Kudlik Construction Ltd.
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SPILL CONTINGENCY PLAN

CAM-E Remediation Project

Keith Bay, Nunavut

Presented to

Public Services and Procurement Canada

Review: July 2018

TABLE OF CONTENTS

1. INTRODUCTION

The purpose of this document is to present the spill contingency plan elaborated for the environmental remediation of the CAM-E DEW Line site located at Keith Bay, Nunavut. The site lies approximately 75 km east of Kugaaruk, in the Kitikmeot region.

The remediation project was awarded to Kudlik Construction Ltd. in May 2016. In September 2016, heavy equipments, camp facilities, material and all consumables were delivered by sealift to Kugaaruk. All equipment, material and consumables required to achieve the remediation project were transported by CAT train during the winter 2017 from Kugaaruk to Keith Bay.

This spill contingency plan is covering the storage and the handling and of consumables (diesel, aviation fuel, gasoline and lubricants) in Keith Bay. This updated plan is effective from June 2018.

Figure 1: Site location

2. STORAGE

All fuel, gasoline and jet A drums are stored in a total of 8 storage areas as presented in figure 2.1 and 2.2. Each drum storage area is lined in order to prevent any spill. “NO SMOKING” signs are posted around each fuel storage area. One spill kit and one fire extinguisher is installed nearby each fuel storage area.

Drum storage area 01
- Location: North end of the north airstrip, nearby the camp
- Coordinates: 68° 17.75’ N 88° 7.01’ W
- Area size: 20 x 15 meter
- Product stored: Arctic diesel in 205 litre drums
- Original quantity: 318 drums, 65 190 litres

Drum storage areas 02 to 06
- Location: South end of the north airstrip
- Coordinates: 68° 17.61’ N 88° 6.84’ W
- Area size: 18 x 4 meter (each area)
- Product stored: Arctic diesel in 205 litre drums
- Original quantity: 692 drums, 141,860 litres (total, within the five caches)

Figure 2.1: Drum storage areas, North Airstrip

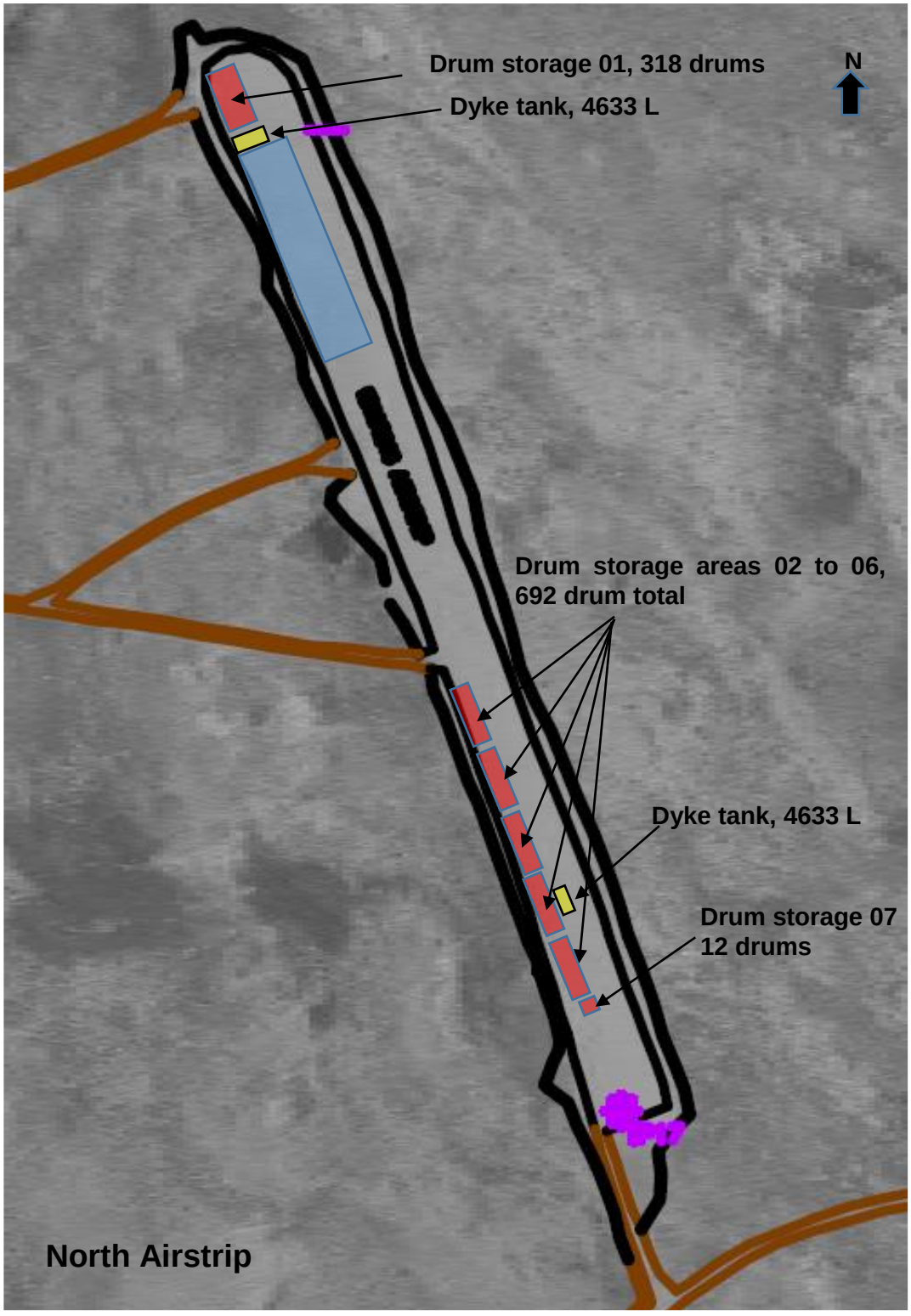
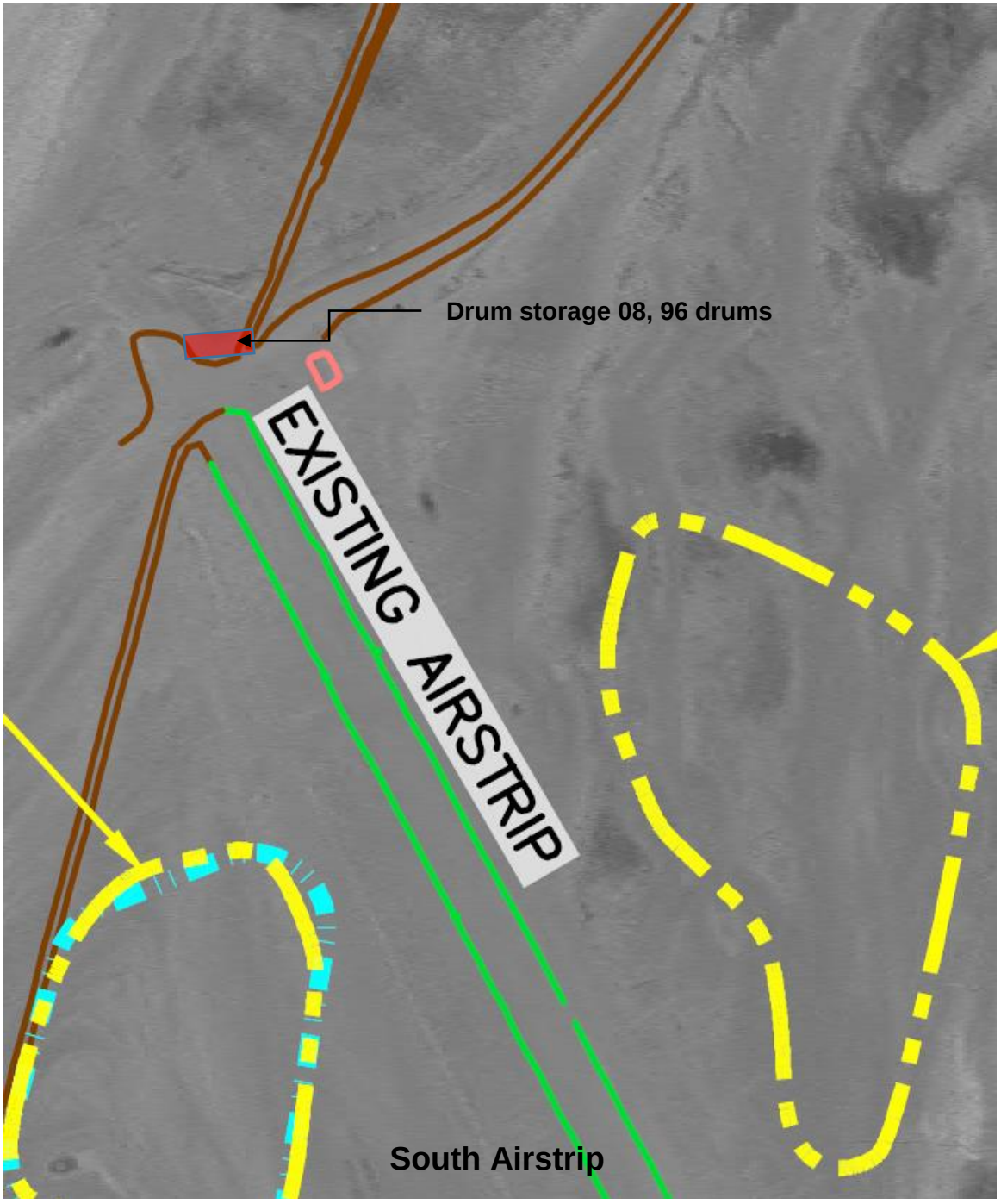


Figure 2.2: Drum storage areas, South Airstrip



Drum storage area 07
- Location: South end of the north airstrip
- Coordinates: 68° 17.57' N 88° 6.806' W
- Area size: 3 x 3 meter
- Product stored: gasoline in 205 litre drums
- Original quantity: 12 drums, 2 460 litres

Drum storage area 08
- Location: North end of the south airstrip
- Coordinates: 68° 15.33' N 88° 9.13' W
- Area size: 18 x 4 meter
- Product stored: Arctic diesel and Jet A-1 in 205 litre drums
- Original quantities: 16 drums of Jet A-1 (3 280 litre) and 80 drums of arctic diesel (16 400 litre)

Two aboveground horizontal dyke tanks CAN/ULC S653 of a capacity of 4 633 litres each were installed on the north airstrip. The first one was installed at the north end of the airstrip in order to supply the diesel for the camp generators. The second one was installed at the south end of the airstrip and is used to refill the vehicles with diesel.

One aboveground horizontal dyke tank 2275 L – CAN/ULC S601, single wall was installed in a lined trailer last year to supply diesel for the operations nearby the landfills. The tank is not made for transportation and it will be removed from the trailer and setup on a lined surface nearby the drum storage area no.8.

A lined area is installed or will be installed in front of each tank to protect the surface from a potential spill that could occurred during the fuel transfer operations.

All tanks complies with CEPA storage tank systems for petroleum products regulations and applicable territorial regulation for temporary fuel tanks and are registered with Environment Canada Federal Identification Registry for Storage Tank Systems.

3. INSPECTION

A monthly inspection of the fuel caches at CAM-E will be done during the periods where no one is at the site. Two of our local representatives from Kugaaruk will use snowmobile or ATV to access the site during these periods. Any spill or vandalism will be reported to the project manager and addressed according to the procedures presented at the section 5.

During the two remediation summers, a daily inspection of the fuel caches will be done.

4. REFUELING

Only authorized and trained people wearing the appropriated PPE are allowed to carry on the refueling operations. A spill kit and a no smoking sign will be installed at both refueling areas.

4.1.1 Refueling the camp generator tank (4,633l)

The camp generator fuel tank will be refilled once a week with drums by using the following procedures:

- Transport fuel pallets nearby the tank with the loader;
- Open the tank spill box and open the 2" lid;
- Insert the hose nozzle into the tank filling pipe;
- Remove the drum seal and lid;
- Connect the ground wire to the tank;
- Insert the suction pipe into the drum;
- Start the pump and use the nozzle handle to adjust the flow;
- Stop the pump when the drum is empty, remove the suction pipe carefully and use and absorbent pad to avoid fuel leakages;
- Proceed with other drums until the tank is filled;
- Drain the remaining fuel at the bottom of each drums into the steel tub;
- When full, transfer the fuel from the steel tub into a drum identified "old fuel";
- Put the lid back on each drum and bring them into the empty drum storage area.

4.1.2 Refueling the heavy equipment and vehicles with diesel

Two areas are assigned for refueling vehicles and equipment with diesel. The first one is at the dyke tank installed at the north airstrip. The second one is located beside the fuel storage area 08, where a 2,275 litre tank is installed. Both refueling areas are protected with a liner.

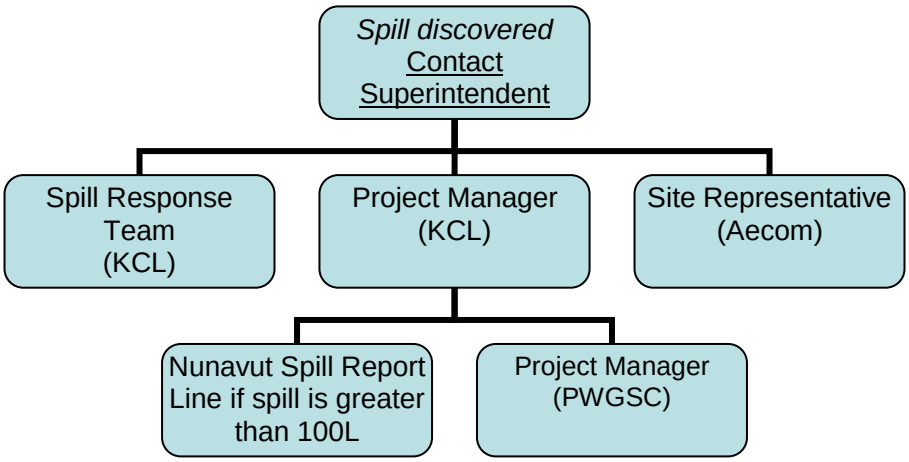
4.1.3 Refueling vehicles and tools with gasoline

Only identified Jerri canes with "gas" must be used to fill the ATVs and some power tools. Make sure that the product is gasoline. The gasoline transfer from the drum to the Jerri canes is done at the fuel storage area no. 7, where a manual barrel pump is setup.

5. PROCEDURES IN CASE OF SPILL

5.1 LINE OF COMMUNICATION

No matter the size of the spill, it must be reported as soon as possible to the site superintendent. The following line of communication must be applied during the mobilization and site works:



Spills of other products shall be also reported. Refer to the table "Schedule 1 – Reportable Quantities for NT–NU Spills" included in the Appendix 2 for reportable products.

5.2 EMERGENCY PHONE NUMBERS

Kudlik Construction Ltd	Business hours	After hours
Main Office, Iqaluit	(867) 979-1166	
René Déziel, General Manager	(866) 781-0704	(418) 571-8889
François Bourassa, Project Manager	(866) 781-0704	(418) 930-0850
Kudlik Office, Kugaaruk	(867) 769-6192	
Kudlik House, Kugaaruk	(867) 769-7909	(867) 769-7909
PWGSC		

Michael Bernardin, project manager	(780)-288-7148	(780)-288-7148
AANDC		
Dele Morakinyo, project manager	(819) 934 9224	(867) 222 1908
AECOM		
Greg Wright, project manager	(780)-486-5922	To be confirmed
RCMP		
Kugaaruk	(867)-857-0123	
Environment		
Nunavut Spill Report Line	(867) 920-8130.	
GN environmental protection	(867) 975-7726	
Environment Canada	(867) 975-4644	
INAC manager of field operations	(867) 975-4295.	

5.3 GENERAL PROCEDURES

This general procedure is to be followed in the event of a spill. Steps are listed in the order of importance; however, depending on the circumstances, conditions, and potential injuries, this order may need to be altered to meet specific needs.

1. Identify the product spilled and call for help:

Petroleum products on site are arctic diesel, gasoline and lubricants. Advise as soon as possible the site superintendent and call for help when needed.

2. Assessment of dangers and hazards:

Immediate determinations must be made about the direction of the spill's progress, whether downhill, on the ice, towards the water, or already in the water. As well, careful attention will be paid to the full nature of the incident; is this solely a surface contaminant, or are fumes an additional factor; are there any injuries current or possible.

3. Stop the flow at source:

Has the flow been stopped or is it still leaking? Is there an emergency Shut-off valve? Have holes in the container been patched? Is the container empty? PRECAUTION: ONLY ATTEMPT TO STOP THE FLOW IF IT IS SAFE TO DO SO.

4. Take actions to contain the spill:

Prompt containment can reduce environmental exposure and risk. Containment measures may be land or water based. Land based measures include application of sorbents, construction of berms and diversion/collection trenches. Water based measures could include dams, dykes, and floating booms.

5.4 SPECIFIC PROCEDURES FOR DIFFERENT ENVIRONMENTS

The entire mobilization/demobilization will be done on snow or ice while the cleanup activities will be performed during summer. As explained in the following sections, procedures in case of spill vary depending in which environment it occurs.

5.4.1 Spill on land

- Do not flush into ditches or drainage systems.
- Block entry into waterways and contain with earth, snow or other barrier.
- Remove small spills with sorbent pads.
- On tundra, collect as much contamination as possible while to the maximum extent practicable minimizing destruction of the root zone of the tundra grasses.

5.4.2 Spill on ice and snow

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with sorbent pads and/or snow.
- Use ice augers and pump to recover diesel under ice.
- Slots in ice can be cut over slow moving water to contain oil.
- Recover all remaining spilled product with absorbent pads.

5.4.3 Spill on Muskeg

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled diesel with pumps and skimmers.
- Flush with low pressure water to herd diesel to collection point.

- Burn only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low water table).
- Minimize damage caused by equipment and excavation.

5.4.4 Spill in water

- Contain spill as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, use skimmer on contained slicks.
- Do not deploy personnel and equipment onto mudflats or into wetlands

5.4.5 Spill in rivers and streams

- Prevent entry into water, if possible, by building berm or trench.
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

5.5 REPORTING

Spills of other products shall be also reported. Refer to the table “Schedule 1 – Reportable Quantities for NT–NU Spills” included in the Appendix 2 for reportable products.

For every spill, pictures must be taken during and after the cleanup progress. The GPS coordinates of the spill location must be recorded. All collected information and pictures will be used for the spill report. Spills of 100 litres and less will be recorded on the Site Spill Log, reported in the weekly report and within the annual license reporting. Any spill grater than 100 litres must be reported to the Nunavut 24-hours spill report line (see the attached from in Appendix 2). The person reporting the spill shall give as much of the following information as possible. Please note that the operators at the Hotline are NOT spill management experts. They can only relay information to the appropriate authorities/protection agencies. Reportable information includes but is not limited to the following:

- Date and time of spill;
- Direction spill is moving (or if it has stopped);
- Name and phone number of persons close to the location of the spill;
- Type of contaminant spilled and quantity spilled;
- Cause of spill;
- Whether the spill is continuing or has stopped;
- Description of the existing containment;

- Actions taken to recover, clean-up and dispose of spilled contaminant;
- Name, address and phone number of person reporting the spill;
- Name of person in charge of management or control at time of spill;

The spill report must be filled and sent to the NT-Nu spill Report email address spills@gov.nt.ca with a copy to the following individuals:

- INAC, Dele Morakinyo: dele.morakinyo@canada.ca
- PSPC, Michael Bernardin: Michael.Bernardin@pwgsc-tpsgc.gc.ca
- AECOM, Zilinsky, Amber.Zilinsky@aecom.com

6. TRAINING

All employees working on the remediation project will have to attempt the worker orientation seminar. Through this seminar, the spill contingency plan will be review and explained to everyone. The employees will be trained in the safe operation of all machinery and tools, as well as in the handling of materials to help prevent and respond to hazardous material spills in a timely and effective manner. Training will also include initial spill response in the event of a spill. The spill response team will be also determined and the member list will be posted.

APPENDIX 1
SAFETY DATA SHEETS

Updated SDS binders are posted on site

APPENDIX 2
NT-NU Spill Report Form

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	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER -
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # TO THE ORIGINAL SPILL REPORT	
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 ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR		
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 ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC	SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN	FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

Page 1 of

Appendix A
Schedule 1 – Reportable Quantities for NT–NU Spills

Substance	Reportable Quantity	TDG Class
Explosives	Any amount	1.0
Compressed gas (toxic/corrosive)		2.3/2.4
Infectious substances		6.2
Sewage and wastewater (unless otherwise authorized)		6.2
Radioactive materials		7.0
Unknown substance		None
Compressed gas (Flammable)	Any amount of gas from containers with a capacity greater than 100 L	2.1
Compressed gas (Non-corrosive, non-flammable)		2.2
Flammable liquid	≥ 100 L	3.1/3.2/3.3
Flammable solid	≥ 25 kg	4.1
Substances liable to spontaneous combustion		4.2
Water reactant substances		4.3
Oxidizing substances	≥ 50 L or 50 kg	5.1
Organic peroxides	≥ 1 L or 1 kg	5.2
Environmentally hazardous substances intended for disposal		9.0
Toxic substances	≥ 5 L or 5 kg	6.1
Corrosive substances		8.0
Miscellaneous products, substances or organisms		9.0
PCB mixtures of 5 or more parts per million	≥ 0.5 L or 0.5 kg	9.0
Other contaminants, e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, wastewater, etc.	≥ 100 L or 100 kg	None
Sour natural gas (i.e., contains H_2S)	Uncontrolled release or sustained flow of 10 minutes or more	None
Sweet natural gas		
Flammable liquid	≥ 20 L	3.1/3.2/3.3
Vehicle fluids	When released on a frozen water body that is being used as a working surface	None
Reported releases or potential releases of any size that: 1. Are near or in an open water body; 2. Are near or in a designated sensitive environment or habitat; 3. Pose an imminent threat to human health or safety; or 4. Pose an imminent threat to a listed species at risk or its critical habitat	Any amount	None

Note: L = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million