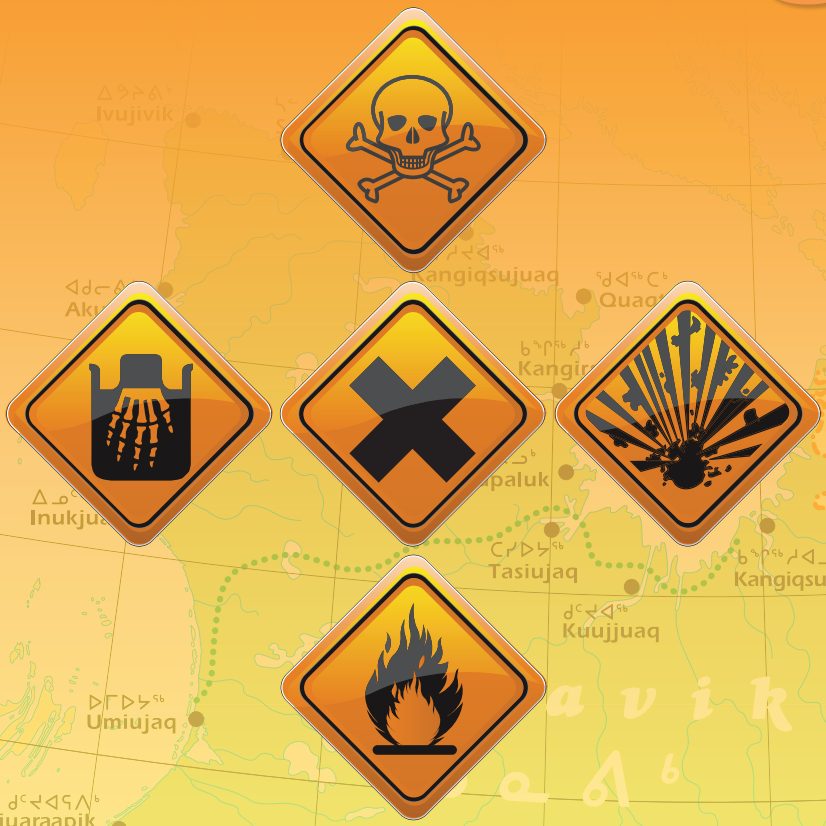
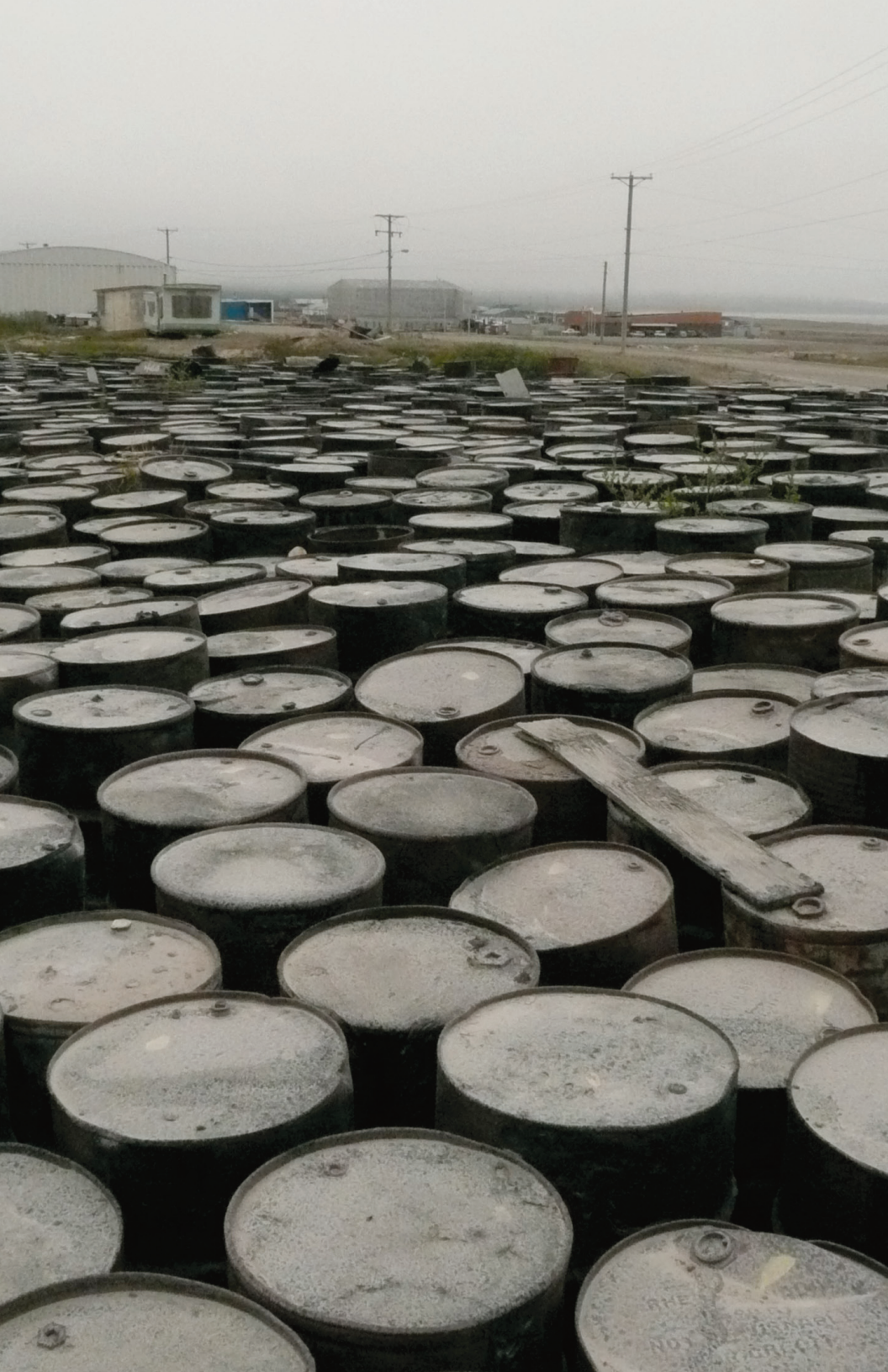
RESIDUAL HAZARDOUS MATERIALS MANAGEMENT GUIDE FOR NUNAVIK

for municipalities and regional organizations

Guide No. 1





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This guide is the first in a series of three guides. Guide No. 2 is intended for the general public and describes residual materials in broad terms, including proper handling and storage practices. Guide No. 3 is a reference guide for municipalities and organizations responsible for environmental contamination responses and contaminated-site remediation.

1 INTRODUCTION TO RESIDUAL HAZARDOUS MATERIALS

The first objective of the *Residual Hazardous Materials Management Guide for Nunavik* is to define proper residual hazardous materials management, as well as to provide related information and support. The second objective of the Guide is to foster awareness among municipalities and regional organizations regarding the issue of residual hazardous materials and their impact on the environment.

1.1 Types

Hazardous materials pose risks to human health and the environment. To reduce these risks, special disposal techniques are required. Various types of hazardous materials are found in Nunavik. A few of these are:

- **Batteries.** Batteries contain heavy metals that may leak and contaminate the ground and water. Batteries also contain corrosive materials.
- **Paint waste.** Paint may contain toxic solvents or metallic elements. Oil paints are also highly flammable.
- **Solvents.** Solvents may contain carcinogens and are highly flammable.
- **Used oil, fuel and antifreeze.** Old drums may contain one or all of these products or other highly flammable or toxic liquids that could contaminate the ground and water.
- **Halogenated hydrocarbons.** Household appliances, such as refrigerators, freezers and air conditioners, contain halogenated hydrocarbons. These appliances also contain coolant that produces chlorofluorocarbons (CFCs). CFCs collect in the atmosphere, contributing to the depletion of the ozone layer.
- **Light bulbs** (fluorescent tubes, mercury-vapour lamps and high-intensity discharge lamps). These products may contain mercury. Long-term exposure to mercury is dangerous for human health and the environment.
- **Hazardous household products.** These products contain ingredients that may adversely affect safety, human health and the environment. Signal words and symbols indicate the type of hazard, such as *poison, corrosive, warning* and *caution*, and are found on a wide range of hazardous household products, such as bleach, antifreeze, furniture polish, insecticides, paint, mothballs, etc.

1.2 Potential Effects

The mismanagement or non-management of hazardous materials may be harmful for humans, plants and animals. Several human health problems are caused by exposure to hazardous materials. Long-term exposure to these materials may even harm vital organs, affect the immune system and be fatal. For example, water contaminated with hazardous materials could infiltrate an entire community water supply system, impacting on human health and the environment.

2 ROLES AND RESPONSIBILITIES

2.1 Generators

Any person, business or organization that uses hazardous materials is responsible for their proper management, including handling, packaging, storage, treatment and disposal in accordance with provincial and federal regulations. (Refer to Section 4.2 References.)

2.2 Support

The *ministère du Développement durable, de l'Environnement et des Parcs* (sustainable development, environment and parks, MDDEP) is the provincial authority responsible for monitoring, supervision, inspections and investigations to ensure compliance with environmental standards. The MDDEP regional office performs regular inspections in the Northern villages to assess compliance with the management practices applicable to residual hazardous materials and to review the impacts of any recent spills or environmental contamination. The MDDEP is available to respond to the inquiries and concerns of the general public regarding hazardous materials in Nunavik.

The Kativik Regional Government (KRG) makes decisions, establishes priorities and acts on behalf of the residents of Nunavik. The KRG Renewable Resources, Environmental and Land Use Planning Department and the KRG Municipal Public Works Department often cooperate with the MDDEP and the Northern villages on residual hazardous materials management. A KRG environmental technician is available to provide assistance with issues regarding the handling and storage of hazardous materials, as well as spills and environmental emergencies.

3 RESIDUAL HAZARDOUS MATERIALS MANAGEMENT

In the normal course of industrial, commercial and institutional activities, residual materials are produced. Some of these materials are more hazardous than others due to their chemical, physical and biological properties. To reduce the risks posed to human health and the environment, special treatment and disposal techniques must be followed.

3.1 Pollution Prevention: Reduce, Reuse, Recycle and Reclaim

An effective and proactive management practice is to eliminate or reduce the use of hazardous materials. This is referred to as pollution prevention or the 3 R-R method: reduce, reuse, recycle and reclaim.

Reduce
Reduce refers, first and foremost, to using fewer resources and decreasing our consumption of goods. For example, whenever you make a purchase, learn how to maintain the product in good condition and, then, do so. Regarding electronics, opt for quality, energy-efficient products.

Reuse
Before recycling or throwing anything out, ask yourself if it can be reused. You may have a new use for the materials or decide to make them available to others. For example, an old snowmobile could be repaired and sold.

Recycle
Recycling is a process whereby reusable materials, instead of being thrown out, are transferred to a designated location for reprocessing. The materials are then used to produce similar or new products. For example, the material from recycled tires may be reprocessed to surface roads, sprint tracks, sidewalks, etc.

Reclaim
Reclamation is a process whereby value is added to residual materials. For example, energy recovery may be practised by burning used oil in a certified furnace.

3.2 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, safety goggles and other related gear. This equipment does not eliminate the hazard, but it does reduce the risk of accident and injury.

3.3 Storage and Identification

It is unacceptable for residual hazardous 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. These containers 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.

Residual hazardous materials, such as used oil, batteries and paint, are covered under the *Transport of Dangerous Goods Regulations* (TDG Regulations) and, as such, they must be stored in UN-certified containers. The symbol below, when it appears on a container, certifies compliance with the TDG Regulations.

Vehicle batteries must be stored in Wrangler bags specifically designed for this purpose. Cover each battery post with a protective cap or tape. Store Wrangler bags in a designated container for residual hazardous materials or in a designated location at the local residual materials disposal site. Wrangler bags should never be stored directly on the ground. Advise the general public of the designated location for battery disposal. Labels (see immediately below) should appear on all four sides of Wrangler bags. A UN-certified container may also be required.

SHIPPING NAME:
Waste batteries, wet, containing acid

UN: 2794

CLASS: 8

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: E15-8.0-S

GENERATOR: Northern Village of Tasiujaq

DATE: 2010-08-29

Batteries may be stored in open plastic drums. Metal drums may also be used with an inserted plastic liner since batteries contain corrosive acids. The general public should be encouraged to dispose of their batteries in these drums at a designated location rather than as regular trash at the local residual materials disposal site. Labels (see immediately below) should appear on all drums. A UN-certified container may also be required.

SHIPPING NAME: Waste batteries, dry, containing potassium hydroxide

UN: 3028

CLASS: 8

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: E16-8.0-S

GENERATOR: Northern Village de Puvirnituq

DATE: 2010-06-10

Oil **paint** containers must be stored in Wrangler bags specifically designed for this residual hazardous material or in open drums. Store Wrangler bags in a designated container for residual hazardous materials or in a designated location at the local residual materials disposal site. Wrangler bags should never be stored directly on the ground. Labels (see immediately below) should appear on all four sides of Wrangler bags. A UN-certified container may also be required.

SHIPPING NAME: Waste paint F.P. 35°C

UN: 1263

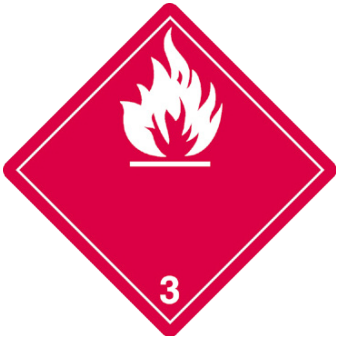
CLASS: 3

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: D02-3.0-L

GENERATOR: Northern Village of Ivujivik

DATE: 2010-10-02



Solvents, such as paint thinner, varnish and degreasing compounds, must be stored in closed metal drums. 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. A UN-certified container may also be required.

SHIPPING NAME: Waste petroleum – distillates, n.o.s. (Toluene), F.P. 35°C

UN: 1268

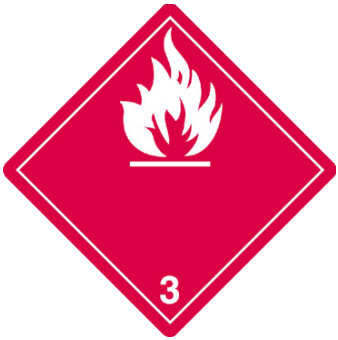
CLASS: 3

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: C02-3.0-L

GENERATOR: Northern Village of Kuujjuaq

DATE: 2010-03-23



Used antifreeze should be stored in closed plastic or metal drums. For transportation purposes, up to four drums may be secured to a pallet. Labels (see immediately below) should appear on all drums.

SHIPPING NAME: Waste antifreeze
(not covered under the TDG Regulations)

UN: n/a

CLASS: n/a

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: D01-0.0-L

GENERATOR: Northern Village of Kuujjuaq

DATE: 2010-03-23

Used oil should be stored in closed plastic or metal drums. 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: Waste – oil
(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

Antifreeze should not be mixed with other liquids, such as used oil and fuel. Mixing will increase the residual hazardous material recovery costs in the South. Notwithstanding, labels (see immediately below) should appear on all drums containing a **mixture of flammable liquids.** The liquid with the lowest flash point is indicated in brackets. Flash point (F.P.) is the temperature at which a product will ignite. A UN-certified container is also required.

SHIPPING NAME: Waste – flammable liquid, n.o.s. (gasoline) F.P. 40°C

UN: 1993

CLASS: 3

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: C02-3.0-L

GENERATOR: Northern Village of Kuujjuarapik

DATE: 2010-05-17

Household appliances, such as refrigerators, freezers and air conditioners, contain **halogenated hydrocarbons**. Before transferring such appliances to the residual materials disposal site, a certified technician must remove the halogenated halocarbons. Contact the Northern village for the next scheduled technician's visit to your community. Generally, a technician will visit once a year. Subsequently, appliances may be placed in a designated location at the local residual materials disposal site.

Care should be exercised to avoid breaking **mercury-vapour lamps**, including fluorescent-compact lamps, on removal from their sockets. Breakage could result in the release of mercury into the environment. Fluorescent lamps should be kept in their original or replacement packaging, which is considered safe.

Hazardous household materials are found in every home. Often hazardous household materials are handled like regular trash and sent to the local residual materials disposal site where they are burned, releasing toxic fumes into the air. A designated location at the residual materials disposal site should be set up for this type of waste, and residents should be encouraged to separate their hazardous household materials from their residual non-hazardous materials. Hazardous household materials are covered in greater detail in Guide No. 2, which is intended for the general public.

The storage of residual hazardous materials should not be considered an acceptable long-term management solution. Their safe storage is, however, important. Therefore, each Northern village should designate and clearly identify a location for the short-term storage of residual hazardous materials. The designated location should comply with the following:

- Drainage into and from the site is controlled to prevent runoff from entering the site and prevent spills or leaks from leaving the site.
- Residual hazardous materials should be stored by category in order to simplify identification and transportation.
- Access to the site should be restricted to personnel trained to handle residual hazardous materials.
- Regular inspections of the site and inventories should be carried out to monitor for leaks and deterioration.
- Emergency response equipment should be accessible and located nearby.
- The local fire department should be informed of the location of the site.

3.4 Transportation

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.

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.

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

3.5 Residual Hazardous Materials Management Firms

Before shipping residual hazardous materials, it is strongly recommended that you 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.

Sanexen
1471 Lionel-Boulet,Blvd., Suite 32
Varennes QC J3X 1P7
Tel : 450-652-9990
Fax : 450-652-2290
info@sanexen.com
www.sanexen.com

Biogénie S.R.D.C. Inc.
4495 Wilfrid-Hamel Blvd., Suite 200
Quebec City QC G1P 2J7
Tel.: 418-653-4422
Fax: 418-653-3583
quebec@biogenie-env.com
www.biogenie-env.com

Recubec
485 Marien
Montreal QC H1B 4V8
Tel.: 514-645-9233
Fax: 514-645-2050
info@recubec.ca
www.recubec.ca

Quatrex Environnement Inc.
2105 Monterey
Laval QC H7L 3T6
Tel.: 450-963-4747
Toll free: 1-800-967-3002
Fax: 450-622-5392
info@quatrex.ca
www.quatrex.ca

Conterm Inc.
220 Labrosse Ave.
Pointe-Claire QC H9R 1A1
Tel.: 514-694-2164
Toll free: 1-888-447-2164
Fax: 514-694-1640
info@conterm.ca
http://www.conterm.ca

4 CONCLUSION

This guide represents a brief introduction to residual hazardous materials management. However, in no manner whatsoever does it replace applicable Québec and Canadian regulations.

4.1 Resources

If you are aware of a spill or for further information about residual hazardous materials, contact the Kativik Regional Government or the Québec government:

Kativik Regional Government
Renewable Resources, Environmental and Land Use Planning Department
Environmental Specialist
P.O. Box 9
Kuujjuaq QC J0M 1C0
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 des Parcs
Regional Analysis and Expertise Branch for Abitibi–Témiscamingue and Nord-du-Québec
Emergency Coordinator
180 Rideau Blvd., Suite 1.04
Rouyn-Noranda QC J9X 1N9
Tel.: 819-763-3333, ext. 256
Hot line: 1-866-694-5454
Fax: 819-763-3202
www.mddep.gouv.qc.ca

4.2 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.

NOTES:

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RESIDUAL HAZARDOUS MATERIALS MANAGEMENT GUIDE FOR NUNAVIK

for municipalities and regional organizations

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HAZARDOUS MATERIALS | SECURE STORAGE | LABELING | TRANSPORTATION

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1 BEFORE SHIPPING: Contact a hazardous materials management company.
(See Guide #1, section 3.5)

2 SHIPPING: After materials have been properly prepared for transport, they are shipped out of the community by boat or air.

In an emergency spill situation, call:

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

To request special labels or containers:

- See Guide #1, section 3.5

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Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee
KATIVIK

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Administration régionale Kativik
Kativik Regional Government