# Appendix A PACIFIC RIDGE EXPLORATION LTD.

# SPILL CONTINGENCY PLAN BAKER LAKE PROPERTY

### **NUNAVUT**

**MARCH 2006** 

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#### 1.0 Introduction

The Pacific Ridge Exploration Ltd. Spill Contingency Plan shall be in effect from March 01, 2006. Any proposed changes and/or amendments will be submitted to the Nunavut Water Board, DIAND and the Kivalliq Inuit Association.

This Spill Contingency Plan has been specifically prepared for the Baker Lake Property exploration program. This Plan shall be posted at operational remote camps and drill shacks.

Pacific Ridge Exploration Ltd. endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of stored materials and operations.

#### 2.0 Facilities

Proposed location: (UTM Nad 27, Zone 14) 363000E, 7065000N, 63° 42′N Lat, 95° 45′ W Long (main drill camp). Other possible camp locations for small fly-camps:

- **Kazan River**: Raised Beaches 63° 44′ N Lat, 95° 42′ Long
- **Kazan River SE:** 63° 39′ Lat, 95° 36′ Long
- **Kazan River N:** (west of Lake Bissett) 63° 45 Lat, 95° 39′ Long (possible drill camp)
- **Kazan River N:** (north east of Lake Bissett) 63° 49′ Lat, 95° 38′ Long (possible drill camp)
- **Bissett Lake E**: 63° 46′ Lat, 95° 32′ Long
- Martell Lake S: 63° 51′ Lat, 95° 20′ Long
- **Bissett Lake S:** 63° 41′ Lat, 95° 22′ Long
- **Shane Lake S:** 63° 46′ Lat, 95° 02′ Long
- Shane Lake NE: 63° 48′ Lat, 95° 57′ Long

Fuel cache and drill target locations yet to be finalized.

#### 3.0 Petroleum and Chemical Product Storage and Inventory

#### 3.1 Remote Location Fuel Inventory, Storage and Handling Procedures

The main fuel cache will be located at the main drill camp. Remote fuel caches may also be established. Typically these remote fuel caches would consist of 8 drums or less of jet fuel, stored in accordance with approved methods of storage of drummed product.

#### 3.2 Petroleum Product Transfer

Manual and automatic pumps (and aviation fuel filters for jet fuel) are used for the transfer of all petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and fuelling areas at all times.

#### 4.0 Risk Assessment and Mitigation of Risk

#### 4.1 Petroleum Products and Other Fuels

Following, is a list of sources:

- 1) Drummed product: Leaks or ruptures may occur. This includes drums of Jet B, Diesel, Gasoline, Waste Fuel, and Waste Oil.
- 2) Fuel cylinders: Propane, leaks may occur at the valves. All cylinders are secured at all times.
- 3) Vehicles and equipment: Wheeled vehicles and equipment, aircraft (fixed and rotary wing), snowmobiles, generators, pumps. Incidents involving leaking or dripping fuels and oils may occur due to malfunctions, impact damage, and lack of regular maintenance, improper storage, or faulty operation.

Regular inspection and maintenance in accordance with recognized and accepted standard practices at all camps and fuel caches, reduces risks associated with the categories listed above.

Spill response training is provided to all personnel with particular attention to those personnel who handle fuels and other petroleum products. This training will include a presentation, "mock" spill, review of spill kit contents and their use and reporting.

Spill Kits will be located at all camps and drill shacks. A description of contents is listed in Section 7.0.

#### 5.0 Responding to Failures and Spills

#### 5.1 Spill Response Contact List

DIAND Water Resources Inspector Iqaluit, Nunavut (867) 975-4298

Environment Canada Iqaluit, Nunavut (867) 975-4644 24 hour pager – (867) 920-5131

Pacific Ridge Suite 1205 – 675 West Hastings Street Vancouver, BC V6B 1N2 Phone: (604) 687, 4951

Phone: (604) 687-4951 Fax: (604) 687-4991

#### 5.2 Basic Steps — Spill Procedure

In the case of any spill or other environmental emergency, it is necessary to react in the most immediate, safe, and environmentally responsible manner. No spill or incident is so minor that it can be ignored.

The basic steps of the response plan are as follows:

- 1. *Ensure* the safety of all persons at all times.
- 2. <u>Identify</u> and find the spill substance and its source, and, if possible, stop the process or shut off the source.
- 3. <u>Inform</u> the on-site coordinator or his/her designate at once, so that he/she may take the appropriate actions. Appropriate action includes the notification of the spill to the 24 hour Spill Line and DIAND Water Resource Officer, a copy of the Spill Report form can be found in Appendix I.
- 4. <u>Contain</u> the spill or environmental hazard, as per its nature, and as per the advice of the Spill Line and the DIAND Water Resource Officer as required.
- 5. <u>Implement</u> any necessary cleanup and/or remedial action.

#### 5.3 Basic Steps — Chain of Command

- 1. <u>Immediately</u> notify and report to the 24-Hour Spill Line at (867) 920-8130, the DIAND Water Resources Inspector in Nunavut at (867) 975-4298, and Environment Canada personnel at 867-975-4644.
- 2. A Spill Report Form (Appendix I) is filled out as completely as possible before or after contacting the 24 Hour Spill Line.
- 3. Notify Wayne Roberts, V.P. of Exploration, Pacific Ridge Exploration Ltd. at (604) 687-4951.

#### 5.4 Other contacts for spill response/assistance and further reporting

Nunavut Water Board	(867) 360-6338
Fisheries and Oceans Canada Habitat Impact Assessment Biologist	(867) 979-8007
Government of Nunavut Department of Environment	(867) 975-5910

#### 6.0 Taking Action

#### **6.1** Before the Fact: Preventative Measures

The following actions illustrate a proactive approach to environmental stewardship. In addition, these actions minimize the potential for spills during fuel handling, transfer and storage:

- 1. Fuel transfer hoses with cam lock mechanisms are used.
- 2. Carefully monitor fuel content in the receiving vessel during transfer. Always have additional absorbent pads on hand while transferring fuel.
- 3. Clean up drips and minor spills immediately.

- 4. Regularly inspect drums, tanks and hoses for leaks or potential to leak and for proper storage.
- 5. Create fuel caches in natural depressions that are located a **minimum** of 31 metres from the normal high-water mark of any water body.
- 6. Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures.

#### 6.2 After the Fact: Mitigative Measures

- 1. First steps to take when a spill occurs:
  - a) Ensure your own safety and that of others around you, beginning with those nearest to the scene.
  - b) Control danger to human life, if necessary.
  - c) Identify the source of the spill.
  - d) Notify your supervisor, request assistance if needed.
  - e) Assess whether or not the spill can be readily stopped.
  - f) Contain or stop the spill at the source.

#### 2. Secondary steps to take:

- a) Determine status of the spill event.
- b) If necessary, pump fuel from a damaged and/or leaking tank or drum into a refuge container.
- c) Notify the 24-hour Spill Report Line, and receive further instructions from the appropriate contact agencies listed in *Section 5.3*. (disposal of contaminated soil or ice/snow in sealed containers for removal from site, etc.).
- d) Complete and Fax a copy of the Spill Report Form (Appendix I).
- e) Notify permitting authorities.
- f) If possible, resume cleanup and containment.

# 6.3 SPILL RESPONSE ACTIONS DIESEL FUEL, HYDRAULIC OIL, AND LUBRICATING OIL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. **Never smoke** when dealing with these types of spills.

#### On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

Contact regulatory agencies for approval before commencing with the removal of any soil, gravel, or vegetation.

#### On Muskeg

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled oil with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

Burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

#### On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

#### On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

#### **Storage and Transfer**

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

#### **Disposal**

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

# 6.3 SPILL RESPONSE ACTIONS GASOLINE AND JET B AVIATION FUEL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. **Never** smoke when dealing with these types of spills.

#### On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

Contact regulatory agencies for approval before commencing with the removal of any soil, gravel, or vegetation.

#### On Muskeg

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled gasoline or Jet B with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

On advice from regulatory agencies, burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

#### On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

#### On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

#### **Storage and Transfer**

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

#### **Disposal**

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

# 6.3 SPILL RESPONSE ACTIONS PROPANE

Take action only if safety permits. Gases stored in cylinders can explode when ignited. Keep vehicles away from area. **Never smoke** when dealing with these types of spills.

#### On Land

Do not attempt to contain the propane release.

#### On Water

Do not attempt to contain the propane release.

#### On Ice and Snow

Do not attempt to contain the propane release.

#### General

It is not possible to contain vapours when released.

Water spray can be used to knock down vapours if there is no chance of ignition.

Small fires can be extinguished with dry chemical of CO<sub>2</sub>.

Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

If tanks are damaged, gas should be allowed to disperse and no recovery attempt should be made.

Personnel should avoid touching release point on containers since frost forms very rapidly.

Keep away from tank ends.

#### **Storage and Transfer**

It is not possible to contain vapours when released.

#### **Disposal**

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods for detective equipment that resulted in the release.

#### 7.0 Spill Equipment

Complete spill kits are kept on hand at all camps and drill shacks. Spill kits contain:

```
1 – 360 litre/79 gallon polyethylene over-pack drum
4 – oil sorbent booms (5" X 10')
100 – oil sorbent sheets (16.5" X 20" X 3/8")
1 – drain cover (36" X 36" X 1/16")
1 – Caution tape (3" X 500')
1 – 1 lb plugging compound
2 – pair Nitrile gloves
2 – pair Safety goggles
2 – pair Tyvek coveralls
1 – instruction booklet
```

In addition at least one empty fuel drum will be located at each fuel cache in the event of damaged or leaking drums. Extra absorbent pads will be kept with the helicopter, drill and any area where re-fuelling, transferring and/or handling is done.

#### 8.0 Training and Practice Drills

10 – printed disposable bags (24" X 48")

#### 8.1 Training

1 - shovel

All employees and contractors will be familiar with the spill response resources at hand, this Contingency Plan, and will also be trained for initial spill response methods. Involvement of other employees may be required, from time to time. Annual refreshers will be conducted to review the procedures within this plan.

## Appendix I

# **Nunavut Spill Report Form**



#### NUNAVUT SPILL REPORT(Oil, Gas, Hazardous Chemicals or other Materials) 24-NUNAVUT KUVIHIMAYMIK UNIUT(Ukhukyuak, Gasiliik, Hivuganaktun Aavughat Aalaatluniit)

24-Hour Report Line Uumiyuituk Unikhiut Hivayaut duniit) Phone/Hivayaut (867) 920-8130 Fax/Kayumiktuk (867) 873-6924

**B** Date and Time of Spill(if known) Ublua Ublukhiutalu Kuvinium(ilihimayaukpan) Spill Number Kuvinium A Report Date and Time Uniutim Ublua Ublukhiutalu C Original Report Hivulikpak Uniut Napa Update No. \_ Ilihimapkangnik Napa. D Location and Map Coordinates (if known) and Direction (if moving) Humiltuk Nunauyamilu Pakitjutaa (ilihimayaukpan) Humungaulikalu (kugluakan) E Party Responsible for Spill (Full Name and Address) Kitkuut Kuvipkaiyun (Tamaita Atiin Nunakakviangalu) F Product(s) Spilled and Estirnated Quantities(provide metric volumes/weights if possible) Hunat Kuviyun Angiklilangiitlu(tunilugin kafi kaalanlu/ukumaitilangalu ilihimagungi) G Cause of Spill Huuk kiviyuk I If Spill is Continuing, give Estimated Rate Kuvigaanginakan H Is Soill Terminated? J Is Further Spillage Possible? K Extent of Contaminated Area(in square metres if possible) Kuvihuikaa? kayumilanguta ukaguk Kuvifakniagungnaghivaa? Angiklilanga halumaighimanuim(uuktuut kikagituk miitusni ilihimagungni) Yes/Hii No/Imaanak Yes/Hii No/Imaanak L Factors Affecting Spill or Recovery(weather conditions, terrain, snow cover, etc.) Huunat Havaluatilimaijutin Kuvinikmun M Containment(natural depression, dykes, etc.) Katitikvia (iitiqhak, Halumaghinikmunlu(hilakluknik, nunap kaanga, apuutpalaknik, atlatlu) maghakviit, alatlu) N Action, if any, taken or Proposed to Contain, Recover, Clean up or Dispose of Product(s) and Contaminated Materials Hulivin, huliguvin, Kanuklu Kaatitiniaka, Pifaklugu, Halumaktiklugu Igitlugiitluniit Kuvihimayut P Possible Hazards to Persons, Property or Environment e.g. fire, drinking water, fish or wildlife. Hivuganakniagungnaghivun Inuknun, O Do You Require Assistance? No/Imaanak Yes/Hii, describe: Tamayanun Avatimunluniit e.g. ikualak, iimiktakvik, ikaluit hugajutinluniit. Ikayuktauyumaviin? Kaanuk: **Q** Comments and/or Recommendations Ukagiyain uvvalu/unaluniit Pitkuugaluaktain FOR SPILL LINE USE ONLY KUVINIUM HIVAYAUTAGINATA ATUKTAGHA Lead Agency Hivulik Havakvik Spill Significance Kivunium Angingninga Lead Agency Contact and Time Hivulium Havakviim Ukakatigiluagha Humungakanlu Is this file now closed? Una tutkumavia umikpaa? Reported By Unikhiukti Position, Employer, Location Haavanga, Havakvia, Humi Telephone Hivayaut Position, Employer, Location Haavanga, Havakvia, Humi Reported To Unikhiuktuk Kinamun Telephone Hivayaut

### **Appendix II**

## **Maps and Figures**



