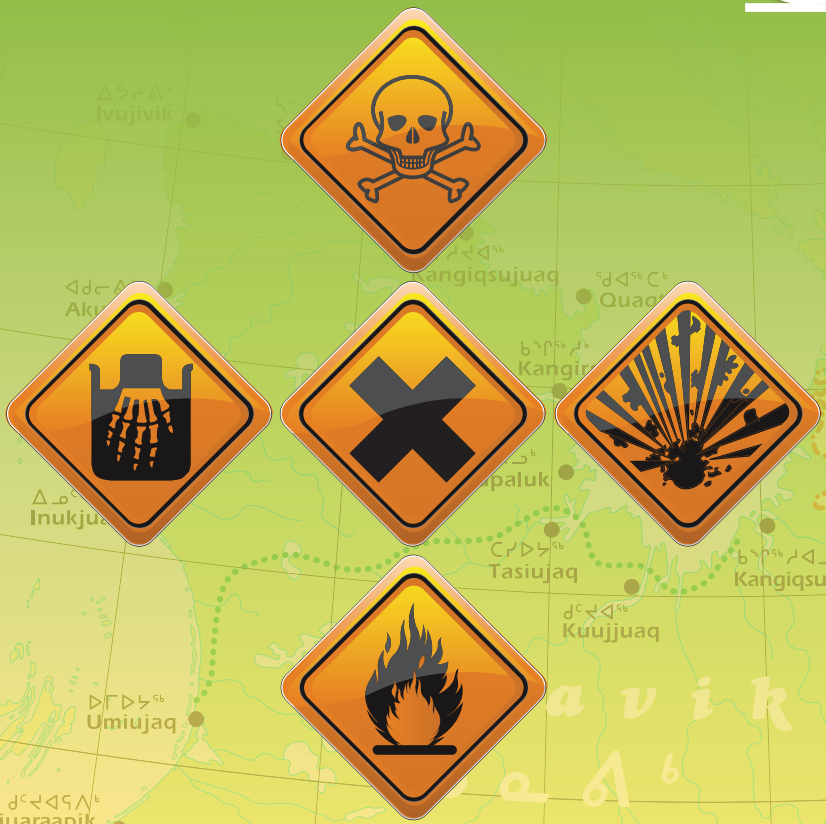
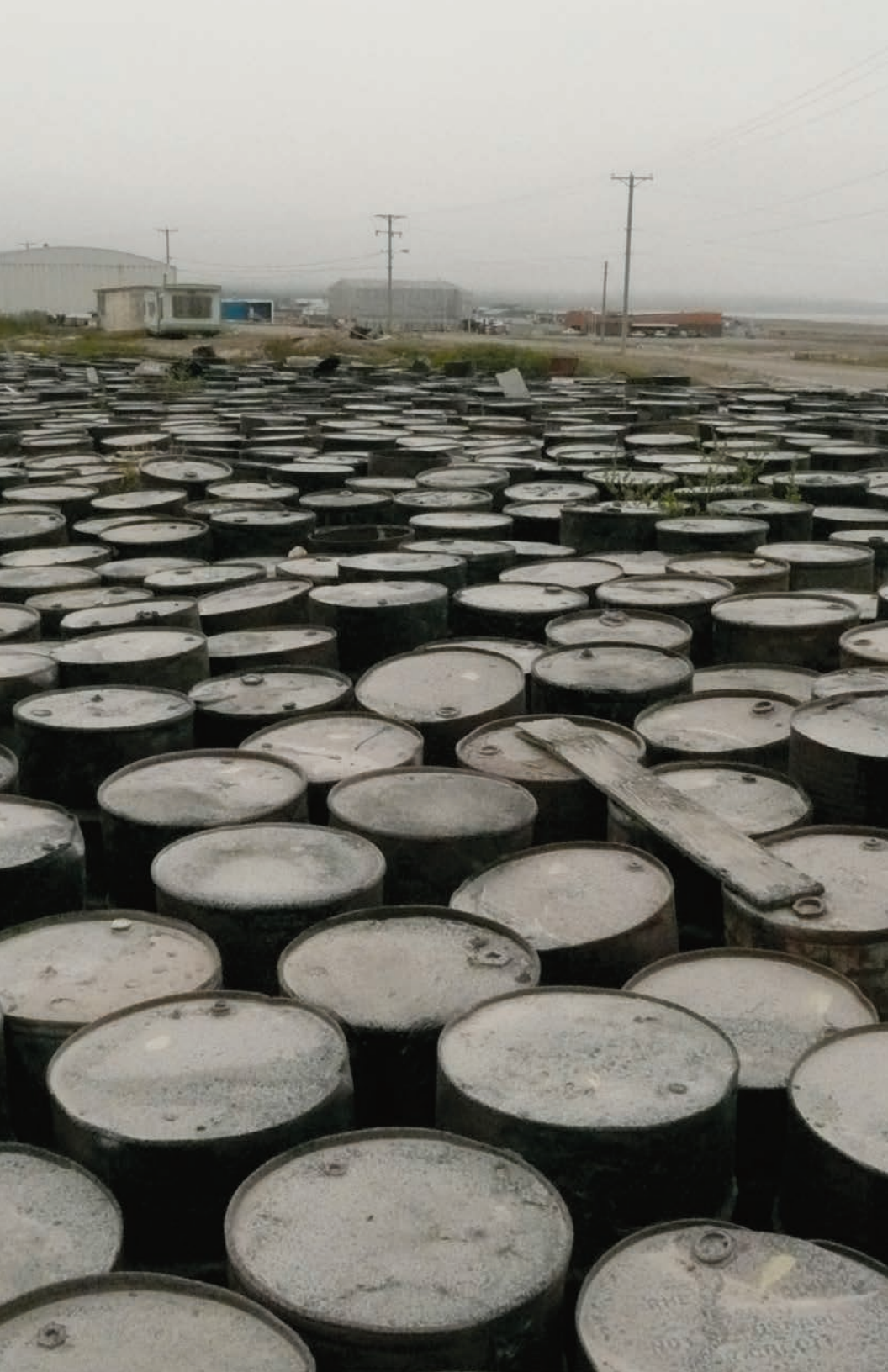
SPILL RESPONSE AND CONTAMINATED-SITE REMEDIATION GUIDE FOR NUNAVIK

for municipalities and regional organizations

Guide No. 3



April 2016



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This guide is the third in a series of three guides. Guide No. 1 is intended for municipalities and regional organizations that regularly handle hazardous materials. Guide No. 2 is intended for the general public and describes residual materials in broad terms, including proper handling and storage practices.

1 INTRODUCTION

The *Spill Response and Contaminated-Site Remediation Guide for Nunavik* is geared towards those who may be required to respond to environmental emergencies involving hazardous materials. The objectives of the Guide are to describe response measures and to provide essential and practical information in case of contamination. The Guide is intended to complement the spill-response protocol that municipalities and regional organizations should possess.

2 SPILL RESPONSE

Ground, water, snow or sediments with contaminant levels exceeding acceptable regulatory thresholds for human health, plants and wildlife are considered contaminated. Possible sources of contamination include buried residual materials, nonpoint chemical pollution (leaks or frequent small spills), disposal and storage of hazardous materials, major spills and fire-caused emissions. Contamination may also occur when contaminated soil is stored improperly. Contaminated sites may have short- and long-term consequences on human health and the environment.

Spills happen in Nunavik and we need to know how to respond quickly and accurately in order to reduce the risk to people and our environment. Even if you are not responsible for the spill, you can help. Please refer to page 17 of this guide for a quick "how-to" for spill response.

STEP 1: STOP THE SPILL

Reduce or stop the spill or leakage of a product by doing simple things like:

- turning off a pump
- closing a valve
- sealing a hole

STEP 2: CONTAIN THE SPILL

Keep the spilled product from spreading by using:

- Absorbent sheets or booms
- Granular sorbent
- Suction equipment like a vacuum truck or shop vac (Attention: Gasoline can pose risk of explosion)
- Heavy equipment to collect material (ie. backhoe or loader)

STEP 3: SECURE THE SPILL SITE

Reduce exposure to the site by:

- Putting yellow tape or barricade around the spill area
- Notifying the public, especially children, to keep away
- Do not allow smoking near the contaminated area
- Wearing safety equipment, if necessary (ie. masks, gloves, safety boots)

STEP 4: FILL OUT *NUNAVIK ENVIRONMENTAL EMERGENCY REPORT FORM*

The person responsible for the spill must complete this form and send it by fax to the Kativik Regional Government (KRG) at 819-964-0964 or by email at enviro@krg.ca. The KRG will then inform the *Ministère du Développement durable, de l'Environnement et Lutte contres les changements climatiques* (sustainable development, environment and fight against climate change, MDDELCC). You can find the form on page 15 of this guide or at: **http://www.krg.ca/images/stories/docs/Environment/KRG_Spill_Report_Procedure_en_iu.pdf**

STEP 5: CALL FOR INFORMATION OR ASSISTANCE

Do you have questions or need help? Call:

- Your local Northern Village or Fire Station where people have been trained to handle these situations
- **KRG Environmental Specialist or Technician at: 1-877-964-2961, ext 2276 or 2324**
- Québec Helpline: 1-866-694-545

STEP 6: STORE AND INDENTIFY CONTAMINATED MATERIAL

Contaminated material should be stored in appropriate, resistant and leak-free containers.

- Collect material until no longer contaminated (use your eyes and nose)
- Place the material (gravel, soil, snow or water) in drums or Wrangler bags or if these are not available use a tarp on the ground and cover the material with another tarp.
- Label your containers and store them in a safe location

STEP 7: SEND CONTAMINATED MATERIAL TO TREATMENT CENTER

The treatment and disposal of contaminated material is the last step in reducing and eliminating the risk to people and the environment. It is acceptable to use the local landfill for storage of contaminated soil (in a waterproof shelter, container or building with a floor), however contaminated material will need to be labeled and packaged properly in order to be shipped by air, marine, or land.

3 CONTAMINATED-SITE INSPECTIONS

If you believe that a site may be contaminated, carry out a careful inspection based on the following questions. The *Nunavik Environmental Emergency Report Form* can assist you in this process.

3.1 What Is the History of the Site?

It is important to know the history of the site.

- Is the site located near a hydrocarbon tank farm or a contaminated site?
- Is the site located near a former hydrocarbon or fuel tank farm?
- Has there ever been a spill at or near the site?

3.2 What Is the Contaminant?

The contaminant must be identified in order to determine suitable decontamination options. Hydrocarbons, such as furnace oil, fuel and oil are the most common type of contaminant in Nunavik. You may take samples of the contaminated material to identify the contaminant and its concentration. In accordance with the type of analysis required, accredited laboratories are able to provide useful information as well as appropriate containers for your samples. A list of accredited laboratories in Québec may be found on the website of the *Ministère du Développement durable, de l'Environnement et Lutte contres les changements climatiques* (sustainable development, environment and fight against climate change, MDDELCC): **http://www.ceaeq.gouv.qc.ca/accreditation/PALA/lla01.htm** (in French).

3.3 What Is the Level of Contamination?

Answers to the following questions are required.

- What is the size of the contaminated site (length and width)?
- What is the soil type? (sand, clay, gravel, etc.)?

- Is the contaminated site sloped?
- Is there surface water at or near the site?
- Is there permafrost at the site?

3.4 What Are the Potential Effects?

The contaminated site may affect human health, wildlife and plants. Identify contamination corridors and all potential receptors.

- Why are there contaminants at the site? Where did they come from?
- Are there any toxic vapours?
- Are there any observable effects on water bodies, wetlands, plants or animals? If yes, what are these effects?
- How will the contaminants affect the surrounding areas?
- Is the contaminated site used by the general public? Is the contaminated site a residential area?

4 MANDATORY STATEMENT

Once the contaminant has been identified, and its concentration and potential effects determined, contact the generator (any individual or business that produces hazardous materials). Pursuant to provincial and federal regulations (Refer to Section 7.2 References.), generators are responsible for managing any substances that must be handled, packaged, stored, treated and disposed of. The generator must complete the *Nunavik Environmental Emergency Report Form* with special attention to be paid to the type of spill, its place, its date and its cause, as well as the name of the organization or individual responsible for remediating the site. Any other relevant information may also be indicated on the form.

Completed forms must be faxed (819-964-0694) to the environmental specialist or technician at the Renewable Resources, Environment, Lands and Parks Department of the Kativik Regional Government (KRG). The KRG environmental specialist or technician processes the information about the incident and informs the MDDELCC regional office. The KRG environmental specialist or technician may be asked to participate in contaminated-site inspections. The MDDELCC also offers 24-hour emergency support and tips (toll free 1-866-694-5454). For immediate emergency assistance in situations that threaten in particular human life, your local police or fire department should be contacted.

5 CONTAMINATED-SITE MANAGEMENT

Once an inspection has been completed, the generator must respond quickly, taking all the necessary steps to remediate the site and reduce or mitigate the risks for human health, property and the environment.

Some contaminated sites require major remediation. Major remediation may include actions such as the removal, containment, cleaning and disposal or treatment of the contaminated material, as well as administrative decisions regarding, for example, rezoning and the enforcement of regulations. Also, prior to beginning major remediation work, it might be required to obtain certificates of authorization from the MDDELCC. Major contaminated-site remediation therefore involves considerable work as well as external assistance. Those responsible for major contaminated-site remediation may request assistance from the KRG environmental specialist or technician (toll free 1-877-964-2961). Municipalities also have staff trained to handle hazardous materials, as well as heavy equipment for this purpose.

Some contaminated sites require only simple remediation work that may be managed and performed by the generator.

5.1 Safety

When handling hazardous materials, safety should always be the number one concern. To reduce exposure, personal protective equipment should be worn, such as rubber gloves, steel toe boots, hard hats, masks, safety goggles and other related gear. This equipment does not eliminate the hazard, but it does reduce the risk of accident and injury. Moreover, smoking near contaminated sites and public access should be prohibited. Perimeter tape or fencing may be used for this purpose.

5.2 Containment Measures in Nunavik

The most common environmental emergencies in Nunavik are hydrocarbon spills resulting from leaks in residential heating-oil tanks or from heavy equipment. Whenever such an incident occurs, it is important to react quickly to contain the spill. The owner of the equipment should be notified immediately. Other basic steps to contain the spill are described below:

- If the spill reaches a body of water, use floating containment booms and absorbent pads to limit the spill and recover the hazardous materials. Be sure to dispose of used pads in the same manner as residual hazardous materials.
- If the spill occurs on the ground, use absorbent pads and rolls to limit the spill, or erect a barricade or fence with soil or any other available material.

- If the spill occurs on a paved road or airport tarmac, spread absorbent gravel evenly over the contaminated area. Allow to stand for an hour and then collect the gravel. The collected gravel should be placed in empty drums or on a plastic tarp. Be sure to dispose of the gravel in the same manner as residual hazardous materials and contaminated soil.

5.3 Storage and Identification of Contaminated Materials

It is unacceptable and prohibited for contaminated materials to be abandoned or disposed of in the environment or as regular trash at a residual materials disposal site. Residual hazardous materials should be stored in appropriate, resistant and leak-free containers at a designated location.

- Collect the contaminated materials until all traces of contamination (sight and smell) have been removed.
- Place the contaminated materials (gravel, soil, snow or water) in drums or Wrangler bags.
- If drums or Wrangler bags are not available, place the contaminated materials on a plastic tarp in a designated location for hazardous residual materials. The contaminated materials should moreover be covered with another plastic tarp held firmly in place to protect them from wind and precipitation. This measure should only be temporary.

Storage containers (drums and bags) should be properly labelled to facilitate inventory, storage and transportation. Appropriate storage and labelling practices for residual hazardous materials commonly found in Nunavik are described below. You will also find photo examples of properly packaged materials on page 11.

Used oil should be stored in closed plastic or metal drums that are waterproof and in good condition, or in resistant Wrangler bags. For transportation purposes, up to four drums or one Wrangler bag may be secured to a pallet. The drums or Wrangler bags should never be stored directly on the ground. Labels (see immediately below) should appear on all drums or Wrangler bags.

SHIPPING NAME: Material contaminated with hydrocarbons (not covered under the TDG Regulations)
UN: n/a
CLASS: n/a
UNIT NUMBER: 1 of 1
PROVINCIAL CODE: A01-0.0-L
GENERATOR: Northern Village of Quaqtaq
DATE: 2010-11-14

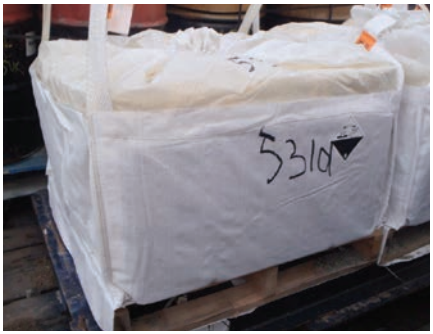
Oil-contaminated water or **melted snow** should be stored in closed plastic or metal drums that are waterproof and in good condition. For transportation purposes, up to four drums may be secured to a pallet. The drums should never be stored directly on the ground. Labels (see immediately below) should appear on all drums.

SHIPPING NAME: Oil-contaminated water (not covered under the TDG Regulations)
UN: n/a
CLASS: n/a
UNIT NUMBER: 1 of 1
PROVINCIAL CODE: A03-0.0-L
GENERATOR: Northern Village of Umiujaq
DATE: 2011-03-21

Contaminated soil should be stored in closed plastic or metal drums that are waterproof and in good condition, or in Wrangler bags. For transportation purposes, up to four drums or one Wrangler bag may be secured to a pallet. The drums or Wrangler bags should never be stored directly on the ground. Labels (see immediately below) should appear on all drums or Wrangler bags.

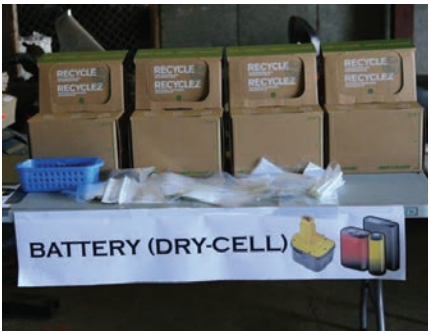
SHIPPING NAME: Soil contaminated with hydrocarbons (not covered under the TDG Regulations)
UN: n/a
CLASS: n/a
UNIT NUMBER: 1 of 1
PROVINCIAL CODE: O01-0.0-S
GENERATOR: Northern Village of Kuujjuaq
DATE: 2010-06-01

Storing contaminated materials is not an acceptable long-term solution. Nonetheless, for safety purposes, each Northern village should designate and clearly identify a site (either building, shelter or container) for the short-term storage of recovered contaminated materials until they can be shipped for treatment elsewhere in Nunavik or in the South.



An example of how to properly package a UN-certified container or bag of **vehicle batteries.**

An example of packaging for **batteries** provided for under the *Regulation Respecting the Recovery and Reclamation of Products by Enterprises.*



An example of how to properly package a crate containing **empty gas cylinders.**

An example of how to properly package drums of **solvents, used antifreeze, used oil, mixed flammable liquids** and **contaminated water, soil** and/or **snow**

6 TRANSPORTATION AND TREATMENT OF CONTAMINATED MATERIALS

The treatment and disposal of residual hazardous materials is the final means for reducing and eliminating the risks posed to human health and the environment. These actions are moreover the responsibility of the generator. Generally, for this purpose the generator must transport the materials out of Nunavik.

Contaminated soils cannot be used as recovery material unless it meets Government of Québec standards for specific levels of contamination **(http://www.mddelcc.gouv.qc.ca/sol/terrains/politique/tableau_2.htm).**

Residual hazardous materials transported to recycling, treatment, storage or disposal facilities must be properly sorted, packaged, labelled and recorded on the shipping (air, marine or land) manifest.

Marine shipping companies that serve the North for the transport of these materials are indicated below:

Groupe Desgagnés (Transarctik) Inc.
6565 Hébert Blvd.
Sainte-Catherine QC J5C 1B5
Tel.: 450-635-0833
Fax: 450-635-5126
info@transarctik.desgagnes.com
http://desgagnes.com

Nunavut Eastern Arctic Shipping Inc. (NEAS)
2100 Pierre-Dupuy, Suite 2060
Montreal QC H3C 3R5
Tel.: 514-597-0186
Toll free: 1-877-225-6327
Fax: 514-523-7875
www.neas.ca

7 RESIDUAL HAZARDOUS MATERIALS MANAGEMENT FIRMS

Before shipping residual hazardous materials it is strongly recommended to contact the shipping company and a residual hazardous materials management firm in the South. Management firms that possess experience and equipment for receiving residual hazardous materials from Nunavik are indicated below. These management firms are able to provide advice regarding residual hazardous materials equipment, labels and containers. This list is not exhaustive.

Avataani (ᐊᕙᑖᓂ ᐊᕙᑎᓕᕆᔩᑦ)
P.O. Box 939
Kuujjuaq, QC J0M1C0
Tel: 819-964-0131
Fax : 866-823-9531
cnakoolak@gmail.com
www.avataani.ca

Sanexen
Tel. : 450-652-9990
Fax: 450-652-2290
info@sanexen.com
www.sanexen.com

Biogénie S.R.D.C. Inc.
Tel.: 418-653-4422
Toll Free: 1 800 267-4422
Fax: 418-653-3583
quebec@biogenie-env.com
www.biogenie-env.com

Recubec
Tel.: 514-645-9233
Fax: 514-645-2050
info@recubec.ca
www.recubec.ca

Quatrex Environnement Inc.
Tel.: 450-963-4747
Toll free: 1-800-967-3002
Fax: 450-622-5392
info@quatrex.ca
www.quatrex.ca

Conterm Inc.
Tel.: 514-694-2164
Toll free: 1-888-447-2164
Fax: 514-694-1640
info@conterm.ca
www.conterm.ca

8 CONCLUSION

This guide represents a brief introduction to contaminated-site assessment and spill responses. It is intended to serve as a source of information for emergency environmental issues, including heating-oil, fuel and oil spills. In no manner whatsoever does it replace applicable Québec and Canadian regulations.

8.1 Resources

For further information, contact the Kativik Regional Government or the Québec government:

Kativik Regional Government
Renewable Resources, Environment, Lands and Parks Department
Environmental Specialist: Véronique Gilbert, or Environmental Technician: Monica Nashak (enviro@krg.ca)
Tel.: 819-964-2961
Toll free: 1-877-964-2961
Fax: 819-964-0694
www.krg.ca

Ministère du Développement durable, de l'Environnement et Lutte contre les changements climatiques (MDDELCC)
Regional Analysis and Expertise Branch for Abitibi–Témiscamingue and Nord-du-Québec
Emergency Coordinator: Guy Vallières (Guy.Vallieres@mddelcc.gouv.qc.ca)
Tel.: 819-763-3333, ext. 256
For communication in English: Daniel Richer (daniel.richer@mddelcc.gouv.qc.ca)
Tel: 819-763-333, ext. 311
Emergency Line: 1-866-694-5454
Fax: 819-763-3202
www.mddelcc.gouv.qc.ca

8.2 References

The following references were used to prepare this guide:

Regulation respecting Hazardous Materials (c. Q-2, r. 32), Québec government, February 2010.

Transport of Dangerous Goods Regulations, Government of Canada, February 2008.

Management of Hazardous Waste, training manual, Stabilis, 2004.

Guideline for the General Management of Hazardous Waste in the NWT, Government of the Northwest Territories, Department of Resources, Wildlife and Economic Development, February 1998.

APPENDIX

Nunavik Environmental Emergency Report Form			
Municipality		**Notification date**	
Date of Spill			
Location of Incident		**Public area affected**	
Organization responsible (Ex.: Owner or manager)			
Contact Person		**Phone number, email address**	
Cause of incident (Description of the incident)			
Type of contaminant			
Quantity deversed (rough estimation in gallon or Litres)		**Quantity recovered (rough estimation gallon or Litres)**	
Action taken to stop the leak			
Action taken for the removal of contaminated material			
Action taken to ensure a safe storage of contaminated material			
Decontamination treatment			
Other information (ie. follow-up)			
Report:		**Date:**	
Contact person:	**Veronique Gilbert or Monica Nashak** **KRG Environmental Specialist and Technician** Email: enviro@krg.ca Tel: 819-964-2961 ext.2324 or 2276 or Toll Free 1-877-964-2961 fax: 819-964-0694		

NOTES:

SPILL RESPONSE AND CONTAMINATED SITE REMEDIATION GUIDE FOR NUNAVIK

for municipalities and regional organizations

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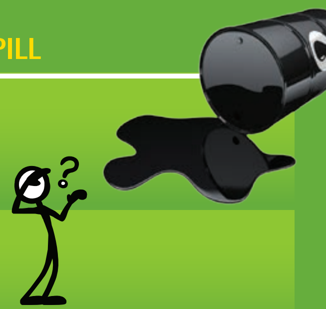
HAZARDOUS MATERIAL SPILL



1 Stop the spill.

2 Contain the spill.

3 Secure the site.

4 Fill out the "Nunavik Environmental Emergency Report Form". (Guide #3 Appendix)

5 Call for information.

- Your local municipality, or
- KRG: 1-819-964-2961, or
- MDDELCC: 1-866-694-5454

6 Storage and Identification of Contaminated Materials.

7 Send contaminated material to treatment center.

NEED HELP? call:

- Your local municipality, or
- KRG: 1-819-964-2961, or
- MDDELCC: 1-866-694-5454

Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

KATIVIK

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Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

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Administration régionale Kativik
Kativik Regional Government