



October 17, 2012

Our File #: NWT-145

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Sent via email: chubert@reviewboard.ca

Re: Fortune Minerals Ltd.'s NICO Cobalt-Gold-Copper-Bismuth Project (EA0809-004) – Final Submission from Natural Resources Canada

This letter is in response to the Mackenzie Valley Environmental Impact Review Board's (the Board) letter of September 3, 2012 requesting final written submissions from parties prior to the closure of the public record for the environmental assessment of the proposed NICO project.

As the Board is aware, Natural Resources Canada (NRCan) involvement in the Board's review of the Fortune Minerals's NICO project is both within the context of our regulatory role under the Explosives Act, and in our capacity as a source of science and technology expertise in the fields of minerals and metals and the earth sciences.

Fortune's proposal for the NICO mine requires explosives manufacturing and storage at the mine site during the operational phase of the project. NRCan's regulatory and statutory responsibilities under the *Explosives Act* creates specific obligations for the department as a regulatory authority and responsible minister under *Mackenzie Valley Resource Management Act*.

The Proponent's explosives supplier will apply for a licence from NRCan's Explosives Regulatory Division for the explosives factory and magazine and will be required to follow NRCan guidelines and standards. This includes ensuring that the locations for the explosives facilities are in keeping with the Quantity-Distance Principles Manual which gives the minimum permissible distance between a site containing a quantity of explosives and a susceptible site requiring protection. Other licence conditions include a spill contingency plan, an emergency response plan and operating and maintenance procedures.

Specific areas of NRCan expertise that have been engaged in the proposed NICO project include:

- Deposit Geology and Geophysics;
- Hydrogeology and Groundwater;
- Geotechnical Science and Engineering, Permafrost, Terrain Sensitivity;
- Surficial Geology, Geohazards and Stratigraphy; and
- Mine Waste Management – including Metal Leaching and Acid Rock Drainage.

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Through these roles, NRCan has participated in:

- Comments on Proponent's Assessment Report Draft Terms of Reference, Oct. 16, 2009;
- Initial Review of Draft Screening Report, Sept. 2011;
- Submission of Information Requests (IR) Round 1, Oct. 7, 2011;
- Review of IR Responses, Dec. 2012 – Jan. 2012;
- Meeting with Proponent to discuss IR Responses, Jan. 26, 2012;
- Participation in Technical Meeting, Yellowknife, Feb. 7-9, 2012;
- Side-meeting with Proponent to discuss IR Responses, Feb. 8, 2012;
- Submission of Technical Report, June 22, 2012;
- Review of Proponent's response to NRCan's Technical Report Recommendations, July 5, 2012;
- Participation in the Board's pre-hearing conference, July 30, 2012;
- Meeting with Proponent to discuss NRCan's Technical Report Recommendations, July 26, 2012;
- Review of Proponent's Responses to NRCan's Technical Report Recommendations, (Aug. 15, 18, 22, 2012);
- Submission of NRCan presentations on Hydrogeology and Geotechnical Aspects, and Access Road, Aug. 24, 2012; and
- Participation in public hearings in Yellowknife (Aug. 29, 2012) and Behchoko (Aug 30-31, 2012, Oct. 10, 2012).

NRCan's Technical Report

NRCan's June 22, 2012 Technical Report made 12 recommendations, three of which remain in providing guidance on factors that should be considered in the detailed/final project design or subsequent monitoring and follow-up plans, to ensure that certain possible environmental impacts are minimized.

Attachment 1 identifies those three recommendations from NRCan's Technical Report. These recommendations are presented under the Technical Report's corresponding topic headings and recommendation numbers. Please refer to NRCan's Technical Report for supporting rationale.

The Proponent's July 5, 2012 response to many of NRCan's Technical Report recommendations indicated that they wished to meet with NRCan representatives prior to the hearing. NRCan and Proponent representatives met on July 26, 2012 and Fortune provided NRCan with draft meeting minutes on Aug. 15, 2012 and draft written responses to our technical recommendations on Aug. 18, 2012. The July 26, 2012 meeting minutes and Fortune's final version of their response to our technical recommendations are dated Aug. 22, 2012 and are on the public registry. NRCan has reviewed Fortune's responses and is satisfied with Fortune's commitments and

explanations for all of our 12 recommendations as provided in their Aug. 22, 2012 document. This is consistent with NRCan's messages delivered through presentations during the public hearings in Yellowknife (Aug. 29, 2012) and Behchoko (Oct. 10, 2012).

Tlicho Nation Traditional Knowledge and Use Study

NRCan has considered the information contained in the report entitled "Asi Edee T'seda Dile: Tlicho Nation Traditional Knowledge and Use Study" submitted by the Tlicho Government on Sept. 15, 2012, and in the Traditional Knowledge presentation provided by the Tlicho Government on Oct. 11, 2012. NRCan has reviewed our recommendations and has determined that none require revisions.

Conclusion

NRCan trusts that the Board will carefully consider all the information on the public record, and clearly recommend programs for follow-up environmental monitoring, analysis and management as may be necessary to support sustainable development and safeguard the well-being of the environment and people of the Mackenzie Valley.

Should the Board require any clarification on NRCan's comments, I can be contacted at (613) 995-7686 or johnking@nrcan.gc.ca.

Sincerely,

Original signed by

John King
Senior Policy Analyst
Environmental Assessment Division
Natural Resources Canada
Attachment: (1)

cc: J. Clarke, A. Dixit, I. Gagné, C. Hogan, R. Johnstone (NRCan); K. Witherly (NPMO)

Attachment 1

Recommendations from “Natural Resources Canada Technical Submission for the Environmental Assessment of Fortune’s Proposed NICO Mine Project” (June 22, 2012), to be considered during detailed/final design

Geotechnical Science, Permafrost and Terrain Sensitivity

Impacts Related to the Access Road

6. NRCan recommends the following in order to identify sensitive areas along the road corridor and to support final route selection and road design to ensure environmental effects are minimized:
 - a. Conduct detailed terrain analysis supported by geotechnical investigations to characterize terrain sensitivity along the proposed route and to identify areas of potential instability. The product associated with this analysis will be large scale route alignment sheets that include this detailed information;
 - b. Conduct thermal analysis and determine potential ground settlement for representative terrain types to support detailed road design including determination of embankment height and other mitigation measures (such as drainage control). The analysis should consider changes in snow cover and drainage that may influence the ground thermal regime; and
 - c. Include in the assessment of environmental impacts to the physical environment, consideration of longer term effects associated with vegetation removal and changes in permafrost and drainage conditions along the road corridor.
7. NRCan recommends the following with respect to environmental monitoring and management plans for the access road:
 - a. Environmental monitoring and management plans include installation of instrumentation in addition to visual inspections to monitor changes to the ground thermal regime and ground movements especially in sensitive areas; and
 - b. Monitoring and mitigation/management plans be developed that define the criteria for the need for mitigation and selection of the appropriate mitigation technique for the access road.

Management of Waste Rock and Tailings

8. Recognizing that design of the Co-disposal Facility (CDF) is at a preliminary design level, NRC can recommend the following for its detailed and final design:
 - a. The Proponent conduct further geotechnical investigations within the footprint of the CDF to improve the characterization of foundation materials and to support the detailed design;
 - b. The Proponent refine the seepage and stability analysis for the CDF incorporating the new information from detailed geotechnical investigations. This will also include updated creep analysis and consideration of effects related to the possible presence of frozen and unfrozen layers within the pile such as porewater expulsion and elevated pore pressures; and
 - c. The Proponent follow through on commitments to develop an effective CDF monitoring and management plan which includes installation of instrumentation (such as piezometers, slope inclinometers, settlement plates, thermistors). Plans should also include a definition of triggers (or critical values) that determine the need for implementation of mitigation and the criteria for selection of mitigation techniques.

