NIRB File No.: 12MN001
NWB File No.: 2AM-HOP- - - -

February 27, 2017

John Roberts
Vice President, Environmental Affairs
TMAC Resources Inc.
95 Wellington Street West, Suite 1010
Toronto, ON M5J 2N7

Sent via email: john.roberts@tmacresources.com

Re: Information Requests received from Parties regarding TMAC Resources Inc.'s *Draft* Environmental Impact Statement for the "Phase 2 Hope Bay Belt Project"

Dear John Roberts:

On January 18, 2017 the Nunavut Impact Review Board (NIRB or Board) initiated the public technical review of the *Draft* Environmental Impact Statement (DEIS) submitted by TMAC Resources Inc.'s (TMAC or Proponent) for the "Phase 2 Hope Bay Belt Project" proposal by requesting that interested parties submit Information Requests (IR) to facilitate their technical review of the DEIS document.

On or before February 24, 2017[1] the NIRB received IR submissions from the following parties:

- Kitikmeot Inuit Association – 218 IRs
- Government of Nunavut – 48 IRs
- Government of Canada
  - Environment and Climate Change Canada – 20 IRs
  - Fisheries and Oceans Canada – 7 IRs
  - Health Canada – 28 IRs
  - Indigenous and Northern Affairs Canada – 51 IRs
  - Natural Resources Canada – 14 IRs
  - Transport Canada – 3 IRs

In addition, the NIRB acknowledges receipt of a submission from TMAC on February 16, 2017 regarding the level of coordination it is seeking from the NIRB and the Nunavut Water Board (NWB) for the Review and Water Licencing of the "Phase 2 Hope Bay Belt" project proposal.

[1] On February 8, 2017 the NIRB granted the Government of Nunavut's request that the February 17, 2017 deadline for submission of IRs be extended to February 24, 2017.

The NIRB and the NWB are reviewing TMAC's submission, and will be issuing correspondence to the Proponent and interested parties detailing the proposed NIRB/NWB coordinated process for the project proposal.

All submissions are available from the NIRB's online public registry at www.nirb.ca by using any of the following search criteria:

- Project Name: Phase 2 Hope Bay Belt Project
- NIRB File No.: 12MN001
- Application No.: 124148

The NIRB has completed its review of the IRs received and hereby requests that TMAC respond to those IRs which have been determined to be relevant to the Proponent, to the current stage of the Review process, and necessary to facilitate parties' technical review of the DEIS and subsequent development of technical review comments.

Following a review of parties' IR submissions to the Board, the NIRB is also providing three (3) additional IRs directed to TMAC for its consideration and response (see Appendix A). The NIRB's development of these IRs considered issues which do not appear to have been raised by other parties through IR submissions, but which warrant that additional information or clarification be provided by TMAC.

Certain IRs contained within parties' submissions appear to be outside the scope of information required for this phase of the Review and may therefore be more appropriately addressed through technical review comment submissions. In addition, some IRs, while useful to parties, may be provided only at the Proponent's discretion. While it is the Board's expectation that the Proponent will review all IRs, at this time the NIRB has provided a list of specific requests (see Appendix B) for which the Proponent is either expected to provide a partial response, or is not expected to address within its response to IRs (IR Response Package); the latter are being forwarded on for information only, or for which the nature and limits to provision of data may prevent the Proponent from responding fully.

The NIRB notes that a number of parties identified concerns with certain aspects of the Proponent's DEIS submission, which may require significant amounts of time to complete, including updates to impacts analysis or additional models and baseline collection or reinterpretation. Where the information/models requested cannot be provided without additional baseline, the Proponent must clearly identify when this information will be forthcoming, or which alternate method the Proponent will use to address the issue or concern.

It should also be noted that the NIRB had provided consideration to TMAC where specific baseline reports were excessively lengthy, or where data can be summarized in the DEIS sufficiently, that all baseline documents did not have to be provided to the NIRB and the NWB at this stage of the Review. TMAC will be required to follow up with parties based on requests for these baseline reports and provide the agencies with the requested reports should they be deemed necessary to understand the modelling or conclusions presented in the DEIS.

When preparing its IR Response package, the NIRB recommends that the Proponent consult with parties as necessary to ensure the information to be provided meets the expectations of reviewers

moving forward. Furthermore, where multiple IRs have outlined the same or similar information requirements, the Proponent is advised to provide one response that will adequately address these requests, avoiding unnecessary duplication. The Board respectfully requests that TMAC review all submissions as available via the NIRB's online public registry and supply the NIRB with an indication of an anticipated date for submission of its IR Response Package, on or before **Monday, March 13, 2017**.

Please direct all forthcoming submissions to the NIRB info@nirb.ca or through the online public registry at www.nirb.ca.

If you have any questions regarding the NIRB's Review of the "Phase 2 Hope Bay Belt Project" proposal, please contact Kofi Boa-Antwi, Technical Advisor, at kboaantwi@nirb.ca or by phone at (867) 983-4616.

Sincerely,

Tara Arko
Director, Technical Services
Nunavut Impact Review Board

cc: Phase 2 Hope Bay Belt Distribution List
Oliver Curran, TMAC Resources Inc.
Shelley Potter, TMAC Resources Inc.
David Hohnstein, Nunavut Water Board
Sonia Aredes, Nunavut Water Board
Karén Kharatyan, Nunavut Water Board

Attachments: Appendix A: NIRB Information Requests to TMAC Resources Inc. for the Draft Environmental Impact Statement for the Phase 2 Hope Bay Belt Project proposal
Appendix B: Information Requests Identified by the NIRB as Requiring a Modified or No Response

Marine Shipping

Reference: *Volume 1, Section 1.1, and Table 1.1-1*

Subject: Shipping Management Plan

Issue/Concern: The Proponent indicates in the DEIS that it will address any requirements regarding shipping management planning in procurement contracts with applicable shipping companies, and that it does not believe a stand-alone plan is applicable or required at the Review stage of the permitting process.

However, without information on the Proponent's general framework/guidelines for shipping management planning, including the proposed minimum environmental protection requirements to inform shipping management plans and standard operating procedures (SOPs) to be developed and implemented by contractors, the NIRB and parties may be challenged in assessing the adequacy of mitigation measures proposed for potential marine shipping-related impacts of the Project. In addition, the NIRB and parties may have difficulty confirming conclusions drawn in the DEIS about the significance of residual impacts on marine-related valued components.

Information Request #1: The NIRB requests that the Proponent provide its general framework/guidelines for shipping management planning, including proposed minimum environmental protection requirements, to inform shipping management plans and/or related SOPs to be developed and implemented by contractors.

Marine Shipping

Reference: *Volume 5, Section 11, Figures 11.2-1, 11.2-2, 11.2-3, and 11.2-4*

Subject: Nominal Shipping Route

Issue/Concern: The Proponent presents the alignment of the proposed western and eastern nominal shipping routes in the Nunavut Settlement Area but appears to limit the eastern reaches of the route to Lancaster Sound.

A description of the entire nominal shipping route in, and in proximity to, the Nunavut Settlement Area, including the Davis Strait, is required to enable the NIRB and parties assess potential interactions between marine shipping activities and marine life, including mammals and birds.

Information Request #2: The NIRB requests that the Proponent provide justification for terminating the alignment of the eastern shipping route at Lancaster Sound.

Environmental Impact Assessment Methodology for Ambient Air Quality

Reference: *Volume 4, Section 2.5, Table 2.5-5, page 2-45*

Subject: Determination of Significance of Residual Effects on Ambient Air Quality

Issue/Concern: Attributes/criteria are generally used to characterize residual effects and to support, in addition to other considerations, the determination of significance of residual effects.

However, the Proponent appears to base its threshold(s) for the determination of significance of residual project effects for all identified indicators (SO_2, NO_2, O_3, CO, VOC, TSP, PM_{10}, $PM_{2.5}$ etc.) of ambient air quality solely on the selected combination of effects characterization attributes/criteria.

Information Request #3: The NIRB requests that the Proponent provide a rationale for applying generic or simplistic combination of effects characterization attributes for significance determination in the assessment of project effects on ambient air quality.

APPENDIX B:
INFORMATION REQUESTS IDENTIFIED BY THE NIRB AS REQUIRING A MODIFIED OR NO RESPONSE

In the table below the NIRB has attempted to identify those Information Requests (IRs) which either require a modified response, or which do not appear to meet the criteria of IRs for the development of technical review comments as part of this stage of the Review for the Phase 2 Hope Bay Belt project proposal. Generally, each of the following items appeared to be either editorial comments on content or issues more appropriate as technical review comments (e.g. requests for consideration of a different approach to data analysis).

While the Proponent will not be explicitly required to address some of the following items within its IR Response Package, the NIRB strongly recommends that TMAC thoroughly review each item and make its own determination regarding the need for or its ability to, provide an appropriate response.

IR No.	Information Request	NIRB Rationale
Government of Nunavut (GN)		
GN-IR#1	Recommends that the typology of archaeological features be further refined. This will not only allow to move from a somewhat non-culturally significant pile of rocks or stone circles it will also reconcile and highlight a clear cultural identity indicative of a past way of life and relationship with the land.	Does not meet criteria for IRs. Defer to technical review period.
GN-IR#2	Requests the following information: ▪ {…}; and ▪ Site/assemblage significance be assigned using a splitting rather than a lumping approach and that more cultural relevant criteria be used for significance assessment.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
GN-IR#3	Recommends that: ▪ Table 2.7.2 be reworked and that the numbers be adjusted throughout the relevant sections; ▪ That only LSA be considered for site significance assessment; and ▪ The proponent continues to make an effort to keep the percentage of site loss below 15%.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
GN-IR#27	Recommends that the vegetation losses be calculated using the total area of each of their corresponding type, class or special landscape feature. The subsequent effects assessment should be revised according to these re-calculations.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
GN-IR#38	Requests the following information: ▪ {…}; ▪ The calculation of an additional habitat disturbance metric that is independent of estimated habitat quality; i.e. the total area disturbed as a proportion of total area available within the range.	This part of the requests does not meet the criteria of an IR. Defer to technical review period.
GN-IR#47	Requests the following information: ▪ {…}; and ▪ Reassess potential impacts of the project on migration in and out of LSA communities in the Kitikmeot region.	This part of the requests does not meet the criteria of an IR. Defer to technical review period.
GN-IR#48	Requests the following information from the Proponent: ▪ {…}; ▪ Not rely on the CIP to be the sole response mechanism for potential impacts to housing as a result of the project;	This part of the requests does not meet the criteria of an IR. Defer to technical review period...
Kitikmeot Inuit Association (KIA)		
KIA-IR#4	Extend temporal boundaries to enable assessment of condition of Vegetation and Special Landscape Features post mine closure.	Defer to technical review period as this information is not required to understand the conclusions as presented in the current version of the EIS, but is requiring changes to the parameters of the analysis presented.
KIA-IR#6	Re-evaluate magnitude of loss and significance of potential effects with respect to an expanded vegetation PDA. Re-evaluate the confidence of the assessment.	Defer to technical review period as this information is not required to understand the conclusions as presented in the current version of the EIS, but is requiring changes to the parameters of the analysis presented.
KIA-IR#7	Consider climate change as part of the cumulative effects assessment for Vegetation and Special Landscape Features.	This inquiry will be limited to a request for TMAC to provide its information on climate change and how it was factored into the assessment for cumulative effects. Discussion on the adequacy of the assessment would be further investigated during the technical review period.

IR No.	Information Request	NIRB Rationale
KIA-IR#9	Conduct vegetation sampling and analyze for metals in sedges and dwarf shrubs (suggest at least 30 samples each within each of the reference and LSA areas for each plant species., along with a suitable number of samples from reference sites) and present those data as an addenda to the DEIS. Use/integrate these data as appropriate to improve the Human Health and Environmental Risk Assessments.	TMAC is requested to provide the data currently available on the subject, but the determination of adequacy of baseline data will be further assessed during the technical review process. Direction for further baseline collection would be determined at the end of the technical review process.
KIA-IR#11	Revise this section (Vol. 4, Section 9.2.6.1, Page 9-14) to more clearly communicate the points that were made (*i.e.*, separate the issues of development and overflights which cause disturbance from the issue of roads which cause increased access). Also, add additional information from BQCMB (2015), which touched on many additional potential influences on the population sizes of this herd.	TMAC is requested to provide the data currently available on the subject, but the determination of adequacy of baseline data will be further assessed during the technical review process. Direction for further baseline collection would be determined at the end of the technical review process.
KIA-IR#20	1) {…} 2) Present an analysis of results for data collected during the spring migration period of the Dolphin and Union herd (April to June), pulling those data out of the summer and winter data, and analyzing for three seasonal periods instead of two.	This part of the request does not qualify as an IR. TMAC is requested to provide any additional information on this topic and the usage of the area, but the test of adequacy and 'trust' in the current assessment will be tested through the technical review period.
KIA-IR#24	Revise DEIS to include references to Appendix numbers (*i.e.*, pull key maps or other information from reports referenced (e.g., Rescan reports) and include as appendices to the DEIS). Alternatively, where information from previous baseline reports is not provided and is too lengthy to include in the DEIS or appendices, provide the reviewers with easy access/links to those cited reports (and information on where the cited information can be found in that report).	Does not qualify as an IR as revisions to the DEIS would be determined through the technical review period. TMAC is requested to provide clarification on the topic which can be provided to support the conclusions currently presented in the DEIS.
KIA-IR#25	Include this label [Elu Peninsula] on maps where relevant throughout this section.	Does not qualify as an IR. TMAC requested to provide a map illustrating the area referenced as the peninsula.
KIA-IR#29	Provide more updated references for the current population status and trends of these species from studies that are more recent or surveys. If these are not available, re-word this accordingly to reflect the past tense, as raptors in the Arctic may alter their population trends strongly within 15-17 years	Does not qualify as an IR. TMAC is requested to indicate where additional data may be available or justification on use of the data as presented. Adequacy of the baseline data would be determined through the technical review period.

IR No.	Information Request	NIRB Rationale
KIA-IR#32	For wildlife VECS, and especially for the Dolphin and Union and Beverly caribou herd, provide information on: ▪ The average lifespan of caribou; ▪ How often and how frequently they reproduce, including the average number of young; ▪ The number of years, for each wildlife VEC where their lifespan, reproductive rate, or both (to various degrees/magnitudes), would need to be affected before the herd would become extirpated/extinct; and ▪ The ability for a population trend to be "reversed" at various points along a population trajectory (i.e., how difficult/easy is it to reverse negative impact to a VEC, driven to an extremely small size in the Arctic, with or without effort). ▪ Use this information to justify or modify the definitions used to arrive at significance (duration, magnitude) in the wildlife effects assessment.	TMAC is requested to provide additional clarification on its data and factors incorporated into its current modelling for this data. However, the IR will be limited to providing this additional information as the adequacy of the current model presented, or any further requests to update the modelling would be discussed through the technical review period.
KIA-IR#33	Correct formatting typos on page 9-233 and pull out list headings from the lists.	TMAC is requested to provide clarification on the issue, however re-submission of the entire document is not necessary.
KIA-IR#39	Revisit the opinions and predictions of Elders and harvesters and revise predictions about impacts of the Phase 2 project on access, communication about caribou presence/locations, and harvest pressure.	Does not qualify as an IR. The adequacy of the current model presented is expected to be assessed through the technical review period.
KIA-IR#41	Clarification and information requested on the following: ▪ {…} ▪ If optimal mitigation is not possible to ensure that this potential effect will not result in a residual impact, consider this effect further in the effects assessment (evaluate effects on disruption of movement and mortality of caribou and muskox).	This point does not qualify as an IR. The adequacy of the current assessment provided will be determined through the technical review period.
KIA-IR#43	1) Update the paragraph on effects of roads on grizzly bear movement to include the range of scientific studies and conclusions. 2) Remove the word "severe" from the quoted statement, and replace this word with an objective or measurable statement of the magnitude of impact.	Does not qualify as an IR. TMAC may provide additional information on using the term in the DEIS.

IR No.	Information Request	NIRB Rationale
KIA-IR#54	Update Vol. 6, Section 5.3.2.2 when air quality monitoring becomes available for during Doris operations.	Does not qualify as an IR. TMAC requested to provide clarification on when it expects to provide additional data with data to reflect operations levels of impacts.
KIA-IR#56	Provide a reference in support of this simplification, a justification, or use the MDL to achieve values that are more conservative.	IR limited to the request for supporting use of the current values in the model, and justifications. Any updating required to the models would be determined through the technical review process.
KIA-IR#58	Update collar data to include the most recent years to determine the exposure period. Also, use a more conservative estimate, such as the maximum exposure period observed, rather than the average. A more detailed explanation of how the 1.3 days was derived from collar data would also improve this section.	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
KIA-IR#60	Add a section that addresses the unique considerations of fatty large mammal predators and assess the baseline concentrations of COPC's in at least one representative species from this group.	IR limited to TMAC providing additional clarification on the issue, however direction on updating the EIS will be determined through the technical review period.
KIA-IR#61	Update this section to include a variety of species consumed by Inuit that had better represent the various potential pathways of exposure from different feeding patterns of birds, as described above.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting or models presented will be determined through the technical review process.
KIA-IR#62	1) Reorganize Vol. 6, Section 5.3.2.2, Page 27, into clear, distinct paragraphs for each type of fish, as it is laborious for the reader. 2) Preferably at the beginning of this section, clearly state which fish species are used for this assessment. There is information about them, but it does not explicitly state which species are being used except for Arctic Char. This is provided only in the conclusion, but it should be at the beginning as well to facilitate the reader's comprehension.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting or models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#63	1) Provide a revised sampling methodology and analysis for Arctic Char that includes the following: ▪ Adequate sample sizes for statistical analysis (an *a priori* power analysis can be conducted to predict this sample number); ▪ Adequate sample sizes of adult fish that represent the marine exposure to COPC; ▪ Complete testing of all metals that were tested for in the other fish types, and method detection limits (MDLs). 2) In addition to sampling in the marine environment for Arctic Char, it may also be useful to sample from Doris Creek in particular, as it has been identified as habitat for Arctic Char, and was/is used by Inuit for fishing. 3) Since it is the location of the tailings water release after mine closure, it would be particularly useful to have baseline data for fish in Doris creek.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#64	1) Correct and clarify the sample sizes such that they are consistent between sections and are correct. Alternatively, provide the complete dataset in the appendix. 2) Ideally, provide additional data (high numbers of fish sampled) for Whitefish and Lake Trout to provide a sufficient sample size for baseline data	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#65	1) The baseline COPC levels in vegetation are a valuable source of information for the human health assessment as humans are potentially consuming them directly. Vegetation concentration data should be presented and compared to the best available guidelines to screen for COPC's of concern. 2) Was Health Canada contacted for advice on this issue? They may be able to advice. At the very least justification is needed as to why vegetation guidelines cannot be estimated based on the sources mentioned by Health Canada, or by using the literature.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#66	1) Correct the value in the table to 500 mg/kg to reflect what was said in the footnote (or remove the footnote if this was not used and is incorrect). 2) Add a symbol next to the values that have been estimated by half the method detection limit. This will improve the clarity of the document.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#67	1) {…} 2) Conduct annual sampling for background levels of air contaminants.	On this last point, IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#70	Remove this from the soil ingestion table for clarity.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#72	Explain why the reported values were used rather than those recommended by Health Canada (2010b). Alternatively, update the assessment when values are corrected.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#73	1) Provide assessment scenarios for each of the recommended age groups. 2) {…}	This IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#74	1) Conduct baseline sampling for country foods. Alternatively, if available, incorporate data collected from country food COPCs sampled during previous baseline studies into the human health assessment. 2) Alternatives, such as verifying the model results against concentrations in a small number of confirmatory test samples should also be considered	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#77	Provide the following clarifying information: ▪ {…} ▪ Test for cadmium in a marine fish (such as Arctic Char) to assess human health impacts. ▪ If cadmium was tested for in Arctic Char, but was below the MDL, use the concentration of the MDL to estimate the background concentration of cadmium in marine fish. ▪ {…}	These points are limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#78	Use a different small mammal [than arctic ground squirrel] with the greatest exposure to COPCs, to be more conservative.	Does not qualify as an IR. IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#79	1) {…} 2) Use a more conservative approach to estimate unknown BTFs, either by using BTF=1 for media where the true BTF is unknown, or adjust the tissue BTFs by a media factor that reflects the relative bioavailability of COPC's in various media. 3) {…}	This point is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#80	1) Provide additional references to demonstrate to validity of these assumptions. Alternatively, demonstrate through sensitivity analysis that the results of the model do not change significantly using a more conservative BTF = 1 scenario. 2) Alternatively, given the lack of data on BTF in relevant mammals and avian species, it would greatly improve the model to verify concentrations in the Arctic species considered through additional sampling efforts aimed at measuring COPCs in mammal and bird tissues	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#81	Use the same format throughout to mean the same thing. Preferably, use the NA to distinguish from actual data gaps that are represented by dashes	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#82	1) To be more conservative, can TMAC include all species that are consumed by Inuit, and were modelled in Appendix V6-5E, within Table 5.3-17 (or a separate table if more space is needed) to screen for the maximum EDI value for each COPC for each wildlife group (large mammal, small mammal, bird). 2) As was done for the three fish species, create separate columns for maximum EDI for large mammals, small mammals, and birds consumed by Inuit, and include the maximum values for each COPC in these columns. 3) {…}	These two points are limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#83	Correct [*the statement found in Vol. 6, Section 5.3.4.1, page 60*] and adopt the lower value (0.14 mg/kg BW/day) provided by JECFA to be conservative as stated as TMAC's goal in the quoted excerpt.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#84	{…} Alternatively, substitute the more conservative value from JECFA (0.00083 mg/kg BW/day) to account for the long half-life of cadmium in the body.	This part of the requests is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#85	Apply a factor of 10 to account for the additional uncertainty from the LOAEL to get to the NOAEL, which can then be used for the PTDI. This may be revised once Health Canada completes their review of lead.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#86	{…} If the larger, general public value is used it does not protect all members of the population (*i.e.*, Women of childbearing age). Update the assessment to use the conservative PTDI for all adults (not just children).	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#87	Separate the risk characterization data for adults into smaller and easier to read tables, as was done for the toddler risk characterization. Ideally, order all three tables one after the other for ease of reading.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#88	Use an 80-year timeframe to estimate baseline exposure for a lifetime cancer risk including the reclamation and closure and post-closure phases for adult land users. Also include the other mine phases in the project related HHRA to allow comparison for the whole lifetime period for adult land users. Also assess the contribution of the closure phase to ILCR for off-duty workers.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#91	1) Conduct additional marine fish sampling (*i.e.*, in Arctic Char) to establish a reliable baseline and ILCR for the human health assessment. Provide updated values for ILCR for arsenic and for any other COPC that exceed thresholds following additional data collection. 2) {…}	This point is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#92	Remove these unsupported statements or show/cite that an analysis was done to prove that this uncertainty in the vegetation is compensated for. As is, there is no reason to suspect that the model is conservative given the numerous uncertainties, and there is no reason to suspect that these vegetation issues are compensated for.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#93	1) Collect additional fish samples for metal concentration analyses, as noted in previous IRs 2) {…}	This point is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#94	Provide the following answers, clarifications, or information: ▪ {…} ▪ Remove the assumption that concentrations are representative of all vegetation, as we cannot know this from this limited dataset that has not included several prevalent and important vegetation types in the LSA. ▪ Reword this section so that it does not minimize the role of vegetation in human exposure, and the potential significance of this uncertainty.	The last two IR points are limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#96	Devise a more conservative method of determining distribution factors for the COPC's where a distribution factor of 1 was assumed.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#97	1) Complete sampling of vegetation that is typically consumed by the wildlife, such as sedges (*i.e.*, cotton sedge), and low shrubs (*e.g.*, dwarf birch, dwarf willow). We would appreciate the models being re-run using these new data. 2) Redo the EDI calculations using this more realistic model for the human health assessment.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#98	Shade key values, the two COPCs identified for terrestrial wildlife, sulphate and arsenic.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#99	{…} Alternatively, revise this model to only include edible and identified berries. Alternatively, collect berries that are more edible if the unidentified berries were only included to fill in data gaps.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#101	Provide the following information: ▪ {…} ▪ If not tested for, test for cadmium in a marine fish (such as Arctic Char) to apply the model correctly. ▪ If it was tested for, but the value fell below the MDL, use the concentration of the MDL to estimate the background concentration of cadmium in marine fish.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#104	Obtain additional data for Arctic Char, or another marine fish, before applying this model. Without adequate inputs, it is extremely difficult to rely on this model to predict baseline levels of COPC's which could affect human health estimates.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#105	{…} Alternatively, the proponent could conduct a small sampling study to verify their accuracy in using the BCFs that were derived from the literature in this system.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#106	Subdivide vegetation into lichen and terrestrial vegetation. The % of diet category could then be updated to be more accurate/descriptive. Paired with increased sampling of vegetation, this would strengthen the model.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#107	{…} As well, add a symbol and a footnote that indicates which values in the table are estimated from these equations	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#108	Provide information to clarify the following: ▪ {…} ▪ Update the muskox soil ingestion rate to better reflect their foraging behaviour, perhaps using a caribou soil ingestion rate to estimate if muskox are not described in the literature. ▪ Add a symbol and a footnote to indicate which values in the table represent substituted values (*i.e.*, values taken from another species).	These parts of the IR are limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#109	Use the maximum exposure time observed in the LSA, as the average might not accurately reflect all exposure times. Further, use of the maximum will render the model more robust in the situation where caribou may shift their distribution and begin to spend more time closer to the Phase 2 project site in the future.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#111	{…} Update the results such that 2020 Canadian guidelines are used, and shade additional boxes where exceedance to these guidelines occur.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#114	{…} Alternatively, conduct sampling of quarry rocks for Beryllium, Mercury, and Tin.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#121	{…}This does not need to be inserted into Appendix A of the Type A Water Licence, but should be included in DEIS material, which can then be referenced within the water licence application.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#130	1) {…} 2) Predict TP concentrations in Aimaokatalok Lake from the discharge of effluent from the Boston WTP. 3) Determine trophic status response of Aimaokatalok Lake from discharge of effluent from the Boston WTP. 4) Determine the effect of discharge of effluent from the Boston WTP on dissolved oxygen conditions, and Lake Trout habitat.	TMAC is requested to provide the data currently available on the subject, but the determination of adequacy of baseline data will be further assessed during the technical review process. Direction for further baseline collection would be determined at the end of the technical review process.
KIA-IR#137	Provide an adaptive management plan for Greenhouse Gas Management and Reduction, which will provide an annual inventory of GHG emissions and review of means to reduce and minimize project emissions of greenhouse gases.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#138	1) {…} 2) If a food chain model was not completed, update the HHRA and ERA with a food chain model for fish.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#139	1) {…} 2) If so, provide a statistical analysis or a comparison of water quality data from the lakes to support the statement "water quality was found to be comparable among the lakes".	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#141	1) Compare the modelled under-ice concentrations to measured under-ice values to verify the magnitude of cryo-concentration or provide examples from other shallow Arctic lakes for comparison. 2) Provide a rationale as to why the model was not calibrated to observed baseline data so that future conditions can be predicted with confidence. Or 3) Validate the model and provide updated impact predictions.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#147	Integrate the water quality and sediment quality effects assessment into the freshwater and marine fish and fish habitat VEC effects assessment chapters.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#149	{…}Provide further detail on the existing baseline level of fishing pressure in the freshwater and marine environments to provide a benchmark for any future monitoring activities.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#186	Include updated baseline information regarding population and demographics and all other available relevant data from Statistics Canada's 2016 data set for the Kitikmeot Region and its communities (released February 8th, 2017).	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#207	Include marine shipping traffic as project effect component/mechanism on land and marine resource access.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
KIA-IR#208	Provide updated information and evidence of hunting, trapping and fishing activity changes since 2011 baseline from the HTOs and re-assess/further assess this effect.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
KIA-IR#209	Provide updated information and evidence of hunting and fishing activity changes since 2011 baseline from the HTOs and re-assess/further assess this effect.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
Fisheries and Oceans Canada (DFO)		
DFO-IR#1	Recommends that TMAC revise their instantaneous pressure threshold limit of 100kPa to 50kPa, and recalculate the appropriate setback distances, in order to develop adequate mitigation measures to address the effects of blasting on fish and reduce the risk of *serious harm to fish* as a result of the Hope Bay Phase 2 Project. This will apply to any reference in the DEIS regarding blasting.	Recommendations for changes to the instantaneous pressure threshold limit and the recalculation of setback distances are more appropriate as technical review comments. However, the Proponent may provide a rationale for its approach to the subject of the information request.
Environment and Climate Change Canada (ECCC)		
ECCC-IR#8	Requests that the Proponent calculate and provide sediment and water quality data for each individual water body that has the potential to be impacted by the project.	TMAC is requested to provide the data currently available on the subject, but the determination of adequacy of baseline data will be further assessed during the technical review process. Direction for further baseline collection would be determined at the end of the technical review process.
ECCC-IR#8	Requests that the Proponent provide the analysis and rationale to demonstrate that Reference Lake B is a suitable reference for Windy Lake, Patch Lake, Wolverine Lake, and Aimaokatalok Lake.	IR limited to the TMAC providing additional clarification on the topic and the analysis currently available on the subject. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
Health Canada (HC)		
HC-IR#1	Concerned with the protection of human health. If for Phase 2 any COPC is found to exceed human health guidelines, it should be assessed in the HHRA regardless of the percent change relative to baseline concentrations.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
HC-IR#2	It is suggested that a future monitoring program be implemented for the area to monitor for increases due to Project-related activities, and that the program include monitoring of substances in soils which are reported to be elevated under existing conditions, including, but not limited to: aluminum, arsenic, chromium, lead, methylmercury, nickel, selenium, and thallium.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#3	Quantify COPC uptake in caribou as a result of project activities, as increases in COPC levels in local soils and vegetation have the potential to result in increased levels of COPCs in caribou meat.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#4	Quantify COPC levels in fish (including lake trout and arctic char) and include the estimated levels of COPC levels in fish tissue in the HHRA. Consider the potential consumption of fish organs, arctic char head or arctic char eggs in the HHRA if these are consumed by the local population.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#5	a) Model airborne deposition of dust from Project-related activities and use this information to predict whether COPC concentrations may be increased in surface water, sediment, soil and vegetation. Consider uptake of these COPCs into vegetation and wildlife, in order to predict potential impacts to human health due to ingestion of drinking water, direct contact with soil and sediment, and consumption of country foods. b) Provide a concise and comprehensive analysis of metals contained in dustfall for all phases of the Project to provide evidence to support the prediction that dustfall, especially in snow covered conditions, will not transport beyond the LSA.	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
HC-IR#7	Arsenic contamination is commonly associated with gold mining; however, the risk assessment did not identify a predicted increase in arsenic exposures due to Project activities. To verify this prediction HC recommends that soil and water arsenic concentrations be monitored throughout the life of the Project. HC suggests that in the event that levels increase, additional analyses for arsenic, along with other COPCs in country foods be conducted. HC also advises that in addition to water quality monitoring-a soil quality monitoring program be included to enable verification of modeled predictions for all COPCs, including arsenic, along with a Proponent commitment that if soil and water quality monitoring results demonstrate that contaminant concentrations in environmental media increase, the potential health risk to human consumer of both plant and animal country foods will be revisited.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#8	Provide updated baseline metals samples to reflect the types of fish (both freshwater and marine) currently being consumed by local populations.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#9	Conduct a dietary survey among people in the vicinity of the project to establish what country foods are being consumed and their rates of consumption.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#10	As access to the Project site is not restricted to workers, the HHRA should assess the risk associated with inhalation of COPCs, including arsenic and nickel, for all people, including sensitive receptors - e.g. toddlers.	IR limited to the TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
HC-IR#17	Include the atmospheric pollutants associated with the Reclamation and Closure phase in the air modelling (Table 2.5-1. Phase 2 Interactions with the Ambient Air Quality VEC, page 2-37).	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
HC-IR#18	Include metals, PAHs and VOCs in the air modelling and human health risk assessment.	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
HC-IR#23	Include the middle section of the AWR in the modeling to evaluate the air quality impacts in this zone.	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
HC-IR#25	Calculate HQs and ILCRs for all emitted COPCs.	IR limited to providing any additional clarification on data used or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
HC-IR#26	Include the 1-hour CAAQS for SO2 of 170µg/m3 effective in 2025 in Table 5.4-1.	IR limited to providing any additional clarification on data used or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
Indigenous and Northern Affairs Canada (INAC)		
INAC-IR#9	Requests that the Proponent provide the following additional information: a) Analysis and modelling of potential effluent pooling in Aimaokatalok Lake bathymetric depressions. b) If effluent pooling is found possible, describe potential environmental effects and mitigation.	TMAC is requested to provide the data currently available on the subject, but the determination of adequacy of baseline data and the associated model will be further assessed during the technical review process.
INAC-IR#12	Requests that the Proponent provide further exploration of cryo-concentration ratios in the small lakes: a) Use only data from each individual lake to analyze possible cryo-concentration ratios, and present "*adjusted*" Goldsim predictions clearly. b) If under-ice concentrations are indeed to exceed guidelines in some small lakes, describe potential environmental effects and mitigation.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
INAC-IR#17	Considering the significant (>50%) difference between Environment and Climate Change Canada (ECCC) recorded data and ECCC data that are adjusted for under-catch for Cambridge A climate station, INAC requests that the Proponent provide the following additional information: a) An assessment of whether the Project site precipitation gauges would also be susceptible to under-catch that warrants a correction. This could be performed using the references cited in the ECCC documentation. Further, the Proponent should re-assess the relationship between Project site precipitation and Cambridge A precipitation using an apples-to-apples comparison that uses consistent (either recorded or catch-corrected) data for both sites. b) An assessment of frequency analysis results on maximum 24-hour rainfall amounts by month based on published EC daily data that are corrected for undercatch. The adjusted EC daily data are available online at ftp://ccrp.tor.ec.gc.ca/pub/EC_data/AHCCD_daily/. c) Short-duration (up to 24-hour) precipitation intensity-frequency-duration information that include appropriate adjustments considering the difference between 24-hour amounts for recorded versus catch-corrected data. d) Re-calibrate and re-run the Doris water and load balance model with catch corrected precipitation data or justify why this is not needed.	IR limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
INAC-IR#18	Requests that the Proponent provide the following information: a) {…} b) {…} c) {…} Recalibrate and re-run the model if warranted.	This part of the IR is limited to providing any additional clarification on data used in the model or explanation of current conclusions. Adequacy of baseline data and required updates to data would be determined through the technical review process.
INAC-IR#29	Requests that the Proponent provide a re-analysis or a commitment to identify and manage open boreholes appropriately when encountered.	IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.

IR No.	Information Request	NIRB Rationale
INAC-IR#30	Requests that the Proponent provide the following additional information: a) {…} b) Implement a marine water quality monitoring program to confirm the effectiveness of the silt curtain mitigation measure for water quality beyond the silt curtain containment area.	This part of the IR is limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.
Natural Resources Canada (NRCan)		
NRCan-IR#1	Provide information on plans for more detailed geotechnical investigations to be conducted along the AWR to better assess ground ice conditions in sensitive terrain that may occur along the route.	IR limited to TMAC providing additional clarification on the topic. Required updates to the reporting, collection of additional baseline, or updates to models presented will be determined through the technical review process.