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5510-5-11

May 10, 2004

Ms. Stephanie Briscoe
Executive Director
Nunavut Impact Review Board
PO Box 2379
Cambridge Bay, NU. X0B 0C0

Via e-mail

Dear Ms. Briscoe

Re: Information Request (IR), Doris North Project, Miramar Hope Bay Ltd.

In the course of our ongoing review of the information supplied by Miramar Hope Bay Ltd., INAC has identified a number of questions that were not addressed to our satisfaction, in Miramar's final submission of April 30. INAC is herewith, providing NIRB with a list of information requests. At this time, INAC would like to advise NIRB that, at the time of writing this letter, our expert advisors continue to identify further information gaps for which additional IRs are justified. Unfortunately, due to the May 10 deadline, we are unable to include these IRs in this letter. As such, INAC will have to incorporate these questions into our final hearing submission.

Before commencing, INAC wishes to advise NIRB that, INAC will be working on compiling our reviewers' final technical comments within a couple of days and thus will not be in a position to incorporate into our hearing submission, or to discuss at the hearings, any information provided by the proponent subsequent to the April 30 deadline. This includes any information provided by the proponent in response to the attached information requests and any new information provided by the proponent at the hearings. Obviously, this will detract from our ability to provide NIRB with a complete technical review of some of the environmental and socio-economic impacts of the Doris North project at the hearings. We would be prepared, given the opportunity, to thoroughly review any information provided by the proponent subsequent to April 30, and provide our comments, in writing, by a later date mutually-agreed upon by the various parties to this process.

In light of the letter dated February 19, 2004 from the Executive Director to the proponent and the IRs that have been submitted to date, it is important for INAC to learn as soon as possible for planning reasons whether the Board will be going ahead with the hearings as proposed.

In the meantime, INAC respectfully requests that NIRB convey the following information requests to the proponent:

1. Please provide more information regarding the proposed jetty, specifically: Is there a road from the existing barge landing site (shown in figure 1.2 of Supporting Document A4 "Surface Infrastructure Preliminary Design")? The existing barge landing site is on the west side of Roberts Bay, about 2km from the proposed jetty. There are at least two major stream crossings. Its not clear how MHBL intends to transport the materials from this location to the mine site.
2. MHBL indicated that they would be using the existing barge landing site during the construction phase of the project. Does the proponent therefore intend to build/upgrade the road to transport their supplies? If such is the case, why would they then be building a new jetty?
3. Is there a design memo on the new jetty? Why have all the various options been developed?
4. Please confirm that the mill will be founded entirely on bedrock (the underlying concern is that heat from the mill will thaw the permafrost).
5. Are there any explanatory notes to accompany the geological sections showing the Doris North drillholes? It is not clear what these drawings are supposed to show.
6. Where is MHBL getting the sand to be used in construction and as bedding for the HDPE liners to be used on this project?
7. The proponent has acknowledged that Tail Lake capacity issues will be subject to a sensitivity analysis in terms of the currently adopted value of average annual runoff. A sensitivity analysis normally requires adjustments of runoff to extreme higher and lower values - for example a 100-year runoff volume - for a sequence of years in the water balance. However it seems apparent that the average annual runoff volume estimate is considerably below what it should be, so this imposes an extra dimension to the water balance that would not have been accounted for. Therefore given that this might be the case, will the proponent be making the necessary adjustments in its sensitivity analysis?
8. Further to # 7, has the proponent committed to providing an outline of adaptive management measures to be taken in the event that the average annual runoff is higher than currently assumed, as estimated and recommended by Environment Canada? I refer the proponent to a letter sent to them by Environment Canada, through NIRB, dated April 26, 2004.

It should be noted, for the record, that the proponent failed to deliver the required information by the April 30 deadline as agreed upon with Environment Canada; and in fact, at the time of writing this letter, the information has not been provided. We acknowledge statements in the proponent's May 6, 2004 response to Environment Canada's information request that this information will be provided "in due course". INAC views this information as a significant impediment to our ability to determine the efficacy of the proponent's water management plan. This

lack of pertinent information will be reflected in our final submission for the upcoming hearings.

9. Miramar proposes an annual discharge of tailings decant water from Tail Lake and predict that in-lake assimilation processes will produce water of acceptable quality for discharge. In response to previous IRs, they have stated that, should water quality not be acceptable:

- There is ten years of hydraulic storage capacity in Tail Lake and,
- Discharge water can be treated to acceptable levels.

Our review team has suggested that the 10 years' of storage may be an optimistic conclusion, based on an underestimate of site runoff and the absence of the sensitivity analysis on the water balance. If this is the case, then retaining water in Tail Lake may not represent an effective contingency and Miramar may have to treat water prior to discharge.

Please provide information on a) the proposed treatment system and methodologies for and b) the quality of discharge water that could be expected.

10. The Thurber Engineering report included in Supplementary Document A5 does not include an interpretation of the stability of the slopes, particularly those surrounding Tail Lake. Has any mapping been done that shows surficial features associated with mass movements, such as solifluction, skin flows, slumps, earth slides etc.?
11. The April 30 response from MHBL included a drawing that showed the proposed location of the borrow area for the construction of the North dam. Previous drill holes by SRK in the foundation of North Dam indicated the presence of significant deposits of sand (as well as marine clay). No drilling was shown in the proposed borrow area. On what basis was this area identified as a borrow area? What would be an alternative location? How will borrow area location affect the feasibility of dam construction?
12. The above referenced figure showing the layout plan for the North Dam shows a spillway in the north abutment. Presumably, the spillway will be excavated in rock, although there is no borehole in the spillway alignment. Could MHBL please confirm that the spillway will indeed be entirely in rock?
13. In the April 8 MHBL response to NIRB directives, Section 11 describes the dam crest details. Given a crest elevation of 37.0 m and 2.5 m of thermal protection over the core gives a top of core elevation of 34.5 m. If the full 1 m of settlement occurs, then the top of the core will be at the maximum water level of 33.5 m. This condition is not acceptable. Freeboard for earth fill dams with an impervious core should be measured as the distance between the top of the core and the maximum water level. With regard to the maximum water level, MHBL have used the value of 33.5 m, which is the same as the spillway elevation. This is the Full Supply Level (FSL) not the maximum water level. Maximum water level occurs

under flood conditions. The spillway will operate with a certain depth of water based on the spillway rating curve. The depth of water at which the spillway operates under the design flood conditions must be added to the FSL elevation to obtain the maximum water level. MHBL is requested to clarify these details.

14. Please provide a summary of the details of Nuna Logistics frozen dam construction experience with respect to the types of materials used in the dams, the equipment, scheduling, productivity and dam performance and how this experience relates to construction of the tailings dams at Doris North.
15. For the cumulative effects assessment, the information for the residual effects from other projects was derived from previous environmental assessment reports. Were the different monitoring agencies contacted to confirm the predicted residual effects of these previous projects, e.g., BHP and Diavik? Similarly, were these agencies asked to confirm if new and/or other effects have arisen since the implementation of the respective projects?
16. It was stated in the Final EIS (p. 3-10) that "Historically, the Bathurst herd has used the RSA, but it has not been observed in the RSA or adjacent ranges east of Bathurst Inlet since 1996 (Hubert and Assoc. 2002 and 2003 as Supporting Documents D2 and D3 and Table 5-2). Please clarify this against the 2001 satellite tracking images on the RWED website which shows the caribou within the RSA. If the 2001 information is correct, does this change the cumulative effects findings? In considering the last question, take into account the Snap Lake Environmental Assessment Report issued by the MVEIRB (2003) and its conclusions on the cumulative impacts to the Bathurst caribou herd.
17. The cumulative effects analysis for caribou concentrated on the Bathurst caribou and south of the Doris North property. However the Queen Maud and Victoria Island herds may actually be more sensitive to changes. The Dolphin-Union herd is currently listed as a species of special concern by COSEWIC (until recently it was considered part of the Peary herd, which is threatened). Please explain why the cumulative effects analysis did not extend northward onto Victoria Island. If Victoria Island was part of the regional study area for the consideration of cumulative impacts on caribou, would that affect your results and how? Please complete the analysis.
18. Table 5.2. Why was the Doris North column not included in Table 5.2 continued?
19. Miramar indicated in its direct effects analysis that crime resulting from increased number of wage earners in the community may result in a negative impact (Chapter 6.0). Does Miramar see only its project as contributing to the crime rate or will other projects have a similar effect? If so, what does Miramar propose as mitigation?
20. Miramar indicated that there would be socio-economic cumulative impacts. It also suggested that monitoring could mitigate for these impacts (p. 6-8). While INAC does not consider monitoring to be mitigation, INAC is interested in gaining a fuller understanding of how monitoring can be used to mitigate for cumulative impacts.

Please explain how monitoring can be used to mitigate for cumulative impacts and what Miramar sees its role to be. Also, please summarize the indicators from the draft West Kitikmeot Regional Land Use Plan that Miramar feels are appropriate for tracking the relevant impacts.

21. Miramar has identified a direct correlation between the increase in disposable income, and the increased consumption of store bought alcohol (page: 6-3). Additional information on how, and to what degree, this impacts community health is not provided. Further information is requested on the following:
 - The analysis of impact effects related to increased alcohol consumption and potential alcohol abuse;
 - How this specific adverse impact was factored into the overall assessment of the Community Health VSEC;
 - A clear indication of what mitigation the proponent intends to employ to address this adverse impact;
 - A discussion of anticipated residual impacts related to this relationship. (e.g. alcoholism, family violence and neglect, early childhood development issues). Specific information on how these factored into assessment of the reversibility and duration of impacts on this VSEC are considered valuable; and,
 - A clear indication of what monitoring will be employed to monitor the success of the mitigation.
22. MHBL has indicated that the demands of a rotational schedule will increase stress on families, which they believe could result in an increased number of family breakups and cases of physical abuse (Page: 6-3). The supplementary documentation also outlines a number of other adverse impacts such as, child neglect resulting in the absence of one parent, that are associated with the rotational nature of the work schedule and commuting distance (SD E-3, Page: 13-16). Additionally these issues are raised as part of the companies attempt to integrate Inuit Qaujimajatuqangit into their assessment (SD E-3, Page: 5-7), but also indicated that issues related to the absence of a spouse, parent, or family member could be mitigated by the availability of recreation facilities (SD E-1, Page 68). Additional information on how, and to what degree, this impacts community health is not provided. Further information is requested on the following:
 - How this specific adverse impact was factored into the overall assessment of the Community Health VSEC;
 - A clear indication of what mitigation the proponent intends to employ to address this adverse impact;
 - A discussion of anticipated residual impacts related to this relationship. (e.g. family violence, neglect, and early childhood development issues). Specific information on how these factored into assessment of the reversibility and duration of impacts on this VSEC are considered valuable; and,
 - A clear indication of what monitoring will be employed to monitor the success of the mitigation.
23. MHBL has identified a direct correlation between the increase in disposable income, and the increase in the reported incidents of crime in communities (Page:

6-4). Additional information is required to substantiate the ratings according to the impact assessment evaluation criteria provided in a table on Page 5 in section E3 of the supplementary documentation. Note that it is unclear how information on page 15 of this supplementary document supports the assessed impact of the project on this VSEC.

24. Several sections related to the mitigation of the project's potential adverse impacts indicate that the mitigation will depend on the successful completion of the IIBA. While this would be appropriate for ensuring that beneficial impacts result in the desired benefits for the region, we do not believe that the absence of information related to how the various adverse impacts will be addressed, is sufficient to determine how the project will affect the existing and future well being of residents in the Nunavut Settlement Area. It is therefore requested that details related to the minimum required level of mitigation be provided for adverse impacts.
25. MHBL appears to be unclear about who will be responsible for the implementation of mitigation measures required to address potential impacts. Clarification on who will be responsible for the implementation of the selected mitigation measures will be important in assessing the project's impacts on the communities, and residents in the Nunavut Settlement Area. Further information on the degree of these expectations, should they exist, and the willingness of partners to provide that support to the project will be valuable in demonstrating the comprehensive nature of the project's socio-economic mitigation regime.
26. MHBL indicates that the development of a socio-economic monitoring committee will allow for adaptive management of impacts. Unfortunately the mechanisms of this committee are unknown. Please provide further information on indicators that will be monitored, methods of data collection (particularly given the difficulty of acquiring information for the impact assessment *April 30, SD Pages 39 & 40*), issues related to the synthesis of data, and the ability to react to any results given the short nature of the project.

If you or MHBL have any questions or require clarification on any of the above-mentioned information requests, please do not hesitate to contact the undersigned at your convenience.

Sincerely,

Original Signed By

Glen Stephens,
Manager of Environment