



NORTHWEST TERRITORIES
POWER
CORPORATION

Empowering Communities

WASTE MANAGEMENT PLAN

**JACKFISH LAKE
GENERATING FACILITY, NWT
PLANT #120
YELLOWKNIFE, NORTHWEST TERRITORIES**

February 2019

DOCUMENT MAINTENANCE AND CONTROL

The Director, Health, Safety & Environment is responsible for the distribution, maintenance and updating of the Waste Management Plan. This document will be reviewed annually and changes in phone numbers, names of individuals, etc. that do not affect the intent of the plan are to be made as required. Additional copies can be provided by the Director, Health, Safety & Environment.

DOCUMENT HISTORY				
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1 INTRODUCTION

1.1 INTRODUCTION

The Northwest Territories Power Corporation (NTPC) has prepared this Waste Management Plan (WMP) for the Jackfish Lake Generating Facility (Jackfish Facility) located at Jackfish Lake in Yellowknife, Northwest Territories (NWT).

The production of waste material as a result of electricity generation and other activities is a normal result of ongoing activities. NTPC generates/handles waste materials at its power generation facilities and has a responsibility to protect and conserve the environment. Proper management of waste is important for the protection of the health and safety of employees, the community, and the environment. The majority of the non-hazardous and some hazardous waste from the facility is deposited at the City of Yellowknife Solid Waste Facility. Any non-hazardous or hazardous that is not accepted at the City of Yellowknife Solid Waste Facility is disposed of according to industry best practices as outlined below.

1.2 PURPOSE

The purpose of the WMP is to provide a consolidated source of information on the safe and environmentally sound transportation, storage, and handling of the waste used and generated at the Jackfish Facility.

NTPC is committed to preventing, to the greatest extent possible, both inadvertent releases of these substances to the environment and accidents resulting from a mishandling or mishap. NTPC develops programs for employee training, Jackfish Facility inspection, periodic drills to test systems, and procedural review to address deficiencies, accountability, and continuous improvement objectives.

The WMP will form a component of the Environmental Management System. As such, it is a working document that will be reviewed and updated on a regular basis.

Figure 1-1: Jackfish Lake Generating Facility



The WMP is based on the following principles of best management practice for waste:

- Identify and prepare waste inventories.
- Characterize potential environmental hazards posed by those wastes.
- Allocate clear responsibility for management hazardous wastes.
- Describe methods for transport, storage, handling and use.
- Identify means of storage and disposal.
- Prepare contingency and emergency response plans.
- Ensure training for management, workers and contractors whose responsibilities include handling hazardous waste.
- Maintain and review records of hazardous waste generation and incidents in order to anticipate and avoid impacts on personal health and the environment.

1.3 SCOPE

This WMP will cover solid waste, sewage, grey water and hazardous waste produced at the Jackfish Facility to ensure they will be stored, handled, disposed of in compliance with all applicable federal and territorial regulations. The WMP is specific to the Jackfish Facility and is intended to supplement the NTPC Hazardous Waste Management Plan (HWMP) which addresses the specific requirements around disposal of hazardous wastes at NTPC facilities.

The WMP applies to all casual, permanent, part-time, and full-time employees and contractors who conduct work or provide services at the Jackfish Facility. This WMP covers activities and operations conducted at the Jackfish Facility.

1.4 ENVIRONMENTAL PROTECTION POLICY

Policy

NTPC is committed to protecting the environment for existing and future generations by meeting, if not exceeding, environmental regulations. Our environmental principles are based on the fundamental values of responsibility, accountability, and open communication. We will strive for continuous improvement in environmental performance and will manage our operations in an environmentally responsible manner.

Guidelines

NTPC will:

- Comply with all applicable environmental legislation and guidelines;
- Maintain an Environmental Management System;

- Incorporate environmental planning in the design phase of projects;
- Reduce waste and use resources as efficiently as possible;
- Take reasonable measures to prevent and reduce pollution to air, water, and soil;
- Manage hazardous waste in a manner that minimizes risk to the environment;
- Report all hazardous materials spills released to water, regardless of size;
- Report all hazardous materials spills greater than 5 L to ground or floor;
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- Clean up all hazardous materials spills to meet applicable environmental criteria;
- Promote the efficient use of energy to customers;
- Provide employees with the appropriate training and education to help them fulfill their environmental responsibilities;
- Communicate regularly with indigenous groups, government, regulators, industry, community groups, and the public regarding NTPC activities; and
- Respect the heritages of the people and communities that we serve.

NTPC recognizes that incorporating proper hazardous material management into other environmental management plans and systems leads to risk reduction, improved process control, and cost savings. This WMP will form a component of the Jackfish Facility's Environmental Management System. As such, it is a working document that will be reviewed and updated on a regular basis. At a minimum the WMP will be reviewed and updated annually. Training is provided on the following NTPC policies, procedures, and information sources, which are available at the Jackfish Facility and/or on the NTPC Intranet PowerLine:

- Spill Contingency Plan
- Emergency Response Plan
- Hazardous Waste Management Plan
- Fuel Transfer Safe Work Practice
- Operator Training Manual
- Plant Operating Manual
- Safety Handbook

The WMP is presented to all employees and contractors during their on-site orientation sessions.

1.5 APPLICABLE LEGISLATION/GUIDELINES

This Plan has been developed in accordance with the Guideline for Developing a Waste Management Plan (MVLWB 2011). Both federal and territorial legislation regulate the management of hazardous materials and hazardous wastes in the NWT. Management and safety personnel will provide an overview of the applicable regulations to all employees as part of their orientation and ongoing training. The acts,

regulations and guidelines pertinent to hazardous products that will be used at the Jackfish Facility are listed in Appendix B.

The federal Transportation of Dangerous Goods Act classifies hazardous materials into nine main classes according to an internationally recognized system, as follows:

- Class 1 – Explosives
- Class 2 – Compressed Gases
- Class 3 – Flammable or Combustible Liquids
- Class 4 – Flammable Solids
- Class 5 – Oxidizing Substances
- Class 6 – Poisonous and Infectious Substances
- Class 7 – Nuclear Substances
- Class 8 – Corrosives
- Class 9 – Miscellaneous

The materials addressed in this document are also identified by class.

1.6 RESPONSIBILITIES

All employees will be expected to comply with all applicable precautions and handling procedures with regard to both hazardous and non-hazardous wastes. Employees are also expected to report any concerns to their supervisors, the Plant Operator, the Joint Occupational Health and Safety Committee, or site management. Contractor employees working on the site will be expected to report any concerns to the Plant Operator. All staff are encouraged to bring forward suggestions for improvements that can be incorporated into procedure revisions as appropriate.

Onsite NTPC Employees

- Ensure worksite and personnel safety.
- Ensure wastes are stored in their appropriate designated storage area.
- Know the location of designated storage areas, spill response materials, first aid stations, emergency and safety equipment, Safety Data Sheets (SDS), emergency exits, and muster stations.
- Wear appropriate personal protective equipment.
- Know the handling, storage and spill prevention requirements.
- Comply with all NTPC and Jackfish Facility policies and procedures when performing duties.

Plant Operator

- Ensure the safety of all personnel and the site.

- Ensure all new site personnel and contractors are oriented and have access to all the required documentation.
- Organize inspections of site waste management practices and storage areas, and ensure that appropriate records are maintained.
- Ensure all NTPC employees and contractors adhere to the requirements of the WMP.

Project Manager/Monitors

- Ensure the safety of all project personnel and the project areas.
- Ensure all new construction personnel and contractors are oriented and have access to all the required documentation.
- Organize inspections of site waste management practices and storage areas, and ensure that appropriate records are maintained.
- Ensure all construction employees, contractors and sub-contractors adhere to the requirements of the WMP.

Stores Person (Logistics Officer or Stock Keeper)

- Ensure that all received wastes are stored, transported and disposed of according to the requirements of the WMP and HWMP
- Maintain appropriate records.

Manager, Plant Operations

- Ensure that the Plant Operator has the available resources to effectively implement the WMP.

Director, Health, Safety & Environment

- Maintain and complete the annual review of the WMP.
- Ensure that all WMP documentation remains up-to-date and the updated versions are distributed out to the personnel on site, external agencies and organizations.
- Periodically audit waste management at the Jackfish Facility to support continuous improvement.
- In coordination with the Plant Operator, prepare and submit any formal reports to regulators and NTPC management regarding the management of hazardous materials.

Third Party Contractors and Suppliers

- Ensure worksite and personnel safety.
- Ensure wastes are stored in their appropriate designated storage area.
- Know the location of the designated storage areas, spill response materials, first aid stations, emergency and safety equipment, SDS, emergency exits, and Muster Points.

- Wear appropriate personal protective equipment.
- Know the handling, storage and spill prevention requirements.
- Comply with all NTPC and Jackfish Facility policies and procedures when performing duties.

1.7 MAINTENANCE OF PLAN

The Director, Health, Safety & Environment will maintain the WMP. The Plan will be reviewed annually, but may also be reviewed more frequently as required (e.g., due to a new or amended legislation or the addition/deletion of a waste to/from the Jackfish Facility use).

A record will document all significant changes that have been incorporated in the WMP subsequent to the latest annual review. The record will include the names of the persons who made and approved the change, as well as the date of the approval.

1.8 ACCESS TO ADDITIONAL COPIES

Additional copies of the plan can be obtained by contacting the Director, Health, Safety & Environment at (867) 874-5327.

1.9 SAFETY DATA SHEETS

NTPC maintains SDS for all controlled products that are used, stored, and handled at NTPC work sites.

3E Online, a web-based program, is used to maintain and update the SDS for NTPC. All NTPC employees with computer access can view current SDS for NTPC products by visiting the following website:

<https://www.3eonline.com/>

In order to login to the site, the following username and password must be entered:

Username: ntpc

Password: msds

If employees cannot locate SDS on the website for products in use at NTPC sites, or if obsolete products are noted on the site, please advise the Manager, Logistics via phone or email using the following contact information:

Rod Gray, Phone: (867) 874-5208, rgray@ntpc.com

All NTPC thermal and hydro sites also require current SDS binders (paper copy) to be maintained and kept up-to-date (i.e., updated every three years). It is the responsibility of the employee to request up-to-date SDS binders. To acquire an up-to-date SDS binder please contact the Environmental Analyst at (867) 874-5248.

1.10 GENERAL EMERGENCY RESPONSE

NTPC maintains procedures for responding to emergency situations and accidents, including any specific procedures that are required by environmental legislation. A summary is presented below:

Site Specific Emergency Response Plan

NTPC maintains a Site Specific Emergency Response Plan that documents how to deal with incidents and emergency situations. The most common emergency situations or accidents that can occur at NTPC are spills and fires. For minor spills and fires that are safe to respond to, spill response materials and fire extinguishers are available in all NTPC buildings.

Spill Contingency Plan

In the NWT, under the *Environmental Protection Act*, the Spill Response Planning and Reporting Regulations set the standard for reporting spills of contaminants and preparing Spill Contingency Plans. A Spill Contingency Plan is required if contaminants are stored above ground in excess of 20,000 kg or 20,000 L, or below ground in excess of 4,000 kg or 4,000 L. A copy of the Spill Contingency Plan must be filed with the Chief Environmental Protection Officer. Although NTPC does not have below ground storage facilities, contaminants (e.g., fuel oil) are stored in excess of 20,000 L and therefore Spill Contingency Plans for all NTPC power plant sites have been established and registered with the Chief Environmental Protection Officer.

Emergency Response Assistance Plan

A person who offers for transport or imports a consignment of dangerous goods must have an approved emergency response assistance plan when the quantity of dangerous goods exceeds the Emergency Response Assistance Plan (ERAP) limit (Transportation of Dangerous Goods (TDG) Regulations sections 7.1, 7.4, and column 7 of Schedule 1). The ERAP is to be filed and approved by the Director General.

Currently no dangerous goods offered for transport or imported by NTPC require an ERAP.

Reporting of Spills

The procedures for reporting spills at the Jackfish Facility are presented in the Jackfish Facility Spill Contingency Plan.

A summary of reporting and response requirements for spills of dangerous goods during transport (as defined under TDG Regulations) and spills of hazardous materials (as defined in the NWT Environmental Protection Act and associated regulations) is presented in the NTPC HWMP.

NWT Spill Reporting

The minimum quantities for reporting of spills to the environment are specified in the Spill Contingency Planning and Reporting Regulations. NTPC has adopted a policy of reporting all spills of hazardous materials over 5 L, and spills of any size that reach water, to the 24-Hour Spill Report Line at (867) 920-8130 unless the minimum quantity specified in the regulation is more stringent (i.e. less than 5 L).

1.11 DISTRIBUTION LIST

The WMP and the most recent revisions are distributed internally to:

- i. Health, Safety & Environment Department, Jackfish Facility /NTPC (control copy)
- ii. Manager, Plant Operations, Jackfish Facility
- iii. Plant Operator, Jackfish Facility
- iv. Manager, System Control, Hydro Region
- v. Central Control Room, NTPC
- vi. NTPC Intranet PowerLine

The Director Health, Safety, and Environment is responsible for distribution of the WMP to outside third-party stakeholders.

2 OVERVIEW OF HAZARDOUS WASTE

2.1 INTRODUCTION

The primary and designated storage locations for hazardous wastes are shown on Figure 2.1.

Hazardous waste storage areas include locations and facilities at which spent or unwanted hazardous materials are stored pending off-site transportation for recycling, treatment or disposal.

Figure 2-1: Location of Main Hazardous Waste Storage at the Jackfish Facility



Table 2-1 presents general information on the location of the hazardous waste storage areas. Estimated maximum quantities of hazardous wastes are presented in Table 2.2.

Table 2-1: Hazardous Waste Storage Areas at the Jackfish Facility

Storage Tank/Storage Area	General Description	Location
Used Lube Oil Tank	1 horizontal 41,000 L steel-bermed waste lube oil tank	Located north of the Cat Plant
Hazardous Product Storage Berm	Various hazardous waste products (waste glycol, solvents, oil, etc.) stored in 205 L drums	Hazardous product storage berm located west of the Ruston Plant

2.2 NON-HAZARDOUS WASTE

Hazardous and non-hazardous waste is segregated onsite. Hazardous waste that cannot be recycled/reused is sent to a registered hazardous waste disposal company while non-hazardous waste is either sent to the local landfill for disposal or sent to the local recycling facility.

Sewage/waste water produced onsite is picked up by a local contractor and sent to the local lagoon for treatment.

2.2.1.1 Non-Hazardous Waste Segregation and Storage Methods

Only approved non-hazardous solid waste materials are sent to the local landfill for disposal. Non-hazardous wastes are segregated at the source and are placed in 1 of 3 front-load dumpster bins located at the Jackfish Facility. These bins are emptied twice per week by a local contractor and hauled to the local landfill for disposal. General classes of wastes **for disposal in dumpster bins** include but are not limited to

- Hazardous Wastes.
- Mercury containing materials / waste (e.g., fluorescent lamps, thermometers, thermostats, dental amalgam, batteries).
- Materials / wastes containing heavy metals (e.g., mercury-containing wastes, pressure or chemically treated wood (i.e., Chromated Copper Arsenate or creosote), lead painted materials.
- Asbestos waste.
- Liquid wastes including petroleum hydrocarbons and sewage.
- Radioactive materials such as smoke detectors.
- Potentially explosive materials such as propane tanks, other pressurized vessels, unused or ineffective explosives.

- Other hazardous materials such as organic chemicals (PCBs, pesticides), other toxics (arsenic, cyanide).
- Electronics.
- Batteries.
- Fluorescent light bulbs.
- Tires.
- Oily rags.

Waste cardboard is collected in a front-load bin and emptied once a week by a local contractor and hauled to the local recycling facility. Waste drink containers are also collected onsite in blue recycle boxes located throughout the site and sent to the local recycling facility.

2.2.2 Human Domestic Waste Handling and Disposal

Sewage/grey water produced onsite is picked up by a local contractor once per month and hauled to the local lagoon for treatment. The Jackfish Facility has 6 locations onsite that require sewage/grey water pickup:

- K-Plant (sewage)
- Warehouse (sewage)
- Line Shop (sewage)
- CAT Plant (sewage and grey water)
- EMD Plant (sewage)
- Administration Building (sewage)

2.3 CONTAMINATED SOILS AND SPILLS

Contaminated soils resulting from the storage and handling of fuels and lubricants will be salvaged at the time such impacts are identified, and either placed directly into end-dump trucks or put into drums, labelled and shipped off-site to an approved disposal facility.

A suitable absorbent will be used to cleanup spillage on impermeable floor surfaces, and will be handled similarly to contaminated soil as described above. Internal and external notification requirements, record keeping and response procedures are detailed in the SCP. If required, the assessment and remediation of contaminated soil will be carried out in accordance with The Environmental Guideline for Contaminated Site Remediation.

2.4 USED PETROLEUM AND OTHER WASTE PRODUCTS

Used oil, solvents or glycol that are no longer suitable for its intended use is classified as a hazardous waste, and drummed and stored as appropriate. The discharge of used oil, solvents or glycol into the environment is prohibited. These substances will be collected by a local specialized waste contractor and will be managed and disposed of in accordance to “*Used Oil and Waste Fuel Management Regulations, the Guideline for the Management of Waste Solvents and the Guideline for the Management of Waste Antifreeze.*”

2.5 HAZARDOUS WASTE STORAGE

NTPC is committed to the safe and appropriate storage of fuels, hazardous wastes. The following sections outline NTPC’s general guidelines for storing hazardous hazardous wastes.

2.5.1 General Precautions

General precautions for handling hazardous wastes include:

- No person should handle a substance unless that person is familiar with the hazards.
- No person should use a substance unless that person is familiar with the proper use.
- Hazardous wastes from different classes should never be mixed in the same container.

2.5.2 Waste Storage Drums/Containers

Prior to removal from the site, the sealed waste containers are stored in the Hazardous Product Storage Berm which is located roughly 100 meters (m) from the Jackfish Lake shoreline. In addition, hazardous waste shall be stored in drums/containers according to the following guidelines:

- In the original containers, where possible or in containers manufactured for the purpose of storing the material, or use good quality 16 gauge or lower steel or plastic 205 L drums.
- Containers of hazardous materials shall be returned to their designated storage area at the end of each shift or when no longer in use.
- Reused steel or plastic drums must have an internal volume greater than or equal to 150 L to handle, offer for transport or transport dangerous goods that are liquid and are included in Class 3, 4, 5, 6.1, 8 or 9 (Section 5.12(2), TDGR 2001-286)
- Storage containers shall be in good condition, sealable and not damaged or leaking.
- Drums containing hazardous wastes expected to be in storage for more than six months shall be placed on pallets or on a well-drained storage area to prevent rusting.

- Each container shall be clearly labelled to identify the substance being stored according to the requirements of the Workplace Hazardous Materials Information System (WHMIS) or the *Safety Act* or the relevant Transport Authority, if transport is planned.
- Containers shall be kept secure and closed except when adding or removing product.
- Containers with product shall be kept in the upright position; empty drums can be placed horizontally.
- Containers shall be arranged to prevent damage from falling or dislodging.
- Containers shall be arranged to allow for easy access and inspections.
- Dispensing a container to another shall only be carried out within an area provided with drip / spill containment.

2.5.3 Hazardous Waste Storage Areas

To assist in the safe and secure storage of fuels, hazardous wastes, the following general guidelines for storage areas/facilities will be considered:

- Design of storage areas shall be in compliance with the National Fire Code, where appropriate.
- Drainage into and from storage areas shall be controlled in order to prevent leaks or spills from migrating off-site and to avoid run-off from entering the storage areas.
- Storage areas shall have controlled access. Only authorized and trained personnel shall have access to storage areas.
- Leaking or deteriorated containers shall be removed and their contents transferred to a sound container.
- Storage areas shall be adequately signed indicating that there is to be no smoking, no sparks or flames and wastes are stored therein.
- Storage locations shall be clearly defined and marked to prevent damage of storage drums and containers in the event they are covered by snow.
- Incompatible wastes shall be segregated by chemical compatibility within the storage area to prevent contact between wastes in the event of a release
- Storage areas shall be located at least 30 m from surface water and on a low-permeability area, where possible.
- Storage areas shall be readily accessible for fire fighting and other emergency procedures.
- Storage areas shall be adequately ventilated to prevent the build up of noxious or toxic vapours.
- Secondary containment or an adequate spill collection system shall be installed to allow for the containment of at least 110% of the largest container or tank volume within the contained area, plus 10% of the aggregate capacity of all other containers or tanks.

- Secondary containment shall be kept free of debris, water accumulation and snow.
- Storage areas and associated secondary containment shall be protected from the elements, where possible. In case this is not feasible, the secondary containment's volume shall be large enough to allow for any precipitation (rain, snow, and storm water run-on) that may enter containment systems located outdoors, in addition to the required containment volume for stored materials. In addition, sufficient capacity to handle sprinkler water and other water from fire protection efforts will be provided.
- Storage areas shall be constructed, or provided with barriers, to protect containers from the environment and physical damage.
- Adequate spill and emergency response equipment shall be installed at each storage area (i.e. spill control, fire protection, etc.). A list of spill control equipment is provided in the Spill Contingency Plan.
- The site shall not be used for long-term storage of hazardous waste.

3 INVENTORY, INSPECTION & RECORDS

3.1 HAZARDOUS WASTE

3.1.1 Inventory Management

Hazardous wastes in storage areas will be inventoried monthly. Inventory records will be maintained on site.

3.1.2 Inspection

The Plant Operator will coordinate the inspection of areas all hazardous waste storage areas. The inspection schedule and procedure to be followed are summarized in Table 5.1. All inspections will be logged with the date and time of inspection, area inspected and the name of the person making the inspection.

Drum / Container Storage Areas

The condition of hazardous waste storage areas will be checked on a regular basis. Observations on their condition will be logged, dated and kept onsite. Drums/containers will be inspected for the presence and legibility of symbols, words or other marks identifying the contents, signs of deterioration or damage such as corrosion, rust, leaks at seams or signs that the drum/container is under pressure such as bulging and swelling, spillage or discoloration on the top or sides of the drum/container. If leaks or deterioration is encountered it will be noted and addressed in a timely manner.

The hazardous wastes area's secondary containment will be inspected and the condition of the secondary containment will be noted. Arrangements will be made for repairs if necessary. If precipitation (water or snow) is present within the secondary containment, it will be removed from the secondary containment area in a timely manner to prevent overflow or damage to the containment system due to large ponding.

The availability of suitable and suitable quantity of spill response materials will be verified during the inspections. Additional spill response materials will be provided as required.

Waste Oil

Inspection of waste oil storage tanks will be in conformance with the requirements of the National Fire Code and the Canadian Council of Ministers of the Environment (CCME) Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum.

Visual inspection of storage tank facility to ensure that there has not been a leak or deterioration of the Jackfish Facility that could result in a leak will be conducted and documented each day the Jackfish Facility is in operation.

Visual inspection of storage tanks, to ensure that there has not been a leak or equipment failure, shall be conducted weekly and documented for the following where applicable:

- foundations, tank walls, roof, and tank attachments;
- dyke capacity, condition of the dyke wall and floor, and water removal systems;
- pumps and product-handling equipment;
- tank gauging equipment;
- mechanical and automatic electronic leak detection equipment;
- dispenser sumps and spill containment devices; and
- overfill protection devices.

Inspection and performance testing in conformance with the manufacturer's requirements and procedures to ensure satisfactory equipment performance and operation of a storage tank facility will be conducted annually and documented where applicable for:

- automatic tank gauges and monitoring systems;
- high-technology sensors;
- electronic or mechanical leak detection equipment;
- corrosion protection equipment;
- pressurized piping emergency valves;
- emergency shut-down devices;
- containment sumps including dispenser, turbine and transition containment devices; and
- overfill protection devices.

Vertical tanks will also undergo periodic testing as per API 653 / API 653-01 as required.

Table 5-1: Inspection of Petroleum and Hazardous Materials Storage Sites

Hazardous Product Storage Berm	Schedule: Monthly by Plant Operator or designate when materials are on site. Procedure: Inspections will be reported annually and filed as above.
Spill Kits	Schedule: Weekly/Monthly as part of inspection schedule as per above by Plant Operator or designate.

Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. The extent of damage will be reported in writing to the Plant Operator or alternate. The report will identify any remedial repairs that may be made, the date of any repairs and the need for any follow-up inspection. The Safety Inspection Report (Hazardous Materials Storage Area Inspection) form can be found in Appendix E.

3.1.3 Records

Records pertaining to storage, use, and loss of fuels and lubricants are required by CCME and the Fire Marshal (under the National Fire Code). The following records will be prepared and maintained for hazardous waste storage areas under the supervision of the Plant Operator:

- Receiver registration number
- Carrier registration number
- Waste generator registration number
- Waste manifests
- Waste accumulation log
- Safety Inspection Report (Hazardous Waste Storage)
- Weekly use summaries
- Inspections and maintenance records
- Any alterations to the systems
- Reports of leaks or losses
- Reports of spill responses
- Records of training

Specific to storage tanks, the following records are also required, where applicable:

- Inventory data;
- Inspections and maintenance records;
- Overfill alarm tests
- Cathodic protection monitoring;
- Precision leak detection tests;
- Maintenance and repairs;
- Construction, alterations, or upgrades;
- As-built drawings; and

- Excavation or nearby construction that could affect the integrity of the storage tank system.

The records will be maintained on-site for at least seven years.

4 TRAINING

4.1 GENERAL

As outlined in the NTPC's Health and Safety Management System, all employees and contractors at the Jackfish Facility will receive the following training:

- Workplace Hazardous Materials Information System
- Emergency and spill response training (see also the SCP and Emergency Response Plan [ERP])
- Operations overview

Employees will receive additional training specific to their area of work and duties, including safe operation practices, safe handling and storage of chemicals, and use of personal protective equipment. This training will be the responsibility of NTPC.

Periodically, NTPC staff will carry out fire or other emergency drills. The drills will test emergency response procedures, and will be scheduled so as not to disrupt work. The results of the drills will be recorded and forwarded to the Plant Operator, Joint Occupational Health and Safety Committee and NTPC. The results may indicate that additional or refresher training is required. Safety committee recommendations will be enacted expeditiously.

4.2 FUEL & LUBRICANTS HANDLERS

Personnel who handle fuel and lubricants will be expected to be conversant with relevant SDS information. As well, these personnel will be given training in the following:

- Transportation of Dangerous Goods (TDG)
- NTPC's fuel handling procedures (outlined in Section 3)
- Spill response and cleanup procedures for petroleum hydrocarbons (see the SCP)
- Emergency response procedures (see the ERP)

The attendants and persons involved in inspections of fuel storage locations will be trained in fuel inventory and inspection procedures to support leak prevention and early detection.

4.3 PLANT EMPLOYEES

Plant employees may receive TDG training, if appropriate. All plant employees will be trained in spill and emergency response procedures. Emergency response procedures for spilled chemical substances are provided in the SCP.

For more information on employee training and safety guidelines, see NTPC's Health and Safety Management System, SCP and ERP.

4.4 THIRD PARTY CONTRACTORS

It is expected that third party contractors receive adequate and comprehensive training to conduct their work tasks from their employer. NTPC intends to review the general qualifications of third party contractors prior to having them work at the site. In addition, the contractor companies may also be requested to confirm the qualifications of specific individuals that they may have working at the site.

Third party contractors working on the site will be expected to participate in, and complete a site specific health and safety training session. The training session is valid for a period of one year, after which time the contractor may be required to complete the training again, or attend a refresher. The training session will outline site specific response procedures that they should be aware of in the course of conducting their work on site. The training session will cover waste management.

5 REFERENCES

MVLWB (Mackenzie Valley Land and Water Board). 2011. Guidelines for Developing a Waste Management Plan. March 31, 2011 Available at:
https://mvlwb.com/sites/default/files/documents/MVLWB-Guidelines-for-Developing-a-Waste-Management-Plan-Mar-31_11-JCWG.pdf Accessed: February 2019.

APPENDIX A
GLOSSARY

A

- **Accredited** (accreditation):

A term used by analytical laboratories. Those that have been tested and evaluated by the Standards Council of Canada and Canadian Standards Association, and that have met certain standards, are assigned an accreditation number. Only Accredited Laboratories may be used to obtain analytical results required for legislative compliance.

B

- **None**

C

- **CAEAL:**

Canadian Association of Environmental Analytical Laboratories. In cooperation with the Standards Council of Canada (see below), this Association governs the standards for and admission to the association of laboratories that have met all CAEAL standards to become accredited (see above).

- **Carrier:**

Any person engaged in the transport of hazardous waste whether or not for hire or reward.

- **Commissioner's Lands:**

Lands in the Northwest Territories that have been transferred by Order-Land in-Council to the Government of the Northwest Territories. This includes highways, block land transfers, and most lands within municipalities.

- **Consignee (Receiver):**

A site or facility that is licensed to accept certain subject wastes for disposal.

- **Consignor (Generator):**

A person who offers a consignment of hazardous waste for transport.

- **Contaminant:**

Any noise, heat, vibration or substance including such other substances as the Minister may prescribe that, where discharged into the environment:

- (a) endangers the health, safety or welfare of persons,
- (b) interferes or is likely to interfere with normal enjoyment of life or property,
- (c) endangers the health of animal life, or
- (d) causes or is likely to cause damage to plant life or property.

D

- **Dangerous Goods**

Any product, substance, or organism included by its nature or by the Transportation of Dangerous Goods Regulations (TDGR) in any of the classes listed in the schedule provided in the *Transportation of Dangerous Goods Act* (TDGA).

E

- **Empty Container**

A container that has been emptied, to the greatest extent possible, using regular handling procedures, the contents of which 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.

- **Environmental Protection Service (EPS):**

Environmental Protection Service (EPS) of the Department of Environment and Natural Resources (ENR) is the Government of the Northwest Territories agency responsible for initiatives which control the discharge of contaminants and their impact on the natural environment.

F

- None

G

- **Generator**

The owner or person in charge, management, or control of a hazardous waste at the time it is generated, or a facility that generates hazardous waste.

H

- **Hazardous Waste:**

A contaminant which 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:

- (a) household in origin;
- (b) included in class 1, Explosives or class 7, Radioactive materials of TDGR;
- (c) exempted as a small quantity;
- (d) an empty container; or
- (e) intended for disposal in a sewage system or by landfilling that meet the applicable standards set out in schedules I, III, or IV of the Guideline for Industrial Waste Discharges in the NWT.

- **Hazardous Waste Management Facility:**

A facility which is used for the collection, storage, treatment, recycling, or disposal of hazardous waste.

I

- **Incompatible Waste:**

Hazardous wastes which, when in contact with one another or other substances under normal conditions of storage or transportation, could react to produce heat, gas, fire, explosion, corrosive substances, or toxic substances.

J

- None

K

- None

L

- **Landfilling:**

The deposit of waste on land, as described in the GNWT Department of Municipal and Community Affairs' document Guidelines for the Planning, Design, Operation & Maintenance of Solid Waste Modified Landfill Sites in the NWT.

- **Licensed Waste Disposal Facility:**

A facility or site that is authorized to accept and dispose of predetermined wastes.

- **Long Term Storage:**

The storage of hazardous waste for a period of 180 days or more and in excess of the minimum quantities, not including materials in transit.

M

- **Manifest (Waste Manifest):**

A six-part, colour-coded, and uniquely numbered document issued by the government to licensed waste generators/carriers that must be completed and carried with/filed for shipments of waste (certain exemptions are allowed). The Manifest consists of three Sections (Consignor, Carrier, and Consignee) each of which must be completed by the party in control of the waste at the time the Section is completed.

- **Manage:**

To handle, transport, store, recycle, treat, destroy, or dispose of hazardous waste.

N

- **None**

O

- **None**

P

- **None**

Q

- **None**

R

- **Receiver (Consignee):**

A person to whom a quantity of hazardous waste is being or is intended to be transported to.

S

- **Sewage System:**

A system for the collection, transmission, treatment or disposal of any liquid waste containing animal, vegetable, mineral, human or chemical matter in solution or in suspension.

- **Small Quantity:**

Hazardous waste that is generated in an amount that is less than 5 kilograms per month if a solid or 5 litres per month if a liquid, and where the total quantity accumulated at any one time does not exceed 5 kilograms or 5 litres. This does not apply to wastes that are mercury or in classes 2.3, 5.1, or 6.1 of TDGR. These wastes must be generated in an amount less than 1 kilogram per month if a solid or 1 litre per month if a liquid; and where the total quantity accumulated at any one time does not exceed 1 kilogram or 1 litre.

T

- **Toxicity Characteristic Leaching Procedure (TCLP):**

Laboratory test method developed by the USEPA for determining the leaching potential of contaminants.

- **Transport Authority:**

The regulations controlling the management of hazardous waste under that mode of transport. These include:

- Road and rail - Transportation of Dangerous Goods Act (TDGA) and Regulations (TDGR).

- Air - International Civil Aviation Organization Technical Instructions (ICAO).
- Marine - International Maritime Dangerous Goods Code (IMDG).

- **TDGA/TDGR:**

The Transportation of Dangerous Goods Act and Regulations (Canada).

- **Treatment or Treat:**

The handling or processing of a hazardous waste in such a manner as to change the physical, chemical or biological character or composition of the hazardous waste in order to eliminate or reduce:

- (a) one or more environmental hazards of the waste; and/or
- (b) the volume.

U

- **None**

V

- **None**

W

- **Waste:**

Any material that is to be disposed of by any individual/company that is not considered to be inert.

- **Waste Dangerous Goods:**

Subject wastes that are also regulated by the terms and conditions contained in the Transportation of Dangerous Goods Regulations under the Transportation of Dangerous Goods Act (federal).

- **Waste Data Sheets:**

The pages in Tab 5 of this manual that describe the legislated requirements for managing the various wastes in accordance with the Transportation of Dangerous Goods Regulations, if applicable.

X

- **None**

Y

- **None**

Z

- **None**

APPENDIX B
LEGISLATIVE REQUIREMENTS

Federal Legislation

A summary of the relevant federal legislation and applicable sections that cover the collection, handling, transportation, and disposal of hazardous wastes in Canada is presented in Table B1.

Table B1: Summary of Federal Legislation

FEDERAL LEGISLATION		
Legislation	Hazardous Waste	Relevant Details in Legislation
Federal Transportation of Dangerous Goods Act	Waste Dangerous Goods	<ul style="list-style-type: none"> - Section 3 - Application of Act The Act applies to the Transportation of all dangerous goods in Canada. Dangerous goods are the following: Class 1 - Explosives Class 2 - Compressed gases Class 3 - Flammable or combustible liquids Class 4 - Flammable solids Class 5 - Oxidizing substances Class 6 - Poisonous and infectious substances Class 7 - Nuclear substances Class 8 - Corrosives Class 9 - Miscellaneous - Section 5 - Safety Requirements, Standards and Marks No person shall handle, offer for transport, transport, or import dangerous goods unless they comply with all safety requirements, have the means of containment and transport for the material, and can display the prescribed safety marks - Section 7 - Emergency Response Assistance Plans The person offering for transport or importing certain dangerous goods must have a Minister-approved ERAP prior to transport. - Section 8 - Means of Containment Containment must display all the necessary safety marks prior to being sold, delivered, distributed, imported, or otherwise transported. - Section 15 - Monitoring Compliance An inspector can inspect any vehicle transporting dangerous goods to ensure compliance to this Act. - Section 18 - Duty to Respond If there is an accidental release of a dangerous good in excess of the prescribed amount as outlined in the TDG Regulations, the person in charge of the material at the time of discharge has the responsibility to immediately report the incident to the 24-Hour Spill Report Line at (867) 920-8130. <p>The person responsible for making the report shall take all reasonable emergency measures to reduce or eliminate any danger to public safety that may occur as a result of the release.</p>

Table B1: Summary of Federal Legislation

FEDERAL LEGISLATION		
Legislation	Hazardous Waste	Relevant Details in Legislation
Federal Transportation of Dangerous Goods Regulations SOR/DORS/2001-286	Waste Dangerous Goods	<ul style="list-style-type: none"> - Part 2 – Classification The consignor is responsible for determining the classification of dangerous goods. Classification includes, as applicable, the shipping name, primary class, compatibility group, subsidiary class, UN number, packing group and risk group of dangerous goods. - Part 3 – Documentation Before allowing a carrier to take possession of dangerous goods for transport, the consignor must prepare and give to that carrier a shipping document or, if the carrier agrees, an electronic copy of the shipping document. The information required on a shipping document must be easy to identify and legible. Information that must be included on a shipping document is outlined in Part 3.5 of the Regulations. - Part 4 – Dangerous Goods Safety Marks A person must not offer for transport, transport or import a means of containment that contains dangerous goods unless each dangerous goods safety mark required by this Part is displayed in accordance with this section. - Part 5 – Containment A person must not handle, offer for transport, transport or import dangerous goods in a means of containment unless the means of containment is required or permitted by this Part to be used for the transportation of the dangerous goods. - Part 6 – Training A person who handles, offers for transport or transports dangerous goods must either be adequately trained and hold a training certificate in accordance with this Part or perform those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with this Part. Adequate training is described in Part 6.2 of the Regulation. - Part 7 – Emergency Response Assistance Plan It is the responsibility of the person offering for transport or importing dangerous goods for which an ERAP is required to establish such a plan and to have that plan approved by Transport Canada. - Part 8 – Accidental Release and Imminent Accidental Release Report Requirements In the event of an accidental release of dangerous goods from a means of containment, a person who has possession of the dangerous goods at the time of the accidental release must make an immediate report if the accidental release consists of a quantity of dangerous goods or an emission of radiation that is greater than a determined quantity or emission level. If an immediate report was required to be made for an accidental release, a follow-up report must be made by the employer of the person who had possession of the dangerous goods at the time of the accidental release within 30 days of the initial report.

Table B1: Summary of Federal Legislation

FEDERAL LEGISLATION		
Legislation	Hazardous Waste	Relevant Details in Legislation
Federal Transportation of Dangerous Goods Regulations SOR/DORS/2001-286	Waste Dangerous Goods	<ul style="list-style-type: none"> - Schedule 1 – Classes 1 to 9 Schedule 1 is a chart of all dangerous goods indicating UN numbers, Shipping Names and descriptions and other important information that must be addressed when handling or shipping dangerous goods. - Schedule 2 – Special Provisions This schedule provides extra requirements for certain dangerous goods that are not provided in Schedule 1. - Schedule 3 – Alphabetical Index This schedule is provided to quickly determine the UN number and class of a dangerous good using an alphabetized list.
National Fire Code	Waste Oily Rags	<ul style="list-style-type: none"> - Waste oily rags are to be kept in non-combustible receptacles with a melting point of no less than 650oC without openings on the sides or bottom. The container must have a self-closing tightly fitting cover.
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	Waste diesel fuel and waste lube oil	<p>The owner or operator of the storage tank system must ensure that:</p> <ul style="list-style-type: none"> - all liquids and sludge are removed and disposed of; - if a tank is being withdrawn from service, the tank is purged of vapours to less than 10% of the lower flammability limit and the presence of vapours is checked with a combustible gas meter; and - the withdrawal is done in such a way that there will be no immediate or long-term harmful effect on the environment and it will not constitute a danger to human life or health.
Canadian Environmental Protection Act – National Strategy for the Management of Post-Use Preservative Treated Industrial Wood	Preservative treated wood (e.g., creosote treated power poles)	<p>The preferable option for treated wood poles is reuse as posts, braces, stubs or anchors.</p> <p>The following uses of treated wood are prohibited:</p> <ul style="list-style-type: none"> - Fuel (e.g., open-burning, furnace, etc.) - Construction material in water (e.g., docks, walls, etc.) - Construction material with which people come into direct and frequent contact (e.g., playgrounds, garden, etc.) <p>Post-use treated wood is not classified as a hazardous waste and can be sent to Class I or II landfills for disposal. The landfill Operator shall be made aware of the waste type so that the treated wood is buried and not open burned.</p>

Northwest Territories Legislation/Guidelines

A summary of the relevant legislation and guidelines and applicable sections that cover the collection, handling, transportation and disposal of wastes in the Northwest Territories (NWT) enacted under the NWT Environmental Protection Act is presented in Table B2.

The Department of Environment and Natural Resources (ENR) is the NWT government agency responsible for initiatives which control the discharge of contaminants and their impact on the natural environment, including the disposal of hazardous wastes.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Environmental Protection Act (EPA)	All hazardous wastes (i.e. contaminants that can enter the environment)	<ul style="list-style-type: none"> - Section 4 - Environmental Protection 4 (1) The chief Environmental Protection Officer may require that the storage facility have on hand at all times the equipment and the material necessary to alleviate the effect of any discharge of contaminants that may be specified in the order. - Section 5 - Discharge of Contaminants 5 (1) - No person shall discharge or permit the discharge of a contaminant into the natural environment without a permit. If there is a discharge to the environment, the person in charge of the contaminant prior to the discharge must: Report the discharge to the 24-Hour Spill Line (867) 920-8130; Stop the discharge if possible; and Make a reasonable effort to notify everyone who may be adversely affected by the discharge. - Section 9 - Unsightly Land If the inspector believes that the land is unsightly when compared to lands used for a similar purpose, the Chief Environmental Protection Officer may issue a written order to improve condition of the land.
Guideline for Industrial Waste Discharges in the NWT	Various Wastes	<ul style="list-style-type: none"> - Addresses discharge of effluent and process residuals from industrial operations. - Covers only waste for which there is not already a guideline or regulation in place. - Provides standards for discharge to municipal landfills and sewage systems.
Guideline for Ozone Depleting Substances (ODSs)	CFCs, HCFCs and Halons (used in heat pumps, air conditioning equipment, refrigeration equipment, motor vehicle air conditioners, and portable fire extinguishers)	<ul style="list-style-type: none"> - ODSs are found in certain air conditioners, refrigeration devices, and fire extinguishers. - A waste manifest must accompany waste ODS if moved for storage, recycling or disposal. - ODS should be removed from equipment by a certified technician prior to equipment disposal. - Any release of ODS from a compressed gas vessel (Class 2, TDG) with a capacity greater than 100 L must be reported to the 24 Hour Spill Report Line (867) 920-8130. - A release of 5 L or more of an ODS classified as a poisonous substance (Class 6, TDG) must be reported to the 24 Hour Spill Report Line (867) 920-8130. - Any ODS-containing equipment that requires disposal should be serviced by a technician to remove the CFCs or HCFCs and marked with the date of service, the certified technician and company name, and an indication that the equipment no longer contains refrigerant. After servicing the equipment can be recycled or landfilled. - If it is a remote community and a technician is not available, contact ENR for a plan to manage ODS equipment in remote areas at (867) 873-7654.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the General Management of Hazardous Waste in the NWT	All hazardous wastes	<ul style="list-style-type: none"> - Complements existing acts and regulations regarding hazardous wastes. - Should be consulted in conjunction with applicable specific hazardous waste guidelines - The generator is responsible for the identification, labelling, and storage of the hazardous waste from the time of generation to the time of disposal (from the “cradle to the grave”). - Generators, carriers, and receivers must all be registered with ENR. The office of the Fire Marshal has authority over the storage of flammable, combustible, and hazardous materials under the National Fire Code. - Storage of Hazardous Waste: <ul style="list-style-type: none"> a) Stored in original containers or other containers manufactured for the purpose of storing hazardous waste. Containers must be sound, sealable and not damaged or leaking. b) Clearly labelled according to Workplace Hazardous Materials Information System if transport is planned. c) Bulked into 16 gauge or equivalent metal or plastic drums, as appropriate. d) Containers should be sealed or closed at all times unless in use. - Requirements for storage facilities: <ul style="list-style-type: none"> a) Drainage into and from the site is controlled to prevent spills from leaving the site. b) Incompatible wastes are segregated by chemical compatibility to ensure safety. c) A secure area with controlled access to trained persons only. d) Regular inspections of containers are performed and recorded. e) A record is maintained of the type and amount of waste being stored. f) Emergency response equipment is available on site. g) If the site stores over 1,000 L/kg of any one waste class or a total of over 5,000 L/kg of all waste classes combined for over 180 days, the site must be registered with ENR. <ul style="list-style-type: none"> - The company name, address, phone number and contact person including position, the location and description of the Jackfish Facility, the expected types, quantities, and method of hazardous waste storage, and the required approvals to occupy the land for the purpose of hazardous waste storage must be provided to the EPA and the local fire chief for emergency planning purposes. h) Storage site must meet local zoning and by-law requirements.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the General Management of Hazardous Waste in the NWT	All hazardous wastes	<ul style="list-style-type: none"> - A completed Waste Manifest must accompany all shipments of hazardous waste. Waste Manifests are available from ENR. - Transportation is regulated by TDGR by road, International Civil Aviation Organization (ICAO) by air, and International Maritime Dangerous Goods Code (IMDG) by water. - Treated hazardous waste may be directed to a landfill or to a municipal sewage system if it meets the <u>Guideline for Industrial Waste Discharges in the NWT</u> and the municipal authority and facility water license are consulted. - Hazardous waste containers must be triple rinsed and punctured so they are rendered unusable or returned to distributor for recycling. <p><i>* Waste oil being transported from generator to receiver in the NWT does not require manifesting (e.g., by waste oil burners under the NTPC Waste Oil Agreement).</i></p>
Guideline for the Management of Waste Antifreeze	Antifreeze (ethylene glycol, propylene glycol)	<ul style="list-style-type: none"> - Waste Antifreeze is a contaminant under the NWT EPA and must be managed as a hazardous waste. - It shall not be landfilled or poured down any drain as it is toxic by ingestion and can easily contaminate the environment. - Both ethylene glycol (used in cooling systems) and propylene glycol (used in heating systems) are considered hazardous despite toxicity differences. - Waste Antifreeze has the potential to contain heavy metals, which are toxic in the natural environment. - Waste antifreeze can be recycled by registered companies or on-site using special equipment. Additives and filters can also be used to extend the life of antifreeze. - Store waste antifreeze as described in the <u>Guideline for the General Management of Hazardous Waste in the NWT</u>. - When transporting waste antifreeze use the following shipping information: <ul style="list-style-type: none"> WASTE TOXIC LIQUID, ORGANIC, N.O.S. (Waste Propylene/Ethylene Glycol) Class: 6.1 PIN: UN2810 Packing Group: I, II or III Special Provisions: 16 for I, 16 or 23 for II and III - The type of glycol must also be added to the shipping name (propylene or ethylene). - Transport the containers to a registered recycling or disposal facility. Do not landfill antifreeze, especially in landfills, which employ a permafrost protective barrier. Do not pour antifreeze into sewers or drains because it can destroy the bacteria that treat sewage.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the Management of Waste Asbestos	Fibrous asbestos	<ul style="list-style-type: none"> - Waste asbestos is a contaminant under the NWT EPA and must be managed as a hazardous waste. - Store waste asbestos as described in the <u>Guideline for the General Management of Hazardous Waste in the NWT</u>. - When transporting waste asbestos use the following shipping information: ASBESTOS WHITE / BLUE / BROWN PIN: UN2590 / UN2212 / UN2212 Classification: 9 Packing Group: III / II / II - The removal of asbestos materials requires a thorough understanding of potential hazards and measures available to prevent worker, public and environmental exposure to asbestos fibres. - The <u>Asbestos Safety Regulations</u> require that employers conducting an asbestos removal project provide proper training to workers likely to come in contact with asbestos. - Asbestos can be landfilled if 0.5 m of cover is placed on the waste immediately. It must be buried where it will not be disturbed and mapped for future reference. - An asbestos abatement expert can be contracted to remove the material.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the Management of Waste Batteries	<p>Batteries (lead acid, potassium hydroxide, nickel cadmium)</p> <p>*Does not include dry cell batteries</p>	<ul style="list-style-type: none"> - Waste batteries are a contaminant under the NWT EPA and must be managed as a hazardous waste. - Store waste batteries as described in the <u>Guideline for the General Management of Hazardous Waste in the NWT</u>. - Transport of waste batteries (ensure no leakage): <ul style="list-style-type: none"> - in sealed, upright drums with adsorbent material, cardboard, or plywood between battery layers, or - on a good, solid pallet lined with a large piece of polyethylene plastic (if pallet is rough or has protruding nails cover it with plywood first to protect the plastic); place cardboard or plywood between battery layers, fold the poly over top of the package to seal it, and secure with banding. - When transporting waste batteries use the applicable shipping information as follows: <p style="margin-left: 20px;">WASTE BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, electric storage PIN: UN3028 Classification: 8 Packing Group: III</p> <p style="margin-left: 20px;">WASTE BATTERIES, WET, FILLED WITH ACID, electric storage PIN: UN2794 Classification: 8 Packing Group: III Explosive Limit: 5</p> <p style="margin-left: 20px;">WASTE BATTERIES, WET, FILLED WITH ALKALI, electric storage PIN: UN2795 Classification: 8 Packing Group: III Explosive Limit: 5</p> <p style="margin-left: 20px;">WASTE BATTERIES, WET, NON-SPILLABLE, electric storage PIN: UN2800 Classification: 8 Packing Group: III Special Provisions: 39 Explosive Limit: 5</p> - Batteries should be shipped to a registered recycler or disposal facility.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the Management of Waste Lead and Lead Paint	Lead paint	<ul style="list-style-type: none"> - Leaded paint is a contaminant under the NWT EPA and must be managed as a hazardous waste. - Products containing lead in excess of 600 ppm (0.06%) are considered hazardous waste. - Painted steel structures should be sampled for confirmation of lead amended paint and lead concentration prior to sandblasting or other maintenance activities. - Regardless of removal method, total containment of the leaded paint and abrasive debris or paint strippers is required under the EPA. - Store lead compounds in leak proof containers to prevent release into the environment. - When transporting waste lead paint use the following shipping information: WASTE LEAD COMPOUND, SOLUBLE, N.O.S. (Waste Lead Paint) or (Sandblasting Residue) PIN: UN2291 Classification: 6.1 Packing Group: III Special Provisions: 24 Explosive Limit: 5 - Leaded paint and sandblast residue should be transported to a registered hazardous waste disposal facility or a lead or metals foundry.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the Management of Waste Paint	Alkyd paint (oil based paint) Latex paint (water based paint)	<ul style="list-style-type: none"> - Waste paint is a contaminant under the NWT EPA and must be managed as a hazardous waste. - Paint: includes lacquer, enamel, stain, shellac, varnish, polish, liquid filler, and liquid lacquer base. - Paint related material: includes paint thinning or reducing compounds. - Latex paint wastes are not a hazardous waste and can be disposed of into most sewage systems and landfills – municipal approval may be required. - Specialty paints are a mix between a base and a hardener (e.g. epoxy coatings). Consult individual SDSs for disposal instructions. - Store waste latex and alkyd paint separately as described in the <u>Guideline for the General Management of Hazardous Waste in the NWT</u>. - When transporting most waste paint (flammable liquids) use the following shipping information: WASTE PAINT (or Waste Paint Related Materials) PIN: UN1263 Classification: 3 Packing Group I, II or III Special Provision 59 for I, 59 or 83 for II and III - When transporting certain specialty paints (corrosive) use the following shipping information: WASTE PAINT (or Waste Paint Related Materials) PIN: UN3066 Classification: 8 Packing Group II or III Special Provision 59 - Less than 5 L of alkyd paint can be allowed to fully dry and be taken to landfill. - Fully dried latex paint may be taken to landfill in any quantity. - Liquid paint should be shipped to a registered recycling or disposal facility.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for the Management of Waste Solvents	Alcohol or petroleum based liquids capable of dissolving another substance (e.g. Varsol, paint thinner)	<ul style="list-style-type: none"> - Waste solvents are a contaminant under the NWT EPA and must be managed as a hazardous waste. - Store waste solvents separately as described in the Guideline for the <u>General Management of Hazardous Waste in the NWT</u>. - Bulk drums must be grounded to avoid sparks. - When transporting waste solvents use the following shipping information (with Varsol as an example): WASTE PETROLEUM DISTILLATES, N.O.S. (Waste Varsol) PIN: UN1268 Classification: 3 Packing Group: I, II, III Special Provisions: 16 - Bulk containers should be shipped to a registered recycling or disposal facility.
Used Oil and Waste Fuel Management Regulations	<p>Fuel (diesel fuel, gasoline, aviation fuel, kerosene, naphtha)</p> <p>Oil (transmission fluid, hydraulic fluid, crankcase oil, gear lube oil, lube oil)</p> <p>Grease</p>	<ul style="list-style-type: none"> - Used oil and waste fuel are contaminants under the NWT EPA and must be managed as hazardous waste. - Used oil has the potential to contain heavy metals that are toxic in the natural environment. - Used oil and waste fuel should be bulked in containers as described in the Guideline for the General Management of Hazardous Waste in the NWT. - Used oil and waste fuel should be shipped to a registered recycler. - Waste oil can be burned in a CSA approved oil heating furnace, and can be shipped without a waste manifest in the NWT in this special case. - When transporting waste fuel use the following shipping information: WASTE FLAMMABLE LIQUID, N.O.S. (Waste Fuel Oil) PIN: UN1993 Classification: 3 Packing Group: I, II, III Special Provisions: 16 - When transporting waste oil use the following shipping information: WASTE OIL (Waste Lube Oil) PIN: NA Classification: NA Packing Group: NA

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
	Used oil filters	<ul style="list-style-type: none"> - Used oil filters must be punctured/crushed and drained of their contents for 24 hours prior to disposal. - Used oil filters do not have to be managed as hazardous waste if properly drained. - All used oil in filters must be drained for 24-hrs into bulk used oil containers. The filters can then be recycled by a registered facility or sent to landfill. - Used oil filters can be crushed using a filter crusher, where available, and then recycled or sent to landfill. - When transporting waste oil filters use the following shipping information: WASTE FILTERS (Fuel Oil or Lube Oil) PIN: NA Classification: NA Packing Group: NA
	Oily Rags	<ul style="list-style-type: none"> - Oily rags or sorbents must be drummed and disposed of at a registered facility. - Some landfarms accept oily rags. - When transporting waste oily rags/sorbents use the following shipping information: WASTE OILY RAGS PIN: NA Classification: NA Packing Group: NA
Environmental Guideline for Contaminated Site Remediation	Contaminated Soil	<ul style="list-style-type: none"> - When transporting hydrocarbon impacted soil with a flashpoint that is unknown or below 610C use the following shipping information: WASTE SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Gasoline or Diesel, as appropriate) PIN: UN3175 Classification: 4.1 Packing Group: II Special Provisions: 16, 56 - When transporting glycol impacted soil or hydrocarbon impacted soil with a flashpoint higher than 610C use the following shipping information: WASTE SOIL (Gasoline, glycol, diesel or oil) PIN: NA Classification: NA Packing Group: NA Special Provisions: NA - All contaminated soil should be analyzed for flashpoint prior to transport so that it can be transported as waste soil rather than Class 4.1.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
NWT Disposal Guideline for Fluorescent Lamp Tubes	Waste fluorescent tubes	<ul style="list-style-type: none"> - Fluorescent tubes are a contaminant under the NWT EPA and must be managed as a hazardous waste. - Fluorescent tubes contain mercury phosphor powder and traces of lead and cadmium. Compliance with the <u>Canada Wide Standards for Mercury</u> is necessary. - Waste fluorescent tubes should be shipped to a registered recycling/disposal service. - If tubes are not broken and are packaged in their original shipping box, transport as a hazardous waste is not necessary. It is recommended to obtain boxes from the manufacturer if not already on hand. - If tubes are broken compliance with the <u>Guideline for the General Management of Hazardous Waste in the NWT and TDG Regulations</u> is required. - As an alternative to shipping waste bulbs for disposal the ENR Environmental Protection Service (EPS) owns a fluorescent bulb crusher which crushes the bulbs and separates the glass from the contaminants. Contact the EPS for more information.
	Waste mercury vapour bulbs	<ul style="list-style-type: none"> - Mercury vapour lights are a contaminant under the NWT EPA and must be managed as a hazardous waste. - Mercury vapour bulbs contain mercury. Compliance with the <u>Canada Wide Standards for Mercury</u> is necessary. - Waste mercury vapour lights should be shipped to a registered recycling/disposal facility. - If bulbs are not broken and are packaged in their original shipping box, transport as a hazardous waste is not necessary. It is recommended to obtain boxes from the manufacturer if not already on hand. - If tubes are broken compliance with the <u>Guideline for the General Management of Hazardous Waste in the NWT and TDG Regulations</u> is required.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Spill Contingency and Reporting Regulations (under EPA)	All spills	<ul style="list-style-type: none"> - Section 3 - Spill Contingency Plan A spill contingency plan must be implemented and filed with the Chief Environmental Protection Officer for facilities with above ground storage of 20,000 L or 20,000 kg or with a below ground storage of 4,000 L or 4,000 kg. If the Jackfish Facility has less than the above storage, a spill contingency plan should be in place, but does not have to be filed with the Officer. - Section 4 The owner or operator of the Jackfish Facility is responsible for the spill contingency plan. It must include: <ul style="list-style-type: none"> a) the name, address and job title of the person in charge of the Jackfish Facility b) the name, job titles and 24-hour phone number of the person in charge of activating the spill contingency plan c) a description of the Jackfish Facility including location, size and storage capacity d) a description of the type and amount of contaminants stored at the Jackfish Facility e) a site map of the location described in (c) f) the steps to be taken to report, contain, cleanup and dispose of contaminants in case of spill g) inventory and location of available response and cleanup equipment h) the date the plan was prepared. When a review is completed the plan shall be updated and the Officer shall be alerted. - Section 9 Spills shall be reported when the amount spilled is equal to or exceeds that described in schedule B. Report spills to the 24-Hour Spill Report Line at (867) 920-8130. The following details should be provided regarding the spill: date and time of spill, spill location, direction spill is moving, name and number of contact person close to spill, type and amount of contaminant spilled, cause of spill, whether spill is continuing or has been stopped, description of existing containment, action taken to contain, recover, cleanup and dispose of spilled material, name, address and phone number of person reporting spill, and name of person in charge of contaminants at time of spill.
Consolidation of Pesticide Act Chapter P-2 Pesticide Regulations	Pesticides	<ul style="list-style-type: none"> - Section 4 - Consolidation of Pesticide Act 1988 No person shall dispose of a pesticide or a container that contained a pesticide in any way except at a site or in the manner that is prescribed in regulations. - Pesticide Regulations: report spills to the 24-Hour Spill Report Line (867) 920-8130.

Table B2: Summary of Northwest Territories Legislation/Guidelines

NORTHWEST TERRITORIES LEGISLATION/GUIDELINES		
Legislation/Guideline	Hazardous Waste	Relevant Details in Legislation
Guideline for Industrial Waste Discharge in the NWT	Ash	<ul style="list-style-type: none"> - Each 205 L drum of ash collected from an incinerator must be sampled independently and sent to a registered laboratory for analysis before it can be discarded at a sanitary landfill or registered disposal facility. - Residues of incinerator ash must pass the leachate extraction test described in the Guideline for Industrial Waste Discharges in the NWT, Schedule IV before it can be sent to a sanitary landfill. - Ash residues that fail the leachate extraction test must be handled as a Hazardous Waste accordingly and sent to a registered disposal facility.
PCB Regulations under the <i>Canadian Environmental Protection Act, 1999</i>	Streetlight ballasts (capacitors) manufactured before 1979	<ul style="list-style-type: none"> - Many capacitors found inside fluorescent streetlight ballasts manufactured before 1979 contain high levels of PCB (Polychlorinated Biphenyls). - Check the date code on the ballasts to determine the year it was manufactured. - If the ballast was manufactured before 1979 the ballast must be shipped as a hazardous waste to a registered treatment facility for disposal. <p style="margin-left: 40px;">POLYCHLORINATED BIPHENYLS (PCB) PIN: UN2315 Classification: 9 Packing Group: III</p>

Notes: EPA = Environmental Protection Agency; ENR = Environment and Natural Resources Department (Government of Northwest Territories); PCB = polychlorinated biphenyls.

APPENDIX C
WASTE ACCUMULATION LOG

APPENDIX D
WASTE STORAGE INVENTORY LOG



WASTE STORAGE INVENTORY

Year		Drum ID (plant - unique drum # - year, e.g., 120-01-10)			# of Drums		
Plant					Full	Empty	Initials
Month	Oil	Shipped					
		Stored					
		Glycol	Shipped				
			Stored				
		Other (Specify)	Shipped				
			Stored				
	Oil	Shipped					
		Stored					
		Glycol	Shipped				
			Stored				
		Other (Specify)	Shipped				
			Stored				
	Oil	Shipped					
		Stored					
		Glycol	Shipped				
			Stored				
		Other (Specify)	Shipped				
			Stored				
	Oil	Shipped					
		Stored					
		Glycol	Shipped				
			Stored				
		Other (Specify)	Shipped				
			Stored				

APPENDIX E
SAFETY INSPECTION REPORT



Health & Safety Management System Form:
Safety Inspection Report

Monitor:
Director, Health, Safety & Environment

Form #:
9.2

Inspection Details

Location:

Plant:

Inspected by:

Date:

#	Inspection Item	Y/N/NA	Notes
1.0	Housekeeping		
1.1	Are all buildings clean & organized inside?		
1.2	Is the yard clean & organized with no vegetation control required?		
1.3	Is the transformer storage platform: solid and well-organized?		
1.4	Is the pole storage rack solid and well-organized?		
1.5	Are garbage cans fire resistant with self-closing lids? Are they emptied at the end of each day?		
1.6	Are all spills and leaks cleaned up?		
1.7	Are floors clean and tidy and free of slippery substances (e.g., water, oil, grease)?		
1.8	Are floors level and well maintained with no projecting surfaces and no tripping hazards?		
1.9	Are windows clean, both inside and outside, and kept obstruction free?		
1.10	Is ventilation equipment clean, obstruction free, well maintained, functions correctly?		
2.0	Storage		
2.1	Are tools and materials properly stored in racks, shelves, and bins wherever possible?		
2.2	Are commonly used and heavy items stored between mid-thigh and shoulder height?		
2.3	Are floors around racks, shelves, pallets, etc. clear?		
2.4	Are racks, shelves, pallets, etc. kept in good condition?		
2.5	Are storage areas safe from falling objects?		

#	Inspection Item	Y/N/NA	Notes
2.6	Are storage racks, shelves, etc. free of sharp edges?		
2.7	Is there a safe means of accessing high shelves?		
3.0	Tools & Equipment		
3.1	Are tools & equipment maintained in good condition, clean, and suitable for intended use?		
3.2	Are all necessary machine guards in place?		
3.3	Are spill pads, drip trays, and crankcase vent containers emptied or replaced as required?		
3.4	Are batteries free of leaks with terminals clean and protective covers in place?		
3.5	Are line & electrical tools available, properly stored, certified, and in good condition?		
3.6	Is rigging & lifting equipment available, properly stored, certified, and in good condition?		
3.7	Are compressed gas cylinders undamaged, stored upright, and secured?		
3.8	Are pipes leak-free, colour coded, and properly painted?		
4.0	Personal Protective Equipment (PPE)		
4.1	Is all PPE available onsite?		
4.2	Is all PPE properly stored?		
4.3	Is all PPE clean?		
4.4	Is all PPE in good condition?		
4.5	Is all PPE correctly used?		
5.0	Emergency Equipment		
5.1	Is the Emergency Response Plan available onsite and current?		
5.2	Is the Spill Response Plan available onsite and current?		
5.3	Is the Hazardous Waste Management Plan available onsite and current?		

#	Inspection Item	Y/N/NA	Notes
5.4	Are the NWT Safety Act and General Regulations available onsite?		
5.5	Are emergency phone numbers posted and up-to-date?		
5.6	Are emergency lights functional for a 30 second test?		
5.7	Are eyewash stations available and functional with the solution changed every 6 months?		
5.8	Are fire extinguishers available, charged, and inspected monthly?		
5.9	Are fire extinguishers secured on the wall and not free standing?		
5.10	Is access to fire extinguishers free and unobstructed?		
5.11	Are first aid kits available, fully stocked, and inspected monthly?		
5.12	Are exits clearly marked with exit signs?		
5.13	Are exits functional and free from obstructions?		
6.0	Chemicals		
6.1	Are MSDS available and up-to-date within the last 3 years?		
6.2	Are all chemicals properly labelled and stored in proper containers (WHMIS)?		
6.3	Are all flammable products stored in proper containers in kept in a flammable cabinet?		
6.4	Are unused or unnecessary substances disposed of in a safe manner?		
6.5	Are all chemical containers and drums leak free?		
7.0	Building		
7.1	Are buildings in good condition on the inside with no repairs required?		
7.2	Are buildings in good condition on the outside with no repairs required?		
7.3	Are floors level and well maintained with no projecting surfaces and no tripping hazards?		



Health & Safety Management System Form:
Safety Inspection Report

Monitor:
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#	Inspection Item	Y/N/NA	Notes
7.4	Are windows clean, both inside and outside, and kept obstruction free?		
7.5	Is ventilation equipment clean, obstruction free, well maintained, functions correctly?		
7.6	Is the air temperature comfortable?		
7.7	Are all inside & outside lights functional?		
7.8	Do existing lights provide adequate lighting?		
7.9	Are all necessary warning signs in place with no new or additional signs required?		
7.10	Are signs and notices in good condition?		
7.11	Are employee facilities (e.g., washrooms, lockers, crew trailers) clean, tidy, maintained, and adequate?		
8.0	Security		
8.1	Are all fences in good condition with barbwire intact?		
8.2	Are all gates and doors kept locked when unattended?		
8.3	Are all locks in working order?		
9.0	Electrical		
9.1	Are ground connections present and in good working condition?		
9.2	Are electrical boxes & breakers properly covered?		
9.3	Are all plugs and switches in good condition?		
9.4	Are all cords in good condition?		
9.5	Are all power tools in good condition?		
9.6	Is all temporary wiring properly routed?		



Health & Safety Management System Form:
Safety Inspection Report

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Monitor:
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#	Inspection Item	Y/N/NA	Notes
10.0	Work Protection		
10.1	Are sufficient Work Protection tags and forms available onsite?		
10.2	Is the Work Protection Log book available and up-to-date?		
10.3	Are all Single Line Diagrams posted and up-to-date?		
11.0	Hazardous Waste Storage Area		
11.1	Are all wastes properly separated to ensure no mixing of wastes?		
11.2	Are all waste storage containers in good condition with lids securely in place and no leaks?		
11.3	Are all waste containers labelled clearly and accurately?		
11.4	Are spill response materials available onsite (e.g., spill kits, sorbents, hand tools, PPE)?		
11.5	Are all sources of ignition kept away from the waste storage area?		
11.6	Is a fire extinguisher kept close to the waste storage area? Is it inspected monthly and charged?		
11.7	Does the storage area have proper drainage to prevent leaks or spills from leaving the site?		
11.8	Is the <i>Waste Accumulation Log</i> up-to-date?		
11.9	Is the <i>Waste Storage Inventory Log</i> up-to-date?		

Provide completed form to manager.



Health & Safety Management System Form:
Safety Inspection Report

Monitor:
Director, Health, Safety & Environment

Form #:
9.2

Corrective Actions (to be assigned by manager and followed up until completed)

Manager:

Signature:

Date:

#	Corrective Action	Responsible Party	Due Date	Completed
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
12				
13				