



Waste Management Plan

Appendix F

January 2019

Government of
Northwest Territories



PLAN MAINTENANCE AND CONTROL

INF and the Environmental Health and Safety Manager of the Contractor are responsible for the distribution, maintenance and updating of the Waste Management Plan (WMP).

This Waste Management Plan will be reviewed as needed, taking into account changes in the law, environmental factors, GNWT-INF and Contractor policies, and any other pertinent site-specific changes.

Changes in phone numbers, names of individuals, etc. that do not affect the intent of the plan are to be made on a regular basis. Plan updates will be issued as per the Waste Management Plan distribution list. The Waste Management Plan holder is responsible for adding new and/or removing obsolete pages upon receipt of updates.

Waste Management Plan Document History

Revision #	Section(s) Revised	Description of Revision	Prepared by	Issue Date

Additional copies of the Waste Management Plan can be obtained from the Environmental Health and Safety Manager of the Contractor and/or the GNWT representative responsible for the Project.



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Acronyms

DFO	Fisheries and Oceans Canada
GNWT-INF	Department of Infrastructure of the Government of the Northwest Territories
INF	Department of Infrastructure
ENR	Environment and Natural Resources
GNWT	Government of the Northwest Territories
PDR	Project Description Report
SCP	Spill Contingency Plan
SLWB	Sahtu Land and Water Board
TDGR	Transportation of Dangerous Goods Regulations
WMP	Waste Management Plan



1 INTRODUCTION

This Waste Management Plan (WMP) has been developed for use by the Department of Infrastructure of the Government of the Northwest Territories (GNWT-INF) for the Geotechnical Investigations for the Great Bear River Bridge Project (the Project).

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 Project. 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). The goal of the WMP is to:

- Ensure components of our environment, including the air, water, land, vegetation, wildlife and fish, are not negatively affected by the Project;
- Ensure aesthetic and land use values remain intact; and
- Ensure the Project will comply with all applicable acts and regulations, as well as conditions outlined in the INF's land use permit.

The WMP will be revised as needed to reflect changes or site-specific conditions. Revisions will be submitted to the SLWB.

1.1 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 the Project is conducted in an environmentally responsible manner.

1.2 LEGISLATION AND GUIDELINES

This plan been developed in consideration of the applicable Territorial legislation including the following guidelines:

- *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 1998)
- *Guidelines for Developing a Waste Management Plan* (MVLWB 2011)

1.3 PROJECT DETAILS

The Government of the Northwest Territories (GNWT) Department of Infrastructure is planning to construct a permanent bridge over the Great Bear River as a component of the Mackenzie Valley Winter Road.



Concurrent with the advancement of the design for the bridge, INF needs to determine sources of aggregate necessary for the construction of the bridge.

The purpose of the geotechnical investigation program is to gain access to the prospective aggregate sites in the winter to complete geotechnical site investigations using auger, core drills and an excavator. The boreholes and test pits will be logged, samples will be collected for laboratory analysis and a comprehensive report of the findings will be prepared. INF will be completing this work using the services of a contractor as well as their own staff.

A complete description of the Project is in the Project Description Report (PDR) along with maps.

1.4 PROJECT CONTACT

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1.5 DISTRIBUTION LIST

This plan and the most recent revisions will be distributed to:

1. Environmental Health and Safety Manager
2. Project Engineer
3. Public Relations
4. Contractor
5. Applicable INF Employees

Copies will also be provided to the following:

Regulatory Agency	Contact
Workers' Safety and Compensation Commission – 24 Hour Incident Reporting Line	1-800-661-0792
Department of Lands, GNWT (Inspector)	(867) 587-7206
Environment and Natural Resources, GNWT	(867) 392-6941
Sahtu Land and Water Board	(867) 598-2413
Fisheries and Oceans Canada	1-866-290-3731
Environment Canada	(780) 951-8600



2 DEFINITIONS

Under the authority of the *Environmental Protection Act*, the GNWT, Department of Environment and Natural Resources has produced a series of 'Environmental Guidelines' for the management of specific hazardous wastes commonly produced by NWT industries. The Environmental Guidelines for the management of waste solvents, batteries, antifreeze, asbestos, paint and ozone depleting substances have been referred to during the preparation of this plan.

The *Environmental Guideline for the General Management of Hazardous Waste in the NWT* provides definitions of terms used in the EPA and Environmental Guidelines and describes the principles of acceptable waste management practice. The following definitions are particularly important to this document.

2.1 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 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.

2.2 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, whichever is less. This does not include containers which previously contained mercury, or Class 2.3, 5.1 or 6.1 materials of TDGR.

2.3 SMALL QUANTITY

Hazardous wastes are considered to be small quantities if it is generated in an amount that is less than 5 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 1 L.



3 IDENTIFICATION OF WASTE TYPES

Over the course of the Project, several types of waste may be generated by equipment and crews. Potential waste types are listed in the table below with further management descriptions provided in Section 5:

Table 1 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.	Waste will be progressively removed from site to approved facilities.
Construction materials	Pieces of material such as metals.	Collect and store in bins at designated area on site.	Waste will be progressively removed from site to an approved facility.
Rubber/used tires	Old or faulty tires used on vehicles or equipment, belts, etc.	Collect and place in designated area on site.	Disposed of with approved methods at acceptable facilities.
Cleared vegetation	Slashed trees and shrubs with possible grubbing.	Trees will be mulched or windrowed along the alignment.	Salvageable timber will be placed in an area approved by the Lands Inspector.
Bulky metals (vehicles, equipment)	Any broken vehicles, equipment or bridge/culvert materials	Collect and place in designated area on site.	Disposed of with approved methods at acceptable facilities.
Contaminated soils and snow	Soil or snow contaminated with either diesel, oil or other hazardous materials.	Pick up contaminated soils or snow and place in lined facility or drum.	Soils or liquid residue will be placed in drums and removed by registered hazardous waste carrier to an approved facility.
Sewage	All human excreta and associated products (greywater).	Stored in tanks prior to disposal.	Sewage waste generated will be trucked to approved facility in Tulita.
Waste oils	Vehicle maintenance	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.
Used filers	Process (glycol, dips, water)	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.
Used hydrocarbon containers and absorbents	Containers used to store hydrocarbons and absorbent materials used for spill cleanup.	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.
Waste antifreeze	From engines possibly contaminated with heavy metals.	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.



Waste solvents	Solvents used to remove grease and oil from engine components and other machinery.	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.
Animal carcasses	Dead or decomposing animal parts.	No storage of animal carcasses will be allowed.	If encountered, animal carcasses will be removed from site through discussions with the GNWT Department of Environment and Natural Resources.
Lead acid batteries and alkaline batteries	From personnel and equipment.	Store in appropriate containers.	Disposed of with approved methods at acceptable facilities.

3.1 NON-HAZARDOUS, NON-MINERAL WASTES

Non-hazardous, non-mineral wastes generated during construction will primarily include domestic wastes, vegetation from clearing operations, bulky metals (vehicles, equipment) and rubber products (tires). Domestic waste will be created by site personnel and camp facilities, etc., while bulky metals and rubber products will be attributed to vehicles and equipment use.

Vegetation cleared along the corridor will be mulched or windrowed along the alignment.

The potential environmental effects arising from unmanaged non-hazardous, non-mineral wastes include increased wildlife attractants, a change in the aesthetics to the area, degradation of water quality, and degradation of wildlife habitat.

3.2 HAZARDOUS WASTES

Potential hazardous wastes generated on the alignment include waste oil, fuel, lubricants, oil filters, batteries and solvents from use and maintenance of heavy equipment. 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. 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.



4 WASTE MANAGEMENT FACILITIES

Various wastes will be generated during the Project. It is essential that these wastes are handled, stored and managed in a safe and environmentally responsible manner.

All fuel storage will consist of double-walled fuel tanks and/or approved storage containers with secondary containment (e.g. lined tray and berms).



5 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.

5.1 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.

5.1.1 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.

5.1.2 CONSTRUCTION WASTE

Waste will be stored in a designated section of the site. This material will then be progressively removed from site throughout operations and disposed of at an approved facility.

5.1.3 RUBBER/USED TIRES

Used tires and belts that cannot be recycled will be stored in a designated section of the site. This material will then be progressively removed from site throughout operations and disposed of at an approved facility.

5.1.4 VEGETATION

Vegetation will be mulched or windrowed on the alignment and cut lines.



5.1.5 BULKY METALS

Vehicle and equipment failure may occur on the alignment; if this does occur, all materials will be hauled off the alignment and repaired at a designated facility or will be properly disposed of in an approved waste facility.

5.2 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. As a result, any and all hazardous waste that is managed by the Contractor will be submitted under INF's registered generator of hazardous waste number 'NTG027'. 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 1998), 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 an enclosure providing secondary containment at least 100 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 construction at minimum. Wastes will be transported to an approved facility for treatment/disposal in their facilities. 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 *Transportation of Dangerous Goods Regulations* 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.

5.2.1 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 Spill Contingency Plan and will follow proper safe operating procedures.

In the instance that a spill should occur, it is expected that contaminated soils/snow will be picked up and placed in drums which will then be removed by a registered hazardous waste carrier to an approved facility. Should a larger spill occur, a secondary containment structure or lined facility may be required. All spills will follow SCP procedures.

5.2.2 SEWAGE

Sewage and greywater will be collected in a holding tank that will be heated and insulated. Sewage will be disposed of in sumps created in natural depression in the terrain or trucked to in town facilities.



5.2.3 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.

5.2.4 USED FILTERS

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

5.2.5 USED HYDROCARBON CONTAINERS AND ABSORBENTS

Used hydrocarbon containers, absorbents and rags produced onsite and any used spill response materials, such as fiber pads or granular absorbents ('floor dry') will be placed in appropriate containers and temporarily stored in the waste management area. Accumulated contaminated absorbents will be removed from site and disposed of in accordance with regulatory requirements.

5.2.6 WASTE ANTIFREEZE

Waste antifreeze will be placed into appropriate containers and temporarily stored in the waste management area. Accumulated waste antifreeze will be removed from site and disposed of in accordance with regulatory requirements.

5.2.7 WASTE SOLVENTS

Solvents such as Varsol are used to remove grease and oil from engine components and other machinery. Waste solvents will be placed into appropriate containers, removed from site and disposed of in accordance with regulatory requirements.

5.2.8 ANIMAL CARCASSES

If encountered, animal carcasses will be removed from site through discussions with the Department of Environment and Natural Resources (ENR).

5.2.9 BATTERIES

Lead acid batteries and alkaline batteries will be placed into appropriate containers and taken to an approved registered facility.



6 REFERENCES

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- Environment and Natural Resources (ENR). 2003. Used Oil and Waste Fuel Management Regulations – Plain Language Guide. GNWT. Yellowknife, NT. Retrieved January 2018 from: http://www.enr.gov.nt.ca/sites/default/files/guidelines/used_oil_guide.pdf.
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- TDIC HRN Contracting Joint Venture. DOT. Tetra Tech EBA. 2015. Construction of the Norman Wells to Canyon Creek Access Road: Waste Management Plan.

Appendix F

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