SPILL CONTINGENCY PLAN

HYDROCARBON IMPACTED WATER TREATMENT

Document presented to

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1. SPILL CONTINGENCY PLAN

1.1 General

The spill emergency plan was developed to assist Qikiqtaaluk Environmental Inc. (QE) in implementing measures to protect the environment and minimize impacts from spill events. It provides precise instructions that all personnel shall be familiarized with during emergency situations. This plan outlines procedures for responding to spills in a way to minimize potential health and safety hazards, environmental damage, and clean-up costs.

The spill emergency plan ensures that QE will respect all applicable laws, regulations and requirements of federal and/or territorial authorities. QE will hold and comply with all required permits, approvals and authorizations required for the project. QE will work in close collaboration with all regulatory authorities to ensure full compliance according to applicable federal or territorial laws, regulations and/or guidelines. The following documents shall be used as spill containment guidelines:

- The Canadian Environmental Protection Act controls hazardous substances from their production and/or import, their consumption, storage and/or disposal;
- The Transportation of Dangerous Goods Act and Regulations describe safety measures in the transportation of dangerous goods. The act applies to all handling of dangerous goods by any means of transport whether or not the goods originate from or are destined for any place(s) in Canada;
- The Guidelines for Preparation of Hazardous Material Spill Contingency Plans describe parameters that should be considered in the development of hazardous material spill emergency plans. It also defines the information that should be incorporated into a comprehensive contingency plan;
- The Code of Practice for Used Oil Management defines appropriate environmental options for handling, storage, collection, recycling, transportation, reuse and/or disposal of used oils in Canada. It provides standard procedures to handle used oil generators. It also helps regulatory authorities to formulate provincial and/or regional strategies for used oil management;
- The Nunavut Environmental Protection Act governs the protection of the environment from contaminants. The act defines offenses and penalties as well as the powers of environmental inspectors;
- The Code of Practice for Used Oil Management defines appropriate environmental options for handling, storage, collection, recycling, transportation, reuse and/or disposal of used oils in Canada. It provides standard procedures to handle used oil generators. It also helps regulatory authorities to formulate provincial and/or regional strategies for used oil management;
- The Nunavut Environmental Protection Act governs the protection of the environment from contaminants. The act defines offenses and penalties as well as the powers of environmental inspectors;

- The Nunavut Spill Contingency Planning and Reporting Regulations describe requirements for spill reporting and emergency planning;
- The Environmental Guideline for Industrial Waste Discharges, from the Government of Nunavut's Department of Sustainable Development provides water discharge criteria for many parameters.

1.2 Hazardous Liquids found Onsite And Storage Capacity

No fuel or any other hazardous liquids are used during the operation of the hydrocarbon impacted water system. Hydrocarbons may be recovered from the oil/water separator, and such waste oil will either be used with a waste oil furnace, or containerized for off-site disposal. The volume of waste oil to be managed from the treated system is variable and difficult to predict as it is dependent on the degree of impacted snow/water.

The industrial area in Iqaluit where the hydrocarbon impacted water treatment is installed has a permit from the Government of Nunavut to be an authorized hazardous waste transfer station. Therefore, QE already has spill response material, additional containers including tote tanks and overpack drums in stock, and can thus easily manage any waste oil generated by the treatment system.

All fuel storage containers will be situated in a manner that allows easy access and removal of containers in the event of leaks or spills. Large fuel caches in excess of 20 drums will be inspected daily. QE will manage the hazardous waste transfer station in Iqaluit and each fall will coordinate for the retrograde shipment through sealift of properly packaged and labelled hazardous waste to authorized disposal facilities located in the Montreal area.

12 Volt fuel pumps (and hand pumps) are to be used for fuel transfer operations with drums of waste oil.

1.3 Duties and Responsibilities

As part of the spill emergency response, QE is responsible for implementing, through its manager or its authorized representative, the following procedures.

1.3.1 Waste Oil or Impacted Water Spill

- To communicate the spill event immediately to the GN official (immediately shall mean upon discovery);
- To authorize the use of personnel and applicable equipment to contain the spill using the most reliable method;
- To eliminate all fire hazards and potential ignition sources near the spill area;
- To implement all required safety and security procedures at the site of the spill;

- To eliminate the source of the spill or reduce the rate of discharge, if such procedures can be implemented with respect to health and safety requirements;
- To contain the spill using the most appropriate methods for the situation (dykes, ditches, sorbent materials, containment booms and other barriers);
- To evaluate the possibilities of recovering spilled chemicals;
- To mobilize all available personnel, equipment and tools, as required;
- To obtain assistance from GN (through its official), from the Hamlet and/or from Environment Canada, if required. To consult and, if required, request assistance from the Canadian Coast Guard and/or and Fisheries and Oceans Canada if the spill affects water;
- To obtain additional assistance by hiring northern residents from Iqaluit and/or specialized spill response firms, if required;
- To comply with all applicable guidelines and regulations;
- To assess, on a preliminary basis, environmental impacts on marine, freshwater and terrestrial wildlife and on the general ecosystem, to be communicated to relevant authorities;
- To provide documentation for all events and actions;
- To report the event to the GN Spill Report Line and to prepare and submit a written spill report using the appropriate form (see below for the list of information required for such submittals).

1.3.2 Other Duties and Responsibilities

As part of the spill emergency response, the Manager is responsible for the implementation of the following procedures:

- To ensure that appropriate resources required to respond and clean the spill are made available;
- To supervise containment, cleanup and remediation operations;
- To provide documentation for all events and actions, using the Spill Report Form found at the end of this section;
- To notify relevant government authorities.

Otherwise, QE will ensure that each selected shipment company has prepared the contingency plans (emergency response plans {ERP}) required to face spill events, and that they comply with all applicable regulations. The shipping company will be responsible to register their ERP, if required, with the Director General of the Transport of Dangerous Goods Directorate if materials identified for transport exceed volumes listed in Schedule XII of the TDG regulations. The ERP shall contain information on the nature of risks from dangerous goods and contact names and numbers for emergency assistance.

If a spill of hazardous materials exceeds the volumes listed in Part 9, Table I of the TDG regulations during transport, the shipment company authorities must immediately notify the relevant authorities using the contact lists defined in Table II of the same regulations. The shipment authority must also inform his/her employer, the owner of the transport vehicle, and the dangerous goods owner. The shipment authority's employer will then be required to submit a written report to the TDG Director General within 30 days following the spill event.

The Contractor will ensure that the selected shipment company reports all spill events using the appropriate spill response line. Quantities of substances which represent "a spill" are listed in Schedule B of the NWT Spill Contingency and Reporting Regulation.

If a spill occurs on water during shipment of material, the shipment company will be responsible to deploy containment booms and recover as much fuel as possible with required and available equipment.

1.4 Training and Drills

All personnel onsite shall be informed that any spill of fuel and/or hazardous liquids or solids, whatever the extent, must be reported immediately to the manager or his authorized representative.

These persons shall also be aware that defensive actions and techniques employed will depend on a variety of factors. These include, but are not limited to:

- Type of pollutant;
- Degree of loss;
- Topography of the nearby area;
- Proximity to water.

Also, they should be aware that the most common pollution incident potentially occurring for this project will probably be caused by fuel, oil or other hazardous fluid spills onto land or water resulting from:

- Human error during transfer operations of fuel from the oil/water separator to the container;
- Leaks from fittings or valves;
- Collapse of a hydrocarbon impacted water container.

Finally, the spill containment team shall be aware that, if a spill occurs, the protection of human health and safety shall be a priority. Even if emergency procedures are attempted to rapidly clean, contain and dispose of released contaminants to minimize further environmental impact, human exposure during a spill event is to be considered as a real concern and be prevented.

1.5 Material and Equipment

In order to prevent spills and provide an appropriate response in case of spill events, QE maintains appropriate equipment and material required onsite. A list of spill prevention and spill containment equipment including protective clothing is presented below. Spill kits have a capacity of 630 L (see www.quatrex.ca - item Spill kit Q Ultra 75)

1.5.1 Spill Prevention

The materials and equipment used for spill prevention are essentially related to temporary fuel tank inspection, and temporary containment basin construction:

Quantity	Description
1	Roll of HDPE geomembrane for lining bermed areas and fuel transfer areas;

1.5.2 Spill Containment

The material and equipment available onsite to be used for spill containment and emergency response including protective clothing are:

Quantity	Description
5	Containerized spill kits having 10 sorbent booms, 2 safety glasses. 2 Nitrile gloves, bails of 100 sorbent sheets
10	38" x 144' Rolls of sorbent sheets
5	100 metre long / 8 inch diameter oil sorbent booms
1	Vacuum suction hose/tank installed on a trailer
2	1 ½" x 25 ft oil hose c/w cam lock fittings
2	2" x 25 ft oil hose c/w cam lock fittings
10	Emergency eye wash station c/w saline solution
1	Caterpillar bulldozer (D6)
1	Caterpillar excavators (320CL)
1	Caterpillar excavator (322BL)
1	Caterpillar integrated tool carrier (IT38G) c/w snow/gravel bucket, 4 ft adjustable forks, material handling arm
1	Caterpillar Wheeled Loader (950G) c/w snow/gravel bucket, 4 ft fixed forks
8	spade nose shovels
1	Electric fuel pump - stationary 115 V, approx. 15 USGAL/min, explosion proof switch, water sediment filter – is it still on site?
100	Saranek & Tyvek suits

1.6 Spill Response Procedures

Following a spill event, specific procedures shall be implemented by the person who first noticed the emergency situation. These procedures are as follows:

- Immediately warn other personnel working near the spill area;
- Evacuate the area if health and safety are judged to be threatened;
- If not, take appropriate measures to stop, contain and identify the nature of the spill;
- Report all relevant information concerning the spill event to QE's manager, such as the type and volume of contaminant, the location and approximate size of the spill, the actions already taken to stop and contain the spill and all other observations including the presence of wildlife and meteorological conditions.

The spill cleanup approaches shall be discussed with the GN. The GN will communicate with Environment Canada. The selected methods shall be based on criteria where the impacts on human health and safety, wildlife, land, water and other environmental parameters are minimized.

To manage a spill incident, some emergency clean-up guidelines shall be followed by the Contractor when applicable. These incorporate some of the material previously described and include:

- Sorbent materials will be used to contain waste oil spills and/or to minimize its movement;
- Appropriate protective clothing and other safety devices will be used to handle spilled materials;
- When the spill occurs on land, dykes may be constructed to limit the spill movement providing granular material is sufficiently available. Snow dikes covered with an impermeable liner may also be used if snow still remains. Otherwise, containment booms will be installed in front of the plume and secured to make sure these sorbent barriers do not become saturated;
- Any free product settled in ditches, trenches or any other ground cavities will be removed using equipment such as pumps, buckets or skimmers. Recovered fluids will be temporarily stored in appropriate containers;
- Any spill areas will be cleaned to an extent where land, water and other disturbed environmental systems are remediated and the site is left as close as possible to its original state.

1.7 Reporting Requirements

Spills will immediately be reported using the 24 Hour Spill Report Line (867) 920-8130 (NWT). Immediately shall mean upon discovery. Failure to report spills can lead to fines. A written spill report will then be prepared by the Contractor with the assistance of the Engineer and submitted to the GN and the Spill Report Line supervisor (see end of this section). This report will include:

- Date and time of the incident;
- Location or map coordinates and direction of spill movement if not at steady-state;
- Party responsible for the spill;
- Type and estimated quantities of spilled contaminant(s);
- Specific cause of the incident;
- Status of the spill indicating if spilled materials are still moving or now at steady-state;
- Approximate surface of contaminated area;
- Factors affecting spill or recovery such as temperature, wind, etc.;
- Status on containment actions indicating whether:
  - naturally;
  - booms, dykes or other, or
  - no containment has been implemented;
- Corrective action taken or proposed to clean, contain or dispose of spilled material;
- Whether assistance is required and in what form;
- Whether the spill poses a hazard to persons or property (i.e., fire, drinking water);
- Comments and recommendations;
- Name, position and employer of the person reporting the spill;
- Name, position department of the person to whom the spill is reported.

Apart from reporting requirements, QE, through its manager, may require special assistance. These could be implemented for the following reasons:

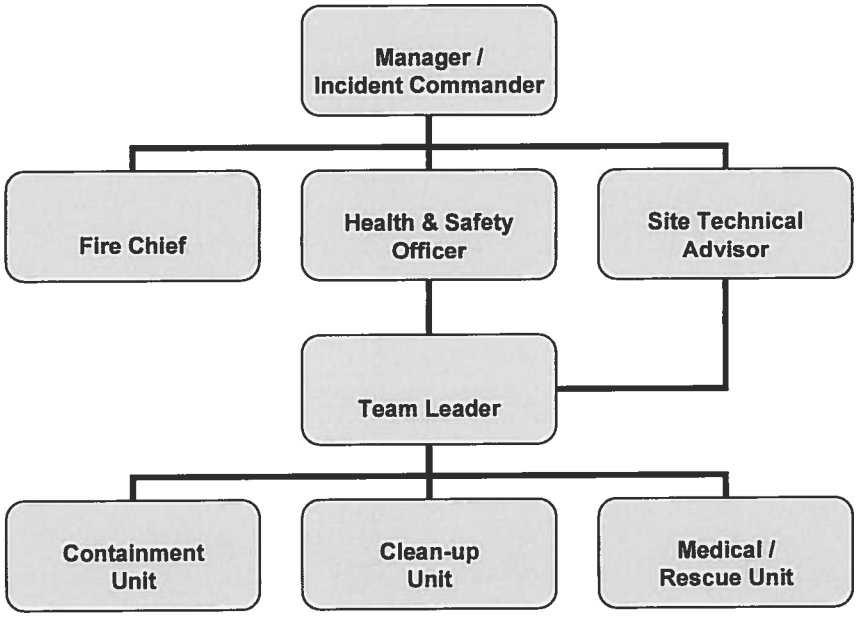
1. If assistance and coordination are required for spill response, Environment Canada (Nunavut Office) and the Department of Environment of the Government of Nunavut can be contacted at:
    a. Environment Canada (867) 975-4644
    b. Environment Canada (24-hour emergencies) (867) 920-5131
    c. INAC Water Resources Inspector (867) 975-4289
    d. GN Department of Environment (867) 975-7700
    e. GN DOE, Manager of Pollution Control (867) 975-7748

2. If medical assistance and coordination are required when injuries occur during spill incident/spill response and/or critical incident stress is observed after an event, the Baffin Regional Hospital (general enquiries) shall be contacted at:
    a. Baffin Regional Hospital (867) 979-7300

3. QE's manager and/or project managers can be reached at:
    a. Greg Johnson(Manager) 514-940-3332
    514-717-7604 (24 hr)

1.8 Spill Report Form

The Nunavut Spill Report Form is found hereafter.


Manager / Incident Commander
Fire Chief
Health & Safety Officer
Site Technical Advisor
Team Leader
Containment Unit
Clean-up Unit
Medical / Rescue Unit