Service

Reference:

Section 5.3 “Implications for Regional and Territorial Transportation Networks”. Abridged Feasibility Study, Document A3, Section 3.0 Port and Road Users.

Issue:

Removing 100% of the diesel and approximately 10% of operational supplies to the annual load shipped on the West Kitikmeot barge system is expected to have some impact to the viability and current level of barge service. Reduced freight volumes could affect tariff rates, frequency of service and ongoing employment from barge operations. An assessment of potential impacts to the existing barge service is necessary, especially as it is proposed to continue to fulfill a vital service after the project is implemented.

Section 5,3 of the DEIS states the project would not remove the need for the regular community barge resupply system from the south; however details on potential impacts to freight costs, schedules, locations of goods purchasing and potential effects on employment of barge network employees are not provided. This issue is not addressed in the Socio-Economic Effects Assessment (Volume VII, Document F2).

Recommendation:

The Proponent should provide an analysis of the potential impacts from the project to the West Kitikmeot community barge system addressing issues including future freight tariffs, schedules and employment.

IR #40: Cumulative Impacts on Traditional Land Use Patterns

Reference:

Vol. VIII, Report G-5, Sub-section 18.7.4, Page 11-7; Vol. VII. F-2, Sections 4.2.2 & 4.2.3, Pages 4-15 and 4-31

Issue:

The Proponent’s Cumulative Effects Analysis states: “Increased mineral development in the West Kitikmeot region of Nunavut facilitated by the Project will limit the traditional land use of the aboriginal groups within the cumulative effects assessment area of influence…although the Project does not itself encroach on land used by the Aboriginal populations, future mineral developments will create a much larger footprint that may encompass traditional lands.” It also highlights increased risks to water and air quality from ARD, sedimentation of aquatic ecosystems, and dust. However, the Proponent doesn’t address how these potential cumulative impacts will be mitigated, monitored or managed, or the role that it will play in undertaking these functions—either on its own or in cooperation with other parties. This is in contrast to other sections of the Cumulative Effects Analysis that specifically deal with issues of mitigation and monitoring.

Recommendation:

The Proponent should provide details on how it proposes to participate in mitigating, monitoring and managing the cumulative impacts of future developments “facilitated by the Project” on traditional land use patterns in the West Kitikmeot. The Proponent should also be required to link this additional analysis to its treatment of impacts on local Inuit land use patterns in its Social and Economic Impact Assessment.

IR #41: Direct Employment Opportunities

Reference:

Vol. 2, Appendix A-2, Sections 2.6.4 and 2.7.4.

Issue:

Employment and job opportunities have been identified as important community concerns, and Wage Employment Opportunities and Economic Development is one of the assessment Valued Social and Economic Components. The current direct employment information does not provide the basis for assessing the project’s effects.

Recommendation:

The Proponent should provide lists of the occupations (by NOC code) required by the project during the construction and operations phases, indicating the annual person-years of employment (for construction) and the average annual person-years of employment (for operations) involved.

IR #42: Local Wage Employment Estimates

Reference:

Vol. 7, Appendix F-2; Pages 12/4 and 24/4

Issue:

Employment and job opportunities have been identified as important community concerns, and Wage Employment Opportunities and Economic Development is one of the assessment VSECs. The draft assessment provides limited baseline information, asserts that certain numbers of direct jobs will be created, and states Inuit employment targets. No information is provided in support of the direct job creation numbers or Inuit employment targets, or the likelihood that they will be achieved, and it is not clear how or whether the project employment requirements (including the types and duration of employment) have been taken into account.

Recommendation:

The Proponent should provide estimates of the local direct wage employment resulting from the project construction and operations, and describe the basis for these estimates.

IR #43: Employment Multiplier Effects

Reference:

Vol. 7, Appendix F-2; Page 12/4 and 24/4

Issue:

Employment and job opportunities have been identified as important community concerns, and Wage Employment Opportunities and Economic Development is one of the assessment VSECs. The draft assessment provides limited information on the project's 'spin-off' effects and how they have been assessed.

Recommendation:

The Proponent should provide estimates of the amount and broad types of local indirect and induced employment resulting from the project construction and operations, including the basis for these estimates.

IR #44: Training Commitments

Reference:

Vol. 7, Appendix F-7; Page 24/4

Issue:

Employment and job opportunities have been identified as important community concerns, and Wage Employment Opportunities and Economic Development is one of the assessment VSECs. Training will be a key contributor to success in achieving local employment targets. However, the draft assessment provides no discussion of construction phase training and unclear commitments with respect to operations phase training.

Recommendation:

The Proponent should provide a concise list of its construction and operations phase training commitments in the DEIS.

IR #45: Statistical Socio-Economic Data and References

Reference:

- DEIS Volume 7, Appendix F-2 Socio-economics Effects Assessment, Appendix 2;
- DEIS Volume 7, Appendix F-7 Socio-economics Baseline Studies; all tables and charts
- DEIS Volume 7, Appendix F-9 Review of Socio-economic Dimensions of Bathurst Port and Road Project, Chapter 2, footnotes referring to Statistics Canada data, all tables and charts referring to Statistics Canada data.

DEIS Volume 7, Appendix F-10 The Economic Benefits for Nunavut and Canada; all tables and charts

Issue:

Some socio-economic statistical information was not well sourced in the text, charts, tables, footnotes and reference lists. In order to review the appropriateness and the correctness of the statistical information included in the DEIS and the FEIS, it is very important that detailed information about the data sources used be provided.

Recommendation:

The proponent should provide detailed sourcing for the data in the text, charts, tables, footnotes and reference lists. It is especially true for data sourced to Statistics Canada where a great amount of survey data is available. The name of the survey and the year of that survey, along with a catalogue number or CANSIM table number should be indicated (e.g., Statistics Canada, 2001 Aboriginal Peoples Survey, Catalogue # XXX). It is not sufficient to put only the website link. These links could change in the future or could already have changed. It would also be time consuming to verify each link to determine which survey was used.

IR #46: Survey conducted on behalf of the proponent

Reference:

DEIS Volume 7, Appendix F-9 Review of Socio-economic Dimensions of Bathurst Port and Road Project, Section 3.2, pages 35 to 49.

Issue:

The proponent indicates that a questionnaire was administered in two communities, the results of which were provided in volume 7, Appendix F-9, section 3.2 of the DEIS. Some information and results were provided for the communities of Cambridge Bay and Kugluktuk. There is little information regarding the methodology used to conduct this survey and the quality of the data.

Recommendation:

The proponent should provide the methodology for the above-mentioned survey (e.g., sampling method and size), explain why the survey was conducted only in two communities, and provide information on how the data was processed and weighted as well as information on the data quality (e.g., response rates, data limitations to take into consideration).

Heritage Resources

IR #47: Up-to-date Archaeological Resource Surveys

Reference

DEIS Vol. VII, Section 4.2 and 4.5

Issue

In these sections there is reference to archaeological work being conducted in 2000 and 2001 as well as possible some work being conducted in 2002. There are references to the fact that development plans for disturbance at these times were not finalized. All potential areas of disturbance must be finalized and reviewed for archaeological resources before it can be said that the area has been adequately investigated from and an archaeological perspective.

Recommendation

It is recommended that the proponent compare 2000, 2001 and 2002 development plans with the most up to date development plans and clearly indicate if all disturbance areas have been surveyed or evaluated for their archaeological resources.

IR #48: Status of Work on Archaeological Sites

Reference

DEIS Vol. VII, Table 5.2.1 (p. 5-4), Section 6

Issue

Table 5.2.1 list the archaeological resources found within the project area. The last column makes mitigation recommendations; for those entries that indicate "Further Study" it is unclear what if any action has been taken.

Recommendation

It is recommended the proponent provide information about the status of work on archaeological sites for which the archaeological recommendation is "Further study" even if the response to this is the regulator (CLEY) did not approve the work. The proponent also indicates that final field work will be done the prior to road construction, what plans are in place for this work to be conducted.

IR #49: Protection of Archaeological Resources

Reference

DEIS pp. 5-6, 5-7

Issue

The proponent acknowledges that the project with increase human activity in the areas where the archaeological resources are located. Indication as to what the proponent will do in order to assist with the protection of these resources is unclear.

Recommendation

It is recommended that the proponent consider ways in which it could assist with the protection of these sites from human distance.