

19 July 2022
Smithers, BC

Dave Stevens' comments on air issues in Telkwa Coal's application for an EA permit.

The problems I see with the air issues in the EA application are that there isn't enough detail, there are gaps and the presentation is poor – there isn't a single section for airborne emissions. ¹ You might think so from looking at the table of contents but a deeper dive shows fragmented information. The information present is about airborne substances whose dispersion characteristics are not known. A dispersion model has been presented by their consultant and is included. The uncertainty arises from the need for an expert review. Trina Orchard has said she has made her concerns (unspecified) known to the proponent but she has not said what they are, when she commented or whether they will be corrected, or if they are in fact incorporated into what we see. I have asked for clarification but have not heard back from her. On that basis alone I think a request should be made for an extension until her comments and the proponents responses are made known. After that some time will be needed for public review. I don't know what extension to suggest because there may be other such insufficiencies that support an extension.

All of these concerns make a well informed public assessment of public concerns considerably more difficult to carry out. This might of course be intentional but my take on it is that they don't have a sufficient grasp on what they are doing. Not a very reassuring conclusion but warranted I think by what I see.

In my email to you on July 12th I sent comments that included this statement,

“In the populated area of Telkwa, maximum predicted concentrations of PM may exceed the ambient air quality criteria due to high background concentrations; however, the Project contribution is very low, less than 3% of background particulate matter less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) concentrations.”

This is an explicit statement that existing conditions are excessively harmful and that the project will make them worse. This isn't my statement it's theirs. PM2.5 is explicitly legally toxic in Canada, per Schedule 1 of the Canadian Environmental Protection Act. It is unfortunate that the relative proportions are not specified here because PM2.5 is a strict subset of PM10 but the ratio is important – PM2.5 is much smaller than PM10 and the boundary determines both dispersion and potential harm. **In my opinion this on its own would disqualify the project application from being approved.**

From the Air Quality Management Plan May 2022, section 13.2 of the application is a discussion of some Criteria Air Contaminants. This would have to be there but is inadequate. Even though mercury is a ferociously toxic substance and is commonplace in coal mines the word mercury does not occur in section 13.2 (at least my computer couldn't find it). It's also not in section 4.1 Atmospheric Effects. Section 8.1 Human Health shows mercury as present in fish but as far as I know they were not flying fish so this is not relevant as an atmospheric concern. Mercury boils at about 355C, or 680F, temperatures easily achieved in an ANFO explosion. In an underground mine more effective measures might be available but in an open pit mine gaseous mercury is directly in contact with the atmosphere, will be emitted at high temperatures and speeds into the atmosphere but is not mentioned except as an

¹NB when I'm talking about emissions I'm talking about toxic substances, not about gases with greenhouse warming potential.

aquatic concern. This is inadequate. The noted lack of standards for some metals is an occasion for caution. The extreme neurotoxicity of mercury puts it in a class by itself. In a recent publication titled **“Neurotoxicity of mercury: an old issue with contemporary significance”** in the National Library of Medicine, at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8276940/> is this excerpt, from section 2.1 dealing with mercury vapour,

“Measurements in mining camps ([Drake et al. 2001](#); [Malm 1998](#)) frequently report ambient air levels well above the recommended (up to 100 fold), and biomarker measurements in individuals involved in the mining process frequently exceeded the LOEL for neurotoxicity ([Bose-O’Reilly et al. 2017](#)). Furthermore, people living in communities surrounding the mining camps may also be exposed to toxic Hg levels, including pregnant women and children ([Armah et al. 2016](#); [Bose-O’Reilly et al. 2016](#); [Castilhos et al. 2015](#); [Kristensen, Thomsen, and Mikkelsen 2014](#)), and the number of humans exposed to this element is still high ([Gibb and O’Leary 2014](#)). “

This is not scaremongering, it is a sober peer-reviewed appraisal by qualified scholars in a reputable journal. In my reading it is clear and relevant. It is also not touched on as an atmospheric contaminant. This is not good enough.