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8.0 Environmental Emergency Response Plan

8.1 Introduction

8.1.1 Purpose of Plan

The impacts of spills can be catastrophic and may threaten or damage the environment, especially water resources. As such, the Government of Nunavut (GN) requires contingency plans to be written and fully implemented. The purpose of this Environmental Emergency Contingency Plan is to provide a plan of action for all spills of sewage, solid waste, and petroleum products that may occur as a result of water supply and distribution, sewage collection and treatment, and solid waste collection and disposal operations undertaken within the Hamlet of Qikiqtarjuaq, Nunavut.

This Environmental Emergency Contingency Plan will assist in implementing corrective options quickly to minimize environmental damage. Furthermore, it defines the responsibilities of key personnel and outlines procedures to effectively and efficiently contain and recover spills of sewage, solid waste, and petroleum products arising from water, sewage, and solid waste; collection, transportation, storage, and treatment operations. It will assist the Hamlet in meeting the regulatory requirements related to reporting events to the appropriate authorities within the prescribed time period.

Sewage, solid waste, and petroleum, oil and lubricating (POL) products that currently, or potentially, fall within the Scope of this *Environmental Emergency Contingency Plan* are as follows:

- Sewage (as defined in the Nunavut Water Board (NWB) water license)
- Solid waste (as defined in the Nunavut Water Board (NWB) water license)
- Gasoline
- Diesel fuel
- Hydraulic fluid
- Lubricating oil.

8.1.2 Objectives

The objectives of this Emergency Spill Contingency Plan are to:

- Provide a plan including procedures so that the Hamlet and their Incident Spill Response Team can rapidly respond to a spill situation and minimize injury to individuals and environmental damage
- Comply with all existing regulations

Updated Operation and Maintenance (O&M) Plan for
Water Reservoir, Sewage Lagoon and Solid Waste Disposal Facility
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- Cooperate with other groups and agencies
- Be prepared and able to provide an integrated team approach with all involved departments and agencies
- Keep staff, government officials, and Hamlet residents informed.

8.1.3 Hamlet of Qikiqtarjuaq Environmental Policy

It is the policy of the Hamlet of Qikiqtarjuaq to fully comply with all applicable legislation to ensure the protection of the environment of the territory of Nunavut. The legislation includes, but is not limited to, the:

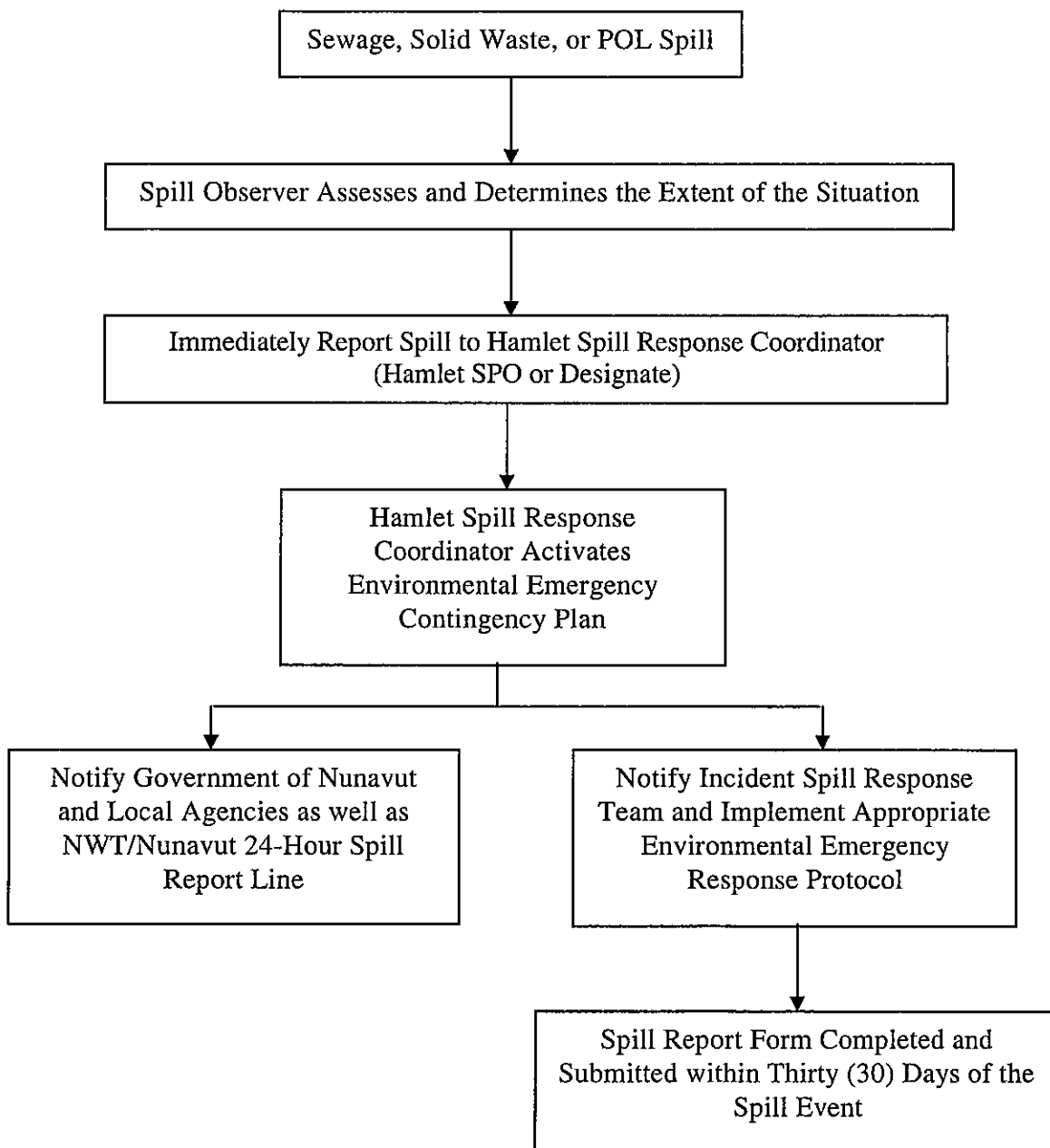
- Environmental Protection Act, Section 34 – Spill Contingency Planning and Reporting Regulations
- Nunavut Waters and Nunavut Surface Rights Tribunal Act.

The Hamlet will cooperate with other groups committed to protecting the environment and shall ensure that Hamlet employees, regulatory authorities, and the public are informed on the policies and procedures developed to help protect the environment and the citizens of the Hamlet of Qikiqtarjuaq.

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8.2 Spill Response Organization

The following is a flow chart to illustrate the sequence of events that must be followed in the event of a sewage, solid waste, or POL spill occurring during supply, distribution, collection, transportation, storage, and treatment operations:



Emergency Response Flow Chart

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8.2.1 Incident Spill Response Team

The Hamlet Senior Administrative Officer (SAO) or his/her Designate will serve as the Spill Response Coordinator for the Hamlet in the event of a sewage or POL spill during collection and transport operations. The SAO of the Hamlet of Qikiqtarjuaq will appoint and train appropriate personnel to make up the Incident Spill Response Team, which normally consist of the following personnel:

- Spill Response Coordinator Hamlet SAO (or Designate)
- Hamlet Works Personnel Will generally vary from 3-7 people throughout the year

The responsibilities of the Spill Response Coordinator are as follows:

1. Assume complete authority over the spill scene and coordinate all personnel involved
2. Evaluate the spill situation and develop overall plan of action
3. Activate the *Environmental Emergency Contingency Plan* for the Hamlet of Qikiqtarjuaq
4. Immediately report the spill to the NWT/Nunavut 24-Hour Spill Report Line at (867) 920-8130, and other applicable regulatory or assistance agencies
5. Provide regulatory agencies with information regarding the status of the clean-up activities
6. Act as a spokesperson on behalf of the Hamlet of Qikiqtarjuaq with regulatory agencies, the public, and the media
7. Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

8.2.3 Contact Information

A complete listing of contact information, including telephone numbers of standard regulatory agencies, Hamlet personnel, and assistance agencies who may be contacted to supply resources, expertise, and advice needed to deal with a spill emergency is included in Appendix G.

8.3 Spill Reporting Procedure

The Spill Response Coordinator must be notified immediately by any individual who is aware of any spill either by phone, radio, or in person.

The following is the incident reporting procedures once the Spill Response Coordinator activates this Environmental Emergency Spill Contingency Plan:

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1. Report spill immediately to the 24-Hour NWT/Nunavut Spill Report Line Phone (867) 920-8130 (Section 4.1)
2. Report immediately to the INAC Manager, Water Resources in Iqaluit at (867) 975-4550
3. Notify Hamlet of Qikiqtarjuaq Fire Department
4. Fill out the NWT/Nunavut Spill Report Form (Appendix H) within thirty (30) days of the spill event occurring.

8.3.1 NWT/Nunavut Spill Report Line

All spills as defined in this document must be reported immediately to the 24-hour NWT/Nunavut Spill Report Line. Gather the following information prior to making the call:

- Date and time of spill (if known)
- Location and map coordinates (if known) and direction of flow of spill materials if moving
- Party responsible for spill
- Product/material spilled and estimate of the quantity
- Cause of spill
- If the spill has been stopped or if it is continuing
- Extent of contaminated area
- Factors affecting spill or recovery, such as weather conditions or terrain
- If containment of spill is available
- Action taken or proposed
- If assistance is required
- Possible hazards to person, property or environment (e.g. fire, drinking water, fish, wildlife, etc.).

The information collected should be brief, and quick estimates made so the Spill Report Line and the Spill Response Coordinator can assess the situation. The information is similar to that required in boxes B, D, E, F, G, H, I, J, K, L, M, N, O, and P on the spill report form that must be completely fill out in thirty days, and available in Appendix H.

8.4 Action Plans

8.4.1 Initial Action

The instructions to be followed by the first person on the spill scene are as follows:

1. Always be alert and consider your safety first

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2. If possible, estimate the volume of material that has been spilled
3. Assess the hazard of people in the vicinity of the spill
4. If possible, and safety permits, attempt to stop the release of product to minimize potential for environmental impacts
5. Immediately report the spill to the Spill Response Coordinator
6. Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.

8.4.2 Environmental Health Protection and Mitigation Measures

The environmental protection and mitigation measures outlined in the following sections are to be taken by all personnel responding to a spill event and to reduce the chance of environmental impairment and health hazards due to spill, release, or other incident.

8.4.3 General Procedures

The following general clean-up procedures shall apply for all spill areas within the Hamlet:

- Always wear personnel protective equipment (PPE)
- Smoking is prohibited during all spill response activities
- Eliminate all ignition sources
- Contain spills on soil or rock by construction of earthen dykes using available material. If soil is not available, place sorbent materials or a boom in the path of the spill. As the sorbent barrier becomes saturated, continually replace it. Fuel or other liquids lying in pools, or trenches are to be removed with pumps, buckets, or skimmers
- If the ground is snow covered, create snow dykes, and line with a chemically-compatible liner for containment and recover of liquid
- For fuels on water, deploy containment booms, and recovery as much fuel as possible with a work boat and skimmer if the area has less than 1/10th ice cover. If the area is ice infested, burn any fuel spills using igniters
- Apply sorbets, if necessary
- Assess potential for disturbance of wildlife, fish, and archaeological sites by spill or clean-up operations
- Notify environmental authorizes to discuss available and feasible disposal and clean-up options
- Conduct required clean-up operations
- Assess and appropriately treat any areas disturbed by clean-up activities with laboratory testing
- Ensure the site has been completely restored and cease operations, only when all work is finalized and laboratory testing confirmed.

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Specific procedures relating to mitigating measures for specific contaminants following below:

8.4.4 Mitigative Measures: Gasoline, Diesel Fuel, Hydraulic Fluid, Lubricating Oil and Aviation Fuel

If possible, and safety permits, stop the flow of product, which is occurring, and eliminate all ignition sources. *Smoking is prohibited during all spill response activities.*

POL Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapors have dissipated
- Remove the spill by using absorbent pads or excavating the soil, gravel or snow
- Remove spill splashed on vegetation using particulate absorbent material
- If soil, gravel, or vegetation are to be removed from the site, the Hamlet shall contact regulatory agencies for approval before commencing with the removal.

POL Spill On Water

- Use containment boom to capture spill for recovery after vapors have dissipated
- Use absorbent pads to capture small spills
- Use a petroleum skimmer for larger spills.

POL Spill on Ice and Snow

- Build a containment berm around spill using snow
- Remove spill using absorbent pads or particulate sorbent material
- The contaminated ice and snow must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

POL-Contaminated Material Storage and Transfer

- All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labeled containers. All containers will be stored in a well ventilated area away from incompatible materials.

Disposal

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material. *No contaminated material is to be disposed of in any Facility operated by the Hamlet of Qikiqtarjuaq without the express written consent of the Nunavut Water Board.*

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8.4.5 Mitigative Measures: Ethylene Glycol Antifreeze

If possible, and safety permits, stop the flow of product, which is occurring.

Ethylene Glycol Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill
- Remove the spill by using absorbent pads or excavating the soil, gravel, or snow
- Remove spill splashed on vegetation using particulate absorbent material
- If soil, gravel, and/or vegetation must be removed from the spill site, the Hamlet shall contact the appropriate regulatory agencies for approval before commencing with the removal.

Ethylene Glycol Spill on Water

- Use containment boom to capture spill, and pump contaminated water into 205 L drums.

Ethylene Glycol Spill on Ice and Snow

- Build a containment berm around spill using snow
- Remove spill using particulate sorbent material
- The contaminated sorbent material, ice and snow must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

Ethylene Glycol Storage and Transfer

- All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labeled containers. All containers will be stored in a well ventilated area away from incompatible materials.

Disposal

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material. *No contaminated material is to be disposed of in any Facility operated by the Hamlet of Qikiqtarjuaq without the express written consent of the Nunavut Water Board.*

8.4.6 Mitigative Measures: Sewage

If possible, and safety permits, stop the flow of product, which is occurring.

Sewage Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill, and to prevent sewage from entering any water body

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- Remove the spill by using vacuum trucks or excavating the soil, gravel, or snow
- If soil, gravel, and/or vegetation must be removed from the spill site, the Hamlet shall contact the appropriate regulatory agencies for approval before commencing with the removal.

Sewage Spill into Water

- Use containment boom to capture spill, and pump contaminated water into vacuum trucks
- Deposit contaminated water to the Hamlet sewage lagoon
- Monitor the affected water body sampling at a minimum for Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), ammonia (NH₃), and faecal coliforms (FC).

Sewage Spill on Ice and Snow

- Build a containment berm around spill using snow
- Remove spilled sewage and contaminated snow and ice to the Hamlet sewage lagoon.

Sewage Storage and Transfer

- All contaminated water, ice, snow, soil, and clean-up supplies will be deposited to the Hamlet sewage lagoon or landfill facility, as appropriate.

8.4.7 Mitigative Measures: Solid Waste

Solid Waste Spill on Soil, Gravel, Rock, or Vegetation

- Physically remove the spilled solid waste from the waste, and deposit to the approved Hamlet Solid Waste Disposal Facility
- If soil, gravel, or vegetation are to be removed from the site, the Hamlet shall contact regulatory agencies for approval before commencing with the removal.

Solid Waste Spill into Water

- Use containment boom to capture soil for recovery
- Physically remove the spilled solid waste from the water, and deposit to the approved Hamlet Solid Waste Disposal Facility
- Capture any sheen from the water using absorbent pads or skimmer, and deposit any used absorbent pads to the approved Hamlet Solid waste Disposal facility.

Solid Waste Spill on Ice and Snow

- Build a containment berm around spill using snow
- Physically remove the spilled solid waste and deposit to the approved Hamlet Solid Waste Disposal Facility

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- If soil, gravel, or vegetation are to be removed from the site, the Hamlet shall contact regulatory agencies for approval before commencing with the removal.

Disposal

Any solid waste shall be removed to the approved Hamlet Solid Waste Disposal Facility.

8.4.8 Spill Recovery Assessment

In order to determine whether a spill has been successfully remediated, samples of the soil and/or water within the spill containment area and surrounding the area, are to be collected and sent to an accredited Canadian Association of Environmental Analytic Laboratories (CAEAL) laboratory to be analyzed for the chemical parameters contained in the spill material. If concentrations of the spill chemicals are not detected, or are at concentrations below the applicable Territorial, Federal, or CCME regulations/criteria, the spill clean-up will be determined a success. Clean-up operations may then cease.

8.5 Spill Response Resource Inventory

8.5.1 Additional Personnel Available

In addition to Hamlet staff, approximately 10 people are available from the Qikiqtarjuaq Fire Department, to assist in spill response and clean-up activities. Personnel from the local RCMP Detachment will be available for securing the site from unauthorized individuals, closing roads, etc. The Community Health Centre have personnel to assist in the treatment of anyone injured during the emergency.

8.5.2 Spill Response Equipment Inventory

Equipment available within the community to assist in responding to a hazardous materials spill includes heavy equipment (i.e. vacuum trucks, dozer, front end loader, and grader), as well as various hand held tools including shovels. In addition, three spill kits should be available on site during spill incident response operations. Each spill kit should contain the following supplies.

Composition of Spill Kit

	Quantity
• 360 litre polyethylene over pack drum	1
• oil sorbent booms (5" X 10')	6
• oil sorbent sheets (16.5" X 20" X 3/8")	100