Spill Contingency Plan
Hamlet of Cambridge Bay

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1.0 INTRODUCTION

This spill contingency plan describes the proper responses to several types of spills that may occur in the operation of the Hamlet of Cambridge Bay's (Hamlet) water and waste facilities. Included in the plan is a spill response Contact List for Nunavut, and the reporting requirements in the event of a chemical, fuel, or waste spill.

2.0 LOCATIONS OF CONTAMINANT STORAGE AREAS

Cambridge Bay's water and waste management facilities include a raw water distribution pumphouse next to Water Lake, and a sewage disposal facility (lagoon) and solid waste disposal facility northeast of the Hamlet.

The Hamlet stores a 12% solution of sodium hypochlorite in the raw water pumphouse, which is used to disinfect drinking water.

At Cambridge Bay's water and waste facilities, fuel oil is used for heating and to run pumps and other equipment. The fuel storage areas are:

- Raw water pumphouse at Water Lake (69°08'18N, 105°03'56W)
- Truckfill station in Cambridge Bay (69°07'07N, 105°03'17W)
- Garage (69°07'07N, 105°03'17W)

These locations are shown in the attached **Figure 1**.

3.0 SPILL RESPONSE TRAINING

Hamlet operations personnel should have up-to-date spill training so they are prepared in the event of a chemical, fuel or waste spill. This training will at least include on-the-job training, and may include formal spill training courses and on-site spill training exercises (mock spills). Hamlet personnel may receive formal spill response training from the Department of Environment, GN in Iqaluit.

If the Hamlet brings contractors on-site to make modifications to the water and waste facilities, the contractors should be made aware of procedures to be followed in the event of a spill.

Workplace Hazardous Materials Information System (WHMIS) training should be given to employees. WHMIS training is legally required in Canada for all employees who are exposed/likely will be exposed to a hazardous material at the workplace.

4.0 ACTION PLAN IN THE EVENT OF A SPILL

This section contains an outline of the steps to take for reporting, clean-up, and disposal of any spilled contaminants and contaminated soil or water.

4.1 Chemical Spills

The Hamlet uses a 12% solution of sodium hypochlorite to disinfect its raw source water. This solution is stored and applied in the pumphouse next to Water Lake. Possible sodium hypochlorite spills range from a small leak or spillage during normal operation, to a major spill caused by damage to a storage drum.

Sodium hypochlorite can cause several adverse health effects, including skin, eye and respiratory system irritation or burns. If ingested in significant amounts, this chemical can cause a wide range of symptoms, from nausea to death. Sodium hypochlorite can cause dangerous reactions with some chemicals, and therefore should not be allowed to mix with other chemicals.

The action plan laid out here for sodium hypochlorite spills is generally applicable to any other chemical spills that the Hamlet may deal with, but some chemicals may have special handling and disposal requirements. Refer to WHMIS (Workplace Hazardous Materials Information System) labels and MSDS (material safety data sheets) for chemical-specific information.

4.1.1 Initial Action

In the event of a chemical spill, the following measures should be taken immediately:

- Evacuate unnecessary personnel.
- Ventilate area of leak or spill (opening all doors and windows).
- Wear personal protective equipment (gloves, safety glasses, impervious material long-sleeved shirt/coat).
- If available wear respirator/self-contained breathing apparatus (SCBA), especially for large spills.
- Remove all other chemicals from the area if safe to do so.
- For small spills, dilute with water, mop or wipe up and place in proper container.
- For large spills, contain by diking (soil/dry sand/kitty litter), absorb with inert material (soil/dry sand/kitty litter) and place in chemical waste container.
- After mopping up chemical, wash area well with soap and water, mopping into spill container and not to the ground.
- Do not use combustible materials! (i.e. sawdust or cardboard).
- Contain runoff from spill clean-up.
- Notify the Northwest Territories/Nunavut twenty-four (24) hour spill reporting centre at (867) 920-8130 and receive disposal information.

4.1.2 Follow-Up Action

After the spill has been cleaned up, other reporting, disposal, and follow-up activities may be required. The following measures should be taken if applicable:

- Dispose of chemical, inert absorbent material, and mop-up water as directed by Spill Reporting Line personnel
- Arrange for repair or replacement of chemical containers, pipelines and equipment, if damaged or leaking.
- Submit a detailed report on the occurrence to an INAC Inspector, within thirty (30) days of reporting the event.

4.1.3 Spill Kit

A spill kit should be on-hand in the pumphouse in the event of a sodium hypochlorite spill. The kit should include:

- Heavy-duty gloves
- Safety glasses
- Mop/wringer/spill squeegee
- Shovel/ broom/dustpan
- Chemical spill container with sealable lid
- Sand/kitty litter (absorbent, non-flammable material).

4.1.4 First Aid

The following first aid recommendations relate to spills of sodium hypochlorite. For first aid with other chemicals, follow any chemical-specific instructions or call the twenty-four (24) hour Spill Reporting Line for assistance.

Skin Contact

Immediately flush skin with water for at least twenty (20) minutes while removing all exposed clothing. Get medical attention immediately. Wash all exposed clothing with soap and water and dry before reuse, thoroughly clean exposed shoes.

Inhalation

Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Ensure the person is at rest – no physical exertion. Get medical attention immediately.

Ingestion

If swallowed, **DO NOT INDUCE VOMITING**. If the person is conscious, have the person rinse their mouth with water. Have the person drink large quantities of water. If milk is available, have person drink milk AFTER the water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Information on poison control should sodium hypochlorite or other hazardous chemicals be ingested can be obtained by calling the Cambridge Bay Health Centre at (867) 983-2531 or the Baffin Regional Hospital Emergency Department at (867) 979-7350.

Eye Contact

Immediately flush eyes with plenty of water for at least twenty (20) minutes, lifting lower and upper eyelids occasionally at eye wash station. Get medical attention immediately.

Note to Physician:
Consider oral administration of sodium thiosulfate solutions if sodium hypochlorite is ingested. Do not administer neutralizing substances since the resultant exothermic reaction could further damage tissue. Endotracheal intubation could be needed if glottic edema compromises the airway. For individuals with significant inhalation exposure, monitor arterial blood gases and chest x-ray.

4.2 Petroleum Product Spills

Petroleum products have many operational uses in the Hamlet's water and waste systems, and used petroleum product drums or other containers end up at the Hamlet's solid waste disposal facility. Petroleum product spills range from minor spills during operations such as gas tank filling, to constant leakage from pipelines in need of repair, to major spills causing large contaminated soil/water issues.

Depending on the location of the spill, a petroleum product spill may result in contaminated soil, snow, ice or water. The contaminated material must be cleaned up and removed for disposal along with the spilled petroleum product.

4.2.1 Initial Action

In the event of a petroleum product spill, the following measures should be taken immediately:

- Shut off ignition sources, if safe to do so.
- Identify the spilled material and locate the source.
- Stop the spill at the source, if safe to do so.
- Take actions to contain/clean up spilled material.
- Record relevant information for reporting: this includes quantity of material spilled, product type, location, date, weather, and other relevant information.
- Notify the Northwest Territories/Nunavut twenty-four (24) hour spill reporting centre at (867) 920-8130 and receive disposal information.

4.2.2 Follow-Up Action

After the initial clean-up and reporting procedures, other activities may be required such as reporting and disposal. The following measures should be taken if applicable:

- Dispose of soil as directed by twenty-four (24) hour Spill Reporting Line personnel or an INAC Inspector.
- Arrange for repair or replacement of petroleum product containers, pipelines and equipment, if damaged or leaking.
- Submit a detailed report on the occurrence to an INAC Inspector, within thirty (30) days of reporting the event.
- For large spills, install wells to monitor the groundwater for signs of contamination as explained in the Subsurface Monitoring Plan (Earth Tech, 2008). Determine the level of final clean-up in consultation with an INAC inspector.

4.2.3 Spill Kit

A spill kit should be on-hand in the event of a petroleum product spill. The kit should include:

- Heavy-duty gloves
- Safety glasses
- Shovel/bucket
- Petroleum product spill container with sealable lid
- Inert (non-flammable), absorbent material (sand, kitty litter).

4.3 Waste Spills

The Hamlet's lagoon and landfill sites are monitored through the Surveillance Network Program (SNP). The wastewater lagoon operates with continuous discharge during the summer months, and the landfill SNP station monitors overland runoff from the landfill periodically during the summer months.

Because these facilities operate in continuous discharge modes, there are no spill reporting requirements for a normal lagoon discharge or landfill overland water flow. Waste may, however, be spilled before reaching the waste disposal facilities. There may also be chemical or fuel product spills at the landfill, contaminating the surrounding soil. These spill situations should be handled with the same procedures as for Petroleum Product Spills above.

5.0 SPILL RESPONSE CONTACT LIST

Organization	Contact	Phone Number
INAC Water Resources	Water Resource Officers in Iqaluit	(867) 975-4298
Northwest Territories/Nunavut twenty-four (24) Hour Spill Report Line		(867) 920-8130
Environment Canada	Environmental Protection Operations, Environmental Emergencies	(780) 951-8861

6.0 REPORTING REQUIREMENTS

The Hamlet's Water License (2001, amended 2005) calls for any chemical or petroleum product spill or unauthorized discharge of waste to be reported immediately to both the twenty-four (24) hour Spill Reporting Line and an INAC Water Resources Inspector (see contact details in previous section). Spills to be reported include spills that have already occurred, or potential spills that are about to occur. Spills must be reported if the amount is greater than or equal to the amount listed in the Nunavut (or interim GNWT) Spill Contingency Planning and Reporting Regulations for each contaminant.

Environment Canada requires that spills or environmental accidents be reported to the twenty-four (24) hour Spill Report Line. A phone number for Environment Canada's Environmental Emergencies office in Edmonton is listed above, in case Hamlet staff need more information.

When reporting a spill to the twenty-four (24) Hour Report Line, give as much of the following information as possible:

- Date and time of spill,
- Location of spill,
- Direction spill is moving,
- Name and phone number of a contact person close to the location of spill,
- Type and quantity of contaminant spilled,
- Whether spill is continuing or stopped,
- Actions taken to contain, recover, clean-up and dispose of contaminant,
- Name and phone number of person reporting spill and person in charge of the facility.

The Hamlet must also submit to an Inspector a detailed report on the occurrence within thirty (30) days of reporting the event.

7.0 REFERENCES

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