



Giant Mine Environmental Assessment

IR Response

Round One: Information Request - Yellowknives Dene First Nation #01

June 17, 2011

INFORMATION REQUEST RESPONSE

EA No: 0809-001

Information Request No: YKDFN #01

Date Received

February 28, 2011

Linkage to Other IRs

Review Board IR #18

Date of this Response

June 17, 2011

Request

It is requested that INAC explain why only Baker Creek was selected as a focus of environmental health - Why wasn't the whole site restored in a similar manner? If not possible, why wasn't the focus shifted to site usability for the membership of YKDFN and the citizens of Yellowknife.

Reference to DAR (relevant DAR Sections)

- S. 1.2.1 Purpose and Objectives
- S. 2.8 Use of Traditional Knowledge

Reference to the EA Terms of Reference

- S.3.2.4 Development Description
- S.3.2.6 Public Consultation

Summary

The Giant Mine Remediation Project (Remediation Project) is being implemented to protect and improve the overall health of the environment. Although important, efforts to remediate Baker Creek are only one component of the overall strategy.

Response

A summary of the environmental benefits associated with the various components of the Remediation Project is presented in Table 1. As noted in the table, Baker Creek is only one of the many project components that will assist in protecting and improving the overall health of the environment. The area of the site that is currently occupied by industrial buildings will be remediated for industrial use in



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the future, including facilities required for long term treatment of minewater and for maintenance of cold temperatures in the underground chambers (i.e., the frozen blocks).

It is intended that Baker Creek will be remediated to support a productive ecosystem. Strategies for the remediation of the creek will be developed in consultation with interested parties, including the Yellowknives Dene First Nation. Likewise, the same approach will be extended to the selection of design strategies for other surface components of the Remediation Project (e.g., decisions regarding re-vegetation of the tailings covers).

Table 1 - Proposed Remediation Activities and Corresponding Benefits

Component	Proposed Remediation Activity	Benefits
Arsenic trioxide dust storage areas	<ul style="list-style-type: none">- Freeze in place through ground freezing ("frozen block" method);- Improve stability of storage areas;- Maintain ground freezing system.	<ul style="list-style-type: none">- Prevents release of soluble arsenic from the arsenic trioxide dust- Eliminates risk of water entering or dust escaping into lower mine workings;
Other underground mine components	<ul style="list-style-type: none">- Clean up and dispose of waste materials;- Seal mine openings.	<ul style="list-style-type: none">- Eliminates safety risks to wildlife and members of the public.
Open pits	<ul style="list-style-type: none">- Backfill B1 Pit and Brock Pit;- Place signs, fences and berms to control access to remaining pits.	<ul style="list-style-type: none">- Filling of B1 Pit allows for installation of freeze system and serves as a waste disposal site;- Public safety enhanced by restricting access to other pits through physical barriers.
Waste rock	<ul style="list-style-type: none">- Disposal of waste rock in B1 Pit.	<ul style="list-style-type: none">- Waste rock serves as backfill to allow for installation of freeze system.
Tailings and sludge containment areas	<ul style="list-style-type: none">- Re-contour and cover with rock and soil to promote drainage and potential re-vegetation.	<ul style="list-style-type: none">- Long-term improvement to air quality on site (e.g., dust reduction);- Improves visual quality of site;- Potential for future land uses following full remediation.
Historic foreshore tailings	<ul style="list-style-type: none">- Cover in place.	<ul style="list-style-type: none">- Limits erosion and potential release of arsenic to the water.
Site water management	<ul style="list-style-type: none">- Construct new water treatment plant;- Direct all contaminated water to the mine for collection and treatment;- Treat contaminated water and discharge to Great Slave Lake;- Manage treatment by-products on site.	<ul style="list-style-type: none">- Storage of contaminated water on surface no longer required;- Eliminates treated water discharge to Baker Creek;- Reduces the amount of arsenic discharged to Great Slave Lake.





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Component	Proposed Remediation Activity	Benefits
Baker Creek	<ul style="list-style-type: none">- Divert portions of creek to reduce risk of flooding of underground workings;- Improve hydraulic performance;- Enhance physical habitat;- Managing contaminated sediments.	<ul style="list-style-type: none">- Reduces risk of flooding underground workings;- Improves aquatic habitat in Baker Creek.
Quarries, borrow pits, and overburden piles	<ul style="list-style-type: none">- Re-slope for improved drainage and stability;- Rehabilitate.	<ul style="list-style-type: none">- Reduces physical hazards;- Returns the site to more natural conditions.
Contaminated soils	<ul style="list-style-type: none">- Excavate and backfill into frozen zone in B1 Pit or treat on surface.	<ul style="list-style-type: none">- Improves quality of terrestrial habitat;- Allows future use of portions of the site for industrial use.
Buildings and infrastructure	<ul style="list-style-type: none">- Remove all hazardous materials and demolish buildings;- Relocate portion of public highway to allow for remediation of the site.	<ul style="list-style-type: none">- Improves visual quality of site;- Reduces safety risks to the public and wildlife.

