

Spill Contingency Plan The Aviat Project

Revised: July 10, 2008

Table of Contents

	Page #
1.0) Introduction	3
2.0) Facilities.....	3
3.0) Petroleum and Chemical Product Storage and Inventory	3
3.1) Remote Location Fuel Inventory, Storage and Handling Procedures	
3.2) Petroleum Product Transfer	
4.0) Risk Assessment and Mitigation of Risk	4
4.1) Petroleum Products and Other Fuels	
5.0) Responding to Failures and Spill.....	5
5.1) Spill Response Team Contact List	
5.2) Basic Steps-Spill Procedure	
5.3) Basic Steps-Chain of Command	
5.4) Other Contacts for Spill Response/Assistance	
6.0) Taking Action.....	6
6.1) Preventative Measures	
6.2) Mitigative Measures	
6.3) Spill Response Actions	
7.0) Spill Equipment	11
8.0) Training and Practice Drills.....	11
8.1) Training	
8.2) Practice Drills	

List of Appendices

Appendix I) Spill Report Form	12
Appendix II) Maps & Figures.....	14
Appendix III) MSDS Sheets	17

1.0 Introduction

This Spill Contingency Plan was revised on July 10, 2008. Any proposed changes and/or amendments will be submitted to the Nunavut Water Board, DIAND and the Qikiqtani Inuit Association

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

Stornoway Diamond Corporation 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

Camp Location: 69° 26.13' N, 83° 14.53' W

See schematic contained in Appendix II for an illustration of the camp layout. Please note that schematic is for illustration purposes only (structures are not to scale) and applies to the camp's typical layout during its operational season of May through to October (weather permitting).

3.0 Petroleum and Chemical Product Storage and Inventory

3.1 Remote Location Fuel Inventory, Storage and Handling Procedures

Fuel caches and chemical storage areas during the operational season are typically as follows:

Description of the type and amount of potential contaminants normally "in use" at camp

- 1 Drum of Diesel located behind each tent (total of 15 drums within camp perimeter)
- 1 Drum of Diesel located behind the generator
- 2 (100lb) Propane Tanks located outside of the "Kitchen" tent

Description of the type and amount of potential contaminants normally stored at camp

- JET B fuel for the helicopter – 2050 litres (10 drums)
- Diesel for the drill - 1845 litres (9 drums)
Drums will be stored on flat stable terrain during the summer to reduce chances of a leak. If available a natural depression situated well away from water bodies will be utilized for storage.
- Oil – Several Cases of 4 Cycle Engine Oil
All oil containers will be removed from the packaging in which they were shipped, placed in plastic tubs that are lined with enviromats, and stored in a plywood floored tent.
- Drilling Additives -
All drilling muds, greases, and oils will be stored in a plywood shed constructed for this purpose. The floor will be lined with plastic and enviromats placed on top of the plastic liner in order to absorb any potential leakage .

Description of the type and amount of potential contaminants normally stored at drill site

- JET B fuel for the helicopter – 410 litres (2 drums)
- Diesel for the drill - 410 litres (2 drums)
- Propane for heating, etc. - One (1) 100 lb. tank

Additional fuel caches are typically located to the northeast of the camp perimeter where helicopters are stored when not in use. These caches are illustrated in the accompanying figure and are typically comprised of small amounts of Jet B drums positioned at each of the three helicopter landing sites, with an additional cache to the west comprised of only diesel. Numbers making up these caches vary throughout the exploration season as fuel is burned and then re-stocked.

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.

One large spill kit is located at generator shack and one large spill kit is located outside of the spare survival shack in the outdoor storage area. Four small spill kits are kept inside the television/storage tent, and another small spill kit is located at the middle helicopter landing site/fuel cache.

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.

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

Qikiqtani Inuit Association
Phone: (867) 979-8417
Fax: (867) 979-1643

Stornoway Diamond Corporation
Phone: (604) 983-7750
Fax: (604) 987-7107

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 Robin Hopkins , Stornoway Diamond Corporation at (604) 983-7750.

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 CO₂.

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 at the camp location and at the drill shack.

One large spill kit is located at generator shack and one large spill kit is located outside of the spare survival shack in the outdoor storage area. Four small spill kits are kept inside the television/storage tent, and another small spill kit is located at the middle helicopter landing site/fuel cache.

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

SPILL REPORT FORM



NUNAVUT SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)

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24-Hour Report Line 24-ᓄᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ

Phone/ᓂᓐᓂᓐ (867) 920-8130

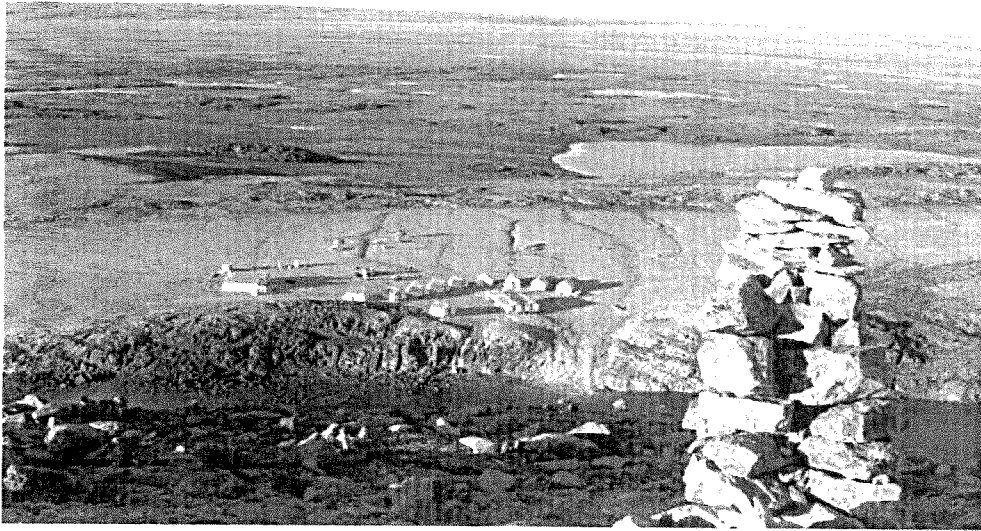
Fax/ᓂᓐᓂᓐ (867) 873-6924

A Report Date and Time ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ		B Date and Time of Spill (if known) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ)		C <input type="checkbox"/> Original Report ᓂᓐᓂᓐ ᓂᓐᓂᓐ	Spill Number ᓂᓐᓂᓐ
D Location and Map Coordinates (if known) and Direction (if moving) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ)					
E Party Responsible for Spill (Full Name and Address) ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ ᓂᓐᓂᓐ)					
F Product(s) Spilled and Estimated Quantities (provide metric volumes/weights if possible) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ)					
G Cause of Spill ᓂᓐᓂᓐ					
H Is Spill Terminated? ᓂᓐᓂᓐ ᓂᓐᓂᓐ?	I If Spill is Continuing, Give Estimated Rate ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	J Is Further Spillage Possible? ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ?	K Extent of Contaminated Area (In square metres if possible) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ (ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ)		
L Factors Affecting Spill or Recovery (weather conditions, terrain, snow cover, etc.) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ		M Containment (natural depression, dykes, etc.) ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ			
N Action, if any, taken or Proposed to Contain, Recover, Clean Up or Dispose of Product(s) and Contaminated Materials ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ					
O Do You Require Assistance? <input type="checkbox"/> No <input type="checkbox"/> Yes, describe: ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ		P Possible Hazards to Persons, Property or Environment e.g. fire, drinking water, fish or wildlife ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ			
Q Comments and/or Recommendations ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ					FOR SPILL LINE USE ONLY ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ Lead Agency ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ Spill Significance ᓂᓐᓂᓐ ᓂᓐᓂᓐ Lead Agency Contact and Time ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ Is this file now closed? ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ
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Appendix II

MAPS & FIGURES

Aerial View of 2005 Aviat Camp



Appendix III

MATERIAL SAFETY DATA SHEETS