

**Preliminary Screening Report Form**

|  |                                      |
|--|--------------------------------------|
| <p><b>Preliminary screener:</b> MVLWB</p> <p><b>Reference / File number:</b> MV2010X0007 and MV2010L8-0003</p> <p><b>Title:</b> Miscellaneous (Remediation)</p> <p><b>Organization:</b> GNWT-Department of Transportation</p> <p><b>Meeting date:</b> April 29, 2010</p> | <p><b>EIRB Reference number:</b></p> |
|--|--------------------------------------|

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

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | New  |
| <input type="checkbox"/>            | Amend, EIRB Ref. #                                 |
| <input checked="" type="checkbox"/> | Requires permit, licence, or authorization         |
| <input type="checkbox"/>            | Does not require permit, licence, or authorization |

**Project Summary**

Phase 1 Land Farm

2010 scheduled activities:

- Strip top soil and subsoil in the Parcel 7 excavation area and any additional area required for soil treatment;
- Excavate approximately 4000 cubic metres of Petroleum Hydrocarbon (PHC) impacted soils located on Parcel 7 and transport soils to land farm;
- Land farm monitoring wells installation(9);
- Excavation of approximately 500 cubic metres of non-hazardous buried Waste debris located on Parcel 7, and the sorting and storage of that debris within temporary storage area located at Parcels 10 and 11;
- Obtain soil samples from base and walls of excavation for laboratory confirmatory analysis to verify that remaining soil is below acceptable criteria; and
- Samples to be taken from the clean granular material from DOT quarry at km 414 to ensure parameters of concern are within specified criteria. Upon receipt of confirmatory analytical results, approved material will be used to backfill excavations.

Phase II Buried Waste Debris Excavation

Parcels 10 and 11 contain an estimated 11,000 cubic metres of various non-hazardous types of Waste debris and potentially up to half of the volume may be wood. The buried Waste debris area requires excavation, sorting, and temporary stockpiling of material on site. Temporary storage of the Waste debris material at parcels 10 and 11 will be placed in delineated areas. Once the material has been disposed of, these locations will be tested and if required, sub-excavation to clean substrate. The wood debris will be excavated, sorted, and stockpiled into untreated wood and treated wood based on wood sampling, and confirmatory laboratory analysis will be conducted. Untreated wood will be burned on site only after a burn permit has been obtained from Environment and Natural Resources. The buried Waste debris will not be transported or disposed of until volume quantities of each type of Waste are confirmed through excavation and sorting. Once volumes are determined, a disposal plan will be formulated and appropriate regulatory requirements (permits and authorization) obtained. It is also estimated that approximately 600 cubic metres of PHC impacted soils are present at the northeast edge of the landfill on parcels 10 and 11. These PHC impacted soils will be excavated and transferred to the km 414 land farm.

Buried Waste Debris activities include:

- Temporary storage of excavated buried Waste debris until volume quantities of each type of Waste are confirmed through excavation and sorting. Temporary storage will be located at parcels 10 and 11;
- Once volumes are determined, a disposal plan will be formulated;
- Strip topsoil and subsoil in the excavation area;
- Excavate approximately 11,000 cubic metres of non-hazardous buried Waste debris from Parcels 10 and 11;
- Separate out buried Waste debris from soil and sort according to Waste type;
- Obtain wood samples to determine untreated vs. treated wood, sort, and stockpile;
- Untreated wood may be burned on site in 2010;
- Excavate approximately 600 cubic metres or more of PHC impacted soils from the landfill on parcels 10 and 11 and transfer soil to KM 414 land farm;
- Obtain soil samples from base and walls of excavation for laboratory confirmatory analysis to verify that remaining soil is within applicable criteria;
- Obtain soil and groundwater samples for confirmatory analysis to assess potential PHC, metals, and PAH impacts while in the field; and
- Transport, place and compact clean backfill material from the DOT quarry KM 414 to Parcels 10 and 11 that have been excavated.

Elevated metals were observed in three test pits, along the southeast end of the land fill and in the gravel layer above the clay. Elevated arsenic levels are typical of northern soils and the levels observed are not considered a concern. As a precaution during the excavation of buried Waste debris material, confirmatory analysis of soil and groundwater will be conducted while in the field through field screening technologies. Additional test pitting, if and where required, will be constructed and sampled. Samples sent for laboratory analysis will be analyzed for BTEX, F1-F4, and PAH. Confirmed petroleum hydrocarbon impacted soils will be transferred to the land farm. Confirmed leachable metals or PAH impacted soils will be temporarily stored on site adjacent to Parcel 10 and 11 in metal containment bins. These soils will be assessed for total volume for planned disposal.

### Phase III: Operation and Maintenance, Monitoring, and Decommission

- The land farm will be tilled using a machine that will minimize the compaction of the soil until the soil is remediated to meet the residential/parkland criteria;
- The objective of the monitoring program is to assess the performance of the land farm and to ensure that the land farm is not leaching contaminants (performance will be monitored through soil and groundwater sampling);
- Monitoring will be done on an annual basis from between June until November and after major precipitation and freshet events;
- Monitoring and annual confirmatory sampling of land farm operations will occur over a period of two years until the soil is remediated (annual reports will be submitted to the MVLWB);
- If Water accumulation becomes an issue because of high precipitation or other factors, the Water will be tested for PHC. If the Water meets criteria, the Water will be discharged at least 30 metres north of the land farm into adjacent vegetation. If the parameters do not meet the criteria, the Water will be pumped into an on-site tank and re-applied to the land farm during dry periods.
- Water may be redistributed on the land farm to enhance moisture content of the soil to encourage oxygen exchange and microorganism activity;
- Snow will be managed to minimize the effects of spring freshet;
- Groundwater monitoring program will be designed and implemented to ensure that leaching is not occurring (involves installation of four groundwater monitoring wells up gradient and down gradient of the land farm);
- A lined retention pond has been constructed in one corner of the land farm. The land farm will be graded such that any runoff will collect in this pond;
- The retention pond basin will be monitored on a weekly inspection basis during periods of thaw to monitor Water levels so that levels do not exceed the high Water level;
- If overflow is imminent, preparations for pump out to the retention pond will begin;
- If the Water levels within the containment berm and retention pond are such that overflow is occurring or imminent, sufficient Water will be pumped out to stop the pond from overflowing without emptying it;
- The Water will be placed in storage tanks and samples will be collected and analyzed for the elements of concern;
- If parameter concentrations are below guidelines, the freshet overflow Water will be discharged to the surrounding environment. If concentrations are above guidelines, the Water from the retention basin will be either returned to the retention pond once the threat of overflow has subsided and sufficient evaporation has occurred in the pond, or the Water will be sprayed back onto the soil. This will increase moisture content when the land farm is sufficiently dry and can be used to control the moisture content of the land farm soils during the summer;
- Formal discharge of the retention pond should occur in the fall, if required, to empty the basin prior to the following spring. If the concentrations are above guidelines, the Water from the retention basin will be sprayed back onto the soil to increase moisture content;
- Once soils are remediated to criteria, the land farm will be decommissioned at the end of the last treatment season; and
- Following land farm decommission, a final remedial report, including a record of site condition, will be submitted to MVLWB.

#### Equipment requirements:

- tracked dozer (22 tonnes);
- backhoe (25 tonnes);
- tracked dozer (45 tonnes);
- rubber tire loader (20 tonnes);
- tandem trucks (12 tonnes);
- portable packer unit (300 pounds);
- crawler 8 Cat (45 tonnes);
- D6 cat (22 tonnes);
- tanker trucks (15 tonnes); and
- Water pump (75 kilograms).

#### Fuel

- Tidy tank (500 litres)

#### Scope

- a) Operation, maintenance, monitoring, and decommissioning of a land farm at 61°27' N, 121°16' W - quarry at km 414, Hwy #1; and
- b) Excavation of former landfill; sorting, stockpiling, and removal of debris; removal of contaminated soil to the land farm for soil remediation and replacement with clean fill; and removal of non-hazardous buried Waste debris at: 61°26' N, 121°15' W – former Checkpoint Highway Maintenance Camp

#### 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:

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

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Construction | <input type="checkbox"/> Exploration       | <input checked="" type="checkbox"/> Decommissioning |
| <input checked="" type="checkbox"/> Installation | <input type="checkbox"/> Industrial        | <input type="checkbox"/> Abandonment                |
| <input checked="" type="checkbox"/> Maintenance  | <input type="checkbox"/> Recreation        | <input type="checkbox"/> Aerial                     |
| <input type="checkbox"/> Expansion               | <input type="checkbox"/> Municipal         | <input type="checkbox"/> Harvesting                 |
| <input checked="" type="checkbox"/> Operation    | <input checked="" type="checkbox"/> Quarry | <input type="checkbox"/> Camp                       |
| <input type="checkbox"/> Repair                  | <input type="checkbox"/> Linear / Corridor | <input type="checkbox"/> Scientific/                |
| <input type="checkbox"/> Research                | <input type="checkbox"/> Sewage            | <input checked="" type="checkbox"/> Solid Waste     |
| <input type="checkbox"/> Water Intake            |  |   |
| <input type="checkbox"/> Other:                  |  |   |

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

- |   |  |
|---|--|
| <input type="checkbox"/> Access Road  | <input checked="" type="checkbox"/> Waste Management                   |
| <input type="checkbox"/> construction   | <input checked="" type="checkbox"/> disposal of hazardous Waste        |
| <input type="checkbox"/> abandonment/removal                                  | <input type="checkbox"/> Waste generation                              |
| <input type="checkbox"/> modification e.g., widening, straightening           | <input type="checkbox"/> sewage  |
| <input checked="" type="checkbox"/> Automobile, Aircraft or Vessel Movement   | <input type="checkbox"/> disposal of sewage                            |
| <input type="checkbox"/> Blasting   | <input type="checkbox"/> Geoscientific Sampling                        |
| <input type="checkbox"/> Building   | <input type="checkbox"/> Trenching                                     |
| <input checked="" type="checkbox"/> Burning                                   | <input type="checkbox"/> Diamond drill                                 |
| <input type="checkbox"/> Burying  | <input type="checkbox"/> Borehole core sampling                        |
| <input type="checkbox"/> Channelling  | <input type="checkbox"/> Bulk soil sampling                            |
| <input type="checkbox"/> Cut and Fill   | <input type="checkbox"/> gravel  |
| <input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation | <input type="checkbox"/> hydrological Testing                          |
| <input checked="" type="checkbox"/> Dams and Impoundments                     | <input checked="" type="checkbox"/> Site Restoration                   |
| <input checked="" type="checkbox"/> construction                              | <input type="checkbox"/> fertilization                                 |
| <input checked="" type="checkbox"/> abandonment/removal                       | <input type="checkbox"/> grubbing                                      |
| <input type="checkbox"/> modification   | <input type="checkbox"/> planting/seeding                              |
| <input type="checkbox"/> Ditch Construction                                   | <input type="checkbox"/> reforestation                                 |
| <input type="checkbox"/> Drainage Alteration                                  | <input type="checkbox"/> scarify                                       |
| <input type="checkbox"/> Drilling other than Geoscientific                    | <input type="checkbox"/> spraying                                      |
| <input type="checkbox"/> Ecological Surveys                                   | <input checked="" type="checkbox"/> re-contouring                      |
| <input checked="" type="checkbox"/> Excavation                                | <input checked="" type="checkbox"/> Slashing and removal of vegetation |
| <input type="checkbox"/> Explosive Storage                                    | <input checked="" type="checkbox"/> Soil Testing                       |
| <input checked="" type="checkbox"/> Fuel Storage                              | <input type="checkbox"/> Stream Crossing/Bridging                      |
| <input checked="" type="checkbox"/> Topsoil, Overburden or Soil               | <input type="checkbox"/> Tunnelling/Underground                        |
| <input checked="" type="checkbox"/> fill                                      | <input checked="" type="checkbox"/> Other: land farming                |
| <input checked="" type="checkbox"/> disposal                                  |  |
| <input checked="" type="checkbox"/> removal                                   |  |
| <input checked="" type="checkbox"/> storage                                   |  |

**NTS topographic map sheet numbers:**  
95H/6

**Latitude / longitude and UTM system:**  
61°26' N, 121°15' W - former Checkpoint Highway Maintenance Camp  
61°27' N, 121°16' W – quarry at km 414, Hwy #1

**Nearest community and Water body:**  
Fort Simpson  
Jean Marie River

**Land Status (consultation information)**

- Free Hold/Private       Commissioners Land       Federal Crown Land       Municipal Land

**Transboundary/Transregional Implications**

- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> British Columbia | <input type="checkbox"/> Alberta                    | <input type="checkbox"/> Saskatchewan                 | <input type="checkbox"/> Yukon                 |
| <input type="checkbox"/> Nunavut          | <input type="checkbox"/> Wood Buffalo National Park | <input type="checkbox"/> Inuvialuit Settlement Region | <input type="checkbox"/> Nahanni National Park |
| <input type="checkbox"/> Wek'èezhii       | <input type="checkbox"/> Gwich'in                   | <input type="checkbox"/> Sahtu                        |  |

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

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

**Physical - Chemical Effects**

**Impact**

**1) Ground Water**

- Water table alteration
- Water quality changes

**Mitigation**

There will be monitoring wells installed and measured. Groundwater Monitoring and Leachate Management Plan in place.

Excess Water will drain into a retention pond and only released if it meets the requirements of the Canadian Council of Ministers of Environment Guidelines (CCMEs)

Removal of debris from the landfill areas will decrease the possibility of further contamination.

Removal of contaminated soil will reduce the potential for further contamination.

**Location of condition**

26(1)(q)

- infiltration changes

There will be monitoring wells installed and measured. Groundwater Monitoring and Leachate Management Plan in place.

Excess Water will drain into a retention pond and only be released if it meets the requirements of the CCMEs.

Removal of debris from the landfill areas will decrease the possibility of further contamination.

Removal of contaminated soil will reduce the potential for further contamination.

26(1)(q)

- other:
- N/A

**Impact**

**2) Surface Water**

- flow or level changes
- Water quality changes

**Mitigation**

There will be monitoring wells installed and measured. Groundwater Monitoring and Leachate Management Plan in place.

Excess Water will drain into a retention pond and only released if it meets the requirements of the CCMEs.

Removal of debris from the landfill areas will decrease the possibility of further contamination.

Removal of contaminated soil will reduce the potential for further contamination.

**Location of condition**

26(1)(q)

- Water quantity changes
- drainage pattern changes
- temperature
- wetland changes/loss
- other:
- N/A

**Impact**

**3) Noise**

- noise in/near Water
- noise increase

**Mitigation**

There will be a minor increase in the noise once excavation commences.  
No mitigation.

**Location of condition**

- other:
- N/A

**Impact**  
4) Land

**Mitigation**

**Location of condition**

- geologic structure changes
- soil contamination

**Checkpoint location**

Removing the contaminated soil at the site will ensure no further contamination of soil. The soil at site will be excavated and remaining soils will meet Canada Wide Standards of Petroleum Hydrocarbon criteria for the protection of potable Water.

**Land farm at quarry site**

The soils will be remediated to meet Canada Wide Standards of Petroleum Hydrocarbons criteria. The remediated soils will be stockpiled at the quarry for future use. The land farm will be monitored when there are large deposits of precipitation.

Removing debris from the landfill area, and any other debris that is located on site, will lessen the possibility of further contamination of soil. Spill Contingency Plan is in place.

26(1)(m)

- buffer zone loss
- soil compaction and settling
- destabilization/erosion
- permafrost regime alteration

There is the potential for the permafrost to be altered through the excavation of contaminated soil and debris.

No mitigation.

- explosives/scarring
- other:
- N/A

**Impact**  
5) Non-renewable natural resources

**Mitigation**

**Location of condition**

- resource depletion

This project is not anticipated to have even a minimal effect on non-renewable natural resources.

No mitigation.

- other:
- N/A

**Impact**  
6) Air/climate/atmosphere

**Mitigation**

**Location of condition**

- other: green house gasses

There will be an increase of greenhouse gasses through the use of equipment/vehicles during excavation and maintenance of the area.

No mitigation.

- N/A

**Biological Environment**

**Impact**  
1) Vegetation

**Mitigation**

**Location of condition**

- species composition
- species introduction
- toxin/heavy accumulation

The removal of contaminated soil and debris will decrease the accumulation of toxins in vegetation.

No mitigation.

other:

**Checkpoint location**

Only clearing to remove what soil is needed. Backfilled material should be able to better support vegetation growth.

26(1)(o)

Land farm at quarry site

The project will use existing clearings at the quarry.

N/A

**Impact**

**2) Wildlife and Fish**

**Mitigation**

**Location of condition**

effects on rare, threatened or endangered species

fish population changes

waterfowl population changes

breeding disturbance

population reduction

species diversity change

health changes

The quality of the Water and vegetation will be improved through the removal of contaminated soil and various types of debris.

behavioural changes

No mitigation.

habitat changes / effects

game species effects

toxins/ heavy metals

Toxins and heavy metals will be reduced through the removal of contaminated soil and removal of other types of debris.

No mitigation.

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

The areas will be affected as machinery will be working to remove vegetation along with contaminated soil and debris. This activity will be temporary.

No mitigation.

reduction/removal of keystone or endangered species

removal of wildlife corridor or buffer zone

other:

N/A

**Impact**

**2) Social and Economic**

- planning/zoning changes or conflicts
- increase in urban facilities or services use
- rental house
- airport operations/capacity changes

human health hazard

**Mitigation**

Removal of contaminated soil and other forms of debris will lessen the chance of further contamination.

**Location of condition**

impair the recreational use of Water or aesthetic quality

No mitigation.

affect Water use for other purposes

affect other land use operations

The development is not anticipated to affect other land use operations.

No mitigation.

quality of life changes

The removal of contaminated soil and debris from the area will decrease the amount of hazardous substances in turn increasing the quality of life for all residents in the vicinity.

public concern

No mitigation.

other:

N/A

**Impact**

**3) Cultural and Heritage**

- effects to historic property
- increased economic pressure on historic properties
- change to or loss of historic resources
- change to or loss of archaeological resources
- increased pressure on archaeological sites
- change to or loss of aesthetically important sites
- effects to aboriginal lifestyle
- other:
- N/A

**Mitigation**

**Location of condition**

**Notes:**

**Consultation**

- Pursuant to section 277, paragraphs (a) and (b) of the **Dah Cho First Nations (DCFN) Interim Measures Agreement**, the MVLWB has determined that written notice was given to the DCFN, and that a reasonable period of time was allowed for DCFN to make representations with respect to the application.
- Pursuant to Schedule 4.1 of the **Northwest Territory Métis Nation (NWTMN) Interim Measures Agreement**, the MVLWB has 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.



## Preliminary Screener / Referring Body Information

### First Nations

|   |
|---|
| TihedzehK'edeli First Nation (JMR)      |
| Ka'a'gee Tu First Nation (Kakisa)       |
| Pehdzeh Ki First Nation (Wrigley)       |
| Liidlii Kue First Nation (Ft Simpson)   |
| Dehcho First Nations                    |
| Acho Dene Koe First Nation (Fort Liard) |
| Sambaa K'e Dene Band (Trout Lake)       |
| Northwest Territory Métis Nation        |
| Dene Tha' First Nation                  |

### COMMUNITIES

|                         |
|-------------------------|
| Village of Fort Simpson |
| Hamlet of Fort Liard    |

### Aboriginal Organizations

|   |
|---|
| Fort Simpson Métis Local #52              |
| Ft. Providence Métis Council Local #57    |
| Fort Providence Resource Management Board |
| Dene Nation                               |
| Deh Cho Land Use Planning Committee       |
| Fort Liard Métis Local #67                |
| Nahendeh Land and Environmental Services  |

### Government

|  |
|--|
| South Mackenzie District Office - INAC                       |
| Head, Regulatory and Science Advice - Water Resources - INAC |
| Mineral and Petroleum Resources Directorate - INAC           |
| Manager/ Aboriginal and Territorial Relations - INAC         |
| Intergovernmental Affairs – INAC                             |
| GNWT – PWNHC   |
| GNWT - ENR   |
| Gnwt_ea@gov.nt.ca  |
| GNWT - Health  |
| GNWT – ITI   |
| Environment Canada   |
| WCSS   |
| DFO  |

### Others

|                                      |
|--------------------------------------|
| (Ka'a'gee Tu First Nation)           |
| Dev. Corp Mgr Sambaa K'e(Trout Lake) |
| Research Cons. Sambaa K'e            |
| CPAWS                                |
| MVEIRB                               |

**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 MV2010X0007 and MV2010L8-0003 – GNWT- Department of Transportation – Miscellaneous (remediation) has been completed in accordance with section 125 of the *Mackenzie Valley Resource Management Act (MVRMA)*.

The Board is satisfied that a reasonable period of notice was given to communities and First Nations affected by the application as required by subsection 63(2) of the MVRMA so that they could provide comments to the Board.

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:

- There is no likelihood that the proposed development might have a significant adverse impact on the environment; and
- There is no likelihood that the proposed development might be 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 *Mackenzie Valley Resource Management Act* 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 checked="" 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 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>  |
| <input 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 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>  |

**Preliminary Screening Organization**

Mackenzie Valley Land and Water Board

April 29, 2010

**Signatures**

