Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

ENVIRONMENTAL GUIDELINE

Property Owner's Guide to Contaminant Spill Prevention and Remediation

How to Report

Spills must be reported to the **NU Spill Report Line** without delay in one of the following ways:

Calling the NU Spill Line
at (867) 920-8130

Emailing a completed Spill
Report to spills@gov.nt.ca

Faxing a completed Spill
Report to 867-873-6924

This Guideline has been prepared by the Department of Environment's Environmental Protection Division and approved by the Minister of Environment under the authority of Section 2.2 of the Environmental Protection Act.

This Guideline is not an official statement of the law and is provided for guidance only. Its intent is to increase the awareness and understanding of the risks, hazards, and best management practices associated with Contaminant Spills. This Guideline does not replace the need for the owner or person in charge, management, or control of Contaminants to comply with all applicable legislation and to consult with Nunavut's Department of Environment, other regulatory authorities, and qualified persons with expertise in the management of these substances.

Copies of this Guideline are available upon request from:

Department of Environment Government of Nunavut
P.O. Box 1000, Station 1360, Iqaluit, NU, X0A 0H0
867-975-7700

An electronic version of this Guideline is available at www.gov.nu.ca/environment/

CONTENTS

1 List of Acronyms and Units

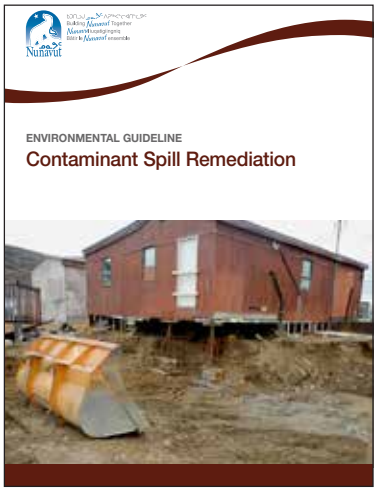
Acronym	Definition
CCME	Canadian Council of Ministers of the Environment
CEQGs	Canadian Environmental Quality Guidelines
ENV	Department of Environment, Government of Nunavut
DU	Decision Unit
EPA	Environmental Protection Act (1988)
ESA	Environmental Site Assessment
PID	Photo-Ionization Detector
RAP	Remedial Action Plan
VOCs	Volatile Organic Compounds

Units	Description
µg	Microgram (1/1,000,000 gram)
mg	Milligram (1/1,000 gram)
Kg	Kilogram (1,000 grams)
L	Litre
ppm	Parts per million
ppb	Parts per billion
mg/L	Milligrams per litre (ppm)
mg/kg	Milligrams per kilogram (ppm)
µg/L	Micrograms per litre (ppb)

2 Introduction

This guide is intended to instruct home and property owners in Nunavut on how to prevent and remediate **Contaminant** spills. It is a companion document to the Environmental Guideline for *Contaminant Spill Remediation,* which describes the **Remediation** process in more detail. **Remediation** is the process of cleaning up a **Contaminant** spill.

As a Guideline, this document does not carry the force of law. It is intended to help in compliance with the laws, specifically the *Environmental Protection Act (EPA)* (1988) and its associated regulations, as well as other environmental laws enforced in Nunavut. The definitions of most words in **Bold** can be found in the Definitions section.



3 What Are Contaminants?

Many of the chemicals that we use every day can be harmful to our health and to the health of the environment. When harmful chemicals are released into the environment, they are called **Contaminants**.

The *EPA* in Nunavut defines **Contaminants** as any noise, heat, or substance that, where discharged into the environment:

- endangers the health and safety of people and animals,
- would damage plant life or property, or
- interferes with the normal enjoyment of life or property.

The most common **Contaminants** that are spilled in Nunavut are fuels and oils, such as home heating fuel, gasoline and motor oil. This Guideline will focus on these petroleum products, but the information provided also applies to many other **Contaminants** such as antifreeze (glycol) and lubricating oils (e.g., hydraulic fluid).

4 What is the Risk?

Fuels and oils cause a variety of problems when they are spilled or stored improperly, including:[1]

Some fuels, such as gasoline, can create a fire or explosion hazard, especially if they evaporate into a confined space.

Many chemicals within fuels and oils are toxic and harmful to the health of humans, animals, and plants.

Some fuels can travel great distances easily through the ground, water, and air.

Many fuels, especially oils, can last a long time in the environment.

If **Contaminants**, like fuels and oils, have spilled on your property, you are responsible for ensuring that the contaminated area is remediated. **Contaminants** are potentially toxic to people, wildlife, and the environment, and can easily move beyond your property. It is important to clean up all spills quickly and completely.

There are laws that require those responsible for spills, called the **Responsible Party**, to ensure that spills are remediated. These laws are discussed in the next section

Protecting the environment from spills, and cleaning them up if they occur, is in keeping with the Inuit societal value of *Avatittinnik Kamatsiarniq*.

[1] Table Examples: CCME, 2008. *Canada Wide Standards for Petroleum Hydrocarbons in Soil*, Winnipeg: CCME. p.3

5 Laws Regarding Contaminant Spills

The most important law that applies to spills in Nunavut is the *Environmental Protection Act* (1988) also called the *EPA*. The *EPA* is enforced by the Government of Nunavut Department of Environment (ENV).

Some important parts of the *EPA* are summarized below:

1. No one is allowed to release **Contaminants** into the environment, either on purpose or by failing to take actions to prevent a release

2. Officers of the ENV can inspect areas where Contaminants are stored (other than inside private homes) in an effort to prevent spills

3. Anyone who releases a Contaminant into the environment has to repair the damage caused by the spill

4. If there is a high risk of a spill, Officers of the ENV can order owners of Contaminants to take measures to prevent the spill from happening.

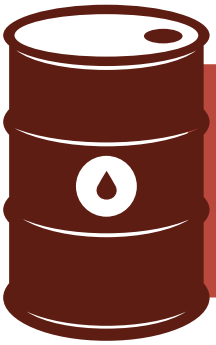
An important part of protecting the environment and people from spills is knowing when they happen. The **NU Spill Report Line** is a hotline that anyone can use to report spills or situations that may lead to a spill. Contact information is below.

Nunavut's 24-Hour Spill Report Line:

867-920-8130

spills@gov.nt.ca

There are **Regulations** under the *EPA* which state that if you are responsible for a spill of a certain amount, you must report it to the **NU Spill Report Line**. This amount is called a **Reportable Quantity** and depends on the **Contaminant**. Appendix A is a table of **Reportable Quantities**.



For fuels and oils, the reportable quantity is 100L

If you are responsible for a fuel spill that is or may be over 100L you must report the spill to the **NU Spill Report Line**: **867-920-8130** or spills@gov.nt.ca.

A **Spill Report Form** can be used to file a report to the **NU Spill Report Line**. This form is available as Appendix D.

Important

Even though all spills don't have to be reported, all spills have to be cleaned up. The *EPA* says that the person (or organization) who causes a spill (**Responsible Party**) must clean up and repair the damage.

Section 7 of this guide describes what a **Responsible Party** must do during **Remediation**.

Improper storage of fuels and oils can lead to spills that are expensive to clean up.

6 How to Prevent Contaminant Spills

Everyone who owns **Contaminants** is responsible for ensuring that they are properly stored and don't leak or spill. Here are a few tips to help with this:

Heating Fuel:

Make sure your tank is not too old

- Single walled steel tanks should be replaced 10 years after installation.
- **Double-bottom** or **Double-walled** steel tanks can last 20 years or more but need to be monitored for leaks.

Drain your Drip Leg

- Most heating fuel tanks in Nunavut have a water trap in the **Supply Line** called a **Drip Leg.**
- The drip leg must be drained once a year to prevent water inside from freezing and breaking the pipe, thus causing a spill.

Inspect your tank regularly

- Make a habit of walking around your tank every few weeks to verify that everything is working properly and there are no slow drips. A small leak can become a big problem if it is not noticed early.

Don't let the Flex Connector get too crooked

- Heating fuel tanks are not usually attached to the buildings that they serve. As the building and the tank shift over time, the **Supply Line** will get misaligned. Most **Supply Lines** have a **Flex Connector** to prevent a leak when this happens, but if the tank moves too much the connector will break and cause a spill. When you notice the **Flex Connector** get more than a little crooked, it's time to move the tank or adjust the **Supply Line**. Contact your local furnace contractor or housing association for help.

Purchase home insurance that covers fuel spills

- This measure will not prevent a spill from happening, but spills can be quite expensive. Having an insurance plan that covers fuel spills is strongly recommended.

Gasoline Drums:

Get rid of them!

- If drums contain waste they need to be moved to the dump or disposed of properly. It is only a matter of time before they are knocked over or begin to leak.

Pick a good location

- Drums should be stored where they won't be knocked over or forgotten.

Used Motor Oil:

Store in a proper container

- After you change your oil, be sure to store the used oil in a container that will not leak or spill. If you do not mix it with any other waste it can be recycled or burned in a waste oil furnace. For more information refer to the ENV *Guideline on Special and Hazardous Waste*.

Get rid of it!

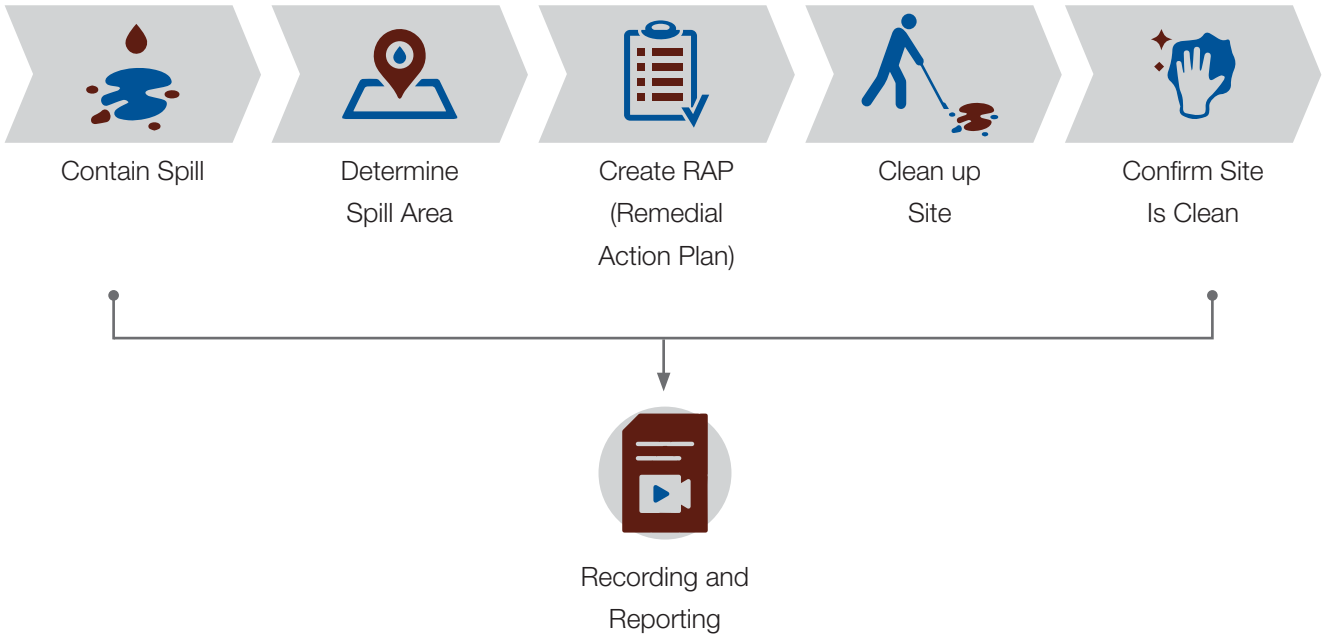
- Bring your oil to the dump for proper disposal regularly. The longer you store it, the more likely it is to be knocked over or begin to leak.

IMPROPER storage of waste oil

PROPER storage of waste oil

7 How Do I Remediate?

Remediation Process



Remediation is the process of cleaning up a **Contaminant** spill. The steps of a **Remediation** are in the image above. In this part of the Guideline, we will go through each step and present information that those involved in spill cleanup need to know. We will sometimes assume that the spilled product is heating fuel, but the information presented is the same for most other spilled products.

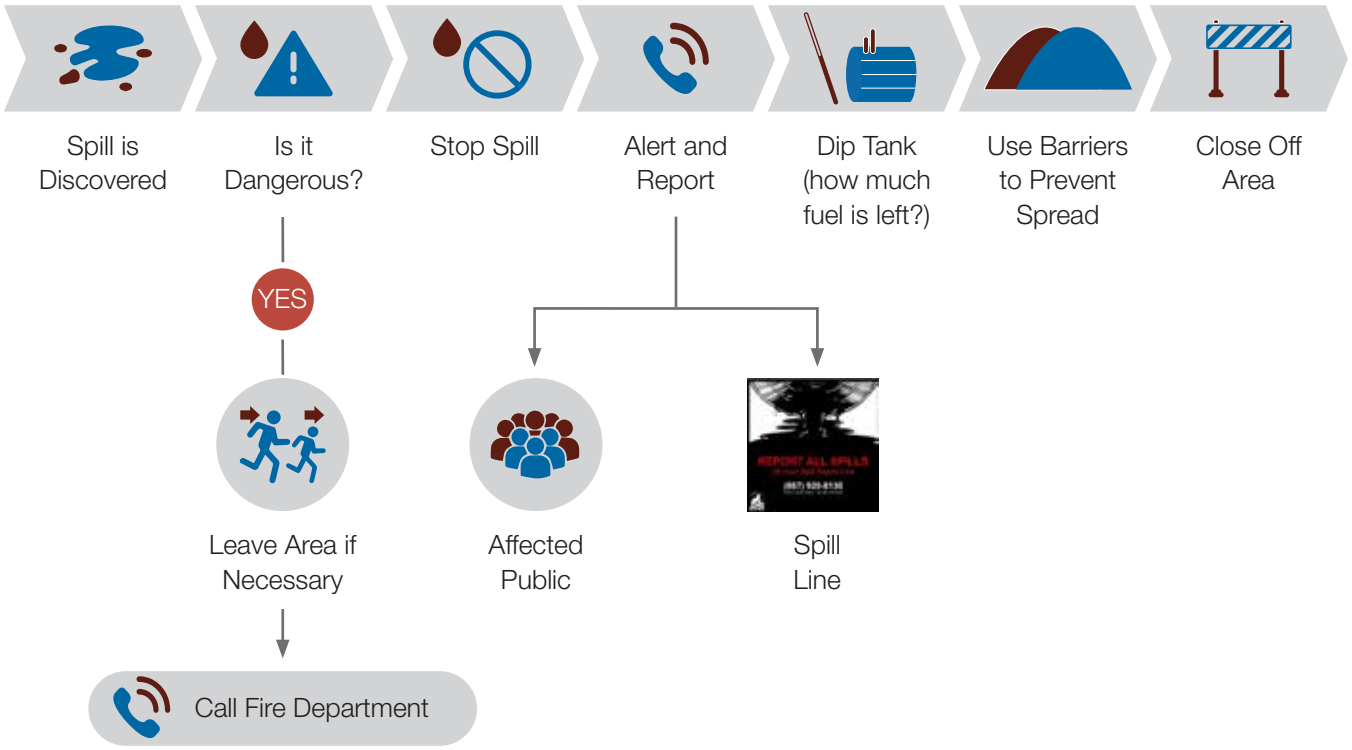
It is important to remember that the person (or organization) that causes a fuel spill is the **Responsible Party** and is responsible for the **Remediation**.

The **Responsible Party** can hire a contractor to remediate a spill for them. However, the **Responsible Party** remains liable for ensuring that the method of management complies with all applicable statutes, regulations, standards, guidelines and local by-laws. If the contractor does not comply with the requirements of the *EPA* and is charged with a violation while managing the waste, the **Responsible Party** may also be charged.

7.1 Contain Spill

Discovery of Spill | **Initial Response** | Initial Site Assessment | Selection of Remediation Criteria | Site Remediation | Final Inspection

A **Responsible Party** who finds a spill must immediately do everything possible to stop the spill and prevent **Contaminants** from spreading. This is called **Spill Containment**.



Important

When a spill is found it is important to act as soon as possible to limit the damage to the community and the environment. Acting fast will also make the cleanup less expensive.

Here are the main steps when containing a spill:

1. Safety First

If you are worried about your safety or the safety of others near the spill, move yourself and any others away from the spill site and call the local fire department before taking further action.

2. Stop the Spill

Close valves or use containers to catch leaking fuel.

3. Alert and Report

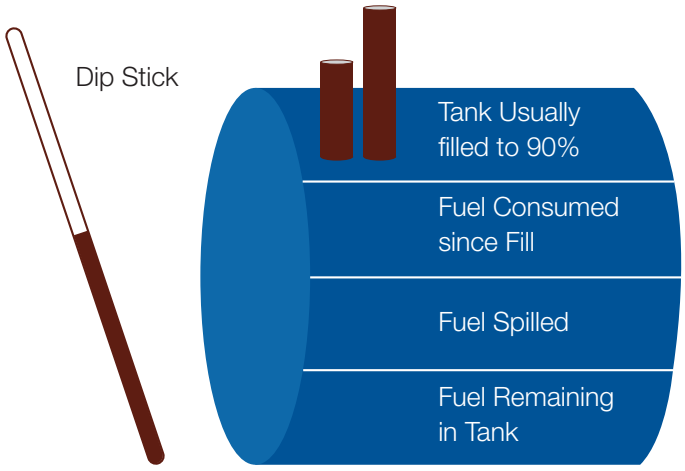
Anyone in the area that might be affected by the spill must be alerted.

The ENV recommends that all spills be reported.
If the spill might be more than the **Reportable Quantities** (100L for fuel or oil) the **Responsible Party** must report the spill to the **NU Spill Report Line**: **867-920-8130** or spills@gov.nt.ca.

4. Determine How Much has Spilled

Once a spill has been stopped, it is important to find out how much was spilled.

This is done by "Dipping" the tank. This means putting a stick or other long object inside the tank and measuring the height of fuel left. This height in inches can be converted to a volume in Litres using a chart specific to the tank type. A chart for an upright 275 gallon tank, the standard tank for houses in Nunavut, is included as "Appendix C: Chart for 275-gallon Tank". Other charts are available online.



5. Use Barriers if Necessary

Barriers can be used to stop the **Contaminant** itself, as well as to stop water and snow from mixing with the **Contaminant** and spreading it further.

Absorbent spill pads or other instruments should be used to collect as much of the **Contaminant** as possible in order to prevent it from spreading. Spills that happen in the winter may not be able to be completely cleaned because the ground is frozen. When this happens, clean up and remove as much **Contaminant** as possible with available tools and equipment. Focus on preventing further spread until the site can be fully cleaned when the ground thaws. Putting effort into containing the spill early will save time and money later in the cleanup process.

Section 7.2 has information about how barriers can be used.

6. Close Off Area

Once the spill is contained and the **Contaminant** is no longer spreading, it is important to close off the area to vehicles, people, and animals to the furthest extent possible. This will help protect people and animals from harm and prevent spread of **Contaminants**. After the **Contaminant** is contained, the next steps in the **Remediation** process can begin.

Record Keeping

Officers of the Department of Environment investigate **Contaminant** spills under the authority of the *EPA*. They attend spills as soon and as often as possible and record events with pictures and notes.

However, Officers cannot be everywhere all the time. It is a good idea for property owners and **Responsible Parties** to take pictures of their property before, during, and after spills occur. With a camera on most cell phones, it is easy to do!

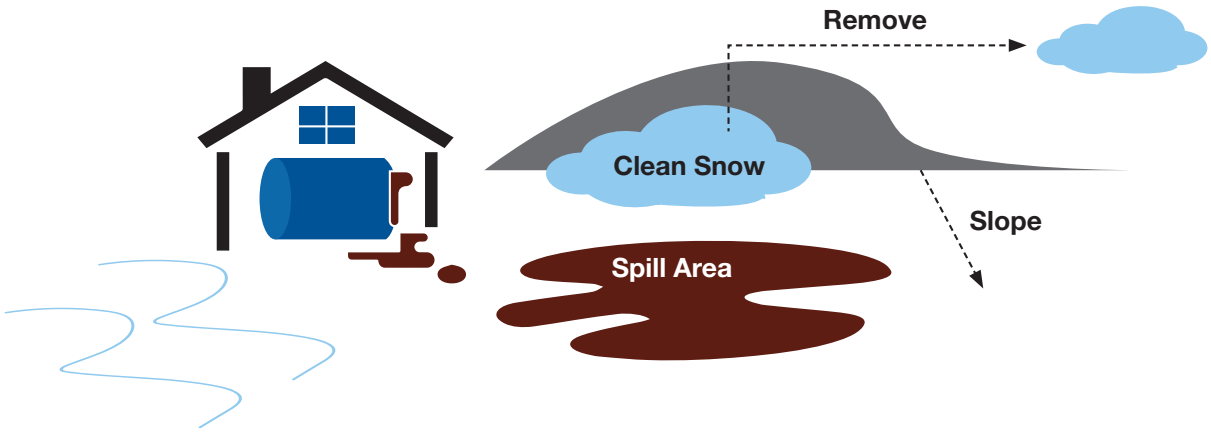
Using a home heating oil tank as an example, this would mean having pictures of: what the tank and surrounding area looked like before the spill, preventative measures like draining the **Drip Leg**, what the tank looked like when the spill was discovered, and images taken during and after work to prevent the spill from spreading.

7.2 Containment Methods

Here are a few containment methods that are commonly used in Nunavut:

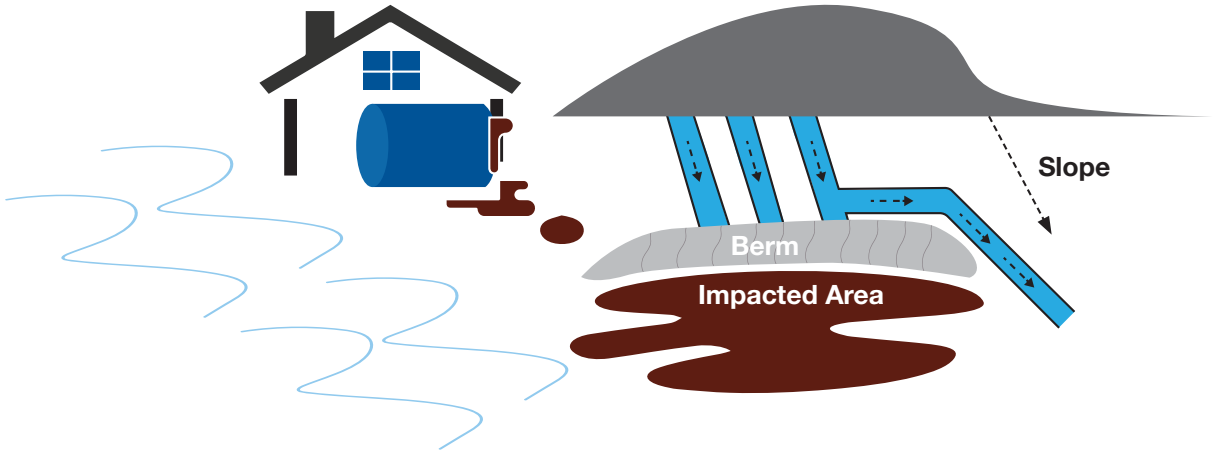
1. Preventing Water from Entering Spill Area

Removing Snow Up-hill:



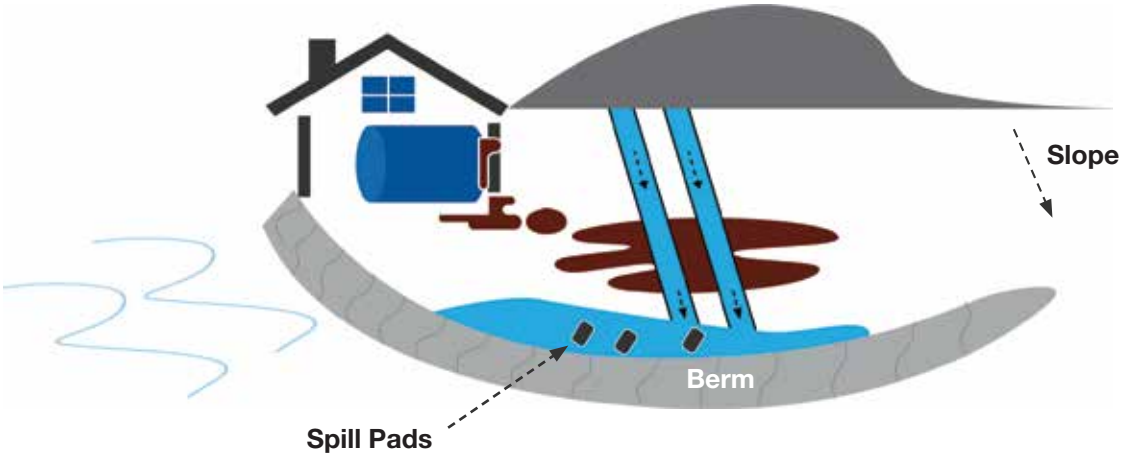
Digging Streams

Building Berms



2. Preventing Water Mixed with Fuel from Leaving the Site

Building Berms



Spill pads can be used to absorb fuel on the surface. If too much water accumulates, an underflow dam can be constructed.

7.3 Determine Spill Area

Once the spill is no longer spreading, it is time to figure out which areas have been affected. **Contaminants** are found when soil and water across the site is sampled and tested. The process of looking at the site and finding all the areas affected is called an **Environmental Site Assessment** (**ESA**).

An ESA is designed to:

- Identify the nature and extent of contamination on a site
- Characterize the actual and potential migration of contaminants
- Assess the actual and potential adverse effects to public health and the environment

Testing for Contaminants

There are ways to test samples without sending them to a laboratory in the South. This is called **Field Screening.**

Officers of the Department of Environment use **Photo-Ionization Detectors (PID)** to detect fuels in soil and water samples. This is a very useful tool but it can only tell us if fuel is in the soil or water, not really how much there is.

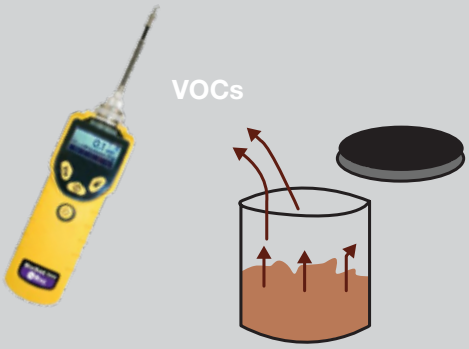
The only way to know exactly what **Contaminants** are in a sample and how much of them there are is with sampling in a laboratory.

Photo-Ionization Detectors (PID)

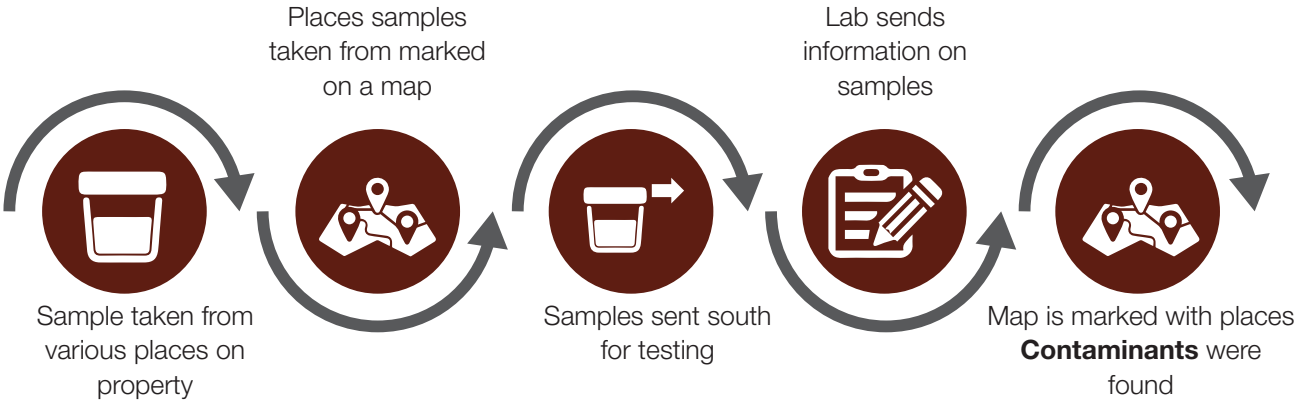
PIDs are devices commonly used by Officers of the ENV and Environmental Technicians in Nunavut.

How they work:

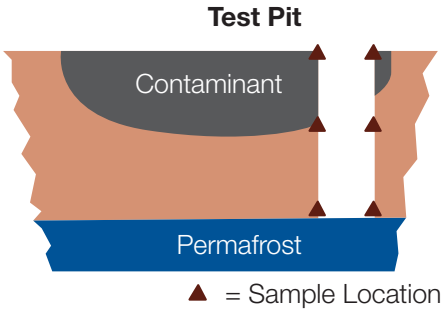
A **PID** sucks in air to detect the presence of **Volatile Organic Compounds** (**VOC**s), which are chemicals found in fuels that evaporate easily.



Here are the steps of site sampling and testing:

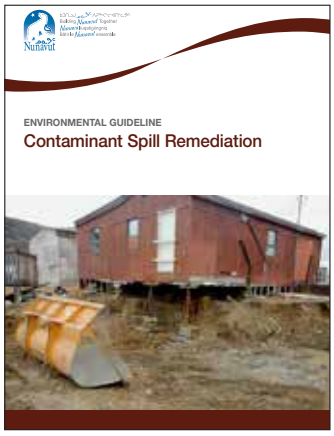


To find out how deep fuel has gone into the ground, it is often necessary to dig **Test Pits**.



The Canadian Council of Ministers of the Environment (CCME) publishes *Canadian Environmental Quality Guidelines* (*CEQGs*), which set out **Concentration** limits for **Contaminants**. **Concentrations** above these limits present adverse risks to human health and the environment. If sampling reveals **Contaminants** in excess of the limits set out in the *CEQGs*, the affected area will need to be remediated.

The *CEQGs* are explained in more detail in the Environmental Guideline for *Contaminant Spill Remediation,* also from the ENV.



7.4 Creating a Remedial Action Plan

Most fuel spills in Nunavut are cleaned up by removing the soil that contains fuel and replacing it with clean fill.

The contaminated soil is then brought to a **Landfarm** where the fuel can be broken down over time and the soil becomes safe.

The purpose of a **Remedial Action Plan (RAP)** is to provide the Department of Environment with important information about the spill, and plans for clean-up.

The **Remedial Action Plan** must include:

- Contact information for the **Responsible Party** and any contractors assisting in the **Remediation** work
- Information regarding the spill: product, quantity, date of spill, etc.
- Any streams or lakes close to the spill that could be affected
- Actions that have been taken or will be taken to contain the spilled product
- Description of how the site will be remediated
- Where contaminated soil, snow or water will go when removed from site
- Description of difficulties foreseen during **Remediation**
- Scheduled containment date (no more product leaving the site)
- Scheduled start date for **Remediation** work
- Scheduled completion date for **Remediation** work

Remedial Action Plan

This form is to be completed by the responsible party of a spill or by an organization designated to do so on their behalf. This form should be completed and submitted to the Department of Environment by the date set on page 5. It can be returned to the local Conservation Officer or sent to the appropriate Environmental Protection Officer (EPO) at the contact information provided.

If you need more space, attach extra pages as required. Please include diagrams and pictures as well.

This form will be used as a remediation plan as outlined in the *Property Owner's Guide to Contaminated Site Remediation in Nunavut* produced by the Government of Nunavut. Any changes can be submitted to the Department of Environment

PART 1: Contact Information

Responsible Party:

In the case of an organization, the primary and secondary people of contact are:

and

Contact Phone numbers:

Primary: Secondary:

e-mail addresses:

Primary: Secondary:

The Department of Environment has created a **RAP** template that includes all the required information that must be provided by the **Responsible Party**. This template is included as Appendix B.

Remedial Action Plans are reviewed by the ENV and changes may need to be made. They must be sent to the ENV before work starts at the site. **RAP**s should be sent to your local Conservation Officer or Environmental Protection Officer.

7.5 Site Cleanup

Site cleanup usually involves using a backhoe, excavator or other heavy equipment to remove contaminated soil. This soil should be brought to a **Landfarm** or other storage area. Contaminated soil must be placed in **Liners** or **Containment Bags** to prevent fuel from leaking.

Site Access

The spill site needs to be blocked off during **Remediation**. This will protect wildlife and the public from danger and prevent vandalism. The remedial work and conditions on the property will decide what measures are needed. For small, short-term projects, temporary snow fencing and hazard tape may be all that is needed. For large long-term projects, access may need to be controlled through fencing and site security.

Water management

Most remedial work in Nunavut happens during the summer. When excavating contaminated soil, there is a good chance that you will find groundwater. Water may also flow into an existing excavation after rainfall. Anyone digging as part of a **Remediation** needs to plan for this possibility. If there is a lot of water causing problems during the excavation, it may be a good idea to wait until conditions change. Water may drain from the area with time, or digging can happen in the fall when the ground is frozen if the right excavation equipment is available.

Water found in an excavation is likely to be contaminated by the surrounding soil. This water cannot simply be pumped out onto the ground as this will spread contamination. Water from a contaminated site must be pumped into tanks or drums where it can be stored until it can be tested. The ENV has to approve any contaminated water being dumped into the environment.

Record Keeping

All remedial activities that take place on a contaminated site should be recorded. This is to demonstrate due diligence in case of accidents or failures, communicate progress to the regulatory authorities, and keep track of events that may be important in later stages of work. Notes and photographs should be taken by the site manager and other staff working at the site.

Risk-Based Approaches

Sometimes, **Contaminants** cannot be removed from a property. Reasons for this might include them being under a building or road, or in a rocky area.

In these cases, a risk-based approach may be taken.

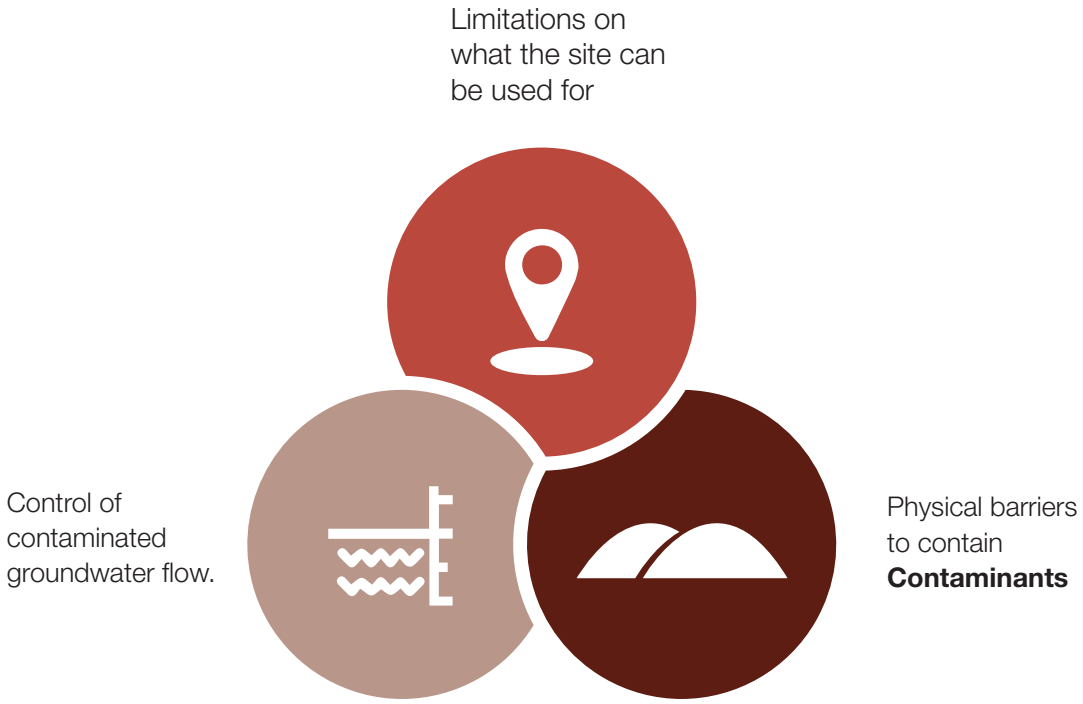
A **Risk Assessment** is an examination of a given spill site to look at the risk posed to humans and the environment from the **Contaminants** there.

A **Risk Assessment** is a complicated process that has to be done by professionals.

The result of the **Risk Assessment** may be **Risk Management Measures (RMM)**.

Risk Management Measures (RMM) are actions or infrastructure intended to control **Contaminants**.

Examples of **RMMs** include:

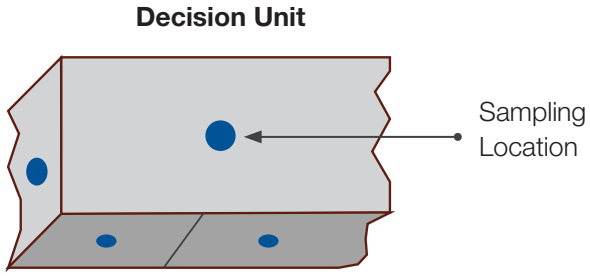


Confirm site is clean

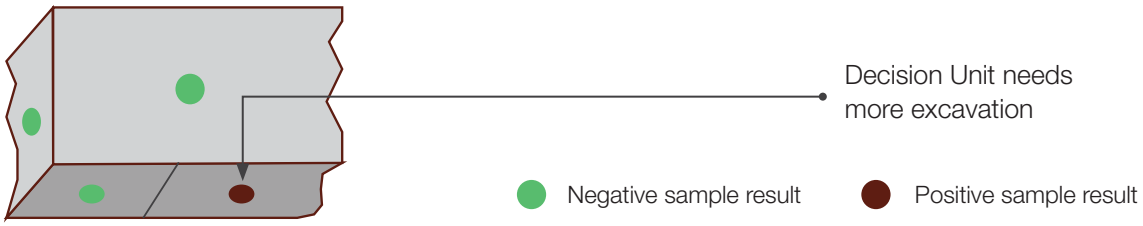
Before the **Remediation** work can be finished, the site has to be tested again to make sure it is clean. This is called **Confirmatory Testing**.

If the **Remediation** was an excavation of contaminated soil, samples must be taken inside the excavation. The excavation may be divided into **Decision Units (DU)** and one sample taken for each **Decision Unit**.

For example, if each wall and each half of the floor is a **DU**:



If the sample for one **DU** comes back above criteria then that area needs to be excavated further.



Final Inspection and Closure Confirmation

Once **Confirmatory Testing** has demonstrated that **Remediation** is complete, the **Responsible Party** must tell the Department of Environment and ask for an **Inspection** of the site.

Important

In cases where an excavation has taken place, the excavation must remain open (if conditions allow) until an Officer has been able to inspect the site.

A spill file that has been closed can always be re-opened if it is found that the **Remediation** was not properly or fully completed.

Anyone in Nunavut has the right to ask for information from the **Government of Nunavut** regarding spills and site **Remediation** under laws like the *Access to Information and Protection of Privacy (ATIPP) Act* (1994) and the *Environmental Rights Act* (1988). Here is the link for help with *ATIPP*: https://www.gov.nu.ca/eia/information/how-place-atipp-request.

8 Conclusion

Contaminant Spills are a serious threat to the health of our communities and the environment. Although preventing spills is the best way to minimize this threat, spills cannot always be prevented. When spills do happen, there are laws to make sure that those responsible clean them up.

This Guideline shows the steps for remediating **Contaminant** spills in the Territory. The focus of this Guideline is on fuel spills because of how common they are in Nunavut. Remember that spills of many other **Contaminants** can be remediated using the same steps shown in this Guideline.

This Guideline does not replace the need for the **Responsible Party** to be aware of their legal responsibilities and comply with all applicable federal and territorial legislation and community by-laws.

9 Definitions

Concentration:
The amount of chemical or substance per unit mass or volume. **Concentration** of a **Contaminant** is typically expressed as milligrams per liter (mg/L) or micrograms per liter (µg/L) in water, milligrams per kilogram (mg/kg) in soil and food and micrograms per cubic meter (µg/m^3) in air. **Concentrations** may also be expressed as parts per million (ppm) or parts per billion (ppb).

1 mg/liter = 1 ppm or 1000 ppb

1 µg/liter = 1 ppb

1 mg/kg = 1 ppm or 1000 ppb

Contaminant:
A substance that has been released into the environment and has the potential to harm people, plants and/or animals.

Defined in the *Environmental Protection Act* (1988) as:

"any noise, heat, vibration or substance and includes such other substance as the Minister may prescribe that, where discharged into the environment,

- endangers the health, safety or welfare of persons,
- interferes or is likely to interfere with normal enjoyment of life or property,
- endangers the health of animal life, or
- causes or is likely to cause damage to plant life or to property;"

Decision Unit (DU):
A defined area being sampled in order to assess whether or not it requires more **Remediation** work.

Double-bottom:
A safety feature on some fuel tanks made of a second layer of steel welded to the bottom of the tank. This creates a small space to catch fuel that may leak through the bottom of the primary tank.

Double-wall:
A safety feature on some fuel tanks made of a second layer of steel wrapped around the entire tank. This is a tank within a tank. The extra tank wall is meant to both protect the inner tank from the outside, as well as catch fuel that may leak through any part of the inner tank.

Drip Leg:
A water trap made of steel pipe in a **Supply Line**. The drip leg prevents water from reaching the oil burner. Every year, drip legs need to be drained so this water does not freeze and break the pipe, leading to a spill.

Environmental Site Assessment (ESA):
The scientific analysis of a specified piece of land intended to identify and quantify environmental contamination.

Field Screening:
The use of instruments to detect Contaminants in a sample without the need for analysis in a laboratory.

Flex Connector:
A flexible steel pipe that is used as part of a **Supply Line**. It allows the tank and building to shift a bit without breaking the **Supply Line**. Once it gets too crooked, the **Supply Line** needs to be adjusted.

Historical Contamination:
Potentially harmful chemicals that have been introduced into the environment in the distant past and for which a **Responsible Party** has not or cannot be identified.

Inspection:
The physical examination of a thing or area permitted under specified legislation. Typically an inspection occurs to verify compliance with a law or regulation.

Landfarm:
A facility that treats soil contaminated by fuel. Air and very small organisms are used to speed up the breakdown of fuels.

NU Spill Report Line:
A 24-hour service for reporting **Contaminant** spills in Nunavut. A call can be made to **867-920-8130** or email sent to spills@gov.nt.ca.

PID:
Photo-Ionization Detector. An instrument used to detect **Volatile Organic Compounds** in air.

Remedial Action Plan (RAP):
A document submitted to regulatory authorities that includes specific information on a spill site including what impacts are known and what **Remediation** is proposed. A **RAP** template including all required information for submission to the Department of Environment is included as Appendix B: Remedial Action Plan Template.

Remediation:
The actions taken to reverse or limit the damage caused by a **Contaminant Spill**.

Reportable Quantity:
The amount of a given product that, when spilled, requires a report to be sent to the **NU Spill Report Line**. This amount is shown in Appendix A.

Responsible Party:
The person, or organization, that discharged or permitted the discharge of a contaminant into the environment and is thus responsible for repairing or limiting the resulting damage to the environment.

Risk Assessment:
A scientific examination of the risk posed to humans and the natural environment from exposure to a **Contaminant** on a given site. The purpose of a risk assessment is to develop property-specific standards that will protect the uses that are being proposed to take place on the property.[1]

Risk Management Measure (RMM):
The actions or infrastructure implemented to eliminate or control potential **Contaminant** exposure **Pathways**.[2]

---

[2] Professional Engineers Ontario (2020). *Environmental Site Assessment, Remediation and Management Guideline.* Toronto: PEO. p.15

Spill Containment:
The combination of effort, equipment, approaches, and other tools used to prevent spilled contaminants from spreading further in the environment.

Supply Line:
Piping that brings heating fuel from a tank to the furnace or burner.

Test Pit:
An excavation conducted to obtain samples below the surface of the ground and thereby delineate the extent of contamination in a given area.

Volatile Organic Compounds (VOCs):
Chemicals made primarily of carbon and hydrogen that have a low boiling point and therefore evaporate easily into the air. Many of these are harmful to human and ecological health.

10 References

Canadian Council of Ministers of the Environment (CCME) (1997) PN 1279. *Guidance Document on the Management of Contaminated Sites in Canada.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/guuidance_management_cs_e.pdf [Accessed 30 November 2021].

Canadian Council of Ministers of the Environment (CCME) (1999). *Guidance Manual for Developing Site-Specific Soil Quality Remediation Objectives for Contaminated Sites in Canada.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/guidance-manual-for-developing-site-specific-soil-quality-remediation-objectives-for-contaminated-sites-in-canada-en.pdf [Accessed 30 November 2021].

Canadian Council of Ministers of the Environment (CCME) (2008). *Canada-Wide Standards for Petroleum Hydrocarbons in Soil.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/cws_phc_standard_1.0_e.pdf [Accessed 30 November 2021]

Canadian Council of Ministers of the Environment (CCME) (2008) PN 1399. *Canada-Wide Standard for Petroleum Hydrocarbons in Soil: Scientific Rationale Supporting Technical Document.* Winnipeg: CCME. Available from: http://registry.mvlwb.ca/Documents/MV2010L1-0001/MV2010L1-0001%20-%20Canada%20Wide%20Standard%20for%20Petroleum%20HydroCarbons%20PHC%20in%20Soil%20-%20May12-10.pdf [Accessed 30 November 2021].

Canadian Council of Ministers of the Environment (CCME) (2008) PN 1398. *Canada-Wide Standard for Petroleum Hydrocarbons in Soil User Guidance.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/cws_phc_user_guide_1.1_e.pdf [Accessed 30 November 2021].

Canadian Council of Ministers of the Environment (CCME) (2016) PN 1551. *Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment – Volume 1 Guidance Manual.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/guidancemanual-environmentalsitecharacterization_vol_1e.pdf [Accessed 30 November 2021].

Canadian Council of Ministers of the Environment (CCME) (2016) PN 1551. *Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment – Volume 3 Operational Procedures.* Winnipeg: CCME. Available from: https://ccme.ca/en/res/guidancemanual-environmentalsitecharacterization_vol_3_epn1555.pdf [Accessed 30 November 2021].

Environmental Protection Act 1988. RSNWT (Nu) c E-7. Available from: https://canlii.ca/t/8l5s [Accessed 30 November 2021].

Environmental Rights Act 1988. RSNWT (Nu) c 83 (Supp). Available from: https://canlii.ca/t/ks46 [Accessed 30 November 2021].

Fuel Snap (2021). *Home Heating Oil Tank Charts* [Online]. Available from: https://www.fuelsnap.com/heating_oil_tank_charts.php#275v [Accessed 30 November 2021].

Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations 2021 SOR/2021-25. Available from: https://laws-lois.justice.gc.ca/eng/regulations/SOR-2021-25/page-1.html [Accessed 26 May 2022].

NWT-NU Spills Working Agreement 2014. Available from: https://www.enr.gov.nt.ca/sites/enr/files/nwt-nu_spills_working_agreement_2014_2_0.pdf [Accessed 30 November 2021].

Professional Engineers Ontario (2020). *Environmental Site Assessment, Remediation and Management Guideline.* Toronto: PEO. Available from: https://www.peo.on.ca/sites/default/files/2020-07/ESAGuideline2020.pdf [Accessed 30 November 2021].

Public Health Act 2016 S. Nunavut, c.13. Available from: https://canlii.ca/t/90gt [Accessed 30 November 2021].

Spill Contingency Planning and Reporting Regulations 2006. NWT Reg (Nu) 068-93. Available from: https://canlii.ca/t/khb5 [Accessed 30 November 2021].

U.S. Environmental Protection Agency (2002). *Guidance for Quality Assurance Project Plans.* Report EPA QA/G-5. Washington, D.C.: US EPA. Available from: https://www.epa.gov/sites/default/files/2015-06/documents/g5-final.pdf [Accessed 10 November 2021].

For additional information on the remediation of contaminant spills, or to obtain a complete listing of guidelines, go to the Department of Environment website or contact the Department at:

Environmental Protection Division
Department of Environment
P.O. Box 1000, Stn. 1360
Iqaluit, Nunavut, X0A 0H0

Phone: (867) 975-7700
Fax: (867) 975-7742

www.gov.nu.ca/environment

Contingency plans are to be submitted to the above address.

11 Appendices

Appendix A: Reportable Quantities

Spills of the following quantities must be reported to the **NU 24-hr Spill Line: 867-920-8130 / spills@gov.nt.ca**

Contaminant	Quantity
Explosives	Any amount
Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (toxic)	Any amount
Compressed gas (corrosive)	Any amount
Flammable liquid	100 L
Flammable solid	25 kg
Spontaneously combustible solids	25 kg
Water reactant solids	25 kg
Oxidizing substances	50 L or 50 kg
Organic peroxides	1 L or 1 kg
Poisonous substances	5 L or 5 kg
Infectious substances	Any amount
Radioactive substances	Any amount
Corrosive substances	5 L or 5 kg
Miscellaneous products or substances, excluding PCB mixtures	50 L or 50 kg
Environmentally hazardous substances	1 L or 1 kg
Dangerous wastes	5 L or 5 kg
PCB mixtures of 5 or more parts per million	0.5 L or 0.5 kg
Other contaminants	100 L or 100 kg

Appendix B: Remedial Action Plan Template

Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

Remedial Action Plan

This form is to be completed by the responsible party of a spill or by an organization designated to do so on their behalf. This form should be completed and submitted to the Department of Environment by the date set on page 5. It can be returned to the local Conservation Officer or sent to the appropriate Environmental Protection Officer (EPO) at the contact information provided.

If you need more space, attach extra pages as required. Please include diagrams and pictures as well.

This form will be used as a remediation plan as outlined in the *Property Owner's Guide to Contaminated Site Remediation in Nunavut* produced by the Government of Nunavut. Any changes can be submitted to the Department of Environment.

PART 1: Contact information

Responsible Party:

_____

In the case of an organization, the primary and secondary people of contact are:

_____ and _____

Contact Phone numbers:

Primary: _____ Secondary: _____

e-mail addresses:

Primary: _____ Secondary: _____

P.O. Box 1000, Stn.1360
Iqaluit, Nunavut X0A 0H0

C.P. Box 1000, Succursale1360
Iqaluit, Nunavut X0A 0H0

(867) 975-7726
(867) 975-7742
www.gov.nu.ca

Appendix B: Remedial Action Plan Template

PART 2: Spill details and containment

Product released: _____

Date of release: _____

Spill Report # (If known): _____

Estimated quantity released: _____

Explain how you estimated the quantity released:

_____
_____
_____
_____

Size of area affected (m^2 or ft^2): _____

Describe any water courses in the spill area that need to be taken into consideration:

_____
_____
_____
_____

What courses of action have been taken, or will be taken in order to prevent the released product from spreading further.

_____
_____
_____
_____

Diagram or other information:

P.O. Box 1000, Stn.1360
Iqaluit, Nunavut X0A 0H0

C.P. Box 1000, Succursale1360
Iqaluit, Nunavut X0A 0H0

(867) 975-7726
(867) 975-7742
www.gov.nu.ca

Appendix B: Remedial Action Plan Template

PART 3: Remediation

The party deemed responsible for the spill must ensure that a proper clean-up is conducted. This party, be it an individual or an organization, is encouraged to seek qualified people if required to properly fulfill its duties. It is often mush easier and cheaper in the long run, to seek professional advice.

What outside agencies will be assisting you as the responsible party:

_____
_____
_____

Describe in detail what will be done to remediate the spill site:

_____
_____
_____
_____
_____
_____
_____
_____
_____

If excavation is to be undertaken, describe what will be done with contaminated soil:

_____
_____

Describe what will be done with contaminated water collected:

_____
_____

Describe any difficulties foreseen as they relate to this site:

_____
_____
_____
_____

P.O. Box 1000, Stn.1360
Iqaluit, Nunavut X0A 0H0

C.P. Box 1000, Succursale1360
Iqaluit, Nunavut X0A 0H0

(867) 975-7726
(867) 975-7742
www.gov.nu.ca

Appendix B: Remedial Action Plan Template

Work undertaken to prevent any further spread of the product will be completed by:

Date: _____

The remediation work will **begin** no later than:

Date: _____

The remediation work will be **completed** no later than:

Date: _____

PART 4: Submission

Please submit this form to your local Conservation Officer or to the regional Environmental Protection Officer by:

Date: _____ (to be completed by DoE staff)

The responsible party is committed to undertaking the work described above and will have the work completed by the dates provided. Any changes will be submitted to the Department of Environment.

This form has been completed by:

Name: _____ Date: _____

Signature: _____

P.O. Box 1000, Stn.1360
Iqaluit, Nunavut X0A 0H0

C.P. Box 1000, Succursale1360
Iqaluit, Nunavut X0A 0H0

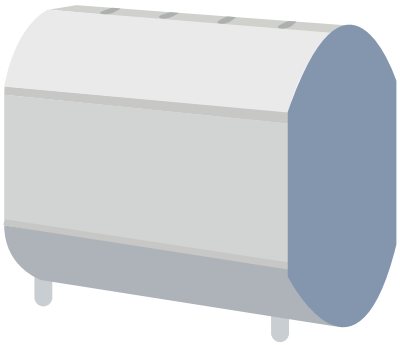
(867) 975-7726
(867) 975-7742
www.gov.nu.ca

Appendix C: Chart for 275-gallon Tank

This chart can be used to estimate the amount of fuel in a tank using a measurement from a dip stick. To do this, measure the height of fuel in the tank shown on the dip stick and look up that height in inches to see how much fuel that represents.

275-gallon (Vertical) Oil Tank Level Chart [3]

Length: 60 Inches
Width: 27 Inches
Height: 44 Inches



Inches	Gallons	Inches	Gallons	Inches	Gallons
1"	2	16"	94	31"	201
2"	5	17"	101	32"	209
3"	9	18"	108	33"	216
4"	14	19"	115	34"	223
5"	19	20"	123	35"	230
6"	25	21"	130	36"	236
7"	31	22"	137	37"	243
8"	37	23"	144	38"	249
9"	44	24"	151	39"	254
10"	51	25"	158	40"	260
11"	58	26"	166	41"	265
12"	65	27"	173	42"	269
13"	72	28"	180	43"	272
14"	80	29"	187	44"	275
15"	87	30"	194	-	-

[3] Fuel Snap (2021). *Home Heating Oil Tank Charts.*

Appendix D: Spill Report Form

Fillable form: https://gov.nu.ca/environment/documents/spill-response

Northwest Territories | Nunavut | 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	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	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 NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
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 D: Spill Report Form

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank**. This box is for the **Spill Line's use only**.


Nunavut