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Kugluktuk

**Phyllis Beaulieu**  
**Manager of Licensing**  
**Nunavut Water Board**  
**P.O. Box 119**  
**Gjoa Haven, NU**  
**X0B 1J0**

Bathurst Inlet  
Kingaok

**March 10<sup>th</sup>, 2014**

Bay Chimo  
Umingmaktok

**Re: KIA Information Requests for Documents submitted by TMAC for  
Amendment of Type A Water Licence No. 2AM-DOH1323; Amendment  
(No.1).**

Cambridge Bay  
Ikaluktutiak

Dear Phyllis Beaulieu, concerning the coordination of the NWB and NIRB review process for the amendment of Type A Water Licence No.2AM-DOH1323, the KIA fully supports the integration of the two processes to the extent as it is possible between the regulators. The KIA also supports a teleconference and written hearing for the Technical/Pre-hearing Conference and an in person meeting for the Public Hearing.

Gjoa Haven  
Okhoktok

The KIA's consultants have reviewed documents submitted by TMAC Resources Inc. for the amendment of Project Certificate No. 003 for NIRB and for the amendment of the Type A Water Licence. Our consultants' Information Requests (IRs) for the NWB are the same as what was provided to NIRB on February 18<sup>th</sup> are presented as follows:

Taloyoak

Kugaaruk

**Wildlife Consultant IRs**

**Kitikmeot Inuit Association: KIA-IR001**

***To Whom IR is Directed:*** TMAC and Rescan

***Subject:***

Effect of the new above ground pipeline to Roberts Bay on movement of caribou and other large mammal VECs not screened into the assessment. Please provide the following:

- Scientific rationale for excluding consideration of effects of the new above ground pipeline to Robert's bay on wildlife movement.

***Issue/Concern:***

The new above ground pipeline to Roberts Bay may act as a partial barrier to movement of mammalian VECs that resist crossing pipelines at particular heights  
An impact assessment on effects of above ground pipelines on movement of potentially impacted wildlife VECs (particularly the Dolphin and Union Caribou, now listed on Schedule 1 of the SARA) seems warranted.

***Reference:***



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- Appendix 1: Doris North Mine Modifications and Related Amendments to Project Certificate No. 003 and Type A Water License No. 2AM-DOH1323;
- Appendix 1- NIRB Application Forms, P. 26, Table 1;
- Project Proposal: Doris North Mine Modifications and Related Amendments to Project Certificate No. 3 and Type A Water Licence No. 2AM-DOH0713. 2011, P. 22, S. 4.4.4

**Information Request:**

Since the time that amendment documents were first written, there has been emerging information from above ground pipeline projects (largely Oil and Gas projects in AB) showing that these structures can affect movement patterns of woodland caribou (particularly fast movements). Some effective mitigation techniques have also been developed to alleviate movement effects. These studies and mitigation techniques should be considered in the project amendment impact assessment.

**Kitikmeot Inuit Association: KIA-IR002**

**To Whom IR is Directed:** TMAC and Rescan

**Subject:**

Effects of doubling camp personnel, increasing milling rates, using more equipment, increasing olfactory disturbances, and lengthening operations (overall, an increase in potential disturbance to wildlife) were not screened into project amendments requiring re-assessment.

- Provide information on the magnitude and duration of disturbances due to the amendments (e.g. noise models, olfactory models, changes in vehicular rates, disturbance duration); Provide scientific rationale for not assessing the new disturbance effects on wildlife (particularly grizzly bear and caribou).

**Issue/Concern:**

The document states that the primary effects of the project on wildlife are expected to stem from disturbances (Page 3-10, Second document listed), but the disturbance effects of amendments are not quantified and assessed as potential impacts on wildlife. Table 1 in Appendix 1 of the NIRB forms, (updated in Nov 2013) does not contain a suitable line entry allowing for the screening of the effects of increased overall disturbance on wildlife.

**Reference:**

- Project Proposal: Doris North Mine Modifications and Related Amendments to Project Certificate No. 3 and Type A Water Licence No. 2AM-DOH0713. 2011, Page 22, Section 4.4.4;
- Appendix 3: Mine Infrastructure Changes- Supporting Memo, P. 3-10 to 3-12 S. 3.7;
- Doris North Mine Modifications and Related Amendments to Project Certificate No. 003 and Type A Water License No. 2AM-DOH1323 . Updated 2013, P. 26, 27.

Table 1 of Appendix 1 of the Doris North Mine Modifications and Related Amendments to Project Certificate No. 003 and Type A Water License No. 2AM-DOH1323, updated in 2013.



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**Information Request:**

Additional personnel working on site for a longer period of time will result in more disturbance stimuli (visual, noise, olfactory), which should be quantified and considered (both individually and in totality) with respect to predicting impacts on wildlife. Although the newly proposed activities have geographical areas that lie within the geographical area included in the Doris North Project Final EIS, the disturbance effects are not confined to these geographic boundaries. There exists no means to evaluate or "screen in" this effect on wildlife, even though it may be the most important effect occurring as a result of the proposed amendments.

**Kitikmeot Inuit Association: KIA-IR003**

**To Whom IR is Directed:** TMAC and Rescan

**Subject:**

Baseline surveys for marine mammals within Roberts Bay are scarce, and an adequate characterization of baseline conditions for marine mammals in Roberts Bay does not appear to be available. Please provide more baseline information on marine mammal presence and timing within Roberts Bay, or supplement information with TK/IQ (if available for the area).

**Issue/Concern:**

Only one ship-based survey was done for marine mammals in Roberts Bay. This survey was done from a barge en route to or from Cambridge Bay over a short period in August, 2010. The aerial surveys for seals hauled out on sea ice appeared to have focused on other, larger geographical areas, or captured conditions in Bathurst Inlet. The baseline community and timing of use, therefore, does not appear adequately characterized for marine mammals. By extension, making informed predictions about the impacts of proposed activities on marine mammals, and required mitigation, seems difficult.

**Reference:**

Appendix 4-2: Existing Baseline Conditions in Roberts Bay, Page 4-35 Section 4.3.4.2 Barge Survey

**Information Request:**

The available information on the use of Roberts Bay by marine mammals seems insufficient for an effects assessment of amended project conditions. In the one survey of Robert's Bay in August, two ringed seals, one bearded seal, and one unknown seal were observed. Seal pups are also usually born in early spring, and which would not have been captured in the survey described. No whales were recorded, although multiple species could use the area at different times of the year. Information on marine mammals using Roberts Bay is required to determine the likelihood of effects due to project amendments.



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<b>Kitikmeot Inuit Association: KIA-IR004</b>
<b>To Whom IR is Directed:</b> TMAC and Rescan
<b>Subject:</b> The last 3 paragraphs of this section are unclear. Please provide information on: <ul style="list-style-type: none"><li>• The total number of aerial surveys that were conducted that included Roberts Bay;</li><li>• The time of year of those surveys relative to surveys of the surrounding area;</li></ul> How the conclusion that "Roberts Bay is used infrequently by caribou in comparison to the regional landscape" was arrived at. Please also include TK/IQ on use of this area by caribou.
<b>Issue/Concern:</b> The limited data that were collected on caribou movement through Roberts Bay as inferred by tracks, present only a snapshot of tracks observed in May, which were compared to track densities in surrounding areas collected in other months. Snow track densities can be influenced by snowfall, wind, or can simply be vary with the seasonal period within which they are observed. A single snapshot of snow tracks cannot be objectively compared to tracks collected at another time in surrounding areas to conclude 'low relative use'. Increased scrutiny will be applied to Dolphin and Union caribou due to their recent addition to Schedule 1 of the <i>SARA</i> . A solid understanding of use of the area prior to project development is needed for IA predictions and establishment of effective mitigation, monitoring and management plans.
<b>Reference:</b> Appendix 4-2: Conditions in Roberts Bay, Page 4-36-4-37 Section 4.3.5 Caribou.
<b>Information Request:</b> Baseline habitat use and movement must be understood to predict impacts, or propose mitigation for wildlife. This is particularly important for Dolphin and Union caribou, which were added to Schedule 1 of the <i>SARA</i> as a species of Special Concern. [The NIRB applications fail to recognize this change]. Species on Schedule 1, and their critical habitats, are afforded enhanced scrutiny and legal protection. The <i>Act</i> also contains provisions to help manage species of special concern to prevent them from becoming endangered or extinct. The proponent must demonstrate that Roberts Bay is not within important migratory habitat, and that sufficient monitoring and adaptive management is in place to meet the requirements of the new <i>SARA</i> designation. Sections of the <i>SARA</i> pertaining to management of species of special are found in s. 65, 66(1)(a)(b)(c) (d)(e), 66(2) and 66(3). S. 73(1), 73(2)(a)(b)(c), and 73(3)(a)(b)(c).

<b>Kitikmeot Inuit Association: KIA-IR005</b>
<b>To Whom IR is Directed:</b> TMAC and Rescan
<b>Subject:</b>





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TMAC now plans to maximize the use of the TIA by depositing more tailings than originally estimated. A final water cover of 2.3 m is determined to be adequate to prevent re-suspension of tailings under all conditions, allowing a greater volume of tailings to be deposited while maintaining the current closure plan.

Please provide additional information pertaining to the TIA on:

- A) Whether the reduction of the TIA water cover is expected to result in changes in pH or contamination of cover water;
- B) Whether contamination thresholds in TIA cover water have been established that, when detected, will trigger mitigation to prevent water consumption/ access of the TIA by wildlife.
- C) How the wildlife monitoring plan (WMMP) will allow for a timely adaptive management response in the case that wildlife are observed to be repeatedly using contaminated TIA water, or if contaminant concentrations detected through monitoring pose a threat to wildlife experiencing occasional exposures.

**Issue/Concern:**

Wildlife will be able to access the TIA. Any changes in contaminant concentration of TIA cover water could have impacts on expected health and mortality of animals consuming or coming into contact with the water. If the water contaminant load in the 2.3 m of water covering the TIA is expected to change due to the new tailings management plan, or to experience re-suspensions more frequently, a re-assessment of chemical impacts via a risk assessment and the establishment of monitoring threshold triggers for adaptive management for wildlife seems warranted. Thresholds (both in terms of water quality and observed wildlife behaviours) should be identified that trigger adaptive management responses for excluding or deterring wildlife from interacting with the TIA.

**Reference:**

Project Proposal: Doris North Mine Modifications and Related Amendments to Project Certificate No. 3 and Type A Water Licence No. 2AM-DOH0713. 2011, Page 26 Section 4.5 and Appendix 14

**Information Request:**

Water cover depths for TIAs in Arctic environments largely require further research into the long term effectiveness of various depths for various tailings types. Some research needs include a better understanding of the influence of waves and return circulating events on erosion and re-suspension for different tailings types and different cover water depths, and changes that may occur with melting of permafrost. Most design methods fail to consider the complex combination of physical and chemical factors of northern environments, and models must be considered best effort predictions only. Since the amount of cover water is being largely reduced, a re-examination of the wildlife chemical risk assessment and establishing plans for thresholds that would trigger mitigation/adaptive management responses for wildlife interacting with the TIA is encouraged to safeguard against unanticipated events.



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Our aquatic, fish, and engineering consultants have also reviewed posted documentation but have no Information Requests to submit. All previous KIA recommendations made to NIRB still stand for the review process.

Yours truly

A handwritten signature in blue ink that reads 'John Roesch'. The signature is fluid and cursive.

John Roesch, P.Eng.

Senior Hope Bay Project Officer  
Kitikmeot Inuit Association Department of Lands and Environment