SPILL CONTINGENCY PLAN

for

Petroleum Product

for

Harbour Development Project

Pangnirtung, Nunavut

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1.0 BACKGROUND

DFO has the responsibility for ensuring that the management of petroleum products storage and dispensing systems at the Harbour Development Project, Pangnirtung, Nunavut is in accordance with the most current legislation.

Petroleum products and allied petroleum products are defined in the Regulations and include product such as diesel fuel.

2.0 SCOPE OF CONTINGENCY PLAN

The site-specific emergency plan included in this document applies only to the petroleum product dispensing systems identified in this document. This plan addresses emergencies related to fire or product release associated with the noted dispensing systems only, and focuses mainly on the environmental and the human health and safety aspects of the plan.

Spills of petroleum products cannot be entirely prevented; however, the impacts of spills can be minimized by establishing a predetermined line of response and action plan. The remote location of developments in Nunavut and the environmental sensitivity of the region underlines the necessity for good spill contingency planning.

3.0 EMERGENCY PLAN AVAILABILITY AND USAGE

A copy of the site-specific emergency contact list will be kept on site.

4.0 FUEL DISPENSING SYSTEMS AND SURROUNDINGS

4.1 System Description

All diesel fuel used at the site by DFO contractors is delivered by fuel dispensing trucks owned and operated by Pangnirtung Eskimo Co-op Limited.

Diesel fuel is transferred from the dispensing truck to vehicles via an electric fuel dispensing pump and a rubber fuel transfer hose with a manually operated discharge nozzle. When not in use, the diesel fuel transfer hose is coiled inside the cabinet in the truck

4.2 Delivery Truck Locations and Surroundings

The contractors on site usually require fill-up at periodic times based on their construction activities and the number of equipment that is working at the site. The site generally utilizes 1-2 excavators (345/365) and 1-3 off–road HM400-2 Rock Trucks. The fuel delivery location is usually located a minimum of one hundred meters from the salt water of the Pangnirtung Harbour.

The site area in the vicinity of the harbour exterior is relatively level with a slight slope towards the adjacent municipal roads

5.0 PETROLEUM PRODUCTS IN SYSTEMS

Diesel fuel is dispensed for operating contractor's equipment at the site. A summary of the hazards associated with diesel fuel and gasoline and the first aid measures and precautionary measures for diesel fuel are included in the following sections.

5.1 Hazards of Diesel Fuel

Diesel fuel is a combustible liquid and a toxic material. Diesel fuel is rated as a slight health hazard, a moderate flammability hazard and an insignificant reactivity hazard. Diesel fuel can be easily ignited by heat, sparks or flames. Diesel fuel vapors are heavier than air and may collect in low-lying areas. Human exposure to diesel fuel can be through dermal contact, ingestion or inhalation. Acute exposure to diesel fuel can result in headaches and other symptoms of central nervous system (CNS) depression, such as nausea and dizziness, as well as a burning sensation in the chest following inhalation. Aspiration into the lungs can cause severe pneumonitis, with coughing, gagging, shortness of breath, chest pain and/or pulmonary edema. Ingestion may produce nausea, vomiting and cramping.

5.2 Precautionary Measures – Diesel Fuel

When handling diesel fuel or gasoline, the following precautionary measures should be used:

- **Personal Protective Equipment**
  - **Gloves** – Nitrile, Viton™ or polyethylene preferred.
  - **Eye Protection** – Chemical safety goggles or face shield, as a good general safety practice.
  - **Respiratory Protection** – NIOSH approved. SCBA or airline respirator with escape cylinder for confined spaces or work with sulphur-containing product. If an air-purifying respirator is appropriate, use organic vapor cartridges. A qualified occupational health and safety professional should advise on respirator selection.
  - **Clothing & Footwear** – Coveralls to prevent skin contact with product. If clothing or footwear becomes contaminated with product, completely decontaminate it before re-use, or discard it.

- **Handling Procedures and Equipment** – Keep containers closed. Keep work area free of ignition sources. Use non-sparking equipment, explosion-proof ventilation and intrinsically safe electrical equipment. Ground handling equipment.

- **Leak and Spill Procedure** – Keep unauthorized persons away. Eliminate all sources of ignition. Ventilate area. Stop leak if it can be done safely. Prevent entry into sewers, waterways or confined spaces. Absorb or cover with dry earth, sand or other non-combustible material and use clean, non-sparking tools to transfer to container.

- **Waste Disposal** – Consult local authorities for advice.

6.0 EMERGENCY RESPONSE – PRODUCT RELEASES

6.1 Minor and Significant Releases

The following are considered to be significant spills or leaks from a petroleum product storage system: any spill or leak that could threaten public health and safety, or reach a harbour or other body of water; any ongoing leak from a storage tank system; or any spill or overfill greater than 70 L.

The following are considered to be minor spills or leaks from a petroleum products storage tank system: any spill or leak that does not threaten public health and safety, and can not reach a harbour or other body of water; a leak of less than 70 L from a storage tank system, where the leak is no longer ongoing; or a spill or overfill less than 70 L.

The most probable minor product release at the site would occur as a result of minor spillage during the filling of equipment with diesel fuel, as the result of minor leakage or spillage during on-site dispensing of diesel fuel , or as the result of minor leakage from aboveground diesel fuel truck or hoses. The most probable significant product release at the site would occur as a result of overfilling the contractors' vehicles, as the result of leakage or spillage during on-site dispensing of diesel fuel or the result of leakage from the delivery trucks.

6.2 Prevention of Product Releases

The following measures will reduce the likelihood of occurrence of product releases at the storage tank systems:

1. Installation of suitable vehicle protection systems around the fuel delivery truck systems.

2. Installation of suitable supports and protection from impacts (e.g., proper location of fuelling vehicles.

3. Provision of spill overflow preventer/secondary containment on diesel fuel transfer trucks – each vehicle is equipped with an automatic floats b which prevents the overfilling of fuel during refueling operations.

4. Prohibition of vehicle movement in and around the area while diesel fuel refueling operations are underway.

5. Completion of regular inspections and maintenance of fuel dispensing systems, including the dispenser and pumping systems, hoses and pipelines.

6. The contractor periodically checks all vehicles to ensure that they are running properly and no leaks of fuel or other products are present in the vehicles.

7. Following standard operating procedures during all petroleum products delivery and dispensing operations.

8. Full-time attendance of on-site personnel during all petroleum products delivery and dispensing operations.

9. Draining petroleum products transfer hoses before moving the hoses around the storage tank and refueling areas.

6.3 Preparation for Product Release Emergencies

The following measures will prepare the site for product release emergencies:

1. Development of a site-specific emergency / contingency plan.

2. Posting of an emergency contact list in the vicinity of the site.

3. Ensuring that, as a minimum, a fully charged ABC fire extinguisher is available on the site.

4. Ensuring that the personnel who operate, inspect or maintain the storage tank systems are familiar with the emergency plan and familiar with the location and usage of emergency response equipment, including fire extinguishers.

5. Ensuring that arrangements are made, where necessary, with local contractors to assist, if needed, in the event of an on-site emergency.

6.4 Emergency Response – Product Releases

In case of a significant or minor spill or leak from the fuel delivery trucks, the individual discovering the product release should follow the emergency response plan outlined below.

1. Contact the CCG Environmental Emergencies Line at 1-800-563-9089. Please note that all spills or leaks are reported to the CCG Environmental Emergencies Line, whether they occur on land or water.

2. Shut down petroleum products transfer operations, if they are in progress.

3. Shut off any ignition sources in the area (e.g., motors, electrical circuits, etc.).

4. Enforce "No Smoking" in the area.
5. Refer to the MSDSs in Appendix A for more detailed information on diesel fuel.
6. Contain the escaped petroleum products if possible and safe to do so. If possible, prevent the release from reaching any open drains or catch basins or the adjacent harbour. Dependent on the volume of the release, the escaped petroleum products may be contained with sorbent materials from the on-site spill kit or by constructing berms from sand, soil or other available materials. If possible, berms should be constructed around open drains and catch basins located down-gradient from the release point or between the harbour and the release point. Soil berms (i.e., a berm constructed by placement of a raised row of soil) are normally effective to contain petroleum products migration on soil, rock, asphalt and concrete. If sorbent materials are used to contain escaped petroleum products, the sorbent materials must be replaced continually when saturated with petroleum products.
7. Isolate leaking components on the fuel dispensing systems, if applicable and possible.
8. Arrange for the immediate removal of the remaining petroleum products from the leaking tanks, if necessary.
9. Take reasonable steps to recover or remove the escaped petroleum products. All personnel involved in the cleanup should wear appropriate personal protective equipment. Personnel on site should assess the potential for disturbance of the surrounding area and wildlife by the release or the planned clean up operations. All petroleum products contaminated soil, groundwater or surface water, contaminated berm materials and contaminated absorbent materials should be excavated/removed and disposed of off-site at an approved petroleum products disposal facility.
10. Inspect the storage systems and arrange via the Emergency Plan Coordinator for upgrade or replacement, if required.
11. When reporting a spill or leak, personnel will be asked to provide various information including:
    - Name and telephone number of the person reporting the spill;
    - Report date and time of spill;
    - Location of spill and direction of spill movement;
    - Extent of injuries, if any;
    - Classification, name and quantity of dangerous good spilled;
    - Party responsible;
    - Cause of spill;
    - Has the spill ceased or been terminated or is it continuing;
    - Extent of contaminated area;
    - Factors affecting spill recovery;

- Containment measures;
- Response actions to date;
- Request for assistance;
- Potential health and environmental hazards; and,
- Comments and recommendations (if any).

6.5 Recovery from Product Release Emergency

After a product release emergency has occurred on the site, various measures may be required:

1. Once the product release emergency has been removed, the Emergency Plan Coordinator must complete a DFO Emergency Response / Environmental Incident Record Form to document the details of the incident.
2. It may be necessary to complete subsurface investigations and/or remediation of impacted soil, groundwater or surface water in the vicinity of the storage tank systems.
3. If necessary, the removal and disposal of petroleum hydrocarbon impacted soil, groundwater or surface water or spilled petroleum products must be carried out in accordance with existing environmental regulations.
4. The storage tank systems must be fully inspected, with any damaged components repaired or replaced before the storage tank system is put back into service. Dependent on the extent of the damage, particularly if the product release emergency was also associated with a fire emergency, it may be necessary to remove the petroleum products from the storage tank systems and replace the entire system.
5. A temporary petroleum products storage tank system may be required for the site until the damaged system is inspected and repaired or replaced.
6. Dependent on the nature and circumstances of the product release emergency, it may be necessary to revise the storage tank system's operations, inspection or maintenance procedures or to revise the emergency plan.

7.0 EMERGENCY RESPONSE ROLES AND RESPONSIBILITIES

7.1 Key Personnel/Groups

Key personnel/groups in the implementation of this spill contingency plan include:

1. DFO Representative on Site.
2. Emergency Plan Coordinator
3. Personnel who operate the fuel dispensing system.

4. The current local contractor on site.

5. Local emergency responders (i.e., fire department, local contractors).

7.2 Roles and Responsibilities

The roles and responsibilities of each of these personnel/groups with respect to the implementation of the emergency plan follow:

DFO Site Personnel, Pangnirtung or Winnipeg, MB

1. Ensure that the emergency plan is maintained up-to-date.

2. Ensure that an Emergency Plan Coordinator is in place.

3. Ensure that the Emergency Plan Coordinator is trained with respect to the content and implementation of the emergency plan and the usage of emergency response equipment.

Emergency Plan Coordinator

1. Is the main person to coordinate the implementation of the emergency plan.

2. Ensure that a copy of the emergency plan is provided to the subject site.

3. Ensure that a copy of the emergency plan is provided to the local fire department and to any local contractors retained by DFO to assist, if necessary, in the implementation of the emergency plan.

4. Ensure that the local diesel supplier contact names and numbers are added to the emergency contact list.

5. Ensure that a copy of the emergency contact list is posted on the job site.

6. Confirm the type and location of emergency response equipment available at the site.

7. Ensure that the necessary emergency response equipment is maintained at the site.

8. Ensure that personnel who operate, inspect and maintain the storage tank system are familiarized with the emergency plan and the location and usage of emergency response equipment.

9. Ensure that arrangements are in place with local contractors to provide equipment and materials, if necessary, to assist in emergency responses at the site, and that the contact names and numbers are on the emergency contact list.

Personnel Who Operate, Inspect or Maintain Fuel Dispensing Systems

1. Familiarize with the spill contingency plan.
2. Familiarize with the location and usage of emergency response equipment.
3. Follow the emergency plan if necessary.
4. Contact the local emergency responders in the event of an emergency.

Local Emergency Responders

1. **Local Fire Department** - The local fire department will respond to fire emergencies, when called. The local fire department will take control of the emergency response for fires, while on site.
2. **Local Contractors** – Local contractors will provide equipment (e.g., backhoe, loader, boat) and/or materials (e.g., sand, clean fill), at the request of the Emergency Plan Coordinator, to assist DFO in an emergency response at the site. 8.3

Emergency Contact List:

Emergency Contact	Telephone Number
Emergency Plan Coordinator – Peter Jacobsen, Tower Arctic Ltd. (This name may be changed as various phases of the work is completed.)	867-473-4114
DFO Representative on Site	867-473-4099
Diesel Fuel Supplier: Eskimo Co-op Limited Alan Patterson	867-473-8936
Local Contractor (Tower Arctic Ltd.)	867-473-4114
PPD Officer	867-899-7399 867-899-7308
NWT Spill Line	403-720-8130 403-873-5763
Fire Department	867-473-4422
SAR	767-473-8953
CCG Environmental Emergencies Line (24 hours)	1-800-563-9089

8.0 TRAINING REQUIREMENTS

Training associated with this emergency plan will consist primarily of review and general familiarization with the emergency plan, the emergency contact list and the location and usage of on-site emergency response equipment and resources. The Emergency Plan Coordinator will review the site-specific emergency plan and is familiar with the location and usage of the on-site emergency response equipment and resources. The Emergency Plan Coordinator will ensure that all site personnel and contractors involved in the fuel dispensing operations, and all contractors retained by DFO to provide assistance or resources during an emergency response at the site, review the site-specific emergency plan, sign off on the compliance agreement, and are familiar with the location and usage of the on-site emergency response equipment and resources.

The current supplier of diesel fuel has been trained in the following course:

- Department of Community and Government Services
  Petroleum Products Division Aviation Fuel Handling Course Parts 1-6
- The Co-operative also has a Procedure Book for the Handling of gasoline and diesel fuel spills

9.0 EMERGENCY RESPONSE EQUIPMENT

The following constitutes the availability of emergency spill contingency equipment or materials on site:

The emergency response equipment stored on the fuel truck normally consists of a spill response kit and a fire extinguisher. Available site information indicates that three spill response kits are present in the on-site yard area. Each of these spill kits contains absorbent pads and loose absorbent materials. A fully stocked spill kit and a fully charged ABC fire extinguisher should be readily accessible in the petroleum products storage tanks areas. As a minimum, each spill kit should contain:

- One absorbent "Loose Particulate" (50 L bag);
- Thirty absorbent pads (17" x 19" x 3/8");
- Three disposal bags (large).

The current contractor, Tower Arctic Ltd., on site has an universal Spill Kit CSKJCARRIER95U which contains the following materials:

- 150 universal pads
- 12 universal socks 3"x4'
- 6 universal pillows 8"x 18"
- 1 pair of splash goggles
- 3 epoxy sticks
- 4 disposal bags
- 1 set of instructions
- 1 95 Gal. wheeled overpack

CCG Emergency Response Equipment & Materials - At the Pangnirtung Harbour site, there are three (3) trailers owned by CCG Emergency Response, Central and Arctic Region, that is stored for a marine emergency. The local RCMP has keys for these units in the case of an emergency.