



Indian and Northern  
Affairs Canada

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File: EA0809-004

Via Fax: (867) 766-7074

May 15, 2009

Alan Ehrlich  
Senior Environmental Assessment Officer  
Mackenzie Valley Environmental Impact Review Board  
P.O. Box 938  
Yellowknife, NT X1A 2P1

**Re: Scoping Phase of the Environmental Assessment of Fortune Minerals NICO Project**

Dear Mr. Ehrlich:

Indian and Northern Affairs Canada (INAC) is pleased to submit the attached comments regarding the scoping phase of the environmental assessment of Fortune Minerals NICO Project.

INAC recognizes that a key purpose of the scoping exercise is to focus the environmental assessment on the areas of greatest concern. It is anticipated that Fortune Minerals will provide additional information about its project plans over the next several months. As this information is provided, some of the issues identified in INAC's submission may be resolved and may not require further examination, or new issues may be added.

Additionally, INAC recognizes that the proposed NICO Project is of great interest for Aboriginal people in the Tlicho region. As you are aware, INAC's approach to Crown consultation builds upon procedural aspects of consultation that already occur, which in this case includes the environmental assessment process. We look forward to working with the Mackenzie Valley Environmental Impact Review Board by assessing the information that comes to light during the course of this environmental assessment, as part of INAC's Crown consultation activities. It should be noted that INAC will also take into account any engagement activities undertaken by Fortune Minerals when assessing the extent of consultation in this case.

If you have any further questions, please contact Candace Ross, Environmental Scientist in Environment & Conservation at 867-669-2407 or myself at (867) 669-2647.

Sincerely,

David Livingstone  
Director, Renewable Resources and Environment

Encl. (1)

## **Indian and Northern Affairs Canada (INAC) – Scoping Submission**

### **1. What biophysical, socio-economic and cultural issues should be considered during the environmental assessment and why?**

#### **Biophysical**

- INAC expects that the following areas will be included in the environmental assessment: impacts to wildlife, wildlife habitat including vegetation, wildlife harvesting, species at risk, migratory birds, impacts to fish, fish habitat and fish harvesting. INAC will not be providing detailed comments on these areas at this time.
- Impacts of the environment on the project should also be considered in the assessment.

#### **Water Quality**

- Establishment and understanding of baseline and background water quality should be considered. Differentiating what is natural background water quality versus what is from the results of previous activity (exploration and natural occurrence (i.e. forest fire)) and the selection and characterization of reference lakes are important components of the environmental assessment. This information is necessary to demonstrate whether site specific water quality objectives should be developed.
- Technical evaluation of the efficiency of the Effluent Treatment Facility (ETF) to meet discharge water quality objectives is necessary. How the ETF meets not only discharge water quality for the Metal Mining Effluent Regulation (MMER) metals but also for other metals such as Selenium, Iron, Cobalt, Bismuth and Cadmium. Consideration of flocculant toxicity and pH changes are also necessary.
- Seasonal effects on the efficiency of the ETF should be considered.
- Complete water balance, including different recycling scenarios and its expected long-term water quality of recycled water should be considered.
- Demonstrate the influences from the forest fire today and what they will be in the future. This will help differentiate any future effects of the project from natural influences.
- A determination of the magnitude and extent of any potential aquatic effects of this proposal and the development of levels of effects (low, medium, high) as well as their thresholds.
- Impacts to potable water quality on communities downstream of the mine.

#### **Hydrogeology**

- Impacts to groundwater flow as a result of underground mining operations.

#### **Tailings and Mine Rock Management**

- Tailings Management Area including its composition, its predicted geochemical stability, its potential for acid generation and its salinity should be considered.
- Separate storage of ETF sludge, autoclave residue, Copper, precipitation circuit and Bismuth recovery circuit should be analyzed. The benefits of a separate sewage sludge storage area should be taken into consideration.
- Potential closure methods of the Tailings Management Area (including alternative locations) should be evaluated considering different closure methods (i.e.; flooded or unflooded).
- Descriptions of the static and kinetic data, acid generating and metal leaching characteristics of the various rock, overburden and quarry material. Management of

waste rock and tailings under both sub-aerial and sub-aqueous conditions and how the metal loading will be limited to meet receiving water quality objectives during operation and following closure should be described.

- The developer should demonstrate how they will minimize the footprint of the waste rock piles, to reduce the area of land disturbed.

#### Processing

- Evaluation of processing the ore on site vs. trucking it out. Discussion of the differences in transport, use and storage of reagents and chemicals on-site and off-site should be included.

#### Monitoring

- How monitoring will be performed to ensure that environmental objectives are met during the operation and after closure.
- INAC is currently preparing "Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories", which are expected to be released this summer. The guidelines outline 'Steps' for assessing potential effects in the aquatic environment, some of which are applicable to the Environmental Assessment stage. INAC would like to see aspects of the initial 'Steps' as part of the Developers Assessment Report, which include:
  1. Identify issues and concerns associated with the project relative to potential effects on the aquatic ecosystem;
  2. Problem formulation for aquatic effects and monitoring; and
  3. Development of data quality objective within a conceptual study design.

#### Closure and Reclamation

- The Closure and Reclamation Plan should have emphasis on reclamation objectives. Conceptual descriptions and assessments of possible reclamation options and activities to meet these objectives should be described. Different closure objectives might affect mine operations, especially related to Tailings Management Area (TMA) and the ETF. Closure planning should attempt to provide sustainable closure.
- Information on designing for closure and proposed progressive reclamation should be provided.

#### Waste Management

- The application states that non-combustible materials will be disposed in an on-site sanitary landfill to be developed in the rock piles or tailings areas. Further information is needed on the location of the proposed landfill, the containment method, and the types of materials to be disposed of. Potentially inert and chemically non-reactive (not just non-combustible) materials are acceptable.
- One proposed option for the disposal of sewage sludge is placing it within the sanitary landfill. If sewage sludge is to be placed in the landfill, the proponent must show it will be contained and will not impact seepage and or groundwater quality.

#### Soil

- It is implied in Figure 4a in the Land Use Permit application, but the proponent should clearly state that overburden (till) will be stored separately from topsoil for use in future

reclamation. Mixing mulched brush with organic topsoil could potentially destroy rhizomes within the soil.

#### Fuel Storage

- Eleven fuel bladders are proposed for use as temporary fuel storage. There are concerns of the appropriateness of using fuel bladders to provide containment in a northern climate. Fuel bladders may not have adequate durability in the north, due to frigid temperatures and rough terrain (risk of puncture). There are concerns that they could be a potential wildlife attractant, which could lead to a loss of control of contents. Bladders are generally seen as more appropriate for smaller types of operations.

#### Socio-economic & Cultural

- It is requested that the developer provide an ongoing record of community engagement, which provides a summary of any issues or concerns raised and any resolution or next steps.
- Employment, training opportunities, community capacity, traditional harvest and land use are all issues that merit consideration.
- Both scientific and traditional knowledge should be considered in the assessment.

#### **2. What physical works and activities should be considered part of the development?**

The scope of the development should be based upon Fortune Mineral's land use permit and water licence applications. The emphasis should be on planned site infrastructure:

- Mine (open pit and underground access portal);
- Processing facilities;
- Tailings management area;
- Mine rock management area;
- Effluent treatment facility;
- Transportation routes within the site;
- Collection (interception) trenches and sediment collection ponds;
- Pump house and water intake;
- Fuel, chemical and explosives storage facilities;
- Proposed drainage controls;
- Utility routes;
- Piping;
- Service complex and mine equipment management building;
- Power generation and heat recovery facilities;
- Waste management facilities;
- Airstrip; and
- Permanent and temporary camp facilities.

#### All-weather road & seasonal over-land road

- An upgrade to a seasonal over-land road and/or an all-weather road will allow further access to the area for mining exploration, hunting, and recreational pursuits and these have potential environmental impacts. The developer's use of the road represents a part of the potential impacts of the proposed mine.

**3. Within which time period and area should impacts (including project-specific and cumulative impacts) be considered?**

Project-specific

- The temporal scope should be specific to each valued component. Generally speaking, the scope may begin as early as exploration of the site and could extend to post mine closure. For hydrology, the effects should be considered in perpetuity, as the changes to the landscape will become permanent features at the site.
- The spatial scope should also be specific to each valued component. Generally speaking, the scope of the assessment should include the drainage area that flows through Tlicho lands and drains into the Marian River, which flows into Marian Lake and Great Slave Lake.

Cumulative Effects

- Paragraph 117(2)(a) of the Mackenzie Valley Resource Management Act requires that every environmental assessment "include a consideration of ... any cumulative impact that is likely to result from the development in combination with other developments". INAC notes that MVEIRB has developed the Cumulative Effects Assessment Guidelines to provide further details around the implementation of this requirement.
- Fortune's use of the proposed over-land seasonal road and proposed all-weather road should be considered within the scope of the cumulative effects assessment.
- The temporal scope should be specific to each valued component. Generally speaking, the scope may begin as early as exploration of the site and could extend to post mine closure.
- The spatial scope should be specific to each valued component. With respect to water quality and quantity, the scope of the cumulative effects assessment should include the drainage area that flows through Tlicho lands and drains into the Marian River, which flows into Marian Lake and Great Slave Lake.

**4. What evidence (if any) from previous studies, management plans, or environmental assessments should be transferred onto the public record for this environmental assessment and why?**

INAC recommends that its Mine Site Reclamation and Closure Guidelines and Mine Site Reclamation Policy be added to the public record for this environmental assessment. These documents will assist the developer in preparing a preliminary closure and reclamation plan, which outlines the proposed methods of closure of the various mine components. A preliminary closure and reclamation plan should be submitted by the developer for review.

- Mine Site Reclamation Guidelines for the Northwest Territories (2007);
- Mine Site Reclamation Policy for the Northwest Territories (2002), available online at: <http://www.ainc-inac.gc.ca/nth/mm/pubs/recpolnwt/recpolnwt-eng.pdf>; and
- Guidelines for Spill Contingency Planning (April 2007).

INAC recommends that comments submitted by reviewers on applications for Water License (W2008L2-0004) and Land Use Permit (W2008D0016) found on the Mackenzie Valley Land and Water Board public registry be transferred onto the public record for this environmental

assessment.

**5. What alternative ways of carrying out this development should be considered during the environmental assessment?**

- The impacts to the environment related to the alternatives of processing ore on site or off site.
- Potential closure methods and management of the Tailings Area (including alternative locations) should be evaluated considering different closure methods (i.e.; flooded or unflooded).