



# Waste Management Plan for the Mackenzie River Ferry Landing Operations

---

Government of the Northwest Territories – Department of Infrastructure



# Table of Contents

1	Introduction.....	3
1.1	Contact Information.....	3
1.1.1	Proponent.....	3
1.1.2	Contractor.....	3
1.2	Effective Date.....	<b>Error! Bookmark not defined.</b>
1.3	Distribution List.....	3
1.4	Environmental Policy and Procedures.....	3
1.5	Legislation and Guidelines.....	4
2	Project Details.....	4
3	Definitions.....	4
3.1	Hazardous Waste.....	4
3.2	Empty Container.....	5
3.3	Small Quantity.....	5
3.4	Sump.....	5
4	Identification of Waste Types.....	5
4.1	Non-Hazardous Wastes.....	6
4.2	Sewage.....	6
4.3	Hazardous Waste.....	6
5	Waste Management Facilities.....	6
6	Management of Waste Types.....	7
6.1	Non-Hazardous, Non-Mineral Wastes.....	7
6.1.1	Domestic Wastes.....	7
6.1.2	Vegetation.....	<b>Error! Bookmark not defined.</b>
6.2	Hazardous Waste.....	8
6.2.1	Sewage.....	8
6.2.2	Contaminated Soils and Snow.....	8
6.2.3	Waste Oils.....	8
6.2.4	Used Filters.....	8
6.2.5	Used Hydrocarbon Containers and Absorbents.....	9
6.2.6	Animal Carcasses.....	<b>Error! Bookmark not defined.</b>
6.2.7	Batteries.....	9
7	References.....	10
8	Appendices.....	11
8.1	Appendix A: Maps.....	11

## Abbreviations

ENR	Department of Environment and Natural Resources, Government of the Northwest Territories
EPA	Environmental Protection Agency
GNWT	Government of the Northwest Territories
GLWB	Gwich'in Land and Water Board
INF	Department of Infrastructure, Government of the Northwest Territories
kg	Kilogram
km	Kilometre
L	Litre
LUP	Land Use Permit
m	Metre
NT	Northwest Territories
NWT	Northwest Territories
O&M	Operations and Maintenance
PDR	Project Description Report
SCP	Spill Contingency Plan
TDGR	Transportation of Dangerous Goods Regulations
WL	Water Licence
WMP	Waste Management Plan

# 1 Introduction

This Waste Management Plan (WMP) has been developed by the Government of the Northwest Territories (GNWT) Department of Infrastructure (INF), to accompany the renewal Water Licence application for G15L8-002 which covers the operations and maintenance activities associated with the Mackenzie River Ferry Landings.

The purpose of the WMP is to provide a guide to all site personnel on the waste management goals, objectives and procedures to be followed during the permitted operations under the water licence. The WMP will ensure components of the environment, including air, water, land, vegetation, wildlife and fish, are not negatively affected. It will ensure aesthetic and land use values remain intact and comply with all applicable acts and regulations as well as conditions outlined in the INF's water licence. The WMP has been developed in accordance with the Guidelines for Developing a Waste Management Plan, prepared by the Mackenzie Valley Land and Water Board (2011).

## 1.1 Contact Information

### 1.1.1 Proponent

Patrick McLaughlin  
Marine Manager North  
Beaufort Delta Regional Office  
PO Box 2038  
Inuvik, NT X0E 0T0  
Telephone: 867-777-7163  
Email: [Patrick.McLaughlin@gov.nt.ca](mailto:Patrick.McLaughlin@gov.nt.ca)

### 1.1.2 Contractor

New Contractor information will be provided once the contract is awarded March 25, 2022

## 1.2 Distribution List

This plan will be distributed to:

- Project Manager(s), INF
- Operations and Maintenance staff
- Contractors
- GLWB

## 1.3 Environmental Policy and Procedures

This WMP deals specifically with procedures and policies for the safe and responsible handling, storage and disposal of waste materials, which have served their original purpose and are scheduled for disposal. It provides background information on the handling of wastes and details the operational requirements to ensure that permitted Projects under this WL are conducted in an environmentally responsible manner.

## 1.4 Legislation and Guidelines

This plan been developed in consideration of the applicable territorial legislation including the following reference documents:

- Northern Land Use Guidelines: Camp and Support Facilities (Lands 2014a)
- Northern Land Use Guidelines: Roads and Trails (Lands 2014b)
- Guideline for the General Management of Hazardous Waste in the NWT (ENR 2017)
- Guidelines for Developing a Waste Management Plan (MVLWB 2011)

## 2 Project Details

This licence will allow for the hauling and depositing of shale and/or pit run gravel on the ferry landing areas. The type of material to be used is locally sourced pit run from Frog Creek Quarry near Km 126 on NWT Highway #8. The size of the material is 60mm, with 5% oversized and 35% passing through a No. 5 screen.

The fill is placed on the ferry landings using a loader and end-dump, 25-30 metres below embankment high point and leveled with a bulldozer front end loader. A maximum of 500m<sup>3</sup> per landing/per year of aggregate will be used. Granular materials that are utilized are reused, as granular materials placed throughout the season are recovered in the fall and during periods of low water.

## 3 Definitions

Under the authority of the *Environmental Protection Act* (EPA), the GNWT has produced a series of environmental guidelines for the management of specific hazardous wastes commonly produced on similar projects. The Environmental Guideline for Hazardous Waste (GNWT 2017) provides definitions of the terms used in the EPA and describes the acceptable waste management practices. The following definitions are particularly important to this document.

### 3.1 Hazardous Waste

A contaminant is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage.

A 'hazardous waste' does not include a contaminant that is:

- Household in origin;
- Included in class 1 (explosives) or class 7 (radioactive materials) of the Transportation of Dangerous Goods Regulations (TDGR);
- Exempted as a small quantity;
- An empty container; or

- Intended for disposal in a sewage system or by land filling that meets the applicable standards set out in Schedules 1, III or IV of the Guideline for Industrial Waste Discharges in the NWT.

### 3.2 Empty Container

A container that has been emptied, to the greatest extent possible, using regular handling procedures, but its contents shall not exceed 1% of the container’s original capacity or 2 litres (L), whichever is less. This does not include containers which previously contained mercury, or Class 2.3, 5.1 or 6.1 materials of TDGR.

### 3.3 Small Quantity

Hazardous wastes are considered to be small quantities if it is generated in an amount that is less than 5 kilograms (kg) per month if a solid or 5 L per month if a liquid; and where the total quantity accumulated at any one time does not exceed 5 kg or 5 L. This does not apply to wastes that are mercury or in Class 2.3, 5.1 or 6.1 of the TDGR. These wastes must be generated in an amount less than 1 kg per month if a solid or 1 L per month if a liquid; and where the total quantity accumulated at any one time does not exceed 1 kg or 1L.

### 3.4 Sump

A man-made pit or natural depression in the earth's surface used for the purpose of depositing Waste that does not contain Toxic Material, such as non-toxic Drilling Waste.

## 4 Identification of Waste Types

Over the course of operations and maintenance of the ferry landings, minimal types of waste will likely be generated by equipment and crews. The primary type of waste will include non-mineral wastes; however, some hazardous wastes may be generated. The types of waste anticipated to be generated are outlined below.

### *Segregated Waste Streams*

Waste Stream	Description	Handling Method	Disposal Method
Domestic wastes (organic and non-organic)	Organic and non-organic waste including garbage, rubbish or food scraps	Place in odour proof secure waste containers, minimizing wildlife attractants.	Waste will be progressively removed from the Project work sites and disposed of at an approved solid waste facility.
Granular Material	Granular material 60mm with 5% oversized and 35% passing through a #5 screen.	Granular material will be placed the build the ferry landings. Any recovered material or staged material will be placed at least 30m above the normal high water mark	Any recovered material or staged material will be placed at least 30m above the normal high water mark. Any granular material that is in place that is suitable will be reused

Potential hazardous wastes generated on-site include waste oil, fuel, lubricants, oil filters, solvents, etc., from use and maintenance of heavy equipment. Other potential wastes may include contaminated soil, snow or water should a spill occur during Project activities. Although not anticipated, the Project may also generate other non-project specific wastes. These wastes are outlined in Table 4-2 below.

### **Other Potential Waste Streams**

<b>Waste Stream</b>	<b>Description</b>	<b>Handling Method</b>	<b>Disposal Method</b>
Wastes generated during spills (including hydrocarbon containers, absorbents, contaminated snow/water)	Contaminated materials with fuel (gasoline or diesel), oil, lubricants, solvents, antifreeze	Place contaminated materials in appropriate storage containers.	Soils or liquid residue will be removed by registered hazardous waste carrier to an approved disposal facility.
Batteries (lead acid and alkaline)	From personnel and equipment	Place in appropriate containers	Removed and disposed of at an approved disposal facility.

## **4.1 Non-Hazardous Wastes**

Within the project footprint of the ferry landings, the non-hazardous waste generated will primarily include domestic waste. The potential environmental effects arising from unmanaged non-hazardous waste include increased wildlife attractants, a change in the aesthetics to the area, and degradation of water quality.

## **4.2 Sewage**

During the ongoing operations and maintenance activities both the ferry and ferry maintenance camps washrooms will be used. There will be no sewage generated under the water licence that will require disposal. Sewage generated at the ferry maintenance camps will follow the G21E001 waste management plan.

The potential environmental effects arising from unmanaged sewage wastes include degradation of soil quality, degradation of water quality, degradation of wildlife habitat, and harm to on-site personnel.

## **4.3 Hazardous Waste**

While it is expected that vehicle maintenance will occur in existing facilities within communities, there may be occasions where equipment requires servicing in the field. Wastes associated with these maintenance activities may include used oil filters, used oil, etc. Other potential hazardous wastes may include contaminated soil, snow or water and sewage if a spill occurs during the Project.

The potential environmental effects arising from unmanaged hazardous wastes include degradation of soil quality, degradation of water quality, degradation of wildlife habitat, and harm to on-site personnel.

# **5 Waste Management Facilities**

Various types of wastes could be generated under this LUP. It is essential that these wastes are handled, stored and managed in a safe and environmentally responsible manner.

INF will select the types of fuels and fuel storage tanks to meet the needs of the Project as well as any storage tank volumes and locations. INF expects that diesel and gasoline will be the two primary fuels used, each sourced from existing fuel tanks. Diesel will be used for mobile equipment and vehicles. Gasoline will be required, depending on the type of vehicles and some small equipment that are used.

INF expects that the external fuel tanks will include: fuel tanks mounted in the back of pickup trucks for refuelling mobile equipment and vehicles at the Project sites. All fuel tanks used will meet regulatory requirements.

All waste management facilities are subject to community approval and capacity to access and handle different types of waste. INF will confirm with individual communities and seek the appropriate approvals for waste disposal depending on the nature of the operations and maintenance projects conducted under this LUP.

## **6 Management of Waste Types**

This section of the plan describes the general procedures and principles that are to be followed by site personnel in handling and storing wastes. The waste management program will attempt to minimize waste production by applying the principles of reducing the use of materials, reusing materials whenever possible, recycling materials and recovering value from used materials. Additional programs for handling, disposal and recycling of other wastes will be developed as needed. The subsections listed below deal with specific wastes that may be encountered during the Project.

### **6.1 Non-Hazardous, Non-Mineral Wastes**

During the Project, the following management and mitigation techniques will be implemented to reduce the potential for environmental effects associated with non-hazardous, non-mineral wastes.

#### **6.1.1 Domestic Wastes**

Waste management practices will be implemented that minimize attractants to wildlife, including:

- Minimizing and properly disposing of garbage, food wastes and other edible and aromatic substances into odour-proof secure containers (wildlife-proof).
- Separating recyclables such as beverage containers, plastics, alkaline batteries and possible electronics for proper disposal offsite.
- Organizing wastes into containers with secure lids to store onsite. This material will then be progressively removed from site throughout construction operations.
- Ensuring work crews inspect work areas and collect and properly dispose of any waste that may have been discarded.

#### **6.1.2 Granular Material**

Granular material is required to operate and maintain the ferry landings. Its anticipated approximately 500m<sup>3</sup> of material per landing will be required for the ferry season, however this number may vary depending on the river system dynamics throughout the year. The following practices will be employed:

- Utilizing granular material that is already in place;
- Staged gravel recovery in the fall and during periods of low waters to retrieve as much aggregate as possible;



- Storing materials at least 30m above the high water mark

## 6.2 Hazardous Waste

INF is responsible for the proper management and disposal of hazardous waste generated on the Project site either directly by INF or by its contractors. The Contractor will be responsible for completing and managing the hazardous waste movement documents according to the Guideline for the General Management of Hazardous Waste in the NWT (ENR 2017), while maintaining contact with INF to ensure proper management of the waste.

If hazardous materials and wastes (fuels, oils and lubricants) are transported onto the alignment, they will be stored within secondary containment at least 100 metre (m) away from the high water mark of any watercourses, as per the Spill Contingency Plan (SCP) for the Project. Any hazardous wastes will be stored in clearly marked containers with lids (i.e., drums) and in clearly marked areas (e.g. signs and flagging). Containers will be kept clear of debris and snow to facilitate route inspections for leaks. Hazardous wastes will be removed from the designated storage area as often as possible, but at the end of the Project at a minimum. Wastes will be transported to an approved facility for treatment/disposal. If other contaminated materials require disposal (i.e. spill pads), these will be disposed of through a licensed facility. On behalf of the INF (the waste generator), the Contractor will complete the appropriate waste manifest to fulfill TDGR requirements and the requirements of the Guideline for the General Management of Hazardous Waste in the NWT. Any contaminated snow, soil, and/or water will also be transported to an approved facility for treatment/disposal.

### 6.2.1 Sewage

No sewage will be generated under the water licence. Existing facilities such as the ferry or the ferry maintenance camps will be used.

### 6.2.2 Contaminated Soils and Snow

Contaminated soils and/or snow as a result of hydrocarbon spills or other spill material is anticipated to be minimal as all site personnel will be familiar with the Project's SCP and will follow proper safe operating procedures.

In the event that a spill should occur, it is expected that contaminated soils/snow will be picked up and placed in suitable storage containers (i.e. drum). The wastes will be removed from the Project worksites by a hazardous waste carrier and disposed of at an approved facility. Should a larger spill occur, a secondary containment structure or lined facility may be required.

### 6.2.3 Waste Oils

Waste oil will be stored in containers suitable for that purpose. Other waste types, such as antifreeze or solvents will not be stored in the same container as waste oils.

### 6.2.4 Used Filters

Used filters will be temporarily stored in filter containers and will then be disposed of at an approved registered facility.

### **6.2.5 Used Hydrocarbon Containers and Absorbents**

Used hydrocarbon containers, absorbents or rags produced onsite, along with any used spill response materials, such as fibre pads or granular absorbents ('floor dry') will be placed in appropriate containers and disposed at an approved disposal facility in accordance with regulatory requirements.

### **6.2.6 Batteries**

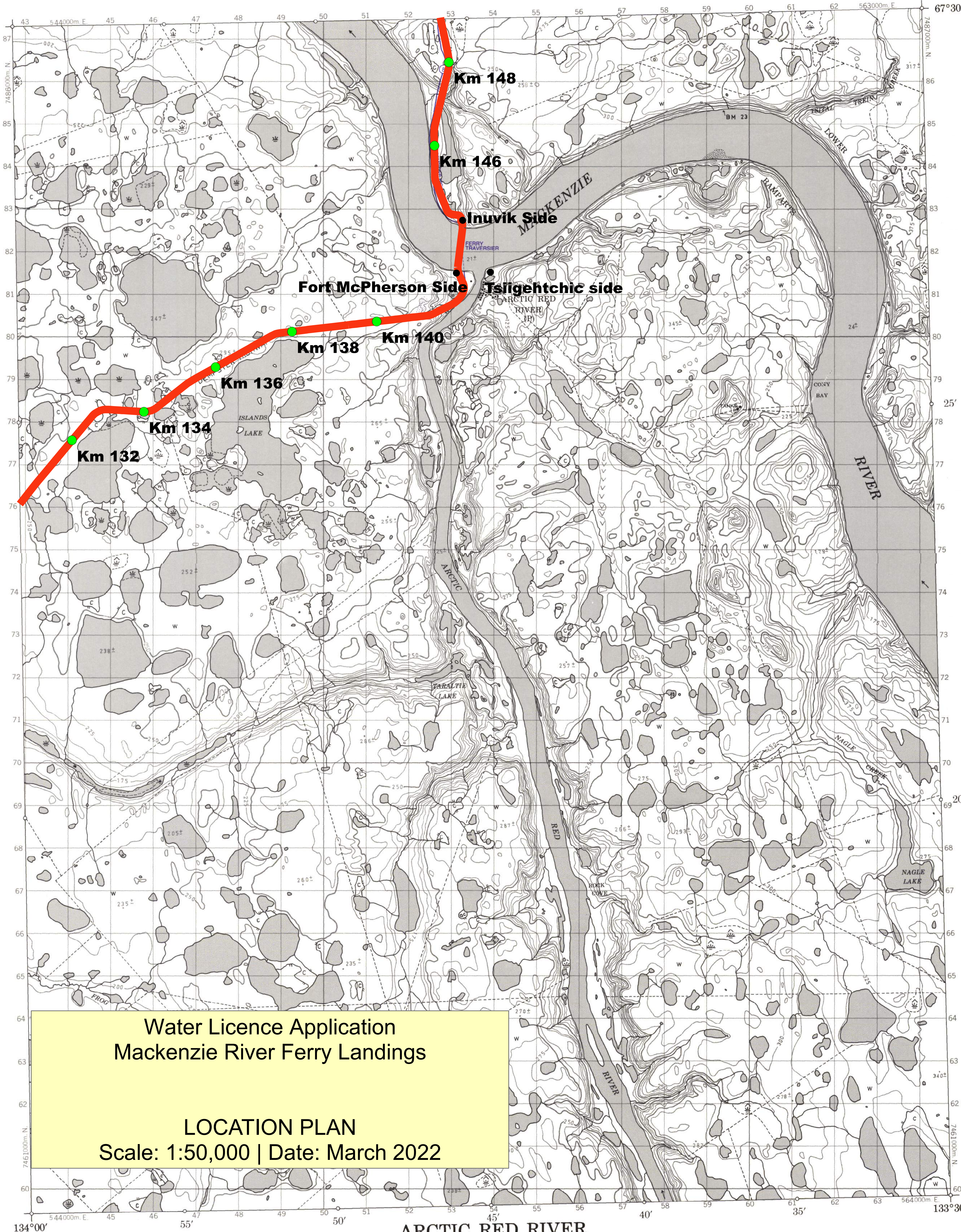
Lead acid batteries and alkaline batteries will be placed into appropriate containers and disposed of at an approved registered facility.

## 7 References

- Ecosystem Classification Group (ECG). 2007 (rev. 2009). Ecological Regions of the Northwest Territories: Taiga Plains. Department of Environment and Natural Resources, GNWT. Yellowknife, NT. viii + 173 pp. + folded insert map.
- Environment and Natural Resources (ENR). 2003. Used Oil and Waste Fuel Management Regulations – Plain Language Guide. GNWT. Yellowknife, NT. Retrieved January 2016 from: [http://www.enr.gov.nt.ca/sites/default/files/guidelines/used\\_oil\\_guide.pdf](http://www.enr.gov.nt.ca/sites/default/files/guidelines/used_oil_guide.pdf).
- Department of Lands (Lands). 2014a. Northern Land Use Guidelines: Camp and Support Facilities. GNWT. Yellowknife, NT. Retrieved January 2016 from: [http://www.lands.gov.nt.ca/sites/default/files/nlug\\_camps.pdf](http://www.lands.gov.nt.ca/sites/default/files/nlug_camps.pdf).
- Department of Lands (Lands). 2014b. Northern Land Use Guidelines: Roads and Trails. GNWT. Yellowknife, NT. Retrieved January 2016 from: [http://www.lands.gov.nt.ca/sites/default/files/nlug\\_roads\\_and\\_trails.pdf](http://www.lands.gov.nt.ca/sites/default/files/nlug_roads_and_trails.pdf).
- GNWT. 2017. Guideline for the Hazardous Waste Management. Web access: [https://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous\\_waste-interactive\\_web\\_0.pdf](https://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous_waste-interactive_web_0.pdf). Last retrieved November 2019.
- Mackenzie Valley Land and Water Board (MVLWB). 2011. Guidelines for Developing a Waste Management Plan. MVLWB, Yellowknife, NT. Retrieved August 2014 from: <http://mvlwb.com/resources/policy-and-guidelines>.

## **8 Appendices**

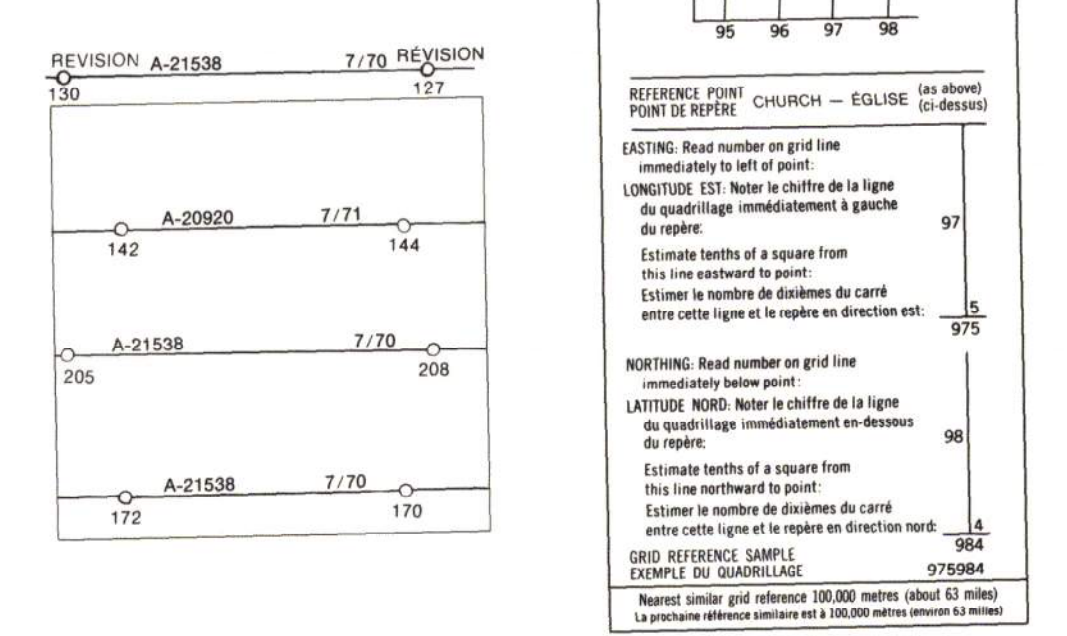
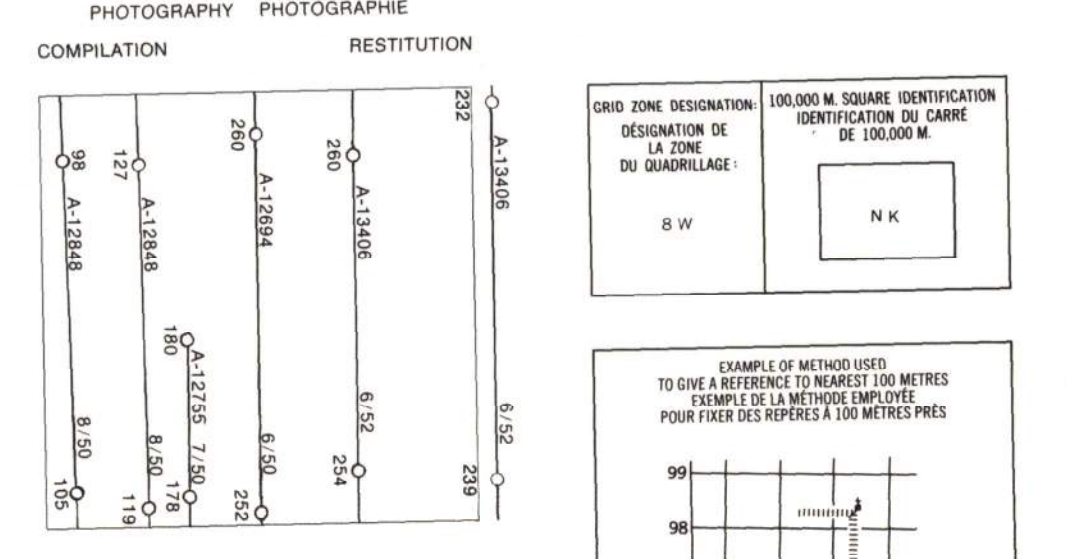
### **8.1 Appendix A: Maps**



Water Licence Application  
Mackenzie River Ferry Landings  
  
LOCATION PLAN  
Scale: 1:50,000 | Date: March 2022

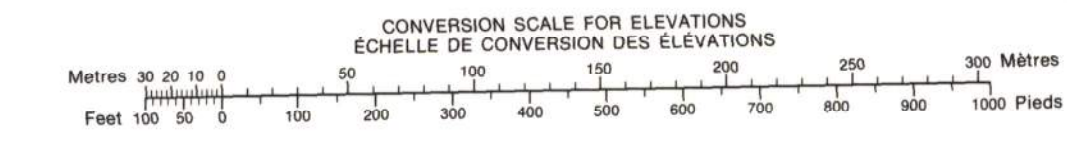
LEGEND - LÉGENDE

<b>ROADS AND RELATED FEATURES</b>	<b>ROUTES ET OUVRAGES CONNEXES</b>
HARD SURFACE, ALL WEATHER	SURFACE DURE, TOUTES SAISONS
LOOSE SURFACE	GRAVIER
CART TRACK, WINTER ROAD OR ROAD UNDER CONSTRUCTION	CHEMIN DE TERRE, D'HIVER OU CHEMIN EN CONSTRUCTION
TRAIL, CUT LINE, PORTAGE	SENTIER, PERÇÉ, PORTAGE
BUILT-UP AREA	AGGLOMÉRATION
RAILWAY, SIDING, STATION, STOP	CHEMIN DE FER, VOIE D'ÉVITEMENT, GARE, ARRÊT
BRIDGE	PONT
SEAPLANE BASE, ANCHORAGE	HYDROAÉROPORT, MOULAGE
<b>LANDMARK FEATURES</b>	<b>POINTS DE REPÈRE</b>
HOUSE, BARN	MAISON, GRANGE
CHURCH, SCHOOL	ÉGLISE, ÉCOLE
POST OFFICE	BUREAU DE POSTE
HISTORICAL SITE	LIEU HISTORIQUE
TOWERS - FIRE, RADIO	TOURS - FEU, RADIO
WELL, OIL, GAS	Puits - PÉTROLE, GAZ
TANK, OIL, GASOLINE, WATER	RESERVOIR - PÉTROLE, ESSENCE, EAU
TELEPHONE LINE	LIGNE TÉLÉPHONIQUE
POWER TRANSMISSION LINE	LIGNE DE TRANSPORT D'ÉNERGIE
MINE	MINE
CUTTING, EMBANKMENT	TRANCHÉE, REMBLAI
GRAVEL PIT	FOSSÉ DE GRAVIER
<b>BOUNDARIES AND SURVEY CONTROL</b>	<b>FRONTIÈRES ET POINTS DE RÉFÉRENCES</b>
INTERNATIONAL, PROVINCIAL, BOUNDARY MONUMENT	INTERNATIONALE, PROVINCIALE, BORNES FRONTIÈRE
COUNTY, DISTRICT	COMTE, DISTRICT
TOWNSHIP, PARISH - SURVEYED	CANTON, PAROISSE - ARPENTÉ
- UNSURVEYED	- NON ARPENTÉ
TOWNSHIP, DLS - SURVEYED, UNSURVEYED	CANTON, DLS - ARPENTÉ, NON ARPENTÉ
SECTION CORNERS	- SECTION ANGULAIRE
MUNICIPALITY	MUNICIPALITÉ
INDIAN RESERVE, PARK, ETC.	RÉSERVE INDIENNE, PARC, ETC.
HORIZONTAL SURVEY POINT	REPÈRE PLANIMÉTRIQUE
BENCH MARK	REPÈRE DE NIVELLEMENT
SPOT ELEVATION, ELEVATION APPROXIMATE	POINT COTE, ÉLEVATION APPROXIMATIVE
<b>DRAINAGE AND RELATED FEATURES</b>	<b>DRAINAGE ET OUVRAGES CONNEXES</b>
STREAM, SHOTLINE, INDEFINITE	COURS D'EAU, RIVE, IMPRÉCISE
DIRECTION OF FLOW	DIRECTION DU COURANT
LAKE, INTERMITTENT LAKE	LAC, LAC INTERMITTENT
INUNDATED LAND	TERRAIN INONDÉ
MARSH, SWAMP (WOODED)	MARAIS, MARÉCAGE (BOISÉS)
DRY RIVER BED WITH CHANNELS	LIT DE COUURS D'EAU TAIN AVEC CHENAUX
SAND, ABOVE IN WATER	SABLE, AU DESSUS, DANS L'EAU
STRING BOG	MARÉCAGES EN ENFILADE
TUNDRA, PONDS, POLYGONS	TOUNORA, ÉTANGS, SOLS POLYGONAUX
RAPIDS, FALLS, RAPIDS	RAPIDES, CHUTES, RAPIDES
FORESHORE FLATS	ESTRANS
ROCK	ROCHE
DAM	BARRAGE
WHARF	QUAI
DITCH	FOSSÉ
<b>RELIEF FEATURES</b>	<b>RELIEF</b>
CONTOURS	COURBE DE NIVEAU
APPROXIMATE CONTOUR	COURBE DE NIVEAU APPROXIMATIVE
DEPRESSION	COURBE DE CUVETTE
ESKER	ESKER
PINGO	PINGO
SAND, SAND DUNES	SABLE, DUNES
PALSA BOG	PALSE
WOODED AREA	RÉGION BOISÉE
CLEARED AREA	RÉGION DÉBOISÉE



ONE THOUSAND METRE UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 8 QUADRILLAGE DE MILLE MÈTRES UNIVERSEL TRANSVERSE DE MERCATOR

106M/9	106N/12	106N/11
106M/8	106N/5	106N/6
106M/1	106N/4	106N/3



PRODUCED BY SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA, 1973. COPIES MAY BE OBTAINED FROM THE MAP DISTRIBUTION OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA, 1973.

Scale 1:50,000 Échelle

DES CARTES SONT EN VENTE AU BUREAU DE DISTRIBUTION DES CARTES, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA, 1973.

ÉTABLI PAR LA DIRECTION DES LÈVES ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA, 1973.

ROADS - ROUTES

hard surface - all weather	surface dure - toutes saisons
loose surface	gravier
2 lanes or more - 2 voies ou plus	
1 way - 1 voie	
cart track - sentier	



8

Inuvik Side

Mackenzie River

Fort McPherson Side

Tsiighehtchic Side

8

Tsiighehtchic

Image © 2022 Maxar Technologies

Google Earth

1985

67°27'03.77" N 133°45'31.97" W elev 6 m eye alt 5.63 km