



Environmental Protection Operations
Prairie and Northern
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22 August 2012

MVEIRB file: EA0809-001

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

Via Email

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

Please find attached Environment Canada's (EC) Final Hearing Presentation to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) in respect to the scheduled Public Hearings concerning the Giant Mine Remediation Project.

EC staff will be in attendance at the public hearings in Yellowknife to make a formal presentation, and will be available to respond to any questions which the MVEIRB members, the Proponent, or the public may have concerning the issues raised by EC.

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

Yours truly,

Cheryl Baraniecki
Regional Director Environmental Protection Operations (P&N)
Environment Canada

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



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Environment Canada's Presentation Giant Mine Remediation Project Environmental Assessment Hearings EA 0809-001

Yellowknife, NT

**Environmental Protection Operations Directorate
Environment Canada
September 10, 2012**



Overview

- Environment Canada's Mandate
- Introduction of Environment Canada's Environmental Assessment Review Team

Environment Canada's Mandate

- The primary relevant legislation and standards administered or adhered to by EC which influenced the content of this submission are:
 - *Department of the Environment Act*;
 - *Canadian Environmental Protection Act*;
 - *Fisheries Act*;
 - *Migratory Birds Convention Act*; and
 - *Species at Risk Act*

Environment Canada's Mandate - *Fisheries Act*

- Environment Canada, on behalf of the Minister of DFO, administers Section 36 of the *Fisheries Act*.
- Subsection 36 (3) of the *Fisheries Act* prohibits the deposit of deleterious substance into fish bearing waters unless authorized by a regulation under the Act or by another law of Parliament.
- *Fisheries Act* regulations also include the Metal Mining Effluent Regulations (MMER's)
 - Require an EEM (Environmental Effects Monitoring) program that evaluates the effects of mine effluent on the aquatic environment

Environment Canada's Mandate - *Migratory Birds Convention Act* and *Species at Risk Act*

- The *Migratory Birds Convention Act* ensures the conservation of migratory birds.
- The *Migratory Bird Regulations (MBR)* establish specific prohibitions and define activities which may be permitted, and the circumstances under which such permitted activities may take place.

Environment Canada's Review Team

- Amy Sparks/Lisa Lowman – EA Coordination
- Anne Wilson – Water and Effluent lead
- Dave Fox – Air Quality lead
- James Hodson – Migratory Birds and Species at Risk lead
- Amy Sparks – Tailings Covers & Baker Creek Sediment Remediation lead



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Environment Canada's Presentation Giant Mine Remediation Project Environmental Assessment Hearings EA 0809-001

Yellowknife, NT

**Environmental Protection Operations Directorate
Environment Canada
September 11, 2012**



Water & Effluent

ISSUE SUMMARY:

- New treatment and discharge configuration pipes effluent straight into the receiving environment, and does not incorporate a polishing pond (as is currently the case)
- Major ion concentrations have not been evaluated for the effluent, and should be monitored in the mine water inflows, and in effluent and the receiving environment to inform adaptive management
- Acute toxicity testing allows evaluation of effluent quality

Water and Effluent cont.

- **Recommendation #1:** *EC recommends that ammonia, sulphate, and major ions be measured in influent as well as in the effluent and receiving environment in order to ensure levels are not elevated. Whole effluent acute toxicity testing should be done on a higher frequency until flooding is completed, and effluent quality stabilizes.*

Water and Effluent cont.

Proponent Commitment:

- Proponent has committed to measuring ammonia, sulphate and major ions in influent and effluent and the receiving environment.
- While the mine remains under MMER the frequency of toxicity testing is determined through that process and EC has no concerns
- **If the Mine opts out of MMER and goes for Recognized Closed Mine Status then EC recommends:**
 - *Whole effluent toxicity testing be done quarterly, with increased frequency to monthly during periods where a change in water quality may be expected (e.g. flooding) or if >30% mortality is observed in the fish bioassay test until the effluent quality stabilizes.*

Water and Effluent

- **Recommendation #2:** *EC recommends that a full characterization of the diffuser location be done, including ongoing measurement of water temperatures, water quality sampling, benthic invertebrate community characterization, and sediment characterization. This information will inform the proponent of the risks associated with potential sediment disturbance, as well as provide baseline data for future comparisons.*

✓ ACCEPTED by the Proponent



Water and Effluent cont.

- **Recommendation #3:** *EC recommends that the diffuser stability and performance be monitored continuously during initial commissioning, and at a higher frequency during the first year of operation.*
- ✓ ACCEPTED by the Proponent



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Environment Canada's Presentation Giant Mine Remediation Project Environmental Assessment Hearings EA 0809-001

Yellowknife, NT

**Environmental Protection Operations Directorate
Environment Canada
September 12, 2012**



Overview

- Air Quality
- Wildlife
- Tailings Covers
- Baker Creek Sediment Remediation

Air Quality

- **Recommendation #4:** *EC recommends that the air quality monitoring plan as described in SENES (2011) be continued for the period during the remediation activities at the Giant Mine site plus at least one year after the remediation activities are completed.*

✓ ACCEPTED by the Proponent

- **Recommendation #5:** *EC recommends that the Proponent develop trigger levels for which dust suppression mitigation strategies are employed.*

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✓ ACCEPTED by the Proponent

Air Quality Cont.

- **Recommendation #6:** *EC recommends that continuous ambient monitoring for $PM_{2.5}$ and NO_2 is conducted near the Niven Lake residential area.*
- Further discussion with the Proponent and GNWT is ongoing

Wildlife

- **Recommendation #7:** *The Proponent should consult the fact sheet “Planning Ahead to Reduce Risks to Migratory Bird Nests” available at: <http://www.ec.gc.ca/paom-itmb/>*
- ✓ ACCEPTED by the Proponent
- **Recommendation #8:** *Remediation work in known nesting areas should be undertaken either before or after the nesting season. Structures with known nests should be taken down either before or after the nesting season.*
- ✓ ACCEPTED by the Proponent

Wildlife cont.

- **Recommendation #9:** *If other demolition or remediation work occurs during the nesting season, these areas should be inspected for active nests before any demolition or remediation work starts.*
 - *Areas should be thoroughly surveyed for active nests using a scientifically sound approach a maximum of 4 days before destruction/clearing. Surveys should be carried out by an avian biologist or naturalist with experience with migratory birds and migratory bird behaviour indicative of nesting (e.g. aggression or distraction behaviour; carrying nesting material or food)*

✓ **ACCEPTED** by the Proponent



Wildlife cont.

- **Recommendation # 10:** *If active nests (i.e., nests containing eggs or young) are discovered, the Proponent should delay any work in the area until nesting is complete (i.e., the young have left the nest). Nests should be protected by an appropriately sized buffer.*
- ✓ ACCEPTED by the Proponent
- EC has provided additional information to the Proponent regarding setback distance guidelines

Wildlife cont.

- EC recommended setback distance guidelines:

Migratory bird nests:

- Songbirds – 30 m
- Waterfowl – 100 m
- Gulls/Terns – 200 m

Species at Risk:

- Olive-sided Flycatcher, Rusty Blackbird – 300 m
- Common Nighthawk – 200 m
- Barn Swallow – 100 m
- Horned Grebe – 100 m from the high water mark of the wetland or waterbody containing a nest

- For birds that are not listed under the Federal Migratory Birds Convention Act (e.g. raptors, ravens) the Proponent should consult with the GNWT-ENR for recommended setbacks (some of these are outlined in Table 6 of AANDC's document "Northern Land use Guidelines – Northwest Territories Seismic Operations")

Tailings Covers

- **Recommendation #11:** *EC recommends that the tailings cover be redesigned to be a greater depth to provide a greater vegetation support layer so that the cover does not have the potential to be compromised by vegetation growth.*
- **Recommendation #12:** *EC recommends that if the tailings cover design remains at its current planned depth, that evidence needs to be provided that the vegetation will not penetrate into the bottom tailings cover layer. A monitoring plan should also be put in place to ensure that the tailings cover is performing as per its design specifications and to prove that vegetation is not infiltrating the cap.*

Tailings Covers Cont.

- **Proponent Response:**

- The Proponent has indicated that the depth is determined in the final design stage.

- **Outstanding Issue**

- Further discussion with the Proponent is required
- EC is concerned that the depth that is proposed for the tailings cover will not be sufficient to provide protection to the environment with time
- EC would like to see Recommendation #11 or alternatively Recommendation #12 implemented

Baker Creek Sediment Remediation

- **Recommendation #13:** *EC recommends that once all scientific information is made available regarding sediments in Baker Creek, that the selection of remedial options for Reaches 2, 5 and 6 are made with input from all interested parties, including EC.*
- ✓ ACCEPTED by the Proponent