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Yellowknives Dene First Nation
Land & Environment Committee

Environmental Assessment of TAHERA's Proposed Jericho Diamond Mine

Public Hearing Submission to the Nunavut Impact Review Board

November 10, 2003.

This submission is intended to offer to the Nunavut Impact Review Board the concerns of the Land & Environment Committee of Yellowknives Dene First Nation, in the matter of the proposed Jericho Diamond Project.

We wish to make known our views and fears about this project as it has the good possibility of affecting the Bathurst Caribou Herd, as well as air quality and other environmental interests of significance to the Yellowknives Dene.

We thank you for the opportunity to make our views known, and trust these will be factored into the Board's deliberations on this project.

Yellowknives Dene Issues of Concern
Jericho Diamond Project

A. ROAD IMPACTS

(1) Increased Road Traffic**:** Tippett-Contwoyto Winter Road

Tahera's EIS states that we can expect an additional 441 trucks over and above what will already be using the winter road, to supply the Jericho mine during the 3 years of construction**. However, Tahera's fisheries consultant erroneously uses the figure of 361 trucks. Will using the 441 number change Tahera's risk assessment for cumulative aquatic effects on lakes and streams along the winter roads?**

(2) ACCIDENTAL SPILLS : Tippett - Contwoyto Winter Road

The EIS assessment of the potential magnitude of a spill of petroleum into a lake is rated as high for small lakes, but only moderate for larger systems the size of Contwoyto Lake. However, the volume of spilled petroleum product such as diesel that was used in the risk assessment is not given in the text. Is TAHERA using the same spill volume as did De Beers in its EA Report?

In the EA Report for the De Beers' Snap Lake Diamonds Project, a worst-case scenario considered a diesel spill of only 200 L., based on the premise that check valves on the diesel tanker truck, that prevent excess flow out of trucks, would always work. This valve keeps a spill to no more than 200 L maximum. But if a malfunction of the check valve occurred, then we would expect the full contents of the tanker to flow into the spill area. A result of this worst-case scenario would be much greater diesel spill volume into a water body. Incorporating the above worst-case would increase the spill volume by 75 times**.**
In fact, a March 3, 2000 accident on the winter road north of Dome Lake did release 15,000 L from an overturned truck. This volume would increase the maximum concentration of diesel to levels above the Aquatic Toxicity Threshold that TAHERA uses as its safety yardstick.

(3) Access Road: Jericho to Contwoyto Lake:

(3a) We fear there is potential for the Contwoyto Lake access road to act as a barrier to caribou migration. **If proper access ramps are not built into the road at main points of caribou movement, how will the caribou react?**

- try to climb up and over the road, possibly injuring their legs and hooves on the rough granite rock on the sides of the road?
- detour to the west, joining other caribou moving through the core mine site?
- detour to the east around Contwoyto Lake?

We need answers to these questions.

(3b) We also believe that **caribou behaviour** when encountering roads should be assessed. This would provide the information needed for Tahera to design the most effective mitigation to accomodate caribou migrating through mine site.

(3c) TAHERA wants to build an all-weather access road, in the event that low snowfall years hampers the building of a winter road. **Has Tahera compared the snowfall records for the north end of Contwoyto Lake and the south end of Pellatt L.** (at which point the long stretch of road over lake ice begins) ?
If they are similar every year, then the need for an all-weather access road to Jericho rather than a winter road seems illogical. This is because if lack of sufficient snow prevents building of the access road, this same lack of snow would prevent building that portion of the road that extends to Pellatt, and thus bulk cargo would be stopped long before it could get to the access road at Jericho, regardless whether that road was all-weather or ice road.

B. CONTAMINANTS in ANIMALS and PLANTS

(1) ANIMALS in the PKCA

(1a) Caribou :

Will the tailings at Jericho be eaten or licked, and/or will standing water in the tailings pond be drunk by caribou? What measures will Tahera take to ensure this does not happen at Jericho?
Tahera believes that there will be “no negative interactions” with the tailings pond, based on photographic studies at the Lupin mine in 1993. (*“Environmental Effects on Wildlife” Hubert & Assoc. P.25*) However, caribou have been observed to eat tailings at the Colomac mine in the N.W.T. It is thought that the tailings pond there attracts caribou, acting as a large salt lick. This is an alarming situation with possible consequences for both caribou health, and the health of Inuit and Dene hunters who would eat meat and internal organs from such affected caribou. Jericho’s kimberlite tailings pond (PKCA) would probably also be an attractive salt lick for caribou as the FEIS states that it will contain water with high TDS (salts) content.

Although Tahera is planning to install fences to deflect caribou around the core mine site, we note the EIS states that "*..individual caribou or small bands (<10)..may take up temporary residence in the Project area for periods of a week or more during the snow free season...In these situations it is important to examine the nature of the risk faced by the animals in interactions with normal mine site activities and adopt a strategy of co-existence.*"(p.24 of above report) We believe the mine should endeavor not only to coexist with caribou on its mine site, but also to safeguard the health and safety of caribou while on the mine property.

(1b) Water Birds:

TAHERA states "The PKCA, being essentially devoid of aquatic life, will not be attractive to waterfowl." **This assumption is not supported by data.**

- There was no aquatic life in a pool of oil in the land farm at EKATI, but ducks landed in it anyway !

TAHERA: "We note that bird deaths are not an issue at .. EKATI™."

- **This is not entirely accurate. The land farm attracted ducks that became oiled and eventually died**.

The only reason why bird deaths are not currently an issue at EKATI is BHP-B's immediate mitigation of the problem has prevented bird deaths from occurring again.

(2) Monitoring Contaminants in Animals:

Chemical contamination in animals (especially animals that Dene people eat) has always been a concern for YK Dene. However, we recognize that identifying the point source of contamination can be difficult in animals with long migration routes such as caribou, ducks and geese.
Ground squirrels ("sik-siks") are recognized by some as early-warning indicators of site-specific contamination of the land. Since they don't migrate out of the immediate area like caribou, ducks or geese do, any increase in contaminants in their bodies indicate a source in the immediate area.
TAHERA's consultant, Hubert & Assoc report (B.1.3) that ground squirrels are active from May 10 (p.18) though mid-August (Appx 4). This makes it a maximum of 15 wks, not 8 as the Final EIS Supplementary Report states.
Since arctic ground squirrels live longer than the 2 yrs life span of mice and voles, and they may be active for double the time period that TAHERA believes, we would like TAHERA to explain why biomagnification of contaminants is not possible or detectable in these animals.

(3) Caribou Access to Pit:

p.73 of FEIS report describes the process of pit development, but we failed to find a physical description in Appdx A.1 or B.3.2 of the final pit berm (dimensions, rock particle size, etc)

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So contrary to what AMEC states (p.26 of FEIS), DSD is correct in stating there are no detailed plans for the pit rim berm. This makes it difficult to evaluate how effective the berm will be in keeping caribou out of the pits.

(4) Ammonia Nitrate Storage:

Tahera has committed to using a bermed open-air storage pad. The berm would prevent spilled Ammonium Nitrate prill from dissolving into runoff from the pad and thus moving into water bodies. But impacts on aquatic environment is not the only potential for harm if these bags are torn. If bags get torn, through weathering or accidental puncture, then **the prill would be poisonous to birds if they eat it. Only inside a building could this impact to birds be prevented**

(5) Contaminant Uptake in Plants:

TAHERA is proposing a monitoring plan for contaminants in lichen on the mine property. (p. 37 of Supplemental Report). We applaude this plan.

BUT we would recommend that Tahera **put in place a monitoring program to investigate the uptake of contaminants in plants as part of the company's plans to revegetate the Long Lake Tailings Containment Area**. BHP-Billiton has been doing these studies in their tailings pond revegetation programs, so Tahera could learn from their experience.

C. AIR QUALITY

(1) Dust Effects on Vegetation

The Supplemental Report (p. 36) states: "Dust has not been found to negatively affect most plant communities" beside a gravel highway in Alaska, in a study by Auerbach, et al. (1997).

This is an odd comment as the footnote below this statement, seemingly intended to support the comment, actually contradicts it. The footnote says that the Auerbach, et al. study found that "Vegetation biomass of most taxa was reduced near the road [by] 50 to 80%", and "Sphagnum moss was nearly

eliminated near the road." These results are far from a finding of no negative effects.

(2) Road Dust Mitigation:

Nuna Logistics states that in their mining experience, water is the only effective mitigative strategy for keeping down dust on their mine roads. But BHP-B has successfully used. on some of their roads, a non-toxic chemical dust suppressant that lasts longer per spraying than does water**.**
Has TAHERA investigated this type of dust supressant?

(3) Air Quality Monitoring :

We are reminded that Tahera plans to station their high-volume air sampler on the roof of the accommodation building (Appndx B.3.3.5.1**). Considering the experience at Ekati, this may not be advisable.** There, TSP readings were contaminated by kitchen ducts that vented directly towards the air sampler ("Ekati Diamond Mine Environmental Impact Report", April 2003, p.26) on the roof of the acccomodation building. BHP-Billiton is currently planning to move this sampler to a new site.

D. CUMULATIVE EFFECTS on CARIBOU

Cumulative Effects of Regional Mining:
The Jericho mine, in combination with cumulative effects from mines further south in the Northwest Territories, has the potential to deflect Bathurst caribou away from their normal migration routes and wintering grounds. This could impact Yellowknives Dene if caribou displacement causes hunters to have to travel longer distances to harvest caribou.

Tahera's EIS (*Appndx B.2.2, p. 36*) states that there is little chance of cumulative impacts on caribou from all diamond mines in the Slave Geological Province. This is because caribou do not pass through Contwoyto Lake, Lac de Gras and Snap Lake in the same migration. However, satellite collar data from RWED showed that in one out of 5 study years between 1998 and 2002, a collared female caribou passed through Lupin, Lac de Gras and Snap Lake in a single migration (*Presentation at the Mackenzie Valley Environmental Impact Review Board's public hearings for the Snap Lake Diamonds Project environmental assessment*, *May 1, 2003*. *A. Gunn & R. Case*).

Tahera should re-evaluate their cumulative impacts assessment, with this information in mind.