

OVERVIEW OF THE REMEDIATION PROJECT AND ENVIRONMENTAL ASSESSMENT



Giant Mine Remediation Project Environmental Assessment

Public Hearings – September 10-14, 2012

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INTRODUCTION

- The Giant Mine Remediation Project Team is committed to remediating the Giant Mine Site.
- Carried out extensive work over the last 12 years.
- Confident that we have a plan that will protect the health and welfare of the public.
- Project is going to result in a significant improvement to the environment.

PROJECT TEAM

- Co-proponents:
 - Aboriginal Affairs and Northern Development Canada (AANDC)
 - Government of the Northwest Territories (GNWT)
- Contract Management: Public Works and Government Services Canada
- Technical Advisor: SRK and Senes
- Engineering: Aecom and Golder
- Care & Maintenance: Deton-Cho Nuna Logistics

BACKGROUND

- Operations at Giant Mine continued from 1948 until 1999 when the company went into receivership.
- Many environmental and physical hazards need to be managed to protect people and environment.
- Aboriginal Affairs and Northern Development Canada (AANDC) and the Government of the Northwest Territories (GNWT) are now responsible for site management , remediation and long-term care.

ENVIRONMENTAL ASSESSMENT

The project set out in the Developer's Assessment Report (DAR) consists of two phases:

- Active remediation phase; and
- Long term monitoring, maintenance and adaptive management phase.

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REMEDIATION PLAN: OBJECTIVES

Goal: the overall goal of the Remediation Plan is to protect human health, public safety and the environment.

Objectives:

1. To prevent, over the long term, the release to the environment of arsenic in the underground dust;
2. To clean up the surface of the site so that it is available for other uses. Decisions on how to use the land will be made together with stakeholders;

REMEDIATION PLAN: OBJECTIVES (CONT'D)

Goal: the overall goal of the Remediation Plan is to protect human health, public safety and the environment.

Objectives:

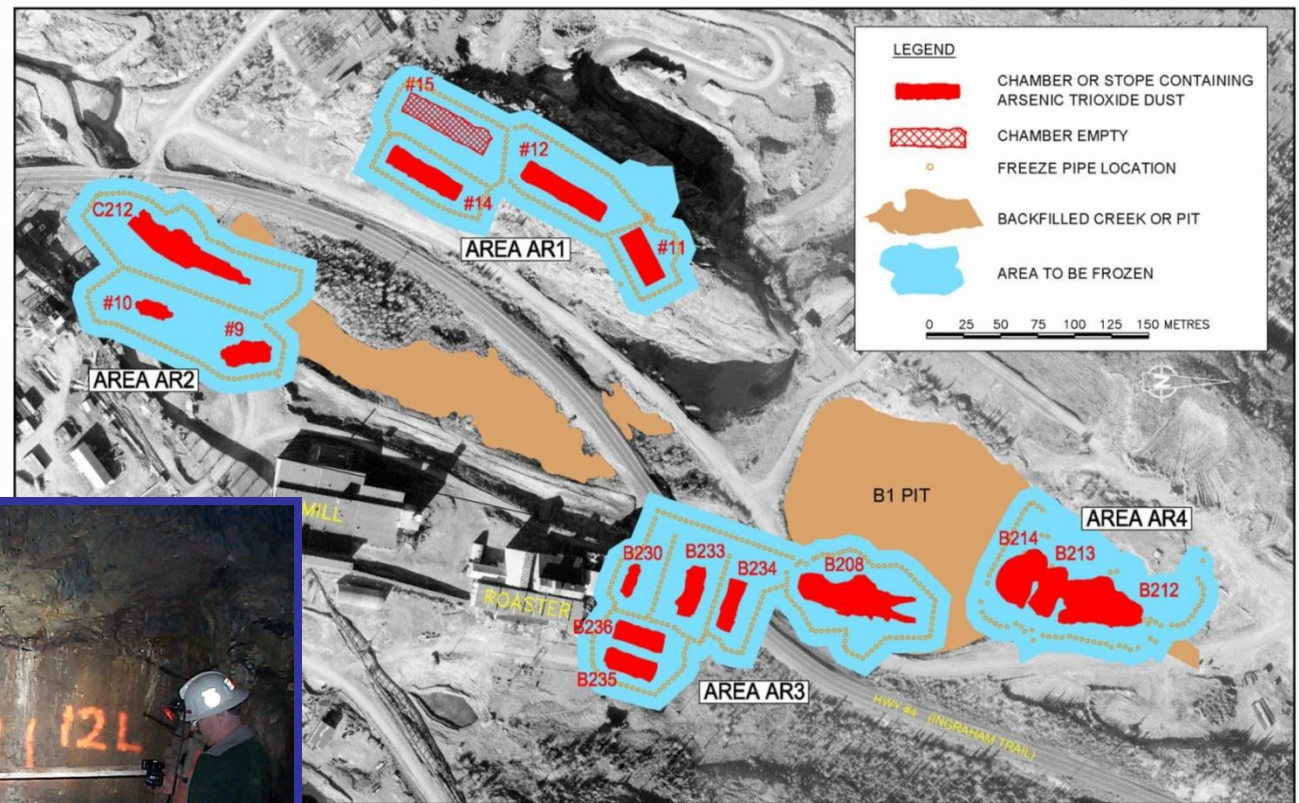
3. To reduce risks by removing buildings, closing mine openings and getting rid of other hazards at the site;
4. To keep the release of arsenic and other contaminants from the surface of the site as low as possible; and
5. To restore Baker Creek to a more natural condition. ⁸

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ARSENIC TRIOXIDE



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BAKER CREEK



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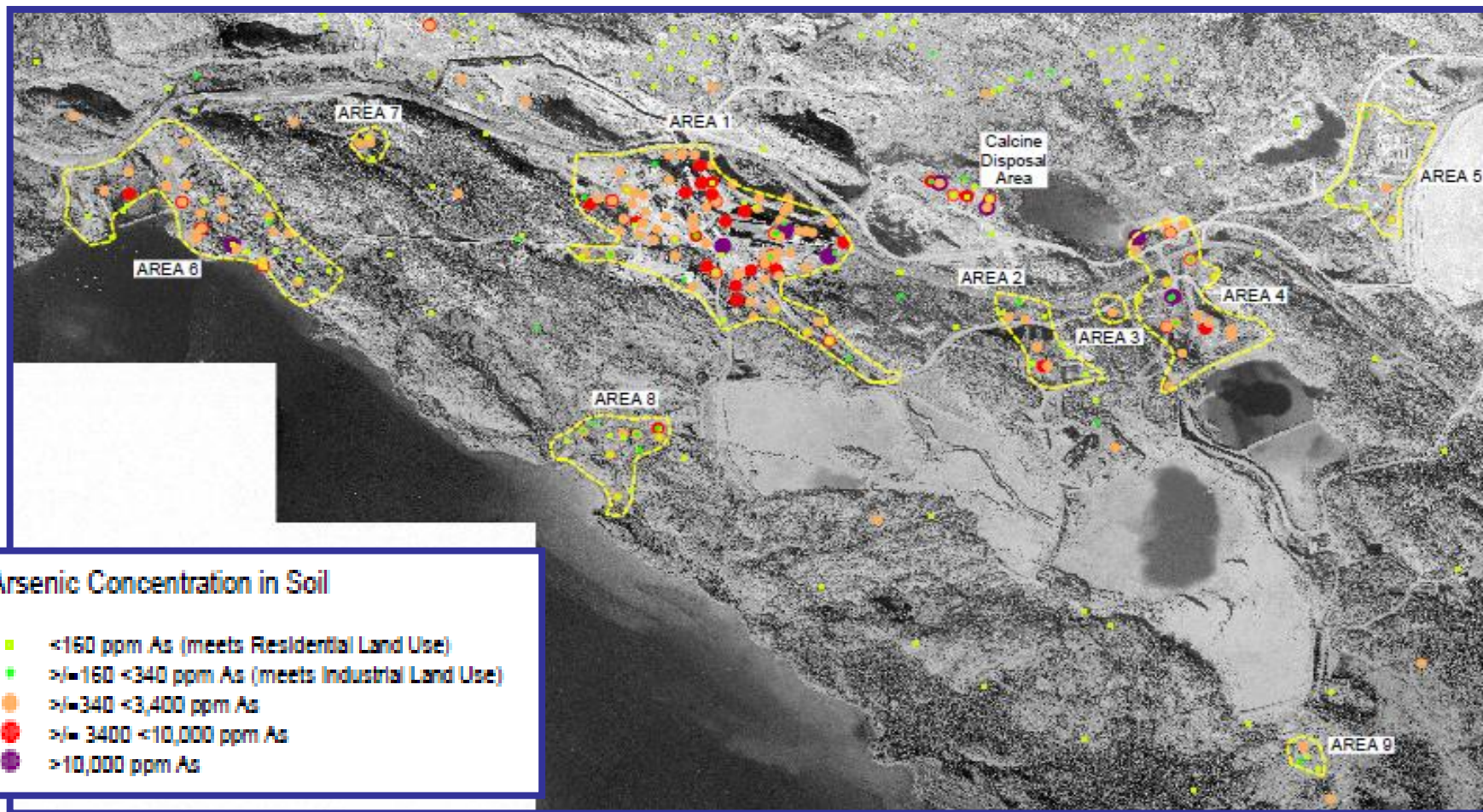


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OPEN PITS AND WASTE ROCK



CONTAMINATED SOILS



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TAILINGS

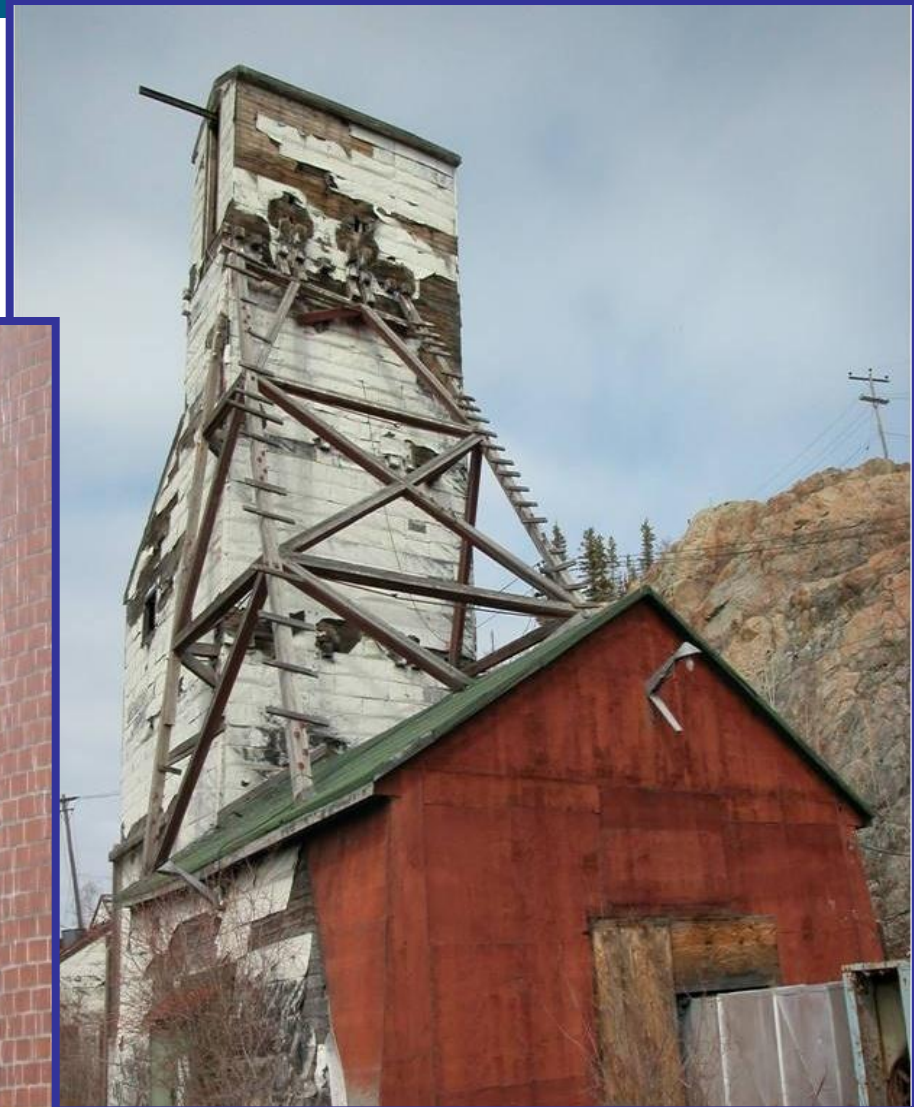


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BUILDINGS AND WASTE DISPOSAL



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WATER MANAGEMENT



REMEDIATION: ACTIVITIES AND BENEFITS

Concern	Remediation	Outcomes
Underground arsenic dust storage areas	<ul style="list-style-type: none">• Freeze in place underground through the “frozen block method”;• Maintain ground freezing system.	<ul style="list-style-type: none">• Prevents release of arsenic into groundwater.
Other parts of the underground mine	<ul style="list-style-type: none">• Clean up and remove waste;• Close mine openings.	<ul style="list-style-type: none">• Stops safety risks to wildlife and the public.
Open pits	<ul style="list-style-type: none">• Backfill B1 Pit and Brock Pit;• Use signs, fences and berms to stop access to remaining pits.	<ul style="list-style-type: none">• Improved public safety by stopping access to pits.
Tailings areas	<ul style="list-style-type: none">• Cover with rock and soil;• Evaluate options for plant growth.	<ul style="list-style-type: none">• No direct contact between tailings and people or animals;• Better long-term air quality (less dust);• More options for future land uses.

REMEDIATION: ACTIVITIES AND BENEFITS (CONT.)

Concern	Remediation	Outcomes
Tailings on the shore of Great Slave Lake	<ul style="list-style-type: none">• Extend the existing tailings cover.	<ul style="list-style-type: none">• Limits erosion and potential for arsenic to get into water.
Site Water Management	<ul style="list-style-type: none">• Build a new water treatment plant and treat all contaminated water;• Release treated water to Great Slave Lake instead of Baker Creek.	<ul style="list-style-type: none">• Much less arsenic into Baker Creek;• Significantly less arsenic in Yellowknife Bay.
Baker Creek	<ul style="list-style-type: none">• Move portions of the creek to reduce the risk of mine flooding;• Manage contaminated sediments;• Create suitable habitat for fish and animals in the creek.	<ul style="list-style-type: none">• Reduces the risk of flooding;• Improves aquatic habitat in Baker Creek;• Improves the aesthetic value of the creek.
Quarries, borrow pits and soil/rock piles	<ul style="list-style-type: none">• Reclaim areas disturbed during the mining operation.	<ul style="list-style-type: none">• Reduces physical dangers;• Returns the site to more natural conditions.

REMEDIATION: ACTIVITIES AND BENEFITS (CONT.)

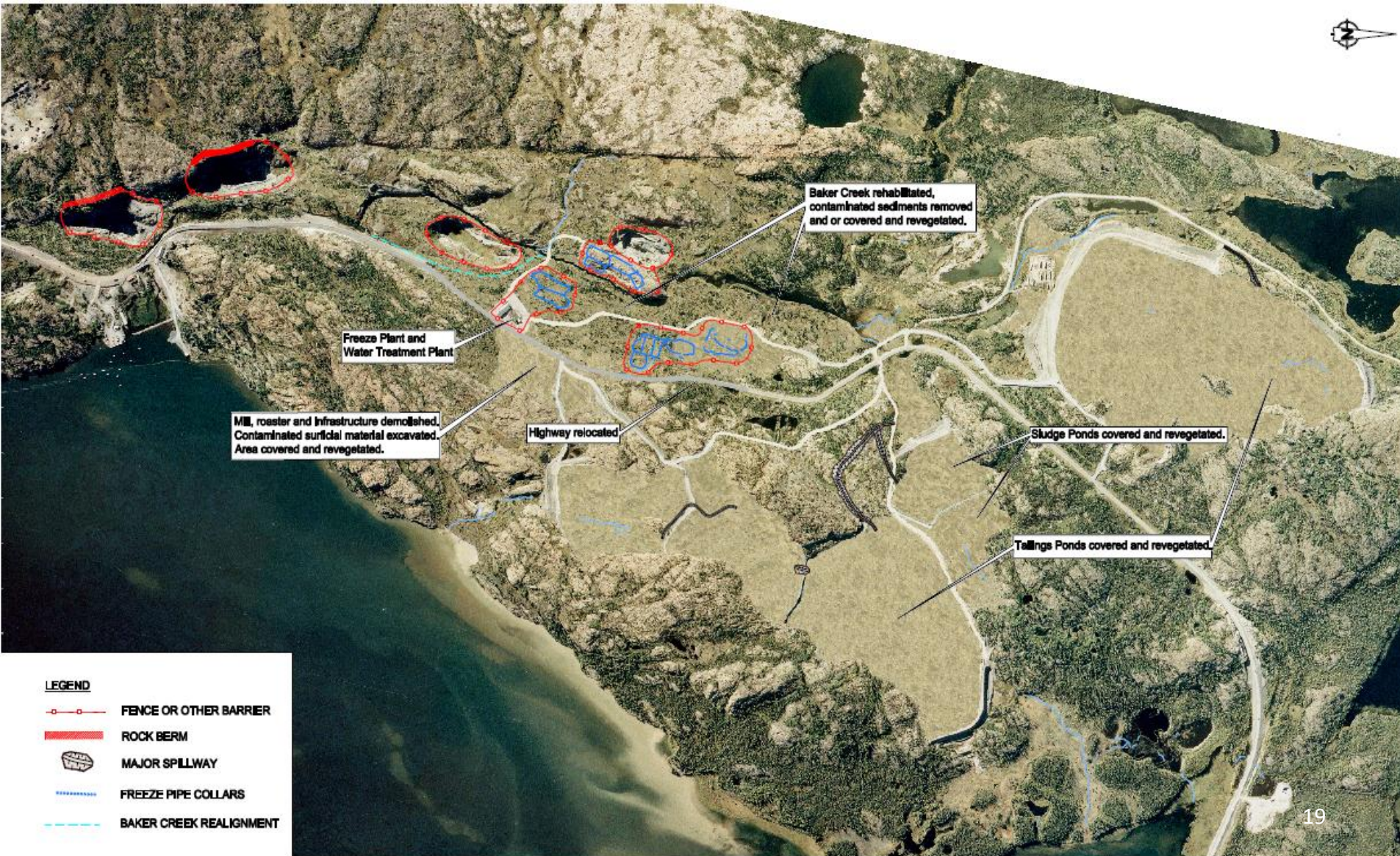
Concern	Remediation	Outcomes
Contaminated Soils	<ul style="list-style-type: none">• Excavate contaminated soils to up to 2 m depth and cover anything deeper.	<ul style="list-style-type: none">• Improves quality of habitat on site;• Reduces risks to the public and animals;• More options for future land uses.
Buildings and Roads	<ul style="list-style-type: none">• Remove all unsafe materials and tear down buildings;• Move part of highway to allow for site clean up.	<ul style="list-style-type: none">• Improves how the site looks;• Reduces safety risks to the public and wildlife.

Socio-economic - In addition to the benefits listed in the table, the Remediation Project will create jobs for Aboriginal people and other northerners. It will also help local businesses through spending on goods and services.

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LEGEND

- FENCE OR OTHER BARRIER
- ROCK BERM
- MAJOR SPILLWAY
- FREEZE PIPE COLLARS
- BAKER CREEK REALIGNMENT

SUMMARY

1. AANDC and GNWT are confident the Giant Mine Remediation Project will result in many positive effects by improving and protecting the environment.
2. Improves environment immediately.
3. Minimizes risk in the long-term.
4. There may be some negative effects during the site remediation activities. These will affect small areas, will be short-lived and can be managed.

We conclude the project will cause no significant adverse impacts on the environment.

MANAGEMENT AND OVERSIGHT

1. Perpetual care
2. Adaptive management and EMS
3. Public engagement
4. Oversight

PERPETUAL CARE

- The physical components of the project have always been designed to reduce the level of active care over time.
- Constructive inputs from the Review Board and Parties have led to significant changes in our thinking about the management of perpetual care.

ADAPTIVE MANAGEMENT AND EMS

- We have been working with the Parties on development of an Environmental Management System for the project.
- We see EMS as the key to effective adaptive management:
 - It supports good decision making;
 - It is easily auditable;
 - AND it allows for stakeholder input into many elements of monitoring and response plans.

PUBLIC ENGAGEMENT

- Ongoing since AANDC took control of the property in 1999.
 - Significant increase during years of arsenic trioxide alternatives assessment (2001 – 2003).
- Significant increase again since Board issued the Terms of Reference in 2009.
 - New process and structures in place;
 - Continuing public engagement.
- Expected to increase again through upcoming detailed design and phases.

OVERSIGHT

- Giant Mine Project Team continues to believe that existing oversight mechanisms and structures are effective.
- Through public engagement and EA process we have learned that there are concerns.
- We are working with the Parties to review options for additional oversight mechanism.

SUMMARY

1. We recognize the historical concern about the Giant Mine site.
2. Our project is primarily designed to mitigate the underlying physical sources of that concern.
3. The management and oversight concepts that we are including will over time serve to reduce public concern.

We conclude that the project is not likely to be a cause for significant public concern.