



# MiningWatch Canada

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### **Review of Alternatives Assessment by Taseko Mines Limited for the Proposed Prosperity Gold-Copper Mine**

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#### **Introduction**

This document is a part of MiningWatch Canada's ongoing review of the proposed Prosperity Gold and Copper Mine. The proposed mine would be located 125 km west of Williams Lake BC and within the traditional territory of the Tsilhqot'in First Nation. MiningWatch has particular concerns regarding this project due to unresolved concerns of the First Nation with rights to the area, and because of the proposed destruction of important aquatic ecosystems and threat to other aquatic ecosystems including the draining of Fish Lake / Teztan Biny.

MiningWatch is submitting this review of Volume 2, Chapter 6 of the EIS along with reviews of fisheries and socio-economic aspects of the EIS to the BC Environmental Assessment Office and the Federal Environmental Assessment Review Panel. The intent of this document, and the others being submitted at this time, is to assess the sufficiency of the Environmental Impact Statement (EIS) that has been submitted by the proponent based on the *Final Environmental Impact Statement Guidelines / Application Terms of Reference*.<sup>1</sup>

The aspects of the EIS guidelines that we have paid particular attention to in our review include:

- The guiding principles of *sustainable development* and the *precautionary approach*. (pg vi)
- Accounting for the relations and interactions among various components of the ecosystems including affected communities. (pg. 8)
- A demonstration of how the preferred alternative contributes to sustainable development. (pg. 8)
- Review of alternatives be done at a level of detail that is sufficient to allow the federal review panel, the public and First Nations to compare the Project with its alternatives. (pg. 9)

In reviewing the Alternatives Assessment materials including appendices we have found a several key flaws that are of concern including some that reoccur throughout the document. These are presented first and followed by a listing of more specific concerns about the adequacy of the EIS.

### Principle Concerns

1. Throughout the alternatives assessment there is a surprising lack of substantiation for statements made by the proponent. The whole of Volume 2 of the EIS includes only one citation. Seeking clarity on the source of information and assertions made in the document by reviewing Appendix 2-6-A provided no additional information as there are no citations within it.

The interaction with committees and working group meetings is referenced at times, however, it is not clear what information presented in the EIS is a product of an individual participant of the meeting, a consensus of the meeting or the proponents own thinking. The lack of substantiation for statements made in the EIS is of particular concern in the sections dealing with risks to fisheries and potential for compensation, tailings storage alternatives and the risks of failures of the tailings impoundments.

2. Another reoccurring flaw with the EIS is the lack of integration of First Nations and public consultation into the Alternatives Assessment process and documentation. The process has been left entirely to technical experts working for the proponent and some dialogue with government representatives. While consultations are described elsewhere in the EIS they are not integrated into the alternatives assessment.
3. The Alternatives Assessment has not demonstrated an application of the precautionary approach or the concept of sustainable development.
4. The timeframe for risk assessment conducted is not clear. While there are references to closure and post closure throughout the document, “post-closure” is an abundantly vague term and it is up to the proponent to define it more precisely. We would argue that all aspects should be considered through the full life-cycle of the mine and include a post-closure period of at least 100 years. We also recommend using a Life Cycle Cost assessment methodology for comparison between alternatives. Assessing life-cycle costs of various mine plans has been shown to have a significant influence on the potential economic performance and environmental risks of a project.<sup>ii</sup>
5. In section 6.2.5.2 *Activities*, potential alternatives to tailings impoundments are summarily dismissed without adequate evaluation and another option, co-disposal<sup>iii</sup> is not discussed. The

options other than conventional tailings impoundments can have important environmental advantages<sup>iv</sup> and should be further elaborated including a life cycle cost assessment (see point 4 above).

Dusting from thickened and dry-stacked tailings is raised as an issue and the EIS states that this is not an issue for tailings impoundments as a majority of the surface is covered by the supernatant pond (pg. 6-26) however much of the tailings in the proponent's 3 options would in fact be above the level of the supernatant pond. While the pond would reduce the extent of potential dusting it does not eliminate the risk in the preferred options as suggested in this section. In fact the Proponent acknowledges that the projects modelling results in dust contamination in excess of objectives or standards (*Vol. 4 pg. 1-3*). Furthermore the other options are well matched with progressive rehabilitation that reduces both long-term risks and financial costs at closure. There is no consideration here about the post-closure risk of the tailings pond drying out at any point in the future, and the fact that this method is the most dependent on perpetual care and maintenance of the facility. The eventual failure of the tailings impoundment would result in the tailings drying out and blowing away and in the exposure of PAG waste rock to acid-generating conditions (and the risk of the tailings going acidic if the proponent's acid-base accounting is flawed).

6. The proponent has failed to include any social values in the Alternatives Assessment, perhaps an outcome of the lack of public and First Nations input (see point 2 above). There is no consideration, for example, of the loss of significant cultural sites for the Tsilqhot'in in the immediate vicinity of Fish Lake under the proponents preferred option and whether the other options would have less impact on cultural values.
7. Throughout the Alternatives Assessment "costs" are narrowly defined in conventional economic terms. There is no consideration of *natural capital* costs associated with the different alternatives or of the costs born by the public and government for various alternatives. An example of natural capital costs that should be included are the various values of wetlands in the area that would be destroyed under each option including contributions to biological productivity, contribution to biological diversity, water quality and quantity maintenance, and carbon sequestration.

## Specific Concerns

The following section outlines a number of specific gaps we found with the Alternatives Assessment. Each concern is briefly described after the corresponding page number.

6-28 Assessment of the load out facility alternatives considers economic costs to the proponent but there is no consideration of additional green house gas emissions, traffic concerns, impacts on roads and subsequent maintenance requirements or other costs that will be born by the public.

6-39 Comparison of fish compensation possibilities is very cursory and lacking substantiation.

6-42 Risks of seepage through the impoundment and impoundment failures are very low given findings of other reports. For example, Davies<sup>v</sup> suggests an annual failure rate probability somewhere between 1 in 700 to 1 in 1750 and a highly published report by Environmental Defence documented the extensive seepage from tar sands tailings ponds. While these risk factors may not discriminate between the 3 options they are very important in terms of communicating risk to the public and First Nations.

6-46 The use of risk assessment data is misleading. Relative rankings are extrapolated to “absolute rankings” suggesting a greater level of precision from what is in fact a further abstraction of the original estimated risks.

6-51 Option 3 is considered to have less environmental risks, in part because it is assumed that the pit will act as a buffer against any downstream flows from the impoundment. Has the ability of the pit to settle out suspended solids and other contaminants been modelled?

6-86 There is no discussion of First Nations interests and concerns about the potential transmission corridors or even a mention that the corridors cross through a number of communities of the TNG.

## Conclusion

From the Proponents position there is only one viable option for the proposed Prosperity Mine to go ahead, and it is argued that this option (#3) is also the most environmentally sound. This option includes the permanent destruction of productive aquatic and wetland ecosystems and perpetual risks of downstream contamination and options that could have significantly reduced the impacts and risks were summarily dismissed as too expensive without an examination of the life-cycle costs or long-term risks to future generations. Our evaluation shows that the proponent clearly has not adequately considered questions of sustainability and the precautionary approach in this assessment. In addition to these core issues there a number of other concerns about the alternatives assessment that on their own should result in the assessment being declared inadequate by the BC EAO and the Federal Review Panel.

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<sup>i</sup> BC EAO and CEAA. 2009. *Final Environmental Impact Statement Guidelines / Application Terms of Reference for the Preparation for an Environmental Assessment Certificate Pursuant to the British Columbia Environmental Assessment Act and an Environmental Impact Statement for Submission to the Federal Review Panel Pursuant to the Canadian Environmental Assessment Act*. January 2009, <http://www.ceaa-acee.gc.ca/050/Document-eng.cfm?DocumentID=31204>

<sup>ii</sup> C. Reid, V. Becaert, Michel Aubertin, R.K. Rosenbaum, L. Deschênes. 2009. Life cycle assessment of mine tailings management in Canada. *Journal of Cleaner Production*. 17 (2009): 471-479.

<sup>iii</sup> See B. Wickland and G.W. Wilson. 2005. Research of Co-Disposal of Tailings and Waste Rock. *Geotechnical News*, September 2005: 35-38.

<sup>iv</sup> See for example: Paste and Thickened Tailings – InfoMine: <http://technology.infomine.com/articles/1/1507/tailings.paste.thickened/paste.and.thickened.aspx>, and Tailings Info: [www.tailings.info](http://www.tailings.info),

<sup>v</sup> M.P. Davies. 2002. Tailings Impoundment Failures: Are Geotechnical Engineers Listening? *Geotechnical News*, September 2002: 31-36.