

**NUNAVUT IMPACT REVIEW BOARD****Part 1 Form:****SECTION 1: NIRB APPLICANT INFORMATION****1. a) Project Number**

Please indicate if applicant has submitted any previous application(s) to NIRB related to this project proposal?

Yes                      No \*

If yes, please indicate the previous NIRB project number(s):

**1. b) Project Name: Soil remediation- Land farm****2. Applicant's full name and mailing address:**

**Bhabesh Roy, M.A.Sc., P.Eng.**

Fax: 867 899 7328

Phone: 867 899 7314

Email: [broy@gov.nu.ca](mailto:broy@gov.nu.ca)

**3. Primary contact's full name and mailing address:**

**Bhabesh Roy, M.A.Sc., P.Eng.**

Fax: 867 899 7328

Phone: 867 899 7314

Email: [broy@gov.nu.ca](mailto:broy@gov.nu.ca)

**4. Secondary contact's full name and mailing address:**

Grant Scott, SAO, Hamlet of Pond Inlet, Baffin Region.

Fax: 867 899 8940

Phone: 867 899 8934

Email: [hamletpond\\_sao@qiniq.com](mailto:hamletpond_sao@qiniq.com)

**SECTION 2: AUTHORIZATION NEEDED****1. Indicate all authorizations associated with the project proposal:**

Regional Inuit Association (RIA)

Nunavut Water Board (NWB) \*

Nunavut Planning Commission (NPC)

Department of Indian And Northern Development (DIAND)

Department of Fisheries and Oceans (DFO)

Community Government & Services (CG&S)

Nunavut Research Institute (NRI)

Hamlet

Canadian Launch Safety (CLS)

Environment Canada (EC)

Government of Nunavut (GN)

Department of National Defense (DND)

Department of Culture, Language, Elders, and Youths (CLEY)

Parks Canada (PC)

Other (please specify):

**2. List the active permits, licenses, or other rights related to the project and their expiry date:**

**Water License, Expiry date: January 31, 2008**

**SECTION 3: PROJECT PROPOSAL DESCRIPTION****1. Indicate the type of project proposal:**

Exploration (geophysical ground, geophysical air, drilling)

Advanced Exploration/ Bulk Sampling

Mine Development

All Weather Roads and Trails

Winter Roads and Trails

DEW Line Clean up

Off-Shore Infrastructure

Pit and/or Quarry

Other: **Soil Remediation****2. Indicate the activities related to the project proposal:**

Drilling other than geoscientific Quarrying

Offshore structure all season road

Airport/ landing strip winter road

Camp Access road

Fuel storage Road modification

Solid waste disposal Cabins

Hazardous waste storage or disposal \*

Sewage or grey water disposal

Research Blasting

Abandonment and Restoration Harvesting

Burning Burying

Construction Channeling

Cut and/or Fill Removal of vegetation

Dam/ Impoundment (construction/ abandonment/ removal/ Modification)

Ditch construction

Drainage Alteration Excavation

Chemical Storage Ecological survey

Explosives Storage Geoscientific sampling by trenching

Geoscientific sampling by diamond drilling Geoscientific sampling by borehole core

Geoscientific sampling by soil sampling Hydrological testing

River/ stream/ lake crossing or work/ bridge Site restoration (fertilization/ grubbing/ scarification/ spraying/ recontouring)

Soil testing Soil disposal/ Soil storage

Tunneling Other (please specify):

**3. Personnel**

Total No. of personnel

on site = 3

Total No. of person days

= (3) x 10 days on site= **30 days****4. Timing***Period of operation: September 2007 to September 2007**Proposed term of permit: Until the life of the existing water license*

Please outline the phases of the proposed project (construction/ operation/ decommissioning) including the timing and scheduling of each phase.

**This is a small project. The estimated completion date is only 30 days.**

**5. Region (check all that apply):**

Baffin \* Kivalliq Kitikmeot Transboundary:

**6. Land Status (check all that apply):**

Crown Commissioners' \* Inuit Owned Surface lands Inuit Owned Sub-Surface Lands

**7. Co-ordinates:**

The NIRB requires coordinates of the project proposal which accurately reflect the **boundary of the entire project area** as well as specific project component point locations. The preferred method for submitting this information is through the use of a Geographic Information Systems (GIS) digital file.

Project component point locations such as drill sites and research stations can be submitted as a single point in Degrees/Minutes/Seconds:

Latitude (degree/minute/seconds) : 72°42' N

Long (degree/minute/seconds): 77°59' W

Project component area locations such as the land use authorization area and camp area require submission of proper bounding coordinates in a suitable electronic format. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS and CAD related formats, including MapInfo and AutoCAD, provided proper format and projection metadata is also submitted.

Should you not have the ability to create a GIS or CAD file for this submission please contact the NIRB office for alternate arrangements. At a minimum please indicate the NTS Map sheet number(s) and ensure that maps of the project proposal are attached at a regional and local scale.

NTS Map Sheet No(s):

**\*Attached**

**8. Non-Technical Project Proposal Summary**

Please include a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- The project activities, their necessity and duration;
- Method of transportation;
- Any structures that will be erected (permanent/ temporary);
- Alternatives considered; and
- Long-term developments, the projected outcome of the development for the area and its timeline.

**\* Attached**

**SECTION 4: MATERIAL USE****1. List equipment (including drills, pumps, aircrafts, etc.):**

Equipment type and number Size – dimensions Proposed use

**\* Dozer and Loader**

**2. Detail fuel and hazardous material use:**

Fuels Number of Containers Capacity of containers (gal & litre)

- Diesel\*
- Gasoline
- Aviation fuel
- Propane
- Other

Hazardous material (please specify)

**SECTION 5: WASTE DISPOSAL AND TREATMENT FACILITIES****1. List the types of waste:**

Type of waste: Projected amount generated: Method of Disposal: Additional treatment procedures

Sewage

Greywater

Garbage

Overburden (organic

soil, waste material, tailings)

Hazardous waste: **Estimated 7000m<sup>3</sup>**      **Equipment**      **Soil Remediation**

Other:

**SECTION 6: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS****1. List the community representatives that have been contacted and provide the minutes of the meetings if available:**

Community	Name	Organization	Date Contacted	Telephone No.	Fax No.
Pond Inlet	Enookie Killiktee	Hamlet	June, 2007	867 899 8934	867 899 8940
Baffin Region	Lands officer				

**Applicant:**

Signature

Title

Date



**Bhabesh Roy, M.A.Sc, P.Eng.**

**Municipal Planning Engineer**

**August 20, 2007**

Government of Nunavut  
Pond Inlet Contaminated Soil Landfarm



## PROJECT SUMMARY

The Pond Inlet 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. No site specific information was used for the design of the landfarm. 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<sup>®</sup> that is underlain and overlain by a 10 oz/yd 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.





# THE GOVERNMENT OF NUNAVUT COMMUNITY AND GOVERNMENT SERVICES

PROJECT: POND INLET LANDFILL CONSTRUCTION - TENDER DRAWINGS  
LOCATION: POND INLET, NU  
PROJECT NO: 07-7400-1000  
DATE: MAY 2007

Sheet Number	Sheet Title
100	Cover
101	Legion Plan
102	Legion Sections and Details
103	Crawl Unit Fence and Monitoring Well Details









