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## **SPILL CONTINGENCY PLAN SILVERTIP PROJECT**

March 1, 2007

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## **1.0 Introduction**

The Strongbow Exploration Inc. Spill Contingency Plan shall be in effect from March 1, 2007. Any proposed changes and/or amendments will be submitted to the Nunavut Water Board, DIAND and the Kitikmeot Inuit Association.

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

Strongbow Exploration Inc. 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 camp location: 64° 49' 02", -108° 0' 14"

Fuel cache locations: To Be Determined

## **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 camp. Remote fuel caches may also be established. Typically these remote fuel caches would consist of 19 drums or less of jet fuel and or diesel, 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.

## **5.0 Responding to Failures and Spills**

### **5.1 Spill Response Contact List**

24 Hour Spill Line  
(867) 920-8130

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

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

Kitikmeot Inuit Association  
Phone: (867) 982-3310  
Fax: (867) 982-3311

Strongbow Exploration Inc.  
David Gale, VP Exploration  
Phone 604-668-8355

### **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. Identify and find the spill substance and its source, and, if possible, stop the process or shut off the source.
3. Inform 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. Contain 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. Implement any necessary cleanup and/or remedial action.

### 5.3 Basic Steps — Chain of Command

1. Immediately 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 David Gale, Strongbow Exploration Inc. at (604) 668-8355

### 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 or 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 defective equipment that resulted in the release.

## **7.0 Spill Equipment**

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

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**

### **8.1 Training**

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**



# NWT SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

24 – Hour Report Line  
Phone: (867) 920-8130  
Fax: (867) 873-6924

<b>A</b> Report Date and Time		<b>B</b> Date and Time of spill (if known)		<b>C</b> <input type="checkbox"/> Original Report <input type="checkbox"/> Update no. _____		Spill Number	
<b>D</b> Location and map coordinates (if known) and direction (if moving)							
<b>E</b> Partly responsible for spill							
<b>F</b> Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)							
<b>G</b> Cause of spill							
<b>H</b> Is spill terminated? <input type="checkbox"/> yes <input type="checkbox"/> no		<b>I</b> If spill is continuing, give estimated rate		<b>J</b> Is further spillage possible? <input type="checkbox"/> yes <input type="checkbox"/> no		<b>K</b> Extent of contaminated area (in square meters if possible)	
<b>L</b> Factors effecting spill or recovery (weather conditions, terrain, snow cover, etc.)				<b>M</b> Containment (natural depression, dikes, etc.)			
<b>N</b> Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials							
<b>O</b> Do you require assistance? <input type="checkbox"/> no <input type="checkbox"/> yes, describe:				<b>P</b> Possible hazards to person, property, or environment; eg: fire, drink water, fish or wildlife			
<b>Q</b> Comments or recommendations						<b>FOR SPILL LINE USE ONLY</b>	
						Lead agency	
						Spill significance	
						Lead Agency contact and time	
						Is this file now closed? <input type="checkbox"/> yes <input type="checkbox"/> no	
Reported by		Position, Employer, Location				Telephone	
Reported to		Position, Employer, Location				Telephone	

## **Appendix II**

### **Map of Camp Location (Camp Schematic To Be Determined)**

