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Bhabesh Roy,
Municipal Planning Engineer
Community Government Services
P.O. Box 379
Pond Inlet
X0A 0S0

October 28, 2009

Re: Site Location for the Qikiqtarjuaq Soil Farm

Dear Mr. Roy,

At the Regular Meeting of the Hamlet Council of Qikiqtarjuaq, the Council passes resolution number 09-250 approving the site location for the Contaminated Soil Farm. This is an area with no lot numbers but the GPS location is N67o 33.847 by W063o 55.918.

This area is located in an abandon gravel quarry, near the garbage and metal dumps.

Bhabesh if you require any further information please feel free to contact me.

Sincerely,

Rick Van Horne,
Interim SAO

1/4

July 17, 2007

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Community and Government Services
Government of Nunavut,
Pond Inlet, NT

Attention: Mr. Bhabesh Roy, P.Eng

Qikiqtarjuaq Land Farm
Project Summary

Dear Mr. Roy:

Please see the attached package for the design summary for the construction of the contaminated soil land farm in Qikiqtarjuaq, NU.

The original design package was designed and prepared by Dillon staff and incorporated changes to the drawings after review by the Government of Nunavut's representatives. The attached is a brief summary on the basis for the design of the proposed landfarm for Qikiqtarjuaq.

Trust this meets your approval.

Regards

DILLON CONSULTING LIMITED

Brad Mueller, P. Eng

for

Gary Strong, P.Eng
Project Manager

Dillon Consulting
Limited

DILLON CONSULTING

PROJECT SUMMARY

The Qikiqtarjuaq Landfarm design is based to provide aerobic treatment of soils contaminated with petroleum hydrocarbons of a diesel/heating oil variety. This process relies on biological degradation and volatilization to remove hydrocarbon-based compounds. To implement the landfarming process, the soil is generally spread in a thin layer (0.15 m - 0.30 m deep) over an area, and then tilled on a regular basis to promote aeration and stimulation of microbial activity. If the soil thickness is increased the process will work equally well, however, the duration of remediation will also increase. Similar to ex-situ bio-pile remediation, nutrients, moisture and microbes may be added to accelerate the biological degradation of hydrocarbon impacted soils. In some instances, landfarming must be performed over an impermeable liner to prevent the migration of contaminants (leachate) into the underlying native soil and ground water.

The subject landfarm cell is designed to accept hydrocarbon contaminated soil. The site location is in a designated area (as indicated in the design documents) southeast of the community of Qikiqtarjuaq and due east of the existing sewage lagoon. The landfarm was designed with an area of 6400 square meters and is located within a fenced area.

The cell is approximately 1.8 m in height and 70 m by 70 m in length and width respectively. The surrounding berm is constructed of re-compacted native fill, and covered with an impermeable membrane that is keyed into the top of the berm on all four sides. The impermeable membrane is comprised of a 300 mm Arctic Liner® that is underlain and overlain by a 10 oz/yard Non-Woven Geotextile, and covered by 50 mm of fine granular material.

The slopes of the berm are 2.5:1 on the inside slope and 2:1 on the outside slope. A 1.2 m deep (7 m square) retention basin has been constructed in one corner of the landfarm containment berm, and filled with fine granular material. A 100 mm High Density Polyethylene (HDPE) perforated leachate collection pipe is located at the bottom of the retention basin, connects to a solid pipe on the sloped face and runs to the top of the berm. The leachate collection pipe can be used to control moisture content by removing leachate or water from the retention basin and spraying back onto the contaminated soil.

Initial Location
Landfarm
Proposed Location
Landfarm
PRELIMINARY ONLY
NOT FOR CONSTRUCTION
DRAWING REDUCED
NOT TO SCALE
REVISIONS
GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL
CONSTRUCTION
SITE LOCATION PLAN
AS SHOWN
DILLON
CONSULTING