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Spill Contingency Plan
Petroleum System Upgrades
Coral Harbour, Nunavut
GN Project No. 10-3019

Submitted by:
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Prepared for:
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Date Prepared: June 9, 2014
Effective date: June 1st, 2014 to November 30th, 2015

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1. 0 Introduction

Inukshuk Construction has been contracted by the Government of Nunavut to upgrade the fuel storage facility in Coral Harbour, NU. Our firm will be handling various hazardous materials and there is the potential for a spill.

Inukshuk Construction and its sub contractors are committed to taking precautions to ensure that hazardous materials are not accidentally discharged. However, in the event that a spill does occur, we have prepared the following spill contingency plan to minimize the environmental impact.

An emergency, such as a spill, is a very stressful situation. The following plan will ensure that all personnel are aware of the procedures that must be following in the event of a spill. This plan will ensure that life is protected, injuries minimized, resources are used effectively, environmental impact is kept to a minimum, and that essential reporting is conducted.

1.1 Applicable Regulations

The GN requires that any person or company storing over 20,000 litres of contaminants in an aboveground storage facility must have a spill contingency plan in place.

1.2 Scope of Work

The work in this contract will be performed at two locations, namely the Main Site Bulk Fuel Storage Facility and at the Airport Fuel Depot Facility.

<u>Main Site Bulk Fuel Storage Facility:</u>

- Re-level the containment berm and incorporate the existing impermeable liner.
- Temporary relocation of fencing and rebuilding of existing and/or new access road over containment berm.
- Provision of temporary security fencing as required.
- Site preparation and placement of new support materials for construction of the new tank over the existing geotextile fabric and impermeable liner.
- Repair or replace any damages to the existing geotextile fabric and impermeable liner materials.
- Supply approximately 2,500 square metres of liner material and approximately 5,000 square metres of geotextile fabric to facilitate

any required repairs to the existing containment berm throughout the project.

- Empty, clean, gas-free, and prepare all horizontal tanks for temporary service in jet fuel or other product requirements.
- If approved by owner, off spec Jet Fuel and distillate products can be transferred into the Diesel P-50 storage tank. Gasoline waste products must be temporarily stored in drums for removal and disposal from the site.
- Empty, clean, gas-free, and prepare existing Tank No. 1 for API 653 Inspection (by others). Upgrade tank for service in gasoline based on API 653 inspection results.
- Install roof connections for electronic tank gauging and overfill prevention equipment.
- Tie in appropriate marine cargo and marketing lines to Tank No.1 for service in gasoline.
- Transfer Jet fuel from horizontal tanks to Tank No. 1 and commission Jet fuel system.
- Transfer gasoline from Tank No. 3 to Tank No. 1 and commission gasoline system.
- Empty, clean, gas-free, and prepare existing Tank No. 3 for API 653 Inspection (by others). Upgrade tank for service in Jet Fuel based on API 653 inspection results.
- Prepare and facilitate Tank #3 for installation of internal lining as required.
- Supply and install fill diffuser pipe and floating suction.
- Supply and Install roof connections for electronic tank gauging and overfill prevention equipment.
- Supply and Install electronic tank gauging and overfill prevention system (Omntec datastik, duocheck and controller with associated materials and equipment).
- Install new outdoor audible and visual alarm.
- Tie in appropriate marine cargo and marketing lines to Tank No.3 for service in Jet Fuel.
- Upgrade existing pipelines to suit tank re-allocations, general piping for new tank, valves, fittings, supports and other equipment required to properly and safely operate this facility. All works shall be in accordance with applicable standards of this time period, most notably the Canadian Environmental protection Act (CEPA), the National Fire Code of Canada, API 650, API 653 and other associated standards.

- Installation of required electrical cables, conduit and equipment for new power and lighting and associated controls according to all applicable codes and standards of the local commercial power supplier.
- Install new static electricity grounding at new flanged connections and new vertical tank installation.
- Install new and replace existing pipe supports to facilitate new piping for new Jet fuel tank.
- Construct one new field erected vertical steel Jet fuel storage tank (16 m in diameter, 9.5 m in height, 1,900,000 L) and associated tank appurtenances.
- Prepare and facilitate tank for installation of internal lining as required.
- Supply and install fill diffuser pipe and floating suction.
- Install electronic tank gauging and overfill prevention system for new tank.
- Tie in marine Cargo and marketing lines to new Tank for service in Jet Fuel.
- Transfer Jet fuel into new tank and commission Jet fuel system.
- Provide permanent lighting and power to the sites as indicated, including the provision and installation of explosion proof lighting fixtures, static grounding, service grounding and associated rigid conduit and wire throughout the facilities.
- Preparation and painting of all field erected tanks, piping and miscellaneous metal surfaces.

<u>Airport Fuel Depot Facility:</u>

- Drain, flush and empty underground piping at airport fuel depot.
- Remove existing underground piping at airport fuel depot.
- Install new unloading basin and concrete apron
- Install new underground double-wall piping and pipe supports at airport fuel depot.
- Install new traffic bollards and instructional signage;
- Replace existing thermal relief arrangement at horizontal tanks;
- Install new solenoid shut-off valve.
- Install new overfill alarm panel, control station and overfill sensors (at tanks).
- Commission new jet fuel system at airport fuel depot.

Other Work:

- Maintain storage and dispensing capability of diesel fuel, jet fuel and gasoline throughout construction and winter laydown periods.
- Mobilization machinery and equipment to perform the Work.
- Purchase and delivery of all materials and equipment for the project to the site.
- Inspect all Work to ensure compliance with all applicable codes and standards as directed in the specifications.
- Strapping and calibration of all tanks subsequent to construction and inspections.
- Repair containment berms as required.
- Repair and/or replace existing fencing as required.
- Start-up and Trial Operation as per Division 15 - Mechanical, of the Specifications.
- Identify and label all electrical circuits in panel boards, switches, starters, contactors, timers, etc. with permanent and identifiable lamacoid labels.
- Supply a list of all the unused materials to the Owner.
- Test the installations as described in Section 01410-
- Documentation, Testing and Acceptance Procedures.
- Prepare and provide all the documentation and test information necessary to comply with Interim Inspection as outlined in Section 01410-Documentation, Testing and Acceptance Procedures.
- Carry out all clean-up and repair work necessary to existing roadways, ditches, etc. affected by new work and to the satisfaction of the Engineer.

Hazardous Materials Expected to Be Encountered

During the implementation of this project, the following hazardous materials will likely be encountered:

Hazardous Material	**Quantities**
Tank Sludge	2,000L (Estimate)
Hydrocarbon Contaminated Soil	Unknown
Hydrotest Water	1,900 cum

1.4 Owner Contact Information

The owner of the facility is the Government of Nunavut, Petroleum Products Division. The contact personnel are as follows:

Project Officer

Anil Kumar Gupta
A/Senior Project Officer
Community & Government Services
Kvalliq Regional Project Management Office
PO Bag 002, Projects/O&M Division
Rankin Inlet, Nunavut X0C 0G0
Tel (867) 645-8182
Fax (867) 645-8196
Email agupta@gov.nu.ca <mailto:jhunter@gov.nu.ca>

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Mr. Todd MacKay
Government of Nunavut
Public Works and Services
P.O. Box 002
Rankin Inlet, NU
X0C 1X0
Tel: (867) 645-5172
Fax: (867) 645-6806
Email: TMcKay@GOV.NU.CA

1.5 Inukshuk Construction Limited Contact Personnel

In the event of a spill, the Inukshuk Construction Site Supervisor will be responsible for activating the spill contingency plan.

The 24 hour contact information for our personnel are as follows:

Tony King
Superintendent
Katudgevik Co-operative Association, Coral Harbour: (867) 925-9969
Rankin Inlet #: (867) 645-2231
Fax #: (867) 645-2231
Cell #: (902) 478-4700

Sheldon Burry
Site Supervisor
Coral Harbour: (867) 925-9969
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David Mosher, Senior Project Manager
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1.6 Fuel Storage Facility and Airport Fuel Depot Facility Description

At the existing Main Site Bulk Fuel Storage Facility, there are three vertical tanks and five horizontal fuel storage tanks. The three vertical tanks include: Tank #1 with 636,000 L capacity store Jet A1 fuel; Tank #2 with 3,000,000 L capacity store heating oil; and Tank #3 with 1,350,000 L capacity store gasoline.

The five horizontal tanks include: Tanks #4, #5, and #6 with 92,000 L capacity store Jet A1 fuel and Tanks #7, and #8 with 102,000 L capacity store waste products. There is an existing fuel dispensing building and a shelter building.

The containment berm will be re-leveled with temporary relocation of fencing, rebuilding of the access road, temporary security fencing, and liner and geotextile repairs. All horizontal tanks will be cleaned and prepared for temporary jet fuel service. Tank #1 will be cleaned and prepared for inspection (including tank gauging and overfill protection) and it will be converted for gasoline storage.

Tank #3 will be cleaned and prepared for inspection and converted for jet fuel storage. Also, the associated tasks with Tank #3 include: internal lining, diffuser pipe, roof connections for tank gauging and overfill prevention, new audible and visual alarm, and tie in lines. Upgrades will be made to existing pipelines to suit tank re-allocations and electrical installations for new power and lighting and controls, new static electricity grounding, existing pipe supports replacement.

A new vertical steel Jet fuel storage tank with 1,900,000 L capacity will be installed with associated tank appurtenances and associated tasks (internal lining, diffuser pipe, tank gauging and overfill prevention, tie in lines). Jet fuel will be transferred to the new tank and the jet fuel system will be commissioned.

All field erected tanks, piping and miscellaneous metal surfaces will be painted.

At the existing Airport Fuel Depot Facility, there are two horizontal Jet A1 tanks, associated piping and jet fuel system. Tank #12 has capacity 44,000 L and Tank #11 has capacity of 47,000 L.

In the Work, the underground piping will be drained, flushed, and emptied. It will be removed and replaced with new underground double wall piping and pipe supports. A new unloading basin and concrete apron will be installed as well as new traffic bollards and signage. The existing thermal relief arrangement will be replaced, a new solenoid shut-off valve will be installed, and a new overfill alarm panel, control station and overfill sensors will be installed. Finally, a new jet fuel system will be commissioned.

1.7 Potential Hazards & Risk Mitigation

We have considered the various types of spills that can occur during this project and listed them below. The type of spill will affect our response.

Fuel Spill during Decommissioning

While fuel lines and tanks are being decommissioned, there is the potential for a spill. To mitigate this risk, we will use only trained, experienced crew for this work. We will also have on hand half drums for catching fuel, absorbent pads and speedy dry in case of a spill.

If a spill were to occur, we would immediately excavate the contaminated soil and place it in the new contaminated soil storage area.

Tank Sludge

There is the potential for tank sludge to spill on the ground while cleaning tanks.

If this were to occur, we would excavate the contaminated soil and place it in the new contaminated soil storage area.

Refueling of Equipment

There is the potential for a spill while we are refueling equipment. To mitigate this hazard, we use a truck mounted fuel truck with Gasboy dispenser. We only use experienced personnel for this task and the fuel pump will automatically shut off if left unattended.

Paint Spill
There is the potential for a paint spill while the tanks are being painted. This risk is mitigated by the use of tarps for storing paint.

1.8 Spill Contingency Plan

Introduction
In the event of a spill, the site supervisor will immediately be notified by telephone. The site will be secured and steps will be taken to minimize spill impact.

Personnel
Two personnel will complete the hydrostatic testing and both will have two-way radios. Also, there will be up to twelve workers in the tank farm doing other work. In the event of a spill, all crew will be available to help contain and clean the spill under the instruction of the site supervisor.

Reporting
As soon as the site is secure, the site supervisor will notify the owners (Chief Safety Officer) and the Inukshuk Construction project management staff. There will be working activity 24hrs per day during the construction period. There will always be someone with a two way radio who can call the site supervisor and arrange the manpower to contain a spill and proceed with cleanup.

In the unlikely event of an accident of a serious nature, Inukshuk Construction will:

a) Immediately report to the Chief Safety Officer an accident resulting in the death of any employee occurring at the place of employment.
b) Report to the Chief Safety Officer an accident of a serious nature involving any employee occurring at the place of employment, within 24 hours of the accident.

Contact the 24-hr Spill Report Line: (867) 920-8130
Contact the INAC's Manager of Field Operations: (867) 975-4295

Cleanup
All the tanks are located in a containment dyke made of gravel and an HDPE Geomembrane. The capacity of the dyke is larger than the capacity of the largest tank. Therefore, if an entire tank would drain out,

there would be no fuel spilled in an un-contained terrain. In the event of small leak, the fuel would be contained using absorbent speedy dry and absorbent pads and disposed in overpack drums. In the event of a large leak, the fuel would be filtered and pumped back into the tank. We also have heavy equipment on site in the event contaminated soil has to be excavated.

Disposal
Any contaminated soil that gets excavated will be stored in the new contaminated soil land farm. Overpack drums containing sludge, and used speedy dry and absorbent pads would be sent to Montreal by sealift and disposed at an approved facility.

Location of MSDS
The MSDS will be stored in the site office.

Content and location of spill kits
Spill kits contain shovels, broom, buckets, hydrophobic pads, and speedy dry for a petroleum leak. The spill kit will be located at the tank farm inside the dyke area. The kit will be easily accessible. A pump and hose in the event of a large hydrostatic test water spill will also be readily available in the tool container at the tank farm.

Map of suitable scale
See attached drawings:

- Main Site Storage Facility – Existing Site Plan Drawing 02
- Main Site Storage Facility – Proposed Site Plan Drawing 03
- Airport Fuel Depot – Existing Site Plan Drawing 02
- Airport Fuel Depot – Proposed Site Plan Drawing 03

NT/NU Spill Report Form
See attached.

Fuel/hazardous Material Inventory
The following are the tanks' capacities:

- Tank #1 - 636,000 L capacity for Jet A1 fuel
- Tank #2 - 3,000,000 L capacity for heating oil
- Tank #3 - 1,350,000 L capacity for gasoline
- Tanks #4 - 92,000 L capacity for Jet A1 fuel
- Tanks #5 - 92,000 L capacity for Jet A1 fuel
- Tanks #6 - 92,000 L capacity for Jet A1 fuel
- Tanks #7 - 102,000 L capacity for waste products
- Tanks #8 - 102,000 L capacity for waste products.

- Tank #9 will be constructed - 1,900,000 L tank for Jet fuel storage
- Tank #11 – 47,000 L capacity for Jet A1 (Airport Fuel Depot)
- Tank #12 – 44,000 L capacity for Jet A1 (Airport Fuel Depot)

1.9 Training

The members of the crew performing fuel transfers, moving tanks, cleaning tanks, and hydrostatic testing of tanks consist of journeymen fitter/welder, experienced labour in tank cleaning, and certified equipment operators. Workers working inside tanks have confined space entry and fall arrest training up to date. The equipment operators must have a valid equipment operator license. The supervisor must be trained and aware of all applicable health, safety, and environmental regulations.

1.10 Other Contacts

Environment Canada: 867-975-4644
GN – Department of Environment: 867-360-6338
Hamlet of Coral Harbour: 867-925-8867
Kivalliq Inuit Association: 867-645-5725