



October 15, 2012

BY EMAIL TO: [chubert@reviewboard.ca](mailto:chubert@reviewboard.ca)

Mr. Chuck Hubert  
Senior Environmental Assessment Officer  
Mackenzie Valley Environmental Impact Review Board  
#200 – 5102 50<sup>th</sup> Avenue  
Yellowknife, Northwest Territories  
X1A 2N7

Dear Mr. Hubert,

**RE: EA 0809-004, NICO Project**  
**Information Request regarding Tlicho Government consultation**

This letter is in response to the Review Board's request, dated July 31, 2012, asking that we file a copy of the complete record of consultation between Canada and the Tlicho Government in relation to the Fortune Minerals Limited NICO Project from the time of the referral to environmental assessment to present.

The NICO Project is currently undergoing an environmental assessment by the Mackenzie Valley Environmental Impact Review Board (MVEIRB). While MVEIRB's review is ongoing, the Government of Canada ("Canada") relies on that process to collect information on potential impacts of the project to Aboriginal groups. MVEIRB's process provides the opportunity for parties to learn about the nature of the NICO project and its impact on the environment and communities, and it allows parties to provide their views and perspectives on the project. This process has provided the opportunity for the Tlicho Government and Canada to exchange information; Canada responded to the Tlicho Government's written information requests and answered questions directed at departments during both the technical sessions and the public hearings. Canada considers this process to be the most effective means by which concerns of the Tlicho people can be identified and addressed.

Part of the record of consultation between Canada and the Tlicho Government in relation to the NICO project is the MVEIRB's public record. Canada has participated in all aspects of the MVEIRB review to-date and notes that the Tlicho Government has also participated and provided input during all stages of this review from scoping to the recent public hearings. Canada is aware of the perspectives and recommendations made by the Tlicho during the review. Canada has reviewed the information provided by the Tlicho during the review, including the recent traditional knowledge study, and has considered that information in making final conclusions and recommendations to the Review Board.



Following the closure of the public record and prior to a decision by the Federal Minister on this project, Canada will assess the information provided to the MVEIRB by the Tlicho and will determine if any additional consultation, or potential accommodation, is necessary.

It should also be noted that Canada encouraged increased participation by Tlicho citizens in MVEIRB's process through the provision of funding to help the Tlicho Government bring community members to the public hearings in Whatí and Yellowknife. This funding provided an opportunity for more Tlicho citizens to participate in the review and provide their views to the Board. Natural Resources Canada also supported the Tlicho in their review by providing responses to technical questions posed to them. That correspondence is enclosed with this letter for your information.

We trust this information has satisfied your information request. Please do not hesitate to contact me if you have any further questions.

Sincerely,

Matthew Spence  
Director General  
Northern Projects Management Office

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**From:** King, John  
**Sent:** September-17-12 5:35 PM  
**To:** 'Ginger Gibson'  
**Cc:** 'sbaines@senes.ca'; 'Rick Schryer'  
**Subject:** RE: NRCAN Response to Tlicho Government (SENES Perspective)

Hello Ginger,

NRCAN's response is below. I hope that this addresses your outstanding questions.

Regards,

John King  
Senior Policy Analyst / Analyste principal de la politique  
Environmental Assessment Division / Division de l'évaluation environnementale  
Natural Resources Canada / Ressources naturelles Canada  
580 Booth Street / 580 rue Booth, 3-A8-1  
Ottawa, Ontario K1A 0E4  
(613) 995-7686

**SENES perspective (General)**

We cannot understand Fortune Minerals contention that 0.3% sulphur is a safe cutoff value. There is no data presented we can find anywhere in the documents we have reviewed to support this contention. The data we have reviewed is insufficient to support the contention and in fact demonstrates that this is not the case.

**NRCAN response to SENES perspective (General):**

NRCAN understanding of the S cut-off is that it is based on the NPR value of 2 and NAG-pH. Because the samples with NPR>2 have less than 0.3% S (Figure 5-5, Annex A) and the contention that the NPR>2 was sufficient for neutralization, Fortune Minerals used the 0.3% S as a criterion.

**SENES perspective 1) Contention NAG data support a 0.3 % cutoff**

Firstly let us look at the NAG test data for waste rock. Fortune contends that no samples below 0.3% S produced acidity. This is true except for the fact that only 3 samples were NAG tested and all samples contained less than 0.05% S and had NP/AP ratios of >7.0. We cannot understand why anyone would only test 3 samples especially samples with virtually no sulphur and very high NP/AP ratios. These samples were almost certain to produce non-acid conditions in a NAG test.

No samples of waste rock between 0.04 and 0.3% S have been tested for NAG and therefore the data simply does not support the 0.3 % cutoff. At best one could weakly support a cutoff of 0.04% with an NP/AP ratio of >7.

#### **NRCan response SENES perspective # 1:**

NAG testing involved 3 waste rock samples (two rhyolite and one feldspar/quartz/amphibole porphyry) and 20 sub-economic mineralized mine rock samples. The latter, although mineralized, is waste rock and destined for disposal in the proposed co-disposal facility.

It appears that most of the mineralized waste rock samples have  $NPR < 2$  and  $NAG\ pH < 4.5$ . On Figure 5-6 of Annex A, the mineralized waste rock samples are shown as one group with the ore samples, preventing their distinction. In any case, only about 20% of the BRS samples have NPR values greater than 2 and about 40% have  $NAG\ pH > 4.5$ .

Not only the NAG tests but also the humidity cell tests lacked samples with S contents between 0.04 and 0.3%. In addition, because the sample with 0.27% S generated acidity during the humidity cell tests, the validity of the 0.3% S cut-off value is questionable. If the spread of the analytical data on Figure 5-5 and the apparent lack of NAG and humidity cell tests for samples between 0.04 and 0.3% S are taken into consideration, a more conservative S cut-off value would lie somewhere between 0.04 and 0.1% S.

#### **SENES perspective 2) Humidity cell data support the 0.3% S cutoff**

There is limited data from humidity cells and results are summarized in Table 5-15 of the Geochemistry report. As shown on the Table, 12 samples were tested. 10 of these samples contained <0.05% sulphur and of these 7 samples contained  $\leq$  . One sample contained 0.27% S and one sample 0.49% S. Both samples at 0.27% S and 0.49% S generated acid during the test. Of the remaining samples, one sample at 0.04 %s was projected to produce a small amount of acid (i.e. this sample is net acid generating based upon this test).

From this data one could conclude that samples with  $\leq$  0.04% S are unlikely to produce acidity. Of samples test at >0.04% S all were acid generating in the humidity cell test.

#### **NRCan response to SENES perspective # 2:**

Agreed as in response above.

#### **SENES perspective 3) NP Availability to neutralize acidity**

Another consideration is the form of the NP minerals and their reactivity. For a conservative assessment, one would use carbonate NP in the initial assessment of Net Neutralization Potential. This is done because carbonate NP is reactive while other minerals contributing NP such as silicates react more slowly. If one looks at acid generation potential using Carbonate NP, many samples at low sulphur (<.3 %) content would be classified as acid generating. As a general comment carbonate NP levels are very low. No samples of waste between 0.04 %S and 0.27% S were tested using NAG or other kinetic test to confirm whether samples with low CaNP would be acid generating.

**NRCAN response to SENES perspective # 3:**

Agreed as in NRCAN 1-1 (dated October 7, 2011): #1 and #5 including NRCAN responses to the explanations provided by Fortune Minerals.

**NRCAN Conclusion**

Overall, NRCAN's agreement with the explanations provided by Fortune Minerals was with the condition that the proponent would develop a comprehensive operational monitoring program to deal with the uncertainties related to the acid generation and metal leaching potentials of the waste rock.

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**From:** Ginger Gibson [mailto:vgibson@interchange.ubc.ca]  
**Sent:** September-06-12 1:04 PM  
**To:** King, John  
**Cc:** sbaines@senes.ca; rknapp@senes.ca  
**Subject:** NRCAN

John:

Thank you kindly for offering to review the question of the sulfur cut off limit at the proposed NICO mine site. I am writing to see if NRCAN can tackle the question of the 0.3% cutoff that has been suggested by the Tlicho Government. Our expert in SENES is Randy Knapp.

Here are our notes—given this perspective, is NRCAN able to respond or provide support to this perspective, or does NRCAN have access to information that provides a different interpretation on this question?

We are suggesting a cutoff value of 0.1% based on this analysis. We would value NRCAN review of this question. If your expert would like to speak with Randy direct, then that might be best for us. Please advise.

Thank you,

Ginger Gibson

*Technical Coordinator  
Kwe Beh Working Group*

***SENES perspective***

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There is limited data from humidity cells and results are summarized in Table 5-15 of the Geochemistry report. As shown on the Table, 12 samples were tested. 10 of these samples contained **<0.05% sulphur** and of these 7 samples contained  $\leq$  . One sample contained 0.27% S and one sample 0.49% S. **Both samples at 0.27% S and 0.49% S generated acid** during the test. Of the remaining samples, one **sample at 0.04 %s was projected to produce a small amount of acid** (i.e. this sample is net acid generating based upon this test).

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**3) NP Availability to neutralize acidity**

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**Summary**

- 1) There is no substantive basis for the 0.3% cut-off presented
- 2) The available data confirm that samples with  $<0.3\%$  sulphur can produce acidity
- 3) Only one sample of waste rock was tested with either by NAG or Humidity cell that had between 0.04% S and 0.3 % sulphur. This sample produced acid in the test.