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Department of Environment

Ministère de l'Environnement

Dec. 14, 06

Richard Dwyer
Licensing Trainee
Nunavut Water Board

via Email to: licensingtrainee@nunavutwaterboard.org

RE: NWB FILE# 8BC-TEH – TEHEK LAKE ACCESS ROAD PROJECT WATER LICENSE APPLICATION

Dear Mr. Dwyer:

The Department of Environment (DOE) has reviewed the water license application from Cumberland Resources Ltd. (Cumberland) for construction of an all-weather road and has the following comments.

1. **GENERAL COMMENTS**

DOE would like to remind NWB that this road is part of the larger Meadowbank Goldmine project. On November 17, 2006 the INAC Minister accepted the NIRB's report and determined that the project should proceed. Under the Nunavut Land Claims Agreement (NLCA) article 12.10.1, no permits, licenses or approvals should be issued until the project certificate has been issued by NIRB. A project certificate has yet to be issued, but it will likely contain a number of terms and conditions of relevance to this water license. NLCA article 12.9.2 requires that such terms and conditions be included in relevant permits.

Furthermore, DOE is aware that Cumberland has already applied for water licenses for two components of the Meadowbank project namely, the camp and construction of the road. A number of project components remain outstanding and DOE would like to know how Cumberland intends to proceed with water licensing for these components. In addition, DOE would like Cumberland to explain their approach to licensing of the Meadowbank project, as the division of the project in this manner could result in additional hearings, issues with enforceability of inter-related terms and conditions, and expectations that issuing one license will automatically guarantee another.

Despite these issues, DOE has reviewed the technical information submitted by Cumberland based on our mandate under Nunavut *Environmental Protection Act* and its associated regulations and guidelines indicated here:

-*Spill Contingency Planning and Reporting Regulations*
-*Contingency Planning and Spill Reporting in Nunavut: a Guide to the New Regulations*
-*Guideline for Dust Suppression*
-*Guideline for the General Management of Hazardous Waste in Nunavut*
-*Guidline for Contaminated site remediation*
-*Guideline for the Management of Waste Antifreeze*
-*Guideline for the Management of Waste Asbestos*
-*Guideline for the Management of Waste Batteries*

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-Guideline for the Management of Waste Paint
-Guideline for the Management of Waste Solvents

2. SPECIFIC COMMENTS

ARD and Metal Leaching

Reference:
-Water License Application for the Tehek Lake Access Road; p5 & p39
-Air Photo Interpretation, Site Reconnaissance, Mapping, and Sampling: Tehek Lake Access Road, Meadowbank Gold Project Nunavut; p12 & Appendix VIII

Cumberland has indicated that non-acid generating rock will be used for road construction, but has not provided details as to how this commitment can be delivered. DOE recommends the following details be provided:

- Acid rock drainage (ARD) screening criteria used to determine acid producing potential from the rock excavated should be discussed;

- Assessing ARD and metal release characteristics is determined by laboratory- and field-based methods. It is a challenge to adequately extrapolate short term test results to larger scale field-based results and even more challenging to extend these findings into the future to assess potential ARD and metal releases over the life of the road. Therefore, DOE recommends continuous monitoring of drainage from both quarried rock, used for construction purposes, and areas of newly exposed bedrock.

- Mitigation and management measures for potentially acid generating materials that may be encountered during quarrying should be discussed, even though they may not be used for road construction.

In addition to ARD, metal leaching from neutral and alkaline drainage can also pose a serious hazard to the aquatic environment. Considering the volumes of rock to be removed from the eleven quarries, this possibility needs to be explored and monitored.

Erosion Control/Drainage:

Reference: *Water License Application for the Tehek Lake Access Road;* p11-12

Erosion control at water crossings is discussed and measures are proposed to limit sediment entering water courses during construction. However, high suspended solid runoff can be expected from road surfaces once constructed. Roadside drainage ditches will also provide pathways for this material to enter water courses. Removal of such pollutants is typically achieved by diverting runoff to sumps and settling ponds, and/or by installation of silt curtains. DOE considers that suspended solids from the road could have detrimental impacts on aquatic resources and that further consideration of management and mitigation measures is required.

Additionally, materials for construction of the roads will be obtained from eleven quarries. Within these quarries, significant volumes of water will likely accumulate from melting permafrost, snow melt and rainfall. Continued use of the quarries may require removal of this water. Considering explosive use, use of heavy machinery and the potential for acid rock drainage, this accumulated water could be contaminated. Cumberland should consider how they will manage quarry drainage to avoid detrimental impacts on aquatic resources.

Spill contingency

Reference: *Water License Application for the Tehek Lake Access Road;* p41

DOE understands that no fuel caches will be present along the road, and that fuel will be provided via fuel truck operation. We therefore recommend the following precautions are implemented:

- Speed on the all-weather road should not exceed: 30 km/hr for fully loaded vehicles and 50 km/hour for empty vehicles;
- Trucks should carry at least 10 square metres of polyethylene material (for lining a trench or depression), a spark-proof shovel, and oil absorbent blankets or squares;
- Trucks should carry reliable radio and/or satellite phone communications;
- Trucks should carry sufficient response equipment for the safe removal of fuel from an overturned tanker (such as hatch cone covers, hoses etc);
- In general, Cumberland should be fully prepared to deal with spills resulting from vehicle accidents along the road, in a timely and efficient manner.

Hazardous material management

The Environmental Protection Service (EPS) at DOE monitors the movement of hazardous wastes, from generators, carriers to receivers, through a tracking document (Waste Manifest). A Waste Manifest must accompany all movements, and all parties must register with the EPS. There is no mention of this procedure in the project proposal.

Incineration

Reference: *Water Licence Application Form*

The water license application indicates that sewage, solid waste and waste oil will be incinerated. Both the Government of Canada and the Government of the Nunavut are signatories to the Canada-wide Standards for dioxins and furans and the Canada-wide Standard for mercury, and are required to implement them according to their respective jurisdictional responsibility. Installation of an incineration device capable of meeting the emission limits established under these standards is required.

Dust suppression

Reference: *Water License Application for the Tehek Lake Access Road;* p42

Cumberland indicated dust suppression measures will be put in place; however, they did not provide details as to what and how the measures will be implemented. DOE guidelines for dust suppression require that all dust suppressants be approved by this department prior to their use in Nunavut. At present, only three suppressants have been approved namely, DL 10, Calcium Chloride and Bunker C. The proponent is requested to consult the guidelines for details on application of these suppressants and to obtain approval from DOE if other suppressants are used.

Abandonment and Restoration

Reference: *Water License Application for the Tehek Lake Access Road*; p42

In addition to the measures already proposed by Cumberland, DOE recommends the following measures are taken to restore the road and quarry sites upon closure, unless there is an agreement between Cumberland and government agencies that the road and quarries should be kept for future usage. These measures are as follows

- Grade the road and quarry sites to match the contour of the surrounding landscape, and re-vegetate the disturbed sites with native seeds;

- Sumps should be back-filled and be graded to match the contour of the surrounding landscape;

- Top soil from quarry sites removed during road construction activities, could be salvaged and be set aside in piles, in a neat fashion, for restoration after mine closure;

- Any contaminated soil should be treated on site to standards outlined in the GN *Guideline for Contaminated site remediation*, or removed to an approved disposal site and replaced with new soil.

We thank NWB for giving us the opportunity to review and provide comments on Cumberland's water license application. Please contact me if you have any further questions or comments.

Yours sincerely,

Original signed by

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