

## PRELIMINARY SCREENING REPORT

**PRELIMINARY SCREENER:** Sahtu Land and Water Board,  
Aswathy Mary Varghese

**REFERENCE / FILE NUMBER:** S19S-002

**APPLICANT:** Wood Environment and Infrastructure Solutions

**TITLE:** Tulita geotechnical and environmental drilling program

**MEETING DATE:** March 8, 2019

**EIRB REFERENCE NUMBER:**

**Type of Development:** (S) Geotechnical

**Type of Development:** (CHECK ALL THAT APPLY)

- New Development
- Amend, EIRB Ref. #
- Renew, EIRB Ref. #
- Requires permit, licence or authorization
- Does not require permit, licence or authorization

**Project Summary:** Geotechnical and environmental drilling program at three locations within the municipal boundaries of Hamlet of Tulita; in order to assess enviro and/or engineering properties (presence of contamination, strength and settlement behavior) of the soil. Wood E&IS is administrating this project on behalf of three organizations/authorities viz. a) Government of Northwest Territories (GNWT), b) Fort Norman Metis Development Corporation (FNMD) and c) Tulita Land Corporation (TLC). The work in Tulita will include three projects: 1) Petroleum hydrocarbon contaminant delineation in soils in Plane Lake Drive (for GNWT); 2) Phase II Environmental Site Assessment (ESA) and geotechnical investigation, in a site located south of the intersection of Plane Lake Drive, in support of a new building construction (for FNMD); and 3) Combined Phase I and Phase II ESA and geotechnical investigation, in a site located north of the Hamlet of Tulita Office (for TLC).

**Scope:** Drilling operations will occur within municipal boundaries (hence in previously disturbed land). No new access is anticipated. The field program will be conducted over a five year period beginning February 2019 or upon issuance of the Permit. The sites will be accessible for a track-mounted drill rig. A maximum of thirty 150 mm diameter boreholes will be drilled with a solid stem auger for the soil testing of all the three sites (sites are close to each other). The number and depth of boreholes planned for each site are as follows:

Site of GNWT- Plane Lake Drive: Approximately 8 holes will be drilled (total number of holes will be determined in the field as this is for contaminant delineation) to the top of the permafrost layer only. The permafrost is likely within 2 - 3.5 m depth below surface (prediction based on drilling/soil testing performed by Wood E&IS for the health centre nearby).

Site of Fort Norman Metis Development Corporation: One hole to 15 m depth, two holes to 10 m depth, and three holes (enviro) to 6 m depth (6 holes in total).

Site of Tulita Land Corporation: One hole to 15 m depth, four holes to 10 m depth, and one to two holes (enviro) to 6 m depth (6-7 holes in total).

Boreholes will be drilled without the use of any drilling fluids. Boreholes will be backfilled using cuttings and/or bentonite.

**Principal Activities (related to scoping)**  
(CHECK ALL THAT APPLY)

Construction

Exploration

Decommissioning

- ✓ Installation : Thermistors to record/monitor permafrost
- Maintenance
- Expansion
- Operation (re-suspension)
- Repair
- Water Intake
- ✓ Other: Geotechnical Drilling
- Industrial
- Recreation
- Municipal
- Quarry
- Linear / Corridor
- Sewage
- Abandonment
- Aerial
- Harvesting
- Camp
- ✓ Scientific / Research
- ✓ Solid Waste : Oil contaminated soil

(DESCRIBE)

**Principal Development Components (*related to scoping*)**  
(CHECK ALL THAT APPLY)

- Access Road
  - construction
  - abandonment/removal
  - modification e.g., widening, straightening
- ✓ Automobile, Aircraft or Vessel Movement
- Blasting
- Building
- Burning
- Burying
- Channeling
- Cut and Fill
- ✓ Cutting of Trees or Removal of Vegetation : minimal
- Dams and Impoundments
  - construction
  - abandonment/removal
  - modification
- Ditch Construction
- Drainage Alteration
- Drilling other than Geoscientific
- Ecological Surveys
- Excavation
- Explosive Storage
- Fuel Storage, drilling fluid, and hydraulic fracture fluid storage
- Topsoil, Overburden or Soil
  - fill
  - disposal
  - removal
  - storage
- ✓ Waste Management
  - ✓ disposal of hazardous waste
  - ✓ waste generation : waste fuel
  - ✓ drilling wastes
- Sewage
  - disposal of sewage
- ✓ Geoscientific Sampling
  - trenching
  - diamond drill
  - ✓ borehole core sampling
- Bulk soil sampling
- Gravel
- Hydrological Testing
- ✓ Site Restoration
  - fertilization
  - grubbing
  - planting/seeding
  - reforestation
  - scarify
  - spraying
  - ✓ recontouring : boreholes are backfilled
- Slashing and removal of vegetation
- ✓ Soil Testing
- Stream Crossing/Bridging
- Tunneling/Underground
- Water Intake
- Other

**NTS Topographic Map Sheet Numbers**  
(LIST ALL THAT APPLY) 096E

**NTS Map Sheet #s:** 096C

Latitude/Longitude and UTM System:      Min. Latitude: 64° 54' 1"      Max. Latitude: 64° 54' 8"  
 Min. Longitude: 125° 34' 11"      Max. Longitude: 125° 34' 24"  
 (DEGREES, MINUTES, SECONDS, MAP SHEET)

**Nearest Community and Water Body:** Tulita, Mackenzie River

**Land Status (consultation information)**

(CHECK ALL THAT APPLY)

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

**Transboundary Implications**

(CHECK ALL THAT APPLY - IF KNOWN & APPLICABLE)

- British Columbia
- Alberta
- Saskatchewan
- Yukon
- Nunavut
- Wood Buffalo National Park
- Inuvialuit Settlement Region

N/A

**Type of Transboundary Implication:**

- Impact / Effect
- Development

Public Concern

\_\_\_\_\_  
(DESCRIBE)

N/A

**PHYSICAL - CHEMICAL EFFECTS**

**IMPACT**

**MITIGATION**

**1. Groundwater**

Water table alteration

1. No impact to water table is expected. However, a standard land use permit condition can be added in the event of encountering flowing artesian wells during the drilling process, requiring the Permittee to a) plug the Borehole in such a manner as to permanently prevent any further outflow of water; and (b) immediately report the occurrence to the Board and an Inspector.

Water quality changes

If fuel spills it may migrate into groundwater. Prevention/mitigations include:

1. Strict following of the Spill Contingency Plan (SCP). The SCP for this project has been developed based upon the Environmental Emergency Regulations (E2 Regulations) that form part of the Canadian Environmental Protection Act (CEPA, 1999) as well as the Government of the Northwest Territories' (GNWT) Department of Environment and Natural Resources' (ENR) Spill Contingency Planning and Reporting Regulations (1993).
2. Spill kits will be located wherever fuel and hazardous materials are stored or used.
3. If a reportable spill occurs, it will be reported to the NWT 24-Hour Spill Report Line at (867) 920-8130 or spills@gov.nt.ca and GNWT Lands Inspector 867-587-7206.

Infiltration changes

1. No infiltration changes are anticipated, however, a standard Flowing Artesian Wells condition can be added to the Land Use Permit to prevent flowing water from a borehole by: (a) plug the Borehole in such a manner as to permanently prevent any further outflow of water; and (b) immediately report the occurrence to the Board and an Inspector

Other:

N/A

**IMPACT**

**MITIGATION**

**2. Surface Water**

Water flow or level changes

Water quality changes

The project is not expected to have a significant impact on watersheds in the area as the location of the project is within the Hamlet of Tulita and located at least 90m away from waterbodies (90m away from nearest wetland and 130 m away from Mackenzie river).

Mitigations include:

1. Drilling personnel and supervisory staff are trained in spill prevention and response, in accordance with the work.
2. Provide spill kits complete with oil-absorbing materials, weirs and containment booms and other equipment as required
3. The SCP plan includes the events of rare cases, where burning the fuel or let the fuel (gasoline) to evaporate, in order to contain them on surface water. This should be done only with the approval of lead agency inspector.
4. Implementation of the Spill Contingency Plan and Waste Management Plan as required.
5. A standard condition can be included in the land use permit conditions to a) ensure the repair of any leaks immediately and b) to instruct for the placement of containment trays under stationary heavy equipment.
6. A standard condition can be included in the land use permit conditions for the proponent to clean up all leaks, spills and contaminated material.

Water quantity changes

Drainage pattern changes

Temperature

Wetland changes / loss

Other:

N/A

**IMPACT**

**MITIGATION**

**3. Noise**

Noise increase

1. Short-term, temporary noise-related impacts will occur during borehole. There is no mitigation for noise during drilling. As any increase in noise disturbance from undertaking will be temporary and localized in nature, there are no anticipated long term effects.

Noise in/near water

Other:

N/A

**IMPACT**

**MITIGATION**

**4. Land**

Geologic structure changes

Soil contamination

Soil contamination is possible in the case of a spill. Mitigations include:

1. Adhering to the Spill Contingency Plan and Waste Management Plan of the project.
2. Spill kits will be located wherever fuel is used or stored.
3. A standard condition can be included in the land use permit conditions, instructing for the placement of containment trays under stationary heavy equipment, which will help to avoid leaks on the land. The condition can also include instruction for the immediate repair of the leaks.
4. If a reportable spill occurs, it will be reported to the NWT 24-Hour Spill Report Line at (867) 920-8130 or spills@gov.nt.ca and GNWT Lands Inspector at 867-587-7206.

Ground disturbance

1. Implement ground disturbance protocols where required.
2. All drilling activities will be occurring around existing disturbed areas and minimal brush clearing is anticipated.

Buffer zone loss

Soil compaction & settling

Destabilization / erosion

Permafrost regime alteration

The project requires drilling where permafrost may be present. Mitigations include:

1. Backfilling of all bore holes once the work has been completed.
2. Placing thermistors into designated holes to monitor and record the permafrost.

Other:

There is a possibility of disruption of buried historic pipeline at the Plane Lake Drive site (of GNWT), due to drilling activities. A non-standard condition can be added to land use permit conditions to address any spills or other losses related to this event, requiring the Proponent to contact an Inspector (GNWT-Lands) immediately for appropriate spill contingency and waste management procedures.

N/A

**IMPACT**

**MITIGATION**

**5. Non Renewable Natural Resources**

Resource depletion

1. Equipment and vehicles using fossil fuels will be utilized in the most efficient manner possible in order to minimize program fossil fuel requirements.

Other

N/A

**IMPACT**

**MITIGATION**

**6. Air / Climate / Atmosphere**

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>✓ Greenhouse gases</li></ul> | <ol style="list-style-type: none"><li>1. Vehicles and equipment, using fossil fuels, emit substances that contribute to air pollution and global warming. The cumulative effects of these activities are an unavoidable impact of fossil fuel usage.</li></ol> |
|--|--|

**BIOLOGICAL ENVIRONMENT**

**IMPACT**

**MITIGATION**

**1. Vegetation**

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>✓ Species composition</li></ul>                        | <p>Project being located within the municipal boundaries that the risk of sensitive species and features being impacted is expected to be low.</p> <ol style="list-style-type: none"><li>1. Contractors will be required to thoroughly clean their equipment prior to mobilizing from outside the NWT to the project to minimize the risk of introducing foreign species.</li></ol> |
| <ul style="list-style-type: none"><li>✓ Species introduction</li></ul>                       | <ol style="list-style-type: none"><li>1. Contractors will be required to thoroughly clean their equipment prior to mobilizing from outside the NWT to the project to minimize the risk of introducing foreign species.</li></ol>  |
| <ul style="list-style-type: none"><li>○ Toxin / heavy accumulation</li></ul>                 |   |
| <ul style="list-style-type: none"><li>○ Loss of timber along seismic lines</li></ul>         |   |
| <ul style="list-style-type: none"><li>✓ Damage to ground vegetation and permafrost</li></ul> | <p>The project requires drilling where permafrost may be present. Mitigations include:</p> <ol style="list-style-type: none"><li>1. Backfilling of all bore holes once the work has been completed.</li><li>2. Placing thermistors into designated holes to monitor and record the permafrost.</li></ol>  |
| <ul style="list-style-type: none"><li>○ Increased fire hazard</li></ul>                      |   |
| <ul style="list-style-type: none"><li>○ N/A</li></ul>  |   |

**IMPACT**

**MITIGATION**

**2. Wildlife & Fish**

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>✓ Effects on rare, threatened or endangered species</li></ul> | <p>Project being located within the municipal boundaries that the risk of sensitive species and features being impacted is expected to be low. Minimal impact on fish and wildlife is expected. Mitigations include:</p> <ol style="list-style-type: none"><li>1. Conducting activities away from water courses</li><li>2. Maintaining a clean work area</li><li>3. Proper waste management</li><li>4. Adherence to best practices relating to wildlife which may come onto site</li></ol> |
| <ul style="list-style-type: none"><li>○ Fish population changes</li></ul>                           |  |
| <ul style="list-style-type: none"><li>○ Waterfowl population</li></ul>                              |  |
| <ul style="list-style-type: none"><li>○ Breeding disturbances</li></ul>                             |  |

- Population reduction
- Species diversity change
- Health changes (identify)
- Behavioral changes (identify)
- Habitat changes / effects
- Game species effects
- Toxins / heavy metals
- Forestry changes
- Agricultural changes
- Other:
- N/A

1. Spills of fuel could be harmful to wildlife and aquatic life.
  2. All spills will be cleaned up according to the Spill Contingency Plan.
- 
1. Wildlife emergencies must be reported to Environmental Protection Division of GNWT (Sahtu region) at 876-587-3500.

## **INTERACTING ENVIRONMENT**

### ***IMPACT***

### ***MITIGATION***

#### **1. Habitat & Communities**

- Predator-prey
- Wildlife habitat / ecosystem composition changes
- Reduction / removal of keystone or endangered species
- Removal of wildlife corridor or buffer zone
- Other: Canadian Important Bird Areas

1. Wildlife/ecosystem changes are expected to be minimal. A standard condition can be included in Permit to ensure that the Permittee takes all reasonable measures to prevent damage to wildlife and fish Habitat during this land-use operation.

### ***IMPACT***

### ***MITIGATION***

#### **2. Social & Economic**

- Planning / zoning changes or conflicts
- Rental house
- Airport operations / capacity changes

✓ Human health hazard      The project activities are not expected to release contaminants to the environment or would result in negative effects to water. Therefore no effects to drinking water in the Sahtu communities or downstream users are expected.

Mitigations include:

1. Hazardous materials on-site will be primarily limited to fuel.
2. Anyone handling hazardous material on-site will be required to wear all personal protective equipment.
3. All personnel are required to support and comply with Health and Safety Policy of Wood E&IS, making safety, health and protection of the environment a part of their daily routine and ensuring that they follow safe work methods and relevant regulations.

○ Impair the recreational use of water or aesthetic quality

○ Affect water use for other purposes

○ Affect other land use operations

○ Quality of life changes

○ Public concern

✓ Other: Benefit of the project

Contaminant delineation at the Plane Lake Drive site (of GNWT) will support the upcoming soil remediation program in the area, benefitting the local community.

○ N/A

### **IMPACT**

### **MITIGATION**

#### **3. Cultural & Heritage**

○ Affects to historic property

○ Increased economic pressure

○ Changes to or loss of historic resources

○ Changes to or loss of archeological resources

1. No changes to or loss of archaeological resources are expected. This project is located within Hamlet of Tulita, and Wood staff and contractors will work with the local organizations relating to the identification of areas of concern if any arise.

2. Standard conditions for the protection of archeological resources can be included in the land use permit conditions with provisions for a) archaeological buffer and b) prevention of damage of archaeological specimen/site.

○ Increased pressure on archeological resources

○ Effects to aboriginal lifestyle

○ Other:



**PRELIMINARY SCREENER / REFERRING BODY INFORMATION**  
(CHECK ALL THAT APPLY)

	<b>RA or DRA</b>	<b>ADVISE</b>	<b>PERMIT REQUIRED</b>
<b>Federal</b>			
ATOMIC ENERGY CONTROL BOARD	○	○	○
CANADIAN HERITAGE	○	○	○
CANADIAN TRANSPORTATION AGENCY	○	○	○
ENVIRONMENT AND CLIMATE CHANGE CANADA	○	✓	○
FISHERIES & OCEANS	○	✓	○
ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA	○	✓	○
CANADIAN NORTHERN ECONOMIC DEVELOPMENT AGENCY – NWT REGION	○	✓	○
INDUSTRY CANADA	○	○	○
NATIONAL DEFENSE	○	○	○
NATIONAL ENERGY BOARD	○	○	○
NATURAL RESOURCES	○	○	○
PUBLIC WORKS & GOVERNMENT SERVICES	○	○	○
TRANSPORT CANADA	○	✓	○
CANADIAN NUCLEAR SAFETY COMMISSION	○	○	○
<b>Territorial</b>			
MUNICIPAL & COMMUNITY AFFAIRS	○	✓	○
EDUCATION, CULTURE AND EMPLOYMENT	○	✓	○
ENVIRONMENT & NATURAL RESOURCES	○	✓	○
INFRASTRUCTURE	○	✓	○
DEPARTMENT OF HEALTH AND SOCIAL SERVICES	○	✓	○
PRINCE OF WALES NORTHERN HERITAGE CENTRE	○	✓	○
INDUSTRY, TOURISM AND INVESTMENT	○	✓	○
LANDS	○	✓	○
OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS	○	✓	○
<b>Boards</b>			
GWICH'IN LAND & WATER BOARD	○	○	○
SAHTU LAND & WATER BOARD	✓	○	✓
MACKENZIE VALLEY LAND & WATER BOARD	○	✓	○
MACKENZIE VALLEY ENVIR. IMPACT REVIEW BOARD	○	✓	○
SAHTU LAND USE PLANNING BOARD	○	✓	○
SAHTU RENEWABLE RESOURCES BOARD	○	✓	○
SAHTU HEALTH BOARD	○	✓	○
WEK'EEZHII LAND & WATER BOARD	○	✓	○
<b>Aboriginal / First Nation</b>			
SAHTU SECRETARIAT INCORPORATED	○	✓	○
NORMAN WELLS LAND CORPORATION	○	✓	○
TULITA RENEWABLE RESOURCES COUNCIL	○	✓	○
TULITA DISTRICT LAND CORPORATION	○	✓	○
FORT NORMAN METIS LOCAL #60 LAND CORPORATION	○	✓	○
FORT NORMAN RENEWABLE RESOURCES COUNCIL	○	✓	○
TULITA LAND CORPORATION	○	✓	○
TULITA BAND COUNCIL	○	✓	○
NORMAN WELLS RENEWABLE RESOURCES COUNCIL	○	✓	○
<b>Local Government</b>			
TULITA HAMLET INCORPORATED	○	✓	○
TOWN OF NORMAN WELLS	○	✓	○
DELINE GOT'INE GOVERNMENT	○	✓	○
<b>Communities</b>			
Tulita			

## REASONS FOR DECISION

The Sahtu Land and Water Board (the Board) is satisfied that the preliminary screening of Application S19S-002, Wood E&IS, Tulita Geotechnical and Environment Drilling Program, Tulita 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, 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="radio"/>	<b>Outside Local Government Boundaries</b>
<input type="radio"/>	The development proposal might have a significant adverse impact on the environment, <i>refer it to the EIRB.</i>
<input type="radio"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="radio"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input type="radio"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="radio"/>	<b>Wholly within Local Government Boundaries</b>
<input type="radio"/>	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="radio"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="radio"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input checked="" type="radio"/>	<i>Proceed with regulatory process and/or implementation.</i>

**Preliminary Screening Organization**

Sahtu Land & Water Board \_\_\_\_\_

\_\_\_\_\_

**Signatures**

 \_\_\_\_\_

\_\_\_\_\_