



Environmental Protection Operations Directorate
Prairie and Northern Region
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Yellowknife, NT, X1A 2P7

October 9th 2012

MVEIRB file: EA0809-001

Richard Edjericon
Chairperson
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938
Yellowknife, NT, X1A 2N7

Via Email

Dear Mr. Edjericon,

RE: Environment Canada's Final Comments – EA0809-001 – Giant Mine Remediation Project

Please find below Environment Canada's (EC) closing comments regarding the Environmental Assessment (EA) for the Giant Mine Remediation Project

Parties to the EA were given the opportunity following the public hearings held from September 10-14th, 2012 to submit in writing their closing comments, additional clarifications, as well as any outstanding responses to questions raised during the hearings.

EC participated in the review of the proposed Giant Mine Remediation Project in order to provide specialist advice, information and knowledge to the Mackenzie Valley Environmental Impact Review Board (MVEIRB). EC will not be issuing permits or authorizations for the proposed Project, but has regulatory duties and responsibilities under applicable legislation. The following relevant legislation administered or adhered to by EC influenced the content of this submission: *Department of the Environment Act*, *Canadian Environmental Assessment Act*, *Canadian Environmental Protection Act*, 1999, *Fisheries Act – Pollution Prevention Provisions*, *Migratory Birds Convention Act* and *Migratory Bird Regulations*, and the *Species at Risk Act*. Various regulations, policies and guidelines stem from these statutes.

EC provided thirteen recommendations in its Technical Report of July 9th 2012. Ten of the thirteen recommendations were accepted by the proponent and they committed to them before the hearings were underway. During the hearings EC reinforced the recommendations below related to air quality and the tailings cover.

1. EC recommended that continuous ambient monitoring for PM2.5 and NO2 be conducted near the Niven Lake residential area. The power demand for the Giant Project will add to the existing power generation requirements at Jackfish for the City of Yellowknife and account for 1/9th of the plant's capacity. This will

ultimately result in higher ambient concentrations of NO₂ and PM_{2.5}. The modeling results indicated the emissions from the Jackfish Power Plant may lead to exceedances of applicable ambient air quality standards in the Niven Lake residential area. It is important that these predictions be verified by conducting ambient air quality monitoring in order for the responsible regulatory authorities to consider adaptive management options; and

2. EC made two recommendations related to the tailings cover.

EC was concerned that the depth proposed for the tailings cover would not be sufficient to provide protection to the environment with time. EC understands that the objectives of the tailings covers are to promote drainage and potential revegetation. Based on the information provided by the Proponent to date, the tailings cover will be allowed to revegetate using natural succession. EC was concerned that not only is there potential for the roots to penetrate the cover and reach the bottom layer and thereby compromise the functions of this layer, but there is also the possibility of the roots penetrating the tailings and uptaking metals. If the vegetation has high concentrations of metals there is potential for exposure to wildlife. There is also the potential for water to infiltrate the tailings cap and cause boils or groundwater contamination.

Although the Proponent stated that the vegetation experts expect the roots to stop at the bottom layer and not penetrate into it, EC was not confident that this would in fact be the result. EC would like to see scientific literature and/or northern case studies to support this assumption as well as a monitoring plan to ensure that the tailings cover is performing as per its design specifications and to prove that vegetation is not infiltrating the capillary break layer. Alternatively EC feels that the tailings cover could be designed at a greater depth to eliminate these potential issues.

EC would also like to take this opportunity to summarize its past and future role with respect to the project as the department has participated in the Giant Mine Remediation Project and the associated Environmental Assessment in many ways over the years. At the outset, EC participated as an expert support department in the Federal Contaminated Sites Program (FCSAP) and as such worked extensively with Aboriginal Affairs and Northern Development Canada (AANDC) on the Giant Mine Remediation Program. Through this role EC has provided technical scientific advice to AANDC to assist in assessing environmental risks, developing sampling programs and selecting remediation and/or risk management activities. EC has worked extensively with AANDC under the Federal Contaminated Sites Action Plan (FCSAP) Program and will continue to do so throughout the life of this project.

EC Environmental Effects Monitoring (EEM) staff in consultation with a multi-agency technical advisory panel provided written review comments on 3 EEM study designs and 2 EEM interpretative reports submitted by Giant Mine. EC also reviews and provides written comments on EEM Effluent Characterization and Water Quality Monitoring Reports submitted annually by mines.

EC enforcement officers review the quarterly and yearly Giant Mine Effluent Monitoring Reports to ensure that they are compliant with the discharge requirements set out in Schedule 4 of the Metal Mining Effluent Regulations (MMER).

EC will continue to provide expert support and advice to the Giant Mine Remediation Project Team to reduce ecological risks at the Giant Mine site. EC will have continued participation with the Giant Mine Remediation Project as it moves forward by remaining an active participant on the Environmental Management System Working Group. This is where specific monitoring plans will be developed providing an opportunity to implement departmental recommendations and address other more minor concerns. Finally, EC will also play a regulatory role in the project through the administration of MMER and the current EEM programs and thereby plans to participate in the development of the Aquatic Effects Monitoring Program for the site.

If you wish clarification on any aspect of this submission, please contact Amy Sparks at (867) 669-4720 or by email at amy.sparks@ec.gc.ca

Sincerely,



Cheryl Baraniecki
Regional Director
Environmental Protection Operations Directorate
Prairie and Northern Region (PNR)

cc: Susanne Forbrich (Manager, Environmental Assessment and Marine Programs)
Carey Ogilvie (Head, EA-North NT&NU)
EC Giant Mine Review Team