

Spill Contingency Plan for Karrak Lake Project Area,

Nunavut

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PROCEDURES FOR SPILLS ON SNOW

Contaminated snow should be shoveled into empty 205L steel drums. After melt, the fuel can be disposed of by incineration, or simply be allowed to evaporate. The area in which the spill occurred should be marked with stakes, and after spring thaw, the area should be carefully inspected for soil contamination. If contaminated, the soil should be removed and back-hauled to an approved waste disposal facility.

PROCEDURES FOR SPILLS ON ICE

Spills should be removed using absorbent material, and back-hauled to an approved waste disposal facility. Remaining contaminated ice and slush should be shoveled into empty 205L steel drums, and after melt, the fuel incinerated or be allowed to evaporate. For larger spills, dykes constructed of compacted snow can be used to contain the spill. Trenches can also be cut into the ice so that the fuel pools in the trench, and removed using absorbent materials and back-hauled to an approved waste disposal facility.

PROCEDURES FOR SPILLS IN WATER

The fuel cache at Karrak Lake is located ~150 m from the high water mark at Karrak Lake, so only small spills over water (less than 20 L) are possible at the Research Station. At North Karrak River and Perry River Camps, fuels are not used near water (no boating activities). Contaminated water should be removed using buckets and placed in empty 205L steel drums, and incinerated or be allowed to evaporate.

REPORTING REQUIREMENTS AND CONTACT INFORMATION

In the event of a spill at any site within the Karrak Lake Project Area, the Facility Manager and On-Site Facility Manager (Ray or Dana) should be contacted immediately, who will initiate the appropriate response. Spills are to be documented using the Nunavut Spill Report Form (Appendix A).

24-Hour Emergency Numbers:

Dr. Ray Alisauskas: 306-975-4556 or 306-230-3085

Dana Kellett: 306-975-5509 or 306-380-2452

24-Hour Nunavut Spill Report Line: 867-920-8139

INAC Manager of Operations (Inspection): 867-975-4295

Environment Canada 24-hour pager: 867-766-3737

Environmental Protection : 867-975-7700

Nunavut Department of Environment, Cambridge Bay: 867-983-4167

KARRAK LAKE RESEARCH STATION

The Karrak Lake Research Station Facility is located at 67° 14' 14" N, 100° 15' 33" W. The Facility has a fuel cache on site where up to 10,000 L of jet-B fuel may be stored in sealed 205 L steel drums; up to 2,000 L of gasoline may be stored in sealed steel drums; up to 205 L of naptha (white gas) may be stored in 205 L steel drum, and up to 500 L of propane may be stored in 100 L certified pressure tanks. The cache is located at the station on an upland location, approximately 100 m north of the camp buildings adjacent to the helicopter landing pad.

Site map:

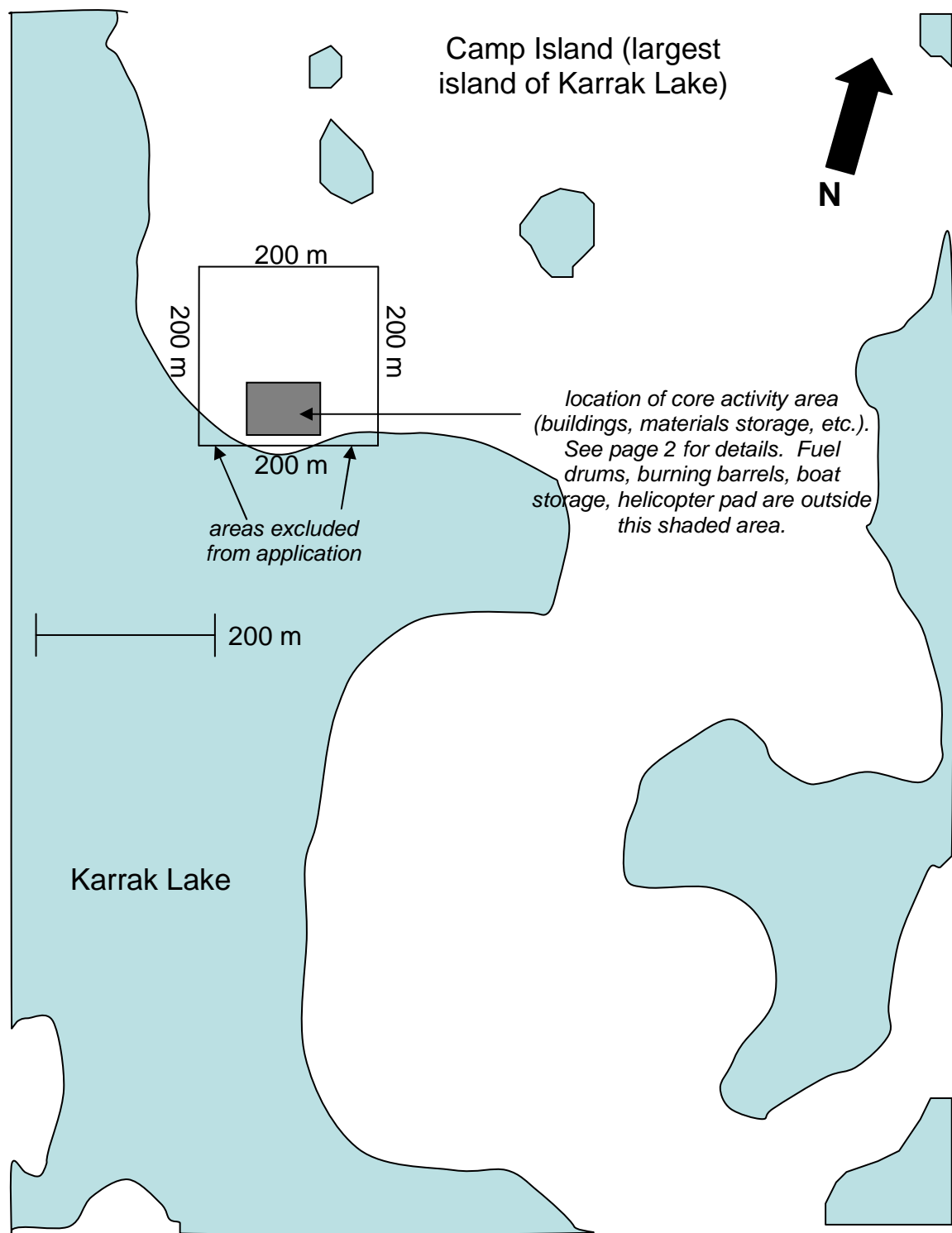


Figure 1. The Kararak Lake Research Station land parcel is located on the largest island (Camp Island) of Kararak Lake. Land and water are shaded white and blue, respectively.

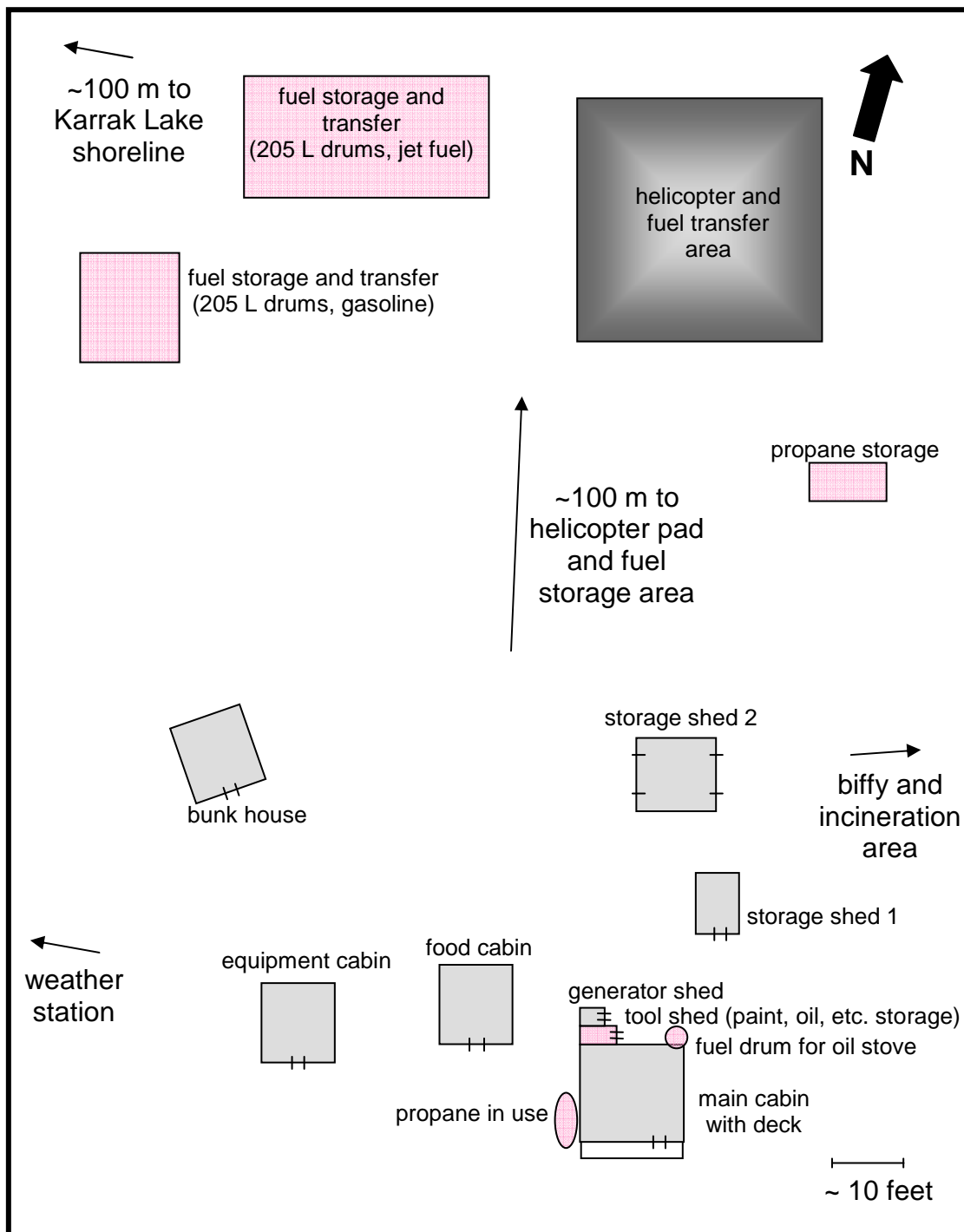


Figure 2. Layout of Karrak Lake Research Station. Pink shading denotes fuel and hazardous materials storage areas and fuel transfer areas. Limited fuel transfer also occurs between storage shed 1 and the tool shed. Spill response equipment is located in storage shed 2 (spill kit) and tool shed (pails, shovels, etc.).

Spill prevention:

- Fuel is transferred from 205 L barrels to boat fuel tanks, helicopters, or jerry cans via a fuel pump with flexible hose; this method has minimal risk of spill.
- Secondary containment equipment for use during fuel transfer will be purchased in 2011.

In the event of a spill:

- All spills should be reported to the camp manager who will initiate an appropriate response and notify the facility manager of the event.
- The spill should be contained using the pads/bumpers in the emergency spill kit, which will prevent the fuel from running downslope. Once the fuel has been contained in a dam with the bumpers, place the absorbent pads in the pool to soak up the fuel. The spill kit is capable of absorbing one entire drum of fuel (205L). Once absorbed and cleaned up, the pads and bumpers should be back-hauled to an approved disposal facility. Contaminated soil should be dug up and placed in a plastic lined box and back-hauled to an approved disposal facility.
- In the event of a small spill (a few litres), the same procedure can be used as above although the entire kit will not need to be used. If spilled fuel did not pool on the soil, then absorbent pads will be of no use and the contaminated soil should be removed for disposal.
- The fuel cache should be monitored periodically to ensure that no drums are leaking or seeping. If a drum is found to be leaking, the remaining fuel should be transferred to an empty drum. The amount of fuel that has leaked from the drum should be assessed and an appropriate response measure taken.

Spill clean-up equipment:

- An emergency spill kit can be found at the fuel cache site, and is stored in Storage Shed 2. It is readily identified by the signage on the poly barrel which contains the kit (contents to be listed in the 2012 amendment of this document). Any other equipment that may be useful for cleanup, such as shovels, buckets and hand pumps, can be found in the tool shed.

NORTH KARRAK RIVER CAMP

The location of this camp is 67° 21' 09" N, 100° 20' 59" W. The only fuel that will be stored on site is approximately 20L of naphtha (white gas) for domestic use. Fuel will be stored in plastic jerry cans or commercial metal 2 L containers, and will be stored inside the cabin when the camp is not in use, and outside the cabin when the camp is in use.

Site Map:

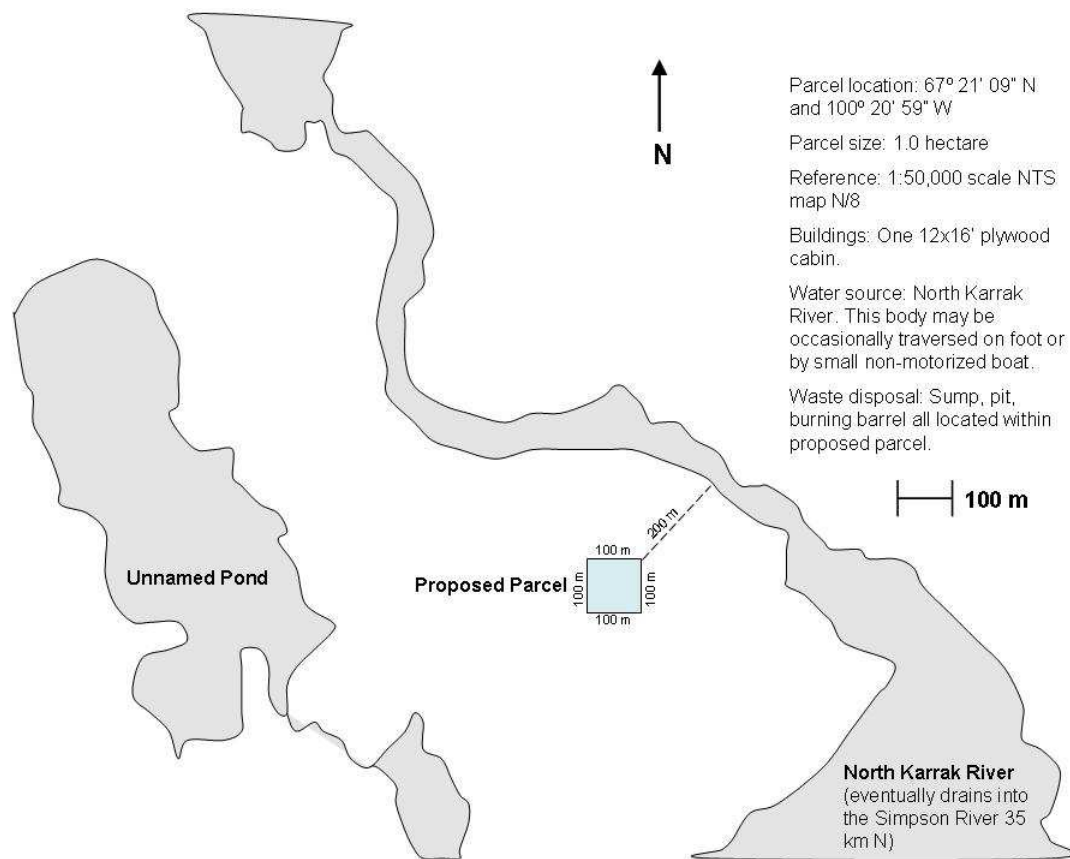


Figure 3. Location of North Karrak River Camp and proximity to adjacent water bodies. Fuel and spill kit will be stored in the cabin located in the land parcel.

Spill prevention:

- Fuel is transferred from storage containers to stove tanks using a funnel, and on the leeward side of the cabin, minimizing risk of spillage.
- Secondary containment equipment for use during fuel transfer will be purchased in 2011.

In the event of a spill:

- All spills should be reported to the camp manager who will initiate an appropriate response and notify the facility manager of the event.
- The spill will be absorbed using the absorbent pads contained in the 'emergency spill kit'. Once absorbed and cleaned up, the pads should be back-hauled to an appropriate disposal facility. Contaminated soil should be dug up and placed in a plastic lined box and back-hauled to an appropriate disposal facility.
- If spilled fuel did not pool on the soil, then absorbent pads will be of no use and the contaminated soil should be removed for disposal.

Spill clean-up equipment:

- An emergency spill kit will be stored in the cabin, and will be readily identified by appropriate signage (contents to be listed in the 2012 amendment of this document). Any other equipment that may be useful for cleanup, such as shovels and buckets will also be stored in the cabin.

PERRY RIVER CAMP

Perry River Camp is located at 67° 21' 09" N, 100° 20' 59" W. Fuels on site include approximately 20L of naphtha (white gas) for domestic use and up to 8,000 L of jet fuel. Naphtha will be stored in plastic jerry cans or commercial metal 2 L containers, jet fuel in 205 L steel drums.

Site Map:

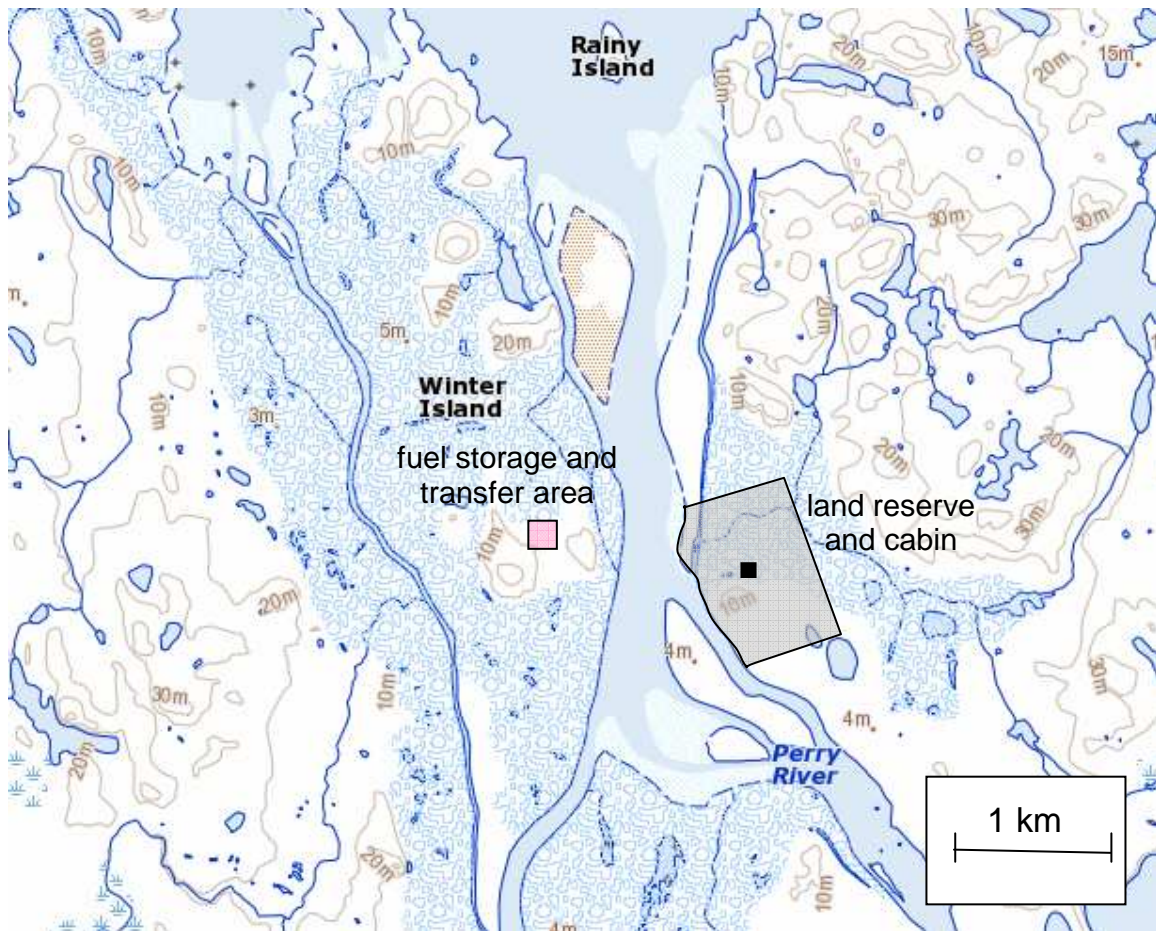


Figure 4. Perry River Camp, showing land reserve and cabin, and fuel cache areas.

Spill prevention:

- Fuel is transferred from 205 L barrels to helicopters via a fuel pump with flexible hose; this method has minimal risk of spill.
- Secondary containment equipment for use during fuel transfer will be purchased in 2011.

In the event of a spill:

- All spills should be reported to the camp manager who will initiate an appropriate response and notify the facility manager of the event.
- The spill will be absorbed using the absorbent pads contained in the 'emergency spill kit'. Once absorbed and cleaned up, the pads should be back-hauled to an appropriate disposal facility. Contaminated soil should be dug up and placed in a plastic lined box and back-hauled to an appropriate disposal facility.
- If spilled fuel did not pool on the soil, then absorbent pads will be of no use and the contaminated soil should be removed for disposal.

Spill clean-up equipment:

- An emergency spill kit will be stored in the cabin, and will be readily identified by appropriate signage (contents to be listed in the 2012 amendment of this document). Any other equipment that may be useful for cleanup, such as shovels and buckets will also be stored in the cabin.

SPILL TRAINING FOR FIELD STAFF

All field personnel receive a camp orientation and safety briefing upon arrival at Karrak Lake Research Station. This includes familiarization with safety and research equipment, and emergency spill response plans.

Appendix A: Nunavut Spill Report Form



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE #	REPORT NUMBER -	
	B OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME				
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT		
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS			
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION				
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION				
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES			U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES			U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES		
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS						
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE		
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE		
REPORT LINE USE ONLY							
N	RECEIVED AT SPILL LINE BY	POSITION Station operator	EMPLOYER	LOCATION CALLED Yellowknife, NT	REPORT LINE NUMBER (867) 920-8130		

LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC		SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY	CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY				
FIRST SUPPORT AGENCY				
SECOND SUPPORT AGENCY				
THIRD SUPPORT AGENCY				