

**Preliminary Screening Report Form**

<p><b>Preliminary screener:</b> MVLWB  <b>Reference / File</b> number: MV2016S016 – Amendment 1 – December 18, 2017  <b>TITLE:</b> Drilling and Soil Testing, Giant Mine, NT  <b>ORGANIZATION:</b> Department of Indian Affairs and Northern Development  <b>MEETING DATE:</b> December 18, 2017</p>	<p><b>EIRB Reference number:</b></p>
--	--------------------------------------

- Type of Development:** (CHECK ALL THAT APPLY)
- New
  - Amend, EIRB Ref. #
  - Requires permit, licence, or authorization
  - Does not require permit, licence, or authorization

**Project Summary**

The proposed drilling and soil testing activities include the following:

- Drilling using a mud rotary drill, diamond drilling and down-the-hole drilling methodologies;
- Boring using an auger
- Excavating test pits
- Supporting activities such as storage of fuel and use machinery

**Scope**

This Permit entitles the Permittee to conduct the following land-use operation:

- conduct soil investigations;
- conduct drilling;
- conduct test pitting;
- use and storage of fuel, and
- use of machinery.

Land Use Eligibility - Section 18 Mackenzie Valley Land Use Regulations

**Type of Disposition**                      Disposition Number(s)

- Mineral Claims
- Prospecting Permit (s)
- Mineral Leases
- Oil and Gas: EL/SDL/PL
- Quarry Permit
- Timber Permit
- Other:                                      Reserve R662T

**Principal Activities (related to scoping)**

(CHECK ALL THAT APPLY)

- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Construction</li> <li><input type="checkbox"/> Installation</li> <li><input type="checkbox"/> Maintenance</li> <li><input type="checkbox"/> Expansion</li> <li><input type="checkbox"/> Operation</li> <li><input type="checkbox"/> Repair</li> <li><input type="checkbox"/> Research</li> <li><input type="checkbox"/> Water Intake</li> <li><input checked="" type="checkbox"/> Other:    Geotechnical Program – Drilling and Soil Testing</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Exploration</li> <li><input type="checkbox"/> Industrial</li> <li><input type="checkbox"/> Recreation</li> <li><input type="checkbox"/> Municipal</li> <li><input type="checkbox"/> Quarry</li> <li><input type="checkbox"/> Linear / Corridor</li> <li><input type="checkbox"/> Sewage</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Decommissioning</li> <li><input type="checkbox"/> Abandonment</li> <li><input type="checkbox"/> Aerial</li> <li><input type="checkbox"/> Harvesting</li> <li><input type="checkbox"/> Camp</li> <li><input type="checkbox"/> Scientific/</li> <li><input type="checkbox"/> Solid Waste</li> </ul> |
|---|--|---|

**Principal Development Components (related to scoping)**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Access Road <ul style="list-style-type: none"> <li><input type="checkbox"/> construction</li> <li><input type="checkbox"/> abandonment/removal</li> <li><input type="checkbox"/> modification e.g., widening, straightening</li> </ul> </li> <li><input type="checkbox"/> Automobile, Aircraft or Vessel Movement</li> <li><input type="checkbox"/> Blasting</li> <li><input type="checkbox"/> Building</li> <li><input type="checkbox"/> Burning</li> <li><input type="checkbox"/> Burying</li> <li><input type="checkbox"/> Channelling</li> <li><input type="checkbox"/> Cut and Fill</li> <li><input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation</li> </ul> | <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Waste Management <ul style="list-style-type: none"> <li><input type="checkbox"/> disposal of hazardous waste</li> <li><input type="checkbox"/> waste generation</li> <li><input type="checkbox"/> sewage</li> <li><input type="checkbox"/> disposal of sewage</li> </ul> </li> <li><input checked="" type="checkbox"/> Geoscientific Sampling</li> <li><input type="checkbox"/> Trenching</li> <li><input checked="" type="checkbox"/> Diamond drill</li> <li><input checked="" type="checkbox"/> Borehole core sampling</li> <li><input type="checkbox"/> Bulk soil sampling <ul style="list-style-type: none"> <li><input type="checkbox"/> gravel</li> <li><input type="checkbox"/> hydrological Testing</li> </ul> </li> </ul> |
|--|---|

- Dams and Impoundments
  - construction
  - abandonment/removal
  - modification
- Ditch Construction
- Drainage Alteration
- Drilling other than Geoscientific
- Ecological Surveys
- Excavation
- Explosive Storage
- Fuel Storage
- Topsoil, Overburden or Soil
  - fill
  - disposal
  - removal
  - storage

- Site Restoration
  - fertilization
  - grubbing
  - planting/seeding
  - reforestation
  - scarify
  - spraying
  - re-contouring
- Slashing and removal of vegetation
- Soil Testing
- Stream Crossing/Bridging
- Tunnelling/Underground
- Other:

**NTS topographic map sheet numbers:**  
85J/08

**Latitude / longitude and UTM system:**  
Minimum Latitude & Longitude are 62°28'54" N & 114°19'12" W  
Maximum Latitude and Longitude are 62°32'38" N & 114°22'34" W

**Nearest community and water body:**  
Nearest Community: Yellowknife, NT  
Nearest Water Body: Baker Creek/Great Slave Lake

**Land Status (consultation information)**

- Free Hold/Private       Commissioner's/Territorial Lands       Federal Crown Land       Municipal Land

**Transboundary/Transregional Implications**

- British Columbia       Alberta       Saskatchewan       Yukon  
 Nunavut       National Park       Inuvialuit Settlement Region  
 Wek'èezhii       Gwich'in       Sahtu

**Type of transboundary implication:**       Impact / Effect       Development

Public concern: \_\_\_\_\_  
(Describe.)

**Physical - Chemical Effects**

<b>Impact</b>	<b>Mitigation</b>	<b>Location of condition</b>
1) <b>Ground Water</b>		
<input checked="" type="checkbox"/> water table alteration	Artesian flows may be encountered when drilling. The proponent will immediately cap any holes in which artesian flow is encountered and the INAC Inspector will be notified.	26(1)(d)
<input checked="" type="checkbox"/> water quality changes	<p>Drilling wastes may impact the groundwater quality as there may be the potential spills of chemicals and fuel. The proponent indicates that:</p> <ul style="list-style-type: none"> <li>• Water will be primarily used in the drilling program. If additives are required in the drilling muds, only environmentally benign materials such as bentonite clays or polymers will be used.</li> <li>• Any rinse water used in down-the-hole drilling (see Project Description) will be captured by the underground water management system which intercepts water flowing through underground workings and directs it to surface for treatment.</li> <li>• Maintaining spill kits at each work site will ensure small spills can be cleaned up immediately and impacts are localized and temporary.</li> <li>• Development of and training in the use of a spill contingency plan will ensure spills are responded to effectively, in a timely manner, and appropriate notifications are made.</li> <li>• Double-walled tanks are used at the main fuel tank farm</li> <li>• Drill stems that enter underground chambers and slopes will be rinsed in-hole to prevent arsenic dust from reaching the surface.</li> </ul>	26(1)(g)
<input type="checkbox"/> infiltration changes		
<input checked="" type="checkbox"/> other:	The addition of the submersible pumps can be used if there is a large flux of water in the underground.	
<input type="checkbox"/> N/A		

**Impact**  
2) **Surface Water**

**Mitigation**

**Location of condition**

flow or level changes

water quality changes

Drilling and excavating soil test pits especially near the banks of Baker Creek 26(1)(g) and 26(1)(m) may result in the operational releases of drill wastes to or sedimentation of the water. Mitigation includes:

- Activities near Baker Creek will take place during low flow periods and above the high water mark.
- Recirculation of drilling fluids to minimize generation of liquid waste.
- Drill cuttings will be collected and disposed of In the Northwest Pond
- Hazardous Waste Area (Figure 4 in Project Description).
- Standard erosion and sedimentation control measures including matting, fencing and berms (e.g., sandbags) will be used as required to prevent wastes from entering the creek.

Also refer to water quality changes under Groundwater above.

water quantity changes

drainage pattern changes

Removal of vegetation at drill targets and the excavation of test pits may affect, in very localized areas, surface water flows. The Proponent proposes the following for mitigation:

26( 1 )(d) and 26( 1 )(f)

- Most of the drilling activities will occur in previously disturbed locations and vegetation will not be encountered.
- In areas such as the banks of Baker Creek where vegetation may be encountered, the vegetation will be chopped and laid on the ground surface in such a manner that the debris will not enter the creek.
- The footprint of areas requiring removal of vegetation will be minimized.
- Excavated soils will be returned to the test pits and mounded to prevent later ponding on the surface.

temperature

wetland changes/loss

other:

N/A

**Impact**  
3) **Noise**

**Mitigation**

**Location of condition**

noise in/near water

noise increase

Noise levels may increase at the site temporarily while this activity is conducted. Mitigation includes:

n/a

- Contractors on site must have appropriate personal protective equipment, including ear plugs, to protect their health.
- Heavy machinery will be equipped with standard Industrial noise suppression devices. Increases In noise levels will be short term and will be outweighed by the positive effects that collecting the geotechnical and design information will have on remediation design and risk mitigation.

other:

N/A

**Impact**  
4) **Land**

**Mitigation**

**Location of condition**

geologic structure changes

soil contamination

Soils could become contaminated from chemical spills. Mitigation includes the 26(1)(g) and 26(1)(m) development of a spill contingency plan, and the use of appropriate spill kits/procedures. See water quality Groundwater above for more information on mitigation.

buffer zone loss

- |  |   |     |
|--|---|-----|
| <input checked="" type="checkbox"/> soil compaction and settling | Soils could become compacted from the use of heavy machinery. Much of the land this operation will occur on has been previously disturbed by over 50 years of mining activity. No mitigation. | n/a |
| <input checked="" type="checkbox"/> destabilization/erosion      | See above under soil compaction and settling.   |     |
| <input type="checkbox"/> permafrost regime alteration            |   |     |
| <input type="checkbox"/> explosives/scarring                     |   |     |
| <input type="checkbox"/> other:                                  |   |     |
| <input type="checkbox"/> N/A                                     |   |     |

<b>Impact</b>	<b>Mitigation</b>	<b>Location of condition</b>
<b>5) Non-renewable natural resources</b>		

- resource depletion
- other:
- N/A

<b>Impact</b>	<b>Mitigation</b>	<b>Location of condition</b>
<b>6) Air/climate/atmosphere</b>		

- other:
 

Emissions from combustion engines and dust generated from drilling and/or heavy equipment use will be released to the atmospheric environment. Drilling into arsenic trioxide chambers may result in arsenic trioxide dust plumes exiting drill holes. The Proponent will do the following to prevent this:

  - Contractors brought to site are responsible for using well-maintained equipment, which will help to minimize combustion engine emissions.
  - Overall impacts to air quality will be outweighed by the positive effects that collecting the geotechnical and design information will have on remediation design and risk mitigation.
  - Drilling into arsenic trioxide chambers will follow modified procedures to prevent arsenic trioxide plumes. The modified drilling procedures include:
    - The use of Down-the-Hole drilling which uses air rather than water.
    - The air will be turned off when drilling reaches within one metre above the chamber so that there is no force to blow dust up the drill hole.

N/A

**BIOLOGICAL ENVIRONMENT**

<b>Impact</b>	<b>Mitigation</b>	<b>Location of condition</b>
<b>1) Vegetation</b>		

- species composition
- species introduction
- toxin/heavy accumulation
- other: Linear Migration routes, habitat fragmentation
- N/A

<b>Impact</b>	<b>Mitigation</b>	<b>Location of condition</b>
<b>2) Wildlife and Fish</b>		

- effects on rare, threatened or endangered species
- fish population changes
- waterfowl population changes
- breeding disturbance

- population reduction
- species diversity change
- health changes
- behavioural changes

The presence of machinery and people on site may disturb terrestrial species that might otherwise be on site. Wildlife disturbances will be short term and temporary, and domestic waste will be managed so as not to attract wildlife.

n/a

- habitat changes / effects
- game species effects
- toxins/ heavy metals
- forestry changes
- agricultural changes
- other:
- N/A

**Interacting Environment**

**Impact**

**1) Habitat and Communities**

**Mitigation**

**Location of condition**

- predator-prey
- wildlife habitat/ecosystem composition changes
- reduction/removal of keystone or endangered species
- removal of wildlife corridor or buffer zone
- other:
- N/A

**Impact**

**2) Social and Economic**

**Mitigation**

**Location of condition**

- planning/zoning changes or conflicts
- increase in urban facilities or services use
- rental house
- airport operations/capacity changes
- human health hazard
- impair the recreational use of water or aesthetic quality
- affect water use for other purposes
- affect other land use operations
- quality of life changes

The proposed activities could impact human health, in particular that of the workers on site. Mitigation includes proper training and protective gear (e.g. eye protection, hard hats, etc.) for those on site, following current procedures related to arsenic trioxide dust, and having well maintained equipment.

n/a

<input checked="" type="checkbox"/> public concern	Residents of nearby Yellowknife that are not aware of what is going on at the site may become concerned about the proposed activities INAC circulates a Giant Mine update newsletter to members of the nearby communities (titled "What's Happening at Giant Mine?"). In this publication, which is also available on line, activities occurring on site are explained in brief. There is also a phone number residents can call to get information and reach the Giant Mine Remediation Project Office staff. As well, this application was circulated to our distribution list for review and comment and INAC had also conducted some community engagement prior to this to explain the proposed activities. No mitigation proposed.	n/a
--	---	-----

<input checked="" type="checkbox"/> other:	The socioeconomic impacts accruing from the remediation program are expected to be largely positive. To enhance regional socio-economic benefits, all contractors bidding on the remediation project will be required to submit an Aboriginal Opportunity Considerations (AOC). Each AOC will specify the commitment of the contractor to Aboriginal employment, subcontracting and training. ABPs with greater commitments to Aboriginal content will receive higher scores. The AOC commitments will be enforced through contractual obligations. No mitigation.	n/a
--	--	-----

N/A

**Impact**  
3) **Cultural and Heritage**

**Mitigation**

**Location of condition**

<input checked="" type="checkbox"/> effects to historic property	Some consider the Giant Mine site to be historic property. The proposed program will be undertaken on this historic site. However, this work need to be done in order to ensure public safety and to optimize the clean-up of this contaminated site. No mitigation. Also see below for further information.	n/a
--	--	-----

increased economic pressure on historic properties

change to or loss of historic resources

change to or loss of archaeological resources

A search of the Prince of Wales Northern Heritage Centre's Archeological Sites Database in April 2012 revealed the presence of four prehistoric sites within the Giant Mine lease area. In addition, a number of on-site buildings have been identified as having potential heritage value. The Proponent lists the following:

- None of the buildings identified as having potential heritage value will be disturbed by the proposed activities.
- All proposed activities will take place in areas previously disturbed by over 50 years of mining activity.
- Contractors will be informed that encountering cultural sites is possible and will be instructed to not disturb any artefacts or sites that may be of cultural value. The Yellowknives Dene First Nation and the Prince of Wales Northern Heritage Centre will be contacted immediately for direction if a cultural resource is suspected.

increased pressure on archaeological sites

change to or loss of aesthetically important sites

effects to aboriginal lifestyle

other:

N/A

- Pursuant to Schedule 4.1 of the **Northwest Territory Métis Nation (NWTMN)** Interim Measures Agreement, the MVLWB determined that written notice was given to the NWTMN and that a reasonable period of time was allowed for NWTMN to make representations with respect to the application.
- Pursuant to subsection 1.6, paragraphs (a) and (b) of the **Akaiicho Territory Dene First Nations (ATDFN)** Interim Measures Agreement, the MVLWB determined that written notice was given to the ATDFN and that a reasonable period of time was allowed for ATDFN to make representations with respect to the Application.

**Preliminary Screener / Referring Body Information**

Alternatives North
Bathurst Inlet Lodge
Canadian Northern Economic Development Agency
CanNor NWT Region
Dene Nation
Deninu K'ue First Nation
Ecology North
Environment and Climate Change Canada
Fisheries and Oceans Canada
Fort Resolution Metis Council
Fort Smith Metis Council
General Public
Giant Mine Oversight Body
GNWT - DOT
GNWT - ENR
GNWT - Health
GNWT - ITI
GNWT - Lands
GNWT - MACA
GNWT - Prince of Wales Northern Heritage Centre
GNWT- OROGO
Golder Associates

Gov of Canada
Hamlet of Fort Resolution
Hay River Metis Council
INAC - Contaminants and Remediation Directorate
Katlodeeche First Nation
Lutsel K'e Dene First Nation - Chief or Wildlife, Lands and Environment
Mackenzie Valley Environmental Impact Review Board
North Slave Metis Alliance
Northwest Territory Metis Nation
Salt River First Nations
Smith Landing First Nation
Snap Lake Environmental Monitoring Agency - SLEMA
Strategic Oil & Gas Ltd.
Tlicho Government
Town of Fort Smith
West Point First Nation
Workers' Safety and Compensation Commission
Yellowknives Dene First Nation

**Reasons For Decision**

(List all reasons and supporting rationales for preliminary screening decision)

**DECISION**

The Mackenzie Valley Land and Water Board (the Board) is satisfied that the preliminary screening of Amendment Application MV2016S0016, INAC, Geotechnical Investigations, Giant Mine, NT has been completed in accordance with section 125 of the *Mackenzie Valley Resource Management Act (MVRMA)*.

The Board is satisfied that communities and First Nations affected by the Application have been notified and provided adequate time to provide comment on the Application as required by land claim and self government agreements, the MVRMA, policy directions relating to Interim Measures Agreements, and any other applicable legislation and agreements.

Having reviewed all relevant evidence on the Public Registry, including the submissions of the Applicant, the written comments received by the Board and any Staff Reports prepared for the Board, the Board has decided that in its opinion:

- The proposed development will not have a significant adverse impact on the environment; and
- The proposed development is not a cause of public concern.

The Board is also of the opinion that the Application can proceed through the regulatory process and that any impacts of the development on the environment can be mitigated through the imposition of the terms and conditions in the attached Land Use Permit

As a result, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the Mackenzie Valley Land Use Regulations has decided that this Land Use Permit be issued subject to the terms and conditions contained therein.

<b>Preliminary Screening Decision</b>	
<input type="checkbox"/>	<b>Outside Local Government Boundaries</b>
<input type="checkbox"/>	The development proposal might have a significant adverse impact on the environment, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input checked="" type="checkbox"/>	<b>Wholly Within Local Government Boundaries</b>
<input type="checkbox"/>	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, <i>refer it to the EIRB.</i>
<input checked="" type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input checked="" type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>

**Preliminary Screening Organization**

Mackenzie Valley Land and Water Board  
\_\_\_\_\_

December 18, 2017  
\_\_\_\_\_

**Signatures**

  
\_\_\_\_\_

Mavis Cli-Michaud, Chair  
\_\_\_\_\_