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FACSIMILE TRANSMISSION COVER SHEET

To: Stephanie Briscoe
Executive Director
NIRB

Date: May 25, 2001

Fax: 867-983-2594

☐ **Jack Kanjak, KITIA Lands Manager** - jkaniak@polarnet.ca

☐ **Stanley Anablak, KITIA Lands Officer** - sanablak@polarnet.ca

☐ **Mona Tiktalek, Community Laison Officer/Lands Clerk** - monat@polarnet.ca

☐ **Larry Adjun, DIO Officer – NTI**

Number of pages to follow this: 21

This fax was sent by: _____. **If you have not received all pages, please call (867) 982-3310/4010.**

Comments: Re: Review Submission - Jericho
Stephanie: There are two review documents for your consideration.
The first doc. is for the January 2001 EIS submission + second is for the November 2000 draft EIS, both by Tahera.

Kaana

Jack

May 25, 2001

Stephanie Briscoe, Executive Director
Nunavut Impact Review Board
Cambridge Bay, NU X0B 0C0

Dear Stephanie:

Re: Review Of Tahera's Jericho Diamond Project

Please fine below a review on the above mentioned development proposal of the Jericho Project in Nunavut. The review was conducted by Feisal Somji,MBA, James Slater, R.P.Bio. (KGL) and Stephen Wilbur, Ph.D. (Entrix Inc.), on behalf of the Kitikmeot Inuit Association.

The reviewers have forcused their comments on major environmental issues and the overall presentation of the documents and have provided remarks regarding specific envioronmental issues that were identified during their review.

GENERAL COMMENTS

Document Structure

The *Project Proposal* contains a "Note on Document Structure" which states in part that "It is important to note that all of the documents contained in Volumes 1 through 5 of this submission were prepared to clarify the document previously submitted and now makes up the complete submission (i.e., **any work carried out reviewing the previous submission is transferable to this submission**)." This statement is unclear as to what is being clarified, but was interpreted to mean that comments from KIA's previous review have not been addressed in the current submission, and that the material in this submission is essentially identical to the material in the previous submission, with the exception that the material is now presented in 5 bound volumes instead of 22 volumes. It also appears a number of figures and maps have been moved from the back of the "Project Description" in the November 2000 report to the back of Volume 3 in the January 2001 report. The only other change noted by the proponent is the renaming of the *Project Description* to *Project Proposal*. **The repackaging of these documents has in no way clarified them.** ***Our previous comments are still very relevant, and have been re-submitted along with these comments.*** **It is still not clear to us why this report was re-submitted, when it is, for all intents and purposes, a complete duplication of work already submitted, with no new information provided.**

In Volume 1, under "Note on Document Structure," it is stated that "...there is some repetition...in the introductions of the various reports... The reader will be required to proceed through each document for details on information that is required." This appears to be saying that the onus is on the reviewer to compensate for the lack of clarity and organization in the EIS.

Considerable time and effort was spent in determining the nature of the structure of this report. The submission of *two* draft EIS's (November 2000 and January 2001) by Tahera for the Jericho Project involved a substantial additional investment of effort, time and money by the reviewing agencies. We suggest that the onus is not on the reviewer to "proceed through each document for details on information that is required;" rather that it is the responsibility of the proponent to provide further clarification on the structure of the EIS, and to provide higher standards for quality control and organization throughout. It should be noted that both the Diavik and BHP EIS reports presented no such problems in terms of their organization.

It is recommended that the Executive Summary for each report clearly state in the first paragraph exactly what the nature, purpose and content of the report is. For example, in the Executive Summary for the Draft Summary EIS, the first sentence should inform the reader that this report is a synopsis of the entire 5-volume EIS. As another example, the Executive Summary for the "EIA" should inform the reader that the socio-economic impacts of the proposed project are addressed in a separate document.

Reference to Environmental Assessment Guidelines

There is an apparent lack of effort on the part of the proponent to provide a high level of quality control and consistency in this EIS. **Of particular note is the fact that the most recent draft of NIRB and NWB's *75-page* "Environmental Assessment Guidelines for the Jericho Project – Second Draft," (February 29, 2000) is *not* the one referred to in the EIS.** These Guidelines Report involved a great deal of time and effort to prepare. By not referencing the latest version, there are many issues that are not addressed. The first draft was 41 pages long, while the second draft was 75 pages. The second draft incorporates a number of new requirements, represents a substantial change from the first draft, and should be central to the production of the EIS. Yet this document is ***not*** referred to at all in the Project Proposal. The Draft Summary EIS refers only to the *October 5, 1999* Guidelines (First Draft), and *not* to the most recent guidelines, which were published *over a year ago*.

It is our opinion that the Jericho Project as proposed cannot be allowed to proceed because the proponent has not complied with the Environmental Assessment Guidelines for the Jericho Project, Second Draft (February 29, 2000). The proponent had 10 months to review these guidelines and comply with them, but instead referred to an older set of guidelines, which have been superseded.

Table 1.2 Concordance Table

It is apparent from the Concordance Table provided in the Draft Summary EIS that the proponent is referring to the First Draft Guidelines, since sections added since the First Draft (e.g., sections 4.30 – 4.33) are not referenced.

The Concordance Table refers to an EIS Summary Section, yet there is no document called EIS Summary. Presumably the reference should be to the Draft Summary EIS.

The Concordance Table is not consistent in presenting details, and in general does not provide sufficient detail to determine whether all the guidelines have been addressed, and apparently relies on the reader to make that determination. For example,

- various project component sections numbered 4.10.1.1 to 4.10.1.12 are only vaguely referenced to the entire Project Description document (which is now called the Project Proposal), rather than individual subsections in the Project Description. As a result, it is unclear which sections of the Project Description correspond to the guideline sections and whether all the guideline sections are completely addressed.

- In some cases the titles of the subsections are incomplete (e.g., Geology/*Mineralogy of the Kimberlite Deposit and Mining Methods*, Fuel *and Explosive* Storage Sites, Borrow Pits *and Quarry Sites* – the omitted part of section title is shown in italics) suggesting that the subsections may also be incomplete.

- Certain subsections are not referenced at all to the Draft Summary EIS (e.g., 4.10.2 Project Design, 4.12 Description of Physical Environment, 4.26.1 Overview).

This Concordance table is therefore obsolete. Nor are NWB's Draft Guidelines cited in the Reference sections of any of the reports. It is clearly stated in the Guidelines that "the concordance table must permit the identification of where each [requirement] is addressed in the text." This has not been done, nor are there any references to the other reports in the 5 volumes of the EIS where a given requirement is satisfied, aside from the initial references to the "EIS Summary" and "Project Description" in the Concordance Table.

Examples of Incompleteness

For example, an important issue in particular is not sufficiently addressed by the current Tahera documents. The February 2000 Draft Guidelines references "the final paragraph of Subsection 4.16," three separate times when describing the requirements for the Processed Kimberlite Containment, Water Supply and Management, and the Description of the Physical Environment. The final paragraph of Subsection 4.16 states that:

> *"...the Proponent shall recognize that, over the past 50 years, the western Arctic has experienced a warming trend accompanied by increased annual precipitation and increases in the magnitude and frequency of extreme weather events. Some General Circulation Models predict continued warming at high latitudes over the next century. There may be no immediate danger of permafrost degradation, but the Proponent must incorporate that possibility into the design of certain Project components..."*

Section 3.2 and 4.3.2 of the DSEIS briefly discusses global warming, and discounts its effects on the project, based on conclusions cited in the Diavik Comprehensive Study and that the mine has only an eight-year lifespan. However, various mine structures (waste dumps, dams, etc) will still exist after mine closure and will not be decommissioned. Thus, the potential effects on these facilities and on other related issues (i.e., water management) from global warming are still very relevant.

A second example of incompleteness is as follows. The guideline 4.12 Description of Physical Environment indicates that a baseline description for geomorphology and soils is required. However, no sections in the DSEIS describe geomorphology (i.e., the word was not even found in the Project Description, DSEIS or EIA) and soils. "Surficial Geology" and "Eskers" are briefly discussed in the EIA, but these sections are not referenced by the concordance table or the DSEIS. Further, the treatment of surficial geology and eskers in the EIA is rudimentary and lacks sufficient detail to provide any basis for addressing the intent of section 4.12 guidelines, which call for a detailed descriptions of permafrost-type features (i.e., ice lenses, thaw-sensitive slopes, high ice-content soils), geomorphology and soils (including eskers), and evidence of potential ground instabilities.

Terminology

There was some confusion in the review of this report resulting from the terminology used, information not included in the Executive Summary, and consultation with the proponent. Based on a discussion between the proponent and two of the reviewers in December 2000, the review of the November 2000 draft EIS was conducted on the understanding that the *EIA Report* was the principal document to be evaluated in terms of meeting NIRB and NWB requirements, and that the *EIS Summary Report* was to be disregarded. This is clearly not the case, and this misapprehension was carried forward to the review of the January 2001 draft EIS.

The terms "Environmental Impact Statement" and "Environmental Impact Assessment" are often used interchangeably in the realm of environmental impact assessment, i.e., they frequently mean the same thing. It should therefore be made absolutely clear in "Notes on Document Structure" in Volume 1 that the entire 5-volume set constitutes the *Environmental*

Impact Statement, and that the *EIS Summary* is a synopsis of the entire 5-volume EIS. We further ***recommend*** that the *Environmental Impact Assessment* report be ***renamed*** (e.g., Environmental Effects Report, Evaluation of Environmental Impacts, Biophysical Impact Evaluation, etc. – something that will avoid further confusion), and that it is clearly stated in the "Notes on Document Structure" that the "EIA" is confined to an evaluation of biophysical effects (and not socio-economic effects, which are assessed separately) resulting from Project development, operation and closure, and does not include mitigation strategies, which are contained in the "Environmental Management Plan."

DETAILED COMMENTS

VOLUME 1 – JERICHO PROJECT PROPOSAL

Section 1.1, page 3 (and Section 4.). The project schedule is obsolete (i.e., the proposed schedule on page 3 and page 21 indicates that the FEIS was to be submitted on January 2, 2001) and does not reflect a realistic appraisal of the time required for review and public participation at each stage. Dates provided in sections 4.1.2, 4.1.3, and 4.1.4 (EIS, Public Hearing, and Project Approval) are obsolete and need to be amended to reflect current expectations.

2.6 – 2.8 (Diamond Valuation, Estimated Resources, Resource Classification). Why is no overall dollar value given for the proposed mine operation?

Table 2.6 (indicated resources) suggests a value of about $302 million, and Table 2.7 (inferred resources) suggests a value of about $114 million. This is down considerably from a 1997 Lytton press release estimating the resource at $466 million. The question remains, is the Jericho project economically feasible with these numbers, or is it relying on finding new economic deposits during the 8-year life of the mine?

5.6 Production Schedule – Are there any major hitches (e.g., economic change) that could arise that would cause delays or accelerations to the proposed schedule. What would be the impacts to such a change? The flexibility of the proposed production schedule does not appear to be thoroughly addressed.

10.1 Intake Design and Construction. A causeway is proposed to be built 170 m out into Carat Lake. What is the lake's bottom substrate comprised of (i.e., proportions of fines)? Is it adequate to build a causeway? Have stability and turbidity issues been addressed for both construction and operational phases?15.1 Processed Kimberlite Characteristics. In reference to the storage volume of the PKC, how were the total volumes of fines and coarse determined? What is potential for these values to be underestimated? Are they mine life totals? The provided estimates are loosely defined. Similarly, the estimates for required

storage are not conservative and the storage requirement estimates vary depending on the assumed effective dry density – from 1.0 tcm to 0.75 tcm to 0.5 tcm (from 380,000 to 506,000 to 760,000 tonnes), which is a big difference in design criteria. The final dam height of 524 m provides a storage of 1,325,000 m^3, with 300,000 annual water each year, implying they could go 2-3 years without discharging. However, the plan is to discharge each year. What are safeguards to this plan, and what happens if supernatant can not be discharged?

16.0 - Water Management sections are included in the Project Description, the Draft Summary EIS, the EIA, and in Volume 5, Section 1 Mine Waste and Water Management, but in the concordance table is referred to only the Project Description. Thus these other sections are redundant and cause ambiguity as to whether supplement or duplicate one another.

16.2.3 – Stream C1 Diversion. "Stream C1 diversion is shown in its approximate location on Map E and with more detail in Figure 5.5." There is no Stream C1 in Figure 5.5, and there is no Map E. Is this referring to another report? The diversion can be seen in Figure 3.1. Map E is first referred to in 16.2.1, but there is no reference as to which volume it can be found in. Generally, there should be a more consistent way of referring to maps (perhaps in a master list of at least Maps A-F provided in each volume along with the existing volume summaries) so that they can be found, especially if the map being referred to is in a different volume. It is not up to the reader to sift through all the volumes to locate the correct figure or map. It was finally determined that Maps A through F are located at the back of Volume 3.

16.2.4 – Processed Kimberlite Containment Area. It should be noted that the PKCA will be located in Long Lake.

17.0 – Sewage and Waste Disposal. The location of the wastewater treatment plant should include a reference to a map or diagram.

18.0 – Hazardous Materials. Should there not be MSDS / WHMIS reference numbers for hazardous materials provided in Table 18.1, or in a separate table? Again, the locations of hazardous materials should make reference to a map.

21.3.2 Open Pit. States that it is assumed that the open pit will not fill until 150 to 200 years. What measures are being implemented to protect wildlife from being trapped in the pit? The stream re-diversions may not be practical or acceptable over this timeframe. Also the estimate assumes no groundwater inflow, yet the effect of global warming is not addressed. Will there be a tendency to use the pit as a dumping zone due to its expected long life? What is technical basis for 150 to 200 years? Shouldn't this estimate vary at least by a factor of 2, which is comparable to the estimates of mean annual runoff provided in an earlier section?

21.3.2 – Open Pit. Will the lake formed by gradual flooding of the abandoned pit contain any littoral aquatic habitat, e.g., for primary production and rearing fish (as is planned by

BHP and Diavik)? This section notes that shallows will be present, but it does not specify how deep they will be. It also suggests that the pit "may" support primary and secondary production, with a resultant net gain in fish habitat at no cost. This is pure speculation.

21.4.4.2 – Fish Habitat. The lake formed by the open pit will not likely be comparable to Carat Lake other than both will be oligotrophic. The pit lake will much deeper and the sides much steeper. Figure 5.4 shows the first bench at an angle of 45° with riprap. Will this be a gradual enough angle, and will the substrate particle size in the littoral zone be small enough to support the growth of phytoplankton, zooplankton, and fish so as to allow for succession?

There are numerous instances where further details on a particular subject are referred to as "previously discussed," but the reader is not referred to the volume or section in which they have been previously discussed. For example, in Section 21.4.4.1 Wildlife Habitat: "Wildlife habitat lost to create dumps, pads and roads will regain pre-disturbance productivity at the same rate as vegetation returns. Every practical effort will be made to accelerate this process as previously discussed." The volume and section for these should be properly referenced. The onus should not be on the reader to search these out, nor should the reader be expected to retain in memory exactly where the previous discussion took place, considering the amount of material there is to cover. The use of "previously discussed" without proper reference was also noted in other volumes of the report. These should be amended as well.

VOLUME 2 – DRAFT SUMMARY ENVIRONMENTAL IMPACT STATEMENT

Executive Summary – Environmental Effects. Paragraph six notes that there will be a "lack" of littoral habitat in the pit lake. Does this mean only a very small amount or a complete absence of littoral habitat?

3.3.11 – Endangered Species. "No rare, threatened, or endangered species of plants or animals are expected to be found in the Project area based on information obtained from COSEWIC." It should be mentioned that grizzly bear, wolverine and peregrine falcon, all of which occur in the project area, are listed as *vulnerable* (special concern) by COSEWIC.

3.4 – Traditional Knowledge. TK is discussed briefly in this report, under its own heading (two paragraphs). It is only referred to four times in the Baseline report within the context of various other sections, and not at all in the "EIA." It is also addressed briefly in the Community Consultation Record. No instances of TK could be found elsewhere. This does not appear to be an adequate assessment of TK as defined in Section 4.4 of the Guidelines.

4.1 – Scope of Assessment. This notes that the EIS examines areas of potential impacts pursuant to guidelines established by the Nunavut Water Board, September 1999. Updated guidelines were issued on February 29, 2000. **The EIS should be referring to these guidelines, which were submitted over a year ago.**

4.13.2. – Significance of Environmental Effects. The first sentence does not make sense.

4.13.5.3 – Wolverine. This is a generic discussion applicable to fox and wolf as well. The wolverine is listed as *vulnerable* by COSEWIC (the wolf and fox are not), and as such should be addressed as a distinct concern. There is no discussion of wolverine habitat, including denning and other critical areas within the project area, (Guidelines, 4.21.2.5). Sentence 2: "It is also essential that any road kills be disposed of by incineration immediately." This should be clarified; i.e., road kills need to be disposed of so as not to attract wolverines, which in turn may become road kills themselves.

General question for wildlife: what measures will be taken to ensure that wildlife do not drink from the sedimentation ponds?

4.17 – Outstanding Issues. This states that there are no major outstanding issues associated with the proposed project, and that "a small number of minor issues" are addressed in the Community Consultation Record. The issues raised in the CCR include employment opportunities; contract opportunities; training; when the would mine start; equity in hiring from all communities; project effects on water quality; and project effects on caribou, especially interference with movement. These would hardly be considered minor by the people who raised them.

5.4 – Domestic and Industrial Wastes. From the Guidelines, 4.21.1.6 Sewage and Solid Waste Management: "The Proponent shall assess the potential impacts of ...solid waste and sewage, identifying **whether either might act as an attractant to certain species of wildlife**"; and 4.21.1.7 Hazardous Materials Management: "The Proponent shall assess the potential impacts associated with the transporting, handling, storing, using, and disposing of hazardous materials, including explosives...**and the possibility that some such materials may act as attractants to some species of wildlife.**" These two points are not adequately addressed.

5.5 – Water Management. The entire first paragraph is repeated (i.e., document editing was not thorough). Also, several possible alternatives to water management are presented, but the preferred or best alternative is not determined, nor are the qualifications of each alternative described.

5.6 – Aquatic Management. It is noted that fishing will be prohibited in Carat Lake – this should read "in the VICINITY of Carat Lake," as noted in Section 4.14.1.2 (Harvest by

Angling). Otherwise this implies that angling would be permitted in other lakes besides Carat Lake. However, shore fishing only at Contwoyto Lake would not likely present a problem, but would likely depend on discussions between the proponent and DFO.

Maps

No index or cross-reference is provided for the six maps comprising Volume 3, Section 6 - Maps. Are these only oversized maps, as other maps are found throughout the five volumes? How are these maps referenced in document (and which documents?)?

There appears to be some confusion in the Map letter for the Water Management Plan. It is referred to as Map E in the "Maps" Section, but was called Map C in the previous submittal (i.e., provided to KIA in November 2000). The drafting date June 24, 2000 is the same on both maps, and no other changes are evident in the text of any of the documents to justify the two names.

END OF COMMENTS

We hope this meets your requirements for identifying outstanding unresolved issues in the EIS submission.

If you have any questions, comments, or concerns, please contact me at 403-716-3666 or fsomji@MeridianGeoscience.com.

KITIKMEOT
The Spirit of Discovery

Memorandum

DATE: December 22, 2000

TO: Jack Kaniak, Land Manager, KIA (jkaniak@polarnet.ca)

FROM: Feisal Somji, KGL

RE: REVIEW OF TAHERA'S JERICHO PROJECT ENVIRONMENTAL IMPACT ASSESSMENT AND SUPPORTING DOCUMENTATION

Please find below our detailed review comments on the above proposed development of the Jericho Project in Nunavut. The review was conducted by Feisal Somji, MBA and James Slater, R.P.Bio. (KGL), and Stephen Wilbur, Ph.D. (Entrix Inc).

DETAILED COMMENTS

JERICHO PROJECT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Executive Summary

In general, the Executive Summary does not appear to be thorough or comprehensive.

Water Quality is NOT addressed in the Executive Summary. This is a key issue in the North, and should definitely be included here.

There is no mention of Water Balance in the Executive Summary.

There is no discussion of Traditional Knowledge or Community Consultation.

It is noted in the Executive Summary that fishing will be prohibited in Carat Lake – this should read "in the VICINITY of Carat Lake," as noted in Section 16.1.2.3 (Harvest by Angling).

Stream C1 will be diverted around the proposed open pit. This appears to be an important stream in terms of fish diversity and possibly abundance. Its mouth also supports known spawning habitat for Arctic char. The Executive Summary does not address restoration of suitable fish habitat in the diversion channel (although it is noted in Section 7.2.1 and 16.1.3.2 that no fish habitat in Stream C1 will be lost, this should be noted in the Executive Summary).

It is noted that socioeconomic issues are dealt with in a separate report impact report (as well as the *EIS Summary Report*, but a summary of those impacts should be included in the Executive Summary of the *EIA Report*.

Introduction

The Introduction does not provide adequate rationale or background for the development of this project, not does it address the regulatory framework (i.e., NIRB) under which this project will be evaluated (which is to be found in the *EIS Summary Report*).

Although it is stated in Section 1.6 that this *EIA Report* is the principal document of the 21 provided, it appears that the crucial information is divided up into several documents, as noted above. This arrangement gives the overall impression of poor organization and inconsistent or incomplete editing, and also makes it difficult to cross-reference and confirm information and to locate certain drawings and maps. It is suggested that the crucial information be combined into a single report to consolidate material, and that further editing be undertaken to improve organization and avoid duplication of the information provided.

Generally, maps, figures and charts (e.g., timelines, an overall plan of the project) are not adequately provided or referenced in this document. For example, Map A is referred to in this document, but is contained in the Project Description, a separate document. This is only referred to in a hand-written note in the TOC. It should also be noted that a copy of Map A is provided in the Baseline Summary Report.

Is there a Contingency Plan in the event that any of the containment facilities fails?

There appears to be no flow diagram showing the pathways for waste streams in any of the documents.

Is there a contingency plan to take IMMEDIATE action in case one of the containment facilities fails? (Section 7.3 and 9.3)

There is no mention of Traditional Knowledge in the EIA, only in the EIS Summary and Baseline Report.

Proposed Development

The numbers provided for the defined resource indicate a value of somewhere between $189 million and $239 million US over the 8-year life of the project. This is down considerably from a 1997 Lytton press release estimating the resource at $466 million. Is the current estimate enough to make the project economically feasible if no other economic diamond deposits are found on the Jericho property? It is noted at the Tahera website

(www.tahera.com) that "The feasibility study indicates that 3,000,000 carats will be produced over an 8-year mine life. The Project shows excellent economics with a base case pretax IRR of 34.3%." Does this mean, in fact, that the Jericho Project will be economically feasible as a stand-alone project?

9.3.1 Water Quality, Accidents and Malfunctions, Mining

The reader is not referred to any drawings showing the overall layout of the project, or the location of waste rock piles, PKC facility, or sediment containment ponds.

Paragraph 1: "No meaningful prediction can be given for the amount of suspended sediment that might reach Carat Lake..." Why not assume a worst-case scenario?

Paragraph 2: "An increase in sediment [in Carat Lake] would be short term, given that the failure were contained immediately." What plans are in place to ensure these facilities would be monitored frequently enough to ensure immediate action?

15.0 Wildlife

There does not appear to be any mention as to the status of certain species, e.g., grizzly bear, wolverine and peregrine falcon are listed as vulnerable (special concern) by COSEWIC. This should be taken into consideration when evaluating potential project impacts. While it is noted in the Baseline Summary Report that no rare, endangered or threatened species occur in the Jericho Project area, the EIA does not mention that the above vulnerable species occur here.

15.5 Significance of Environmental Effects

Four criteria are apparently used: spatial (regional or local); temporal (short-, medium-, long-term); and levels of significance (major – $\geq$ 10% change in population, moderate – 1-10% change, and minor – <1% change; and also high – >30% change in habitat, moderate – 6-30% change, and low – <5% change). It is explained that these are based on the informed judgement of experienced scientists and the results of previous studies, and are and combined "as appropriate." However, these criteria are not applied uniformly for each VEC, and the reasons for applying one or more term to one VEC and not another are not clearly explained. This approach in general does not appear to be as rigorous, robust, or logically consistent as is, for example, the approach for evaluating impacts used for Aquatic Resources. Also, most of the effects are deemed to be "minor," which seems to imply some kind of quantitative assessment is being applied, according to the definitions above. The result is that the evaluations appear to be ultimately arbitrary, and the overall effect is confusing.

15.5.3 Levels of Significance

"An environmental effect is rated minor if it is judged to result in a change in the animal population size, or resource harvest that is less than one percent." Is this referring to global, regional, or local populations? It is mentioned, in Section 15.8.3.1 (Raptors) that active peregrine falcon nests were found in every raptor nesting survey in the Project area, but no numbers are given. However, it is concluded that, although some breeding pairs may be displaced, the effect will be minor. How can this conclusion be reached if a) the number of breeding pairs is not known or provided; b) the number of displaced pairs is not known or provided; and c) world, regional or local populations are not know or provided? The same kind of reasoning appears to be applied to the other raptors in the Project area as well. If these numbers are provided in the baseline report, this should be noted or referred to. This quantifiable reasoning is, however, applied to caribou, with statistics given. A consistent methodology appears to be needed here, or at least the reasons for not applying it needs to be explained. Also, there is no mention, with regard to raptors at least, whether impacts will be, for example, local and moderate. It is only stated that they will be minor.

The extent of impacts to grizzly bears as a result of mining activities is not evaluated, although they are evaluated with respect to transportation activities.

15.7.2.4 Caribou

This assessment assumes the Jericho Diamond Project will be abandoned and in the reclamation phase after 8 years, but one of the goals of the Project is to discover other economic diamond deposits in the project area. It should therefore be explicitly stated that this assessment is based on the assumption that no further deposits will be found.

There appears to be no mention of whether certain operations will be suspended if there is a large influx of migrating caribou through the project area.

15.11 Summary – Environmental Effects of the Jericho Project (Wildlife)

"No measurable cumulative environmental effects are foreseen for wildlife populations." What if additional economic diamond deposits are discovered and the mine life extends beyond 8 years? Since this is one of the objectives of the project, it should be stated that this conclusion assumes no additional deposits will be found.

16.0 Aquatic Resources

16.1.4.1 Mine Runoff

"...the only constituents of the mine runoff that may exceed water quality guidelines are copper and ammonia." Section 9.1.1.3 notes that possible exceptions (due to waste rock runoff) to CCME guidelines for Metal Mine Liquid Effluent are copper, aluminum and arsenic (arsenic is discounted for acceptable reasons). Is it not possible that aluminum could pose a problem as well? Aluminum levels are naturally high in some areas of Carat Lake, and aluminum is also associated with kimberlite; as well, in toxicity tests in fish (Fox kimberlite, Ekati mine), showed that sub-lethal effects on fish included accumulation of aluminum in the gills. Lake fish in Carat Lake were found to contain three times the concentration of aluminum in liver than in Izok and Nisha Lakes (RL&L 2000). This may be even more of a problem with runoff from the PKC facility.

17.0 Biodiversity

Paragraph 3: "Species of concern [presumably according to the Arctic Council's Conservation of Arctic Flora and Fauna] that are found in the Project area are barrenland grizzly and peregrine falcons..." Would this not also include the wolverine, which, along with the grizzly and peregrine falcon, is listed as vulnerable (special concern) by COSEWIC?

21.0 Cumulative Environmental Effects

21.13.1.5 Caribou

Paragraph 1: "The value of such collaboration [between Tahera and the Government of Nunavut and other organizations] is demonstrated by the caribou telemetry data reported above." Perhaps this should read, "reported below" as neither telemetry data nor WKSS findings appear to be discussed previously in the EIA (notably in the impacts section, which would appear to be a deficiency); rather, there is some mention of them in the separate Baseline Summary Report. A more specific reference is therefore needed here.

21.13.2.1 Caribou

Paragraph 5: This lengthy paragraph is a complete repetition of paragraphs 1 and 4.

JERICHO DIAMOND PROJECT DESCRIPTION

4.1.2 Project Schedule, Environmental Impact Statement

"Tahera will submit a draft EIS to NIRB in October 2000. Due to a *change in plant location* environmental information is required prior to completing the EIS. A final EIS will be submitted after review by the appropriate environmental agencies." When was the change in plant location made? Is this referring to the processing plant only?

BASELINE SUMMARY REPORT

Executive Summary, paragraph 10: "...results of the WKSS reports have been evaluated and findings incorporated into the Jericho Diamond Project environmental assessment where appropriate." Where are the references to WKSS studies in the EIA Report?

The project description in the Baseline Summary Report is more comprehensive than the overview presented in the EIA.

13.0 Rare and Endangered Species

This should mention peregrine falcon, grizzly bear and wolverine, which are listed as vulnerable (special concern) by COSEWIC (2000).

SOCIO-ECONOMIC IMPACT ASSESSMENT

No major deficiencies found. It is suggested that the positive impacts of the Project be emphasized in the Executive Summary, e.g., the proponent plans to enter into an Inuit Impacts and Benefits Agreement with the Inuit of Kitikmeot, and the recommendation that Tahera can mitigate negative impacts on employees and their families due to rotational work by providing counseling services.

ENVIRONMENTAL IMPACT ASSESSMENT – AQUATIC BIOTA

No major deficiencies found. However, some questions remain:

Why are cumulative effects not addressed in this report?

It is also noted in the Executive Summary that "Based on the proposed development in the Jericho Site and the mitigative measures that will be implemented, it is not know whether compensation will be required." This appears to indicate that the level of detail provided does not allow for a compensation plan to be drawn up. Is this satisfactory to NIRB, i.e., will they allow the project to proceed (e.g., subject to certain conditions) in the absence of a compensation plan for aquatic resources?

Are there any plans to allow Long Lake to be fished out prior to its being removed from production?

Has the possibility of creating littoral aquatic habitat around the edges of the open pit following mine closure (as is planned by BHP and Diavik) been considered as part of the compensation plan?

2000 WILDLIFE REPORT

This was not reviewed due to time restrictions; however, the synopsis of this report, provided in the EIA, was reviewed (above). The wildlife report will be reviewed in full should a detailed evaluation be required.

OCCUPATIONAL HEALTH AND SAFETY PLAN

It is noted in the Introduction that the mine planning has not been finalized, and that the OHSP is therefore conceptual in nature (document dated October 15, 2000).

WATER MANAGEMENT ISSUES

The overall water management objectives are conceptual and not always clear. There is the essential premise that they will divert the clean runoff, and collect and slow down the impacted water, but the specifics as to how this will be done is not presented. In general, all water will ultimately discharge to Carat Lake, but it is not clear what type and degrees of protection will be taken to ensure the protection of water quality.

A detailed water routing schematic has not been provided. This schematic should explain where water is derived and discharged, and how it is consumed, collected, processed and treated. The water components should be quantified and balanced with respect to natural climate factors and mining needs. The Map C entitled Water Management Plan, which is in a few documents, is general and conceptual in nature, and is missing important information (e.g., sub-basin boundaries, water management boundaries, directions of water flow, distinctions between impacted and non-impacted water streams, identification of locations of discharge to the environment, etc.).

There is no water balance for the main water facility (i.e., the Processed Kimberlite Containment Area – PKCA) and the water balances for Carat Lake, and Lake C3 are general, simplified and very rough. Each year, continuous discharge during ice-free season to the environment from the PKCA (via the settling pond) is proposed, yet there is the likelihood that some constituents (i.e., ammonia) will exceed the criteria for protection of aquatic life. This does not seem to be the most prudent approach, and contingencies for non-discharge or delayed discharges have not been evaluated. Further, the calculations that supports the

decision to discharge over 300,000 m^3/yr of PKC effluent to the environment are inconclusive with large inherent variability (this also implies that no treatment or minimal treatment is planned). Finally, the effect of commingling at least five different water sources (watershed runoff, precipitation, wastewater treatment plant, fine tailings, and coarse tailings) in the PKCA on resultant water quality was not addressed.

In support of the water balance estimates, two methods to derive the mean annual runoff (MAR) were used, but resulted in large differences (i.e., 130 to 250 mm); these values were different than reported in supporting documents (i.e., 190 mm). There is no discussion as to which estimate is better. In addition, the mean annual precipitation was reported as 300 or 330 mm, depending on the report. Further, it was unclear what was the accuracy of and basis for the mean annual lake evaporation (280 mm) or mean annual evapotranspiration (200 mm). Apparent large inherent variability in the water balance calculations have not been addressed, nor have seasonal or annual variation of these values been evaluated (i.e., a very wet month, year or successive wet years).

In general the local or regional climate data used for the water balance was not made available (referenced to some other study), or incompletely presented (i.e., some data in figures, some in tables, some not available at all).

What was the runoff distribution presented in Table 16.1 of the Project Description based on? Does the information incorporate the local snow survey data or regional snow water equivalent data? One cannot duplicate the presentation of data with the information given; original data references and/or summaries of the data should be provided in the appendices.

Conceptual drawings regarding a settling pond, energy dissipation pond, dike and dam placements are provided. In some cases detailed design specifications are also provided. What is the basis for the site-specific design criteria or plans that are provided? The variation in level of detail implies an unequal level of understanding of site conditions and project plans. Have these designs considered all the necessary hydrologic design criteria, seepage, suprapermafrost subsurface flow, and structural stability issues common to the arctic (i.e., freshet and ice-over, thawing permafrost)?

The mining plan assumes that no groundwater seepage will occur. This assumes that melt from ice lenses will be negligible and the final depth of the open pit will not encounter groundwater due to permafrost. What are the final depths of the open pit and underground operation? What is the basis for the indicated permafrost depth of 540 m bgs (i.e., are there any ground temperature profiles for this site)? What is possibility that this could be much shallower, and that groundwater inflow could occur? Are there any contingency plans for this?

Water Quality

The predicted water quality of discharge streams is discussed on conceptual levels only. Although treatment options are presented, little information regarding effluent water quality and site-specific design criteria were presented to evaluate the suitability of various options. In general, the available documents present initial feasibility concepts, but do not provide sufficient detail to understand the potential impacts to water quality, nor will they be sufficient for developing discharge criteria for the water licence.

For example, how were the predicted effluent water quality shown on Table 15 of the Project Description derived? Was variable retention time in the PKCA considered? What is the possibility that the runoff/effluent generated during the freshet would be discharged that year? What final "treatment" is expected to occur in the "polishing" pond? How will nitrate/nitrite concentrations be increased by the degradation of ammonia? What was the basis for the predicted low total suspended solids (8 mg/L) and turbidity values (5.2 NTUs)? The analyte list appears to be incomplete (e.g., total nitrates, nitrites, anion/cations, phosphorus, cadmium, lead, mercury, arsenic, chromium, etc. are not shown).

Various options for dealing with ammonia were presented in section 16.2.2.3 of the Project Description (e.g., dilution in Carat Lake, PKC, Lake C4, or spray irrigation, overland treatment, wetland treatment, or bacterial treatment). A preferred option is not presented. The discussion also implies that ammonia will be the only problem. How well is this established?

The implementation, design criteria, locations and use of silt fences are not clear. For example, section 10.1 of the Project Description indicated that "a silt fence will be placed around the area to prevent sediment from drifting away from the construction site in Carat Lake." Is this silt fence in the lake – how will this work? What will protect the lake when the causeway is constructed? There will be acute impacts to aquatic biota. What is the duration of impact? How long will it take to build the causeway? Are all DFO requirements being satisfied?

What is the basis for the design of the sediment collection ponds presented in Section 16.2.2.2 (i.e., the pond will be 50 m wide by 200 m long with baffles – what are these dimensions based on?) Why are British Columbia MOE guidelines referenced, but no arctic specific criteria for Nunavut (or NWT or Yukon that would be more appropriate). Also, sediment control design criteria appear to be base on annual hydrologic data, not monthly or event specific, even though erosion and sedimentation control are event driven.

Where will water quality be monitored on the mine site and vicinity? Has a Surveillance Network Program (SNP) been developed? How will future monitoring be related to monitoring conducted during previous baseline characterization work?

Management of Waste Rock, Ore, Processed Kimberlite and Other Materials

Although geochemical studies suggest that the waste rock, processed kimberlite and ore stockpiles would not be acid generating, it is difficult to ascertain whether a logical and consistent sampling strategy was appropriately designed to sufficiently characterize each rock type. The drilling and sampling conducted since 1995 appears to be only a series of individual events intended to characterize specific geologic zones of interest (i.e, economic aspects of kimberlite), but there is no apparent overall strategy discussed or designed that adequately characterizes all the geologic units that would be mined and form the dumps or stockpiles. For example, there are no geologic maps and cross sections provided that show drill hole locations and samples analyzed with respect to each geologic unit. Although the granites and granodiorites have been analyzed, is the drilling and sample spatial distribution complete and representative of all zones of the waste rock that will be mined? Also, very little information exists on the extent and distribution of other rock types such as the biotite schist and diabase.

Sample analyses indicate that ammonia concentrations in discharge streams from tailings, waste rock and ore stockpiles will be ten times what were expected. Apparently, this was due to the inadequate management of explosives during the exploration phase of the project. What were the actual causes of the high concentrations, and what new explosives management programs will be implemented to assure that the environmental risks associated with ammonia will be reduced?

The sewage and waste disposal plan is apparently only conceptual at this time (i.e., a general description of a treatment process that might be used anywhere). Was a proposed treatment program designed specifically for the Jericho Mine (e.g., number of people, arctic conditions, treatment conditions available etc.)? What are the estimated concentrations of constituents in the treated wastewater? Treated wastewater will apparently be discharged to the PKC, which will then mix with water from other sources and then be discharged to stream C3. What is the effect on water quality (e.g., ammonia) of mixing waters from the treatment plant and tailings?

The secondary containment for the fuel farm is only 110% of the largest tank. This implies that Tahera anticipates that a failure (i.e., leak or spill) would occur from only one tank. What are the contingencies for failures from more than one tank?

The hazardous materials management plan is only conceptual at this time. What site-specific conditions are being considered that would require unusual or special management approaches?

Baseline Data

In general, the reference and use of tables and figures is careless. This presentation is carried through from the Baseline Summary Report and into various other documents. For example, references to specific tables or figures are not always made (i.e., Figure 2.2 Wind Summary), the same figure numbers are used more than once (i.e., Figure 2.2 for Wind Summary, and Jericho Average Temperature and Average Rainfall). When the data is depicted, sometimes figures are presented and sometimes tables are used, but rarely both. In some cases, data is discussed but not presented. In other cases, the figure titles are inaccurate (i.e., monthly mean rainfall instead of monthly total rainfall), axes are incorrectly labeled (i.e., 800 mm instead of 80 mm), or data is missing (i.e., in the wind rose diagram looks there are no proportions for the N22.5E and N45E sectors – the total adds up to only 90%). This form of presentation implies that the documents were assembled in a hasty manner, without thorough or adequate review. In general, figures and tables should complement one another, be adequately referenced and discussed in the text, and all available baseline data (or a summary of that data) should be concisely presented in an appendix.

The 26-year annual precipitation of Contwoyto Lake is shown as 246 mm, yet there are references to an annual precipitation at the minesite (i.e., in the Project Description) of approximately 300 mm, and other documents (i.e., the Water Management Plan) of 330 mm? Which value is being assumed? The obvious effect of the problem of snow "undercatch" on the Contwoyto Lake data is not presented well nor adequately addressed.

The basis or reference for the lake evaporation value (280 mm) is not clear. Also the annual and seasonal variations of evaporation and evapotranspiration are not discussed.

The nomenclature of the water quality sampling locations is different than that of the streamflow monitoring locations. This implies that the two are being done under separate programs. Water quality and water quantity sampling programs should be well integrated and complementary to adequately collect useful baseline data.

In general, the most recent water quality data (from the year 2000) have not been included. Also, it appears that sampling comprehensiveness decreased in 1997, 1998 and 1999 and was, in general, not uniform. This implies that Tahera believes sufficient data has been collected to establish the natural variability in background. Yet, in review of the existing data set, out of 28 water quality stations, only 5 stations were sampled at least once in four different years, while only one (CL-02) was sampled in all five years. In general, only

during the 1996 data set were samples collected in 4 or 5 separate months. Further it is difficult to discern the flow regime under which the samples were collected.

Regional or local snow water equivalent (SWE) data for April are not presented. In general, April SWE data are much more important than winter snowfall data when estimating freshet runoff.

The streamflow database is fairly scant, as almost the entire local site data are point measurements. Prior to July 2000, there was only one continuous recording stage station. The reliance on regional flow data may not be appropriate for the smaller basins that have to be managed on the mine site. Also only mean annual runoff is addressed. The possible annual variation of annual runoff under different recurrence intervals was not addressed, nor were data presented that could depict rainfall or snowmelt related runoff events.

The report referenced regional WSC streamflow monitoring stations. Where are they in relation to the proposed mine? Also these regional stations are all very much larger than Carat Lake and the mine site drainages (i.e., 1,530 to 19,600 km^2 compared to all less than 0.2 km^2). In this case, the mean annual runoff relationship as discussed in a number of documents should not be used without some adjustment to reflect the affect of drainage area (i.e., the seasonal proportion of flow does not decrease linearly with the decrease in drainage area).

Not all of the data is updated for 2000; and in some case the database is scant or incomplete, and with large data gaps (i.e., local precipitation).

Table 3.1 references specific catchments. Where are these depicted? There is no apparent map that outlines these mine-site catchments. This should be part of baseline data presentation and also form the basis for structuring the physical boundaries of the water management plan.

END OF COMMENTS

We hope this meets your requirements for identifying "sore thumbs" in the EIA Report and supporting documentation.

If you have any questions, comments, or concerns, please contact me at 403-716-3666 or fsomji@attglobal.net.