



Vancouver Exploration Office

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**Spill Contingency Plan
Tak Camp and Rockinghorse Property**

Submitted with
Water License Application – Nunavut Water Board

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Table of Contents

1. Preamble	3
2. Introduction.....	3
3. Site Information	6
4. Response Organization	8
5. Reporting Procedures.....	9
6. Action Plans	12
7. Environmental Mapping	24
8. Resource Inventory	24
9. Training and Exercises.....	25
10. Product Information	26
11. Supporting Documentation	29
12. Appendices.....	31

1. Preamble

This Spill Contingency Plan (the Plan) will be in use from the start-up date to closing date of all exploration related activities taking place in Nunavut and the Northwest Territories. This SCP will take effect on January 1, 2006 and will remain in effect until replaced or revised. The exploration activities taking place on the Rockinghorse property include, but are not limited to; drilling, aircraft operations, remote camp operations and any activity involving materials and substances that are able to be spilled

This Plan was prepared for use by all Tahera Diamond Corporation (Tahera) employees and contractors working for Tahera in permitted areas of the Northwest Territories and Nunavut. The Plan will be distributed to all Tahera site managers and site contractors. The Plan will be posted and available on site and the contents of the Plan will be reviewed during scheduled safety meetings and whenever deemed necessary. Copies of the Plan will be sent to the Nunavut Water Board (NWB) and Workman's Compensation Board of the Northwest Territories and Nunavut (WCB). The master copy of the Plan will be held at the Tahera's Coquitlam Exploration Office where revisions and amendments may be implemented.

Copies and revisions of the spill contingency plan can be obtained from Tahera Diamond Corporation's Coquitlam Exploration Office by contacting Ferg McDonnell at (604) 519-1977. The head office for Tahera Diamond Corporation is located at 130 Adelaide St West, Suite 1900, Toronto Ontario M5H 3P5.

2. Introduction

This plan is written to meet Tahera Diamond Corporation's (Tahera) requirements for a contingency plan for the Rockinghorse Property (the Property) exploration and drilling activities based out of Tak Camp (the Camp). It covers the following key areas:

- Site information;
- Response organization;
- Reporting procedures;
- Initial action;
- Action plans;
- Environmental mapping;
- Resource inventory;
- Training and exercises; and
- Supporting documentation.

The plan will be updated if required annually. The plan is consistent with the requirements for spill response plans and reporting as set out in *Spill Contingency Planning and Reporting Regulations R-068-93*, April 1, 1999 and addresses the requirements as set out in Nunavut Water Board, *Guidelines for Spill Contingency*

Planning, November 2004 (draft). As well, this plan addresses the requirements as set out in Nunavut Environmental Protection Service, *Environmental Guidelines for General Management of Hazardous Waste, January 2002*, and Nunavut Environmental Protection Service, *Nunavut Hazardous Waste Disposal Manual*.

2.1 TAHERA'S ENVIRONMENTAL POLICY STATEMENT

It is Tahera's policy to achieve a high standard of environmental care in conducting its business as an exploration company in Canada's north. Tahera's approach to environmental management seeks continuous improvement in performance by taking account of evolving knowledge and community expectations.

Specifically, it is Tahera's policy to:

- Comply with all applicable laws, regulations and standards; uphold the spirit of the law; and where laws do not adequately protect the environment, apply standards that minimize any adverse environmental impacts resulting from its operations;
- Communicate openly with government and the community on environmental issues, and contribute to the development of policies, legislation and regulations that may affect Tahera;
- Ensure that its employees and suppliers of goods and services are informed about this policy and are aware of their environmental responsibilities in relation to Tahera's operations;
- Ensure that it has management systems to identify, control and monitor environmental risks arising from its operations and to prevent environmental impacts prior to their occurrence;
- Conduct research and establish programs to conserve resources, minimize wastes, improve processes and protect the environment;
- Take appropriate corrective actions should unexpected environmental impacts occur. Appropriate actions will be taken to prevent reoccurrence of such unexpected impacts.

2.2 PURPOSE AND SCOPE OF THE PLAN

The purpose of this plan is threefold:

- to provide a practical source of information required to assess spill risks, develop an effective countermeasures program, and respond in a safe and effective manner to spill incidents;
- to set out procedures and processes to be followed in the event of an emergency on site; and
- to provide procedures for handling hazardous materials.

The plan covers all exploration and bulk sampling activities taking place on the Property. It encompasses the activities of all Tahera and contractor employees as well as visitors to the Property and Camp.

The main goals of the plan are:

- to provide education and training for exploration staff at the Camp in emergency preparedness;
- to enable staff to respond to an emergency in a co-ordinated manner minimizing injury and loss of property; and
- to allow all exploration and bulk sample activities to maintain operations at a level as close as possible to normal and restore normal operations quickly and efficiently.

The plan was specifically developed for the Polar Property operations and is not intended to be used, without careful assessment of applicability, by people trained in spill response at other facilities operated by Tahera or a third party.

2.3 PLAN USE AND DISTRIBUTION

The appropriate procedures in this plan are to be followed in the case of any product spills or emergency, whether reportable to external authorities or not. The responsible supervisor will decide what further action is appropriate in each case.

All persons issued this plan must become familiar with its contents relevant to their responsibilities. It is important that you understand your area of responsibility and the appropriate actions to take in the case of a spill. If you do not understand a procedure, clarify the procedure with your supervisor.

This plan includes a discussion of general preventive measures that can be taken to ensure spills do not happen. Your participation in this activity is key to preventing spills. You should:

- follow the suggestions contained in this plan where they apply; and
- inform your supervisor of any additional measures or better ways of handling hazardous wastes and preventing spills.

2.4 UPDATE PROCEDURES AND SCHEDULE

This plan will be reviewed for accuracy and completeness annually; in the event of a spill, a thorough debriefing including critical review of the plan will be undertaken by Tahera and affected contractors. Changes to procedures or in products and materials used and the locations used will be incorporated as amendments to the plan.

2.5 METHODS FOR INTERNAL EVALUATION OF THE PLAN

The exploration safety committee (SC) will be responsible for evaluation of the plan. The continual improvement approach to evaluation will be followed. Suggestions will be solicited and welcomed from all employees. Emergency preparedness will be formally evaluated by the SC who will provide verbal and written reports immediately following the evaluation.

All emergency incidents will be reviewed by the SC immediately following the incident. Emergency response will be reviewed for adequacy. Any deficiencies will be addressed as a priority and the emergency response plan modified as appropriate.

3. Site Information

Maps showing the locations of storage facilities of petroleum products and/or hazardous materials and spill response kits and stockpiles of spill response equipment on site are in Appendix A.

3.1 PETROLEUM / HAZARDOUS MATERIAL STORAGE

The petroleum products potentially used and stored on site include: diesel, jet fuel (Jet B), unleaded gasoline, propane, motor oils, hydraulic oils, lubricants and ethylene glycol (antifreeze). Table 3.1 lists all the potential storage locations for hazardous fuel products and the maximum quantities that will be stored of each product at each storage site. Table 3.2 lists the hazardous, non-fuel products potentially stored on site and the maximum on-hand quantities. Table 3.3 lists the non-hazardous, petroleum based products potentially stored on site.

TABLE 3.1		
LOCATION OF HAZARDOUS FUEL PRODUCTS STORAGE		
<i>Product</i>	<i>Site</i>	<i>Location – Estimated quantity</i>
Diesel	Camp	Bulk storage (drums) – 20,000L All structures with oil stoves – 205 L
	Diamond drill	Drill site (drums) – 10,000 L
Jet-B Fuel	Camp	Bulk storage (drums) – 30,000 L Helipad – 1,025 L
	Diamond drill	Drill site – 1,025 L
Propane	Camp	Bulk storage (cylinders) – 20,000 lbs Kitchen and dry – 1,000 lbs
	Drill	1000 lb
Unleaded Gasoline	Camp	Bulk storage (drums) – 10,000 L Snowmobile tent – 410 L

TABLE 3.2		
LOCATION OF HAZARDOUS SUBSTANCES STORAGE (NON-FUEL)		
<i>Product</i>	<i>Site</i>	<i>Location – Estimated quantity</i>
Ethylene glycol	Camp	Generator shed – minimal Storage shed – minimal
	Diamond drill	Storage shed – minimal

TABLE 3.3		
LOCATION OF NON-HAZARDOUS PETROLEUM SUBSTANCES STORAGE		
<i>Product</i>	<i>Site</i>	<i>Location – Estimated quantity</i>
Motor Oils	Camp	Storage shed – 12 L Generator shed – 12 L Snowmobile tent – 12 L
	Diamond drill	Drill site – To be determined
	Diamond drill	Drill site – To be determined
Greases and lubricants	Camp	Storage shed – Minimal Generator shed – Minimal
	Diamond drill	Drill site – To be determined

3.2 SPILL RESPONSE KITS

Spill response kits will be located at each fuel storage and fuelling stations. A portable spill kit is available in the camp storage shed for response to potential spills while refuelling the heating oils drums attached to each building in camp. The descriptions and contents of these kits are displayed in Section 8. Fuel spill response supplies are stored in the camp storage shed and are readily available. Table 3.4 lists locations.

TABLE 3.4 SPILL RESPONSE KIT LOCATIONS	
<i>Location</i>	<i>Type of spill kit / spill supplies</i>
All fuel bladders	Spill Response Unit - Extra Large
All fuel tank farms	Spill Response Kit
All fuelling stations	Spill Response Kit
Camp helipad	Kwik Response Kit
Camp generator shed	Spill Response Kit
Camp storage shed	Bulk spill supplies
Diamond drill site	To be determined

4. Response Organization

The spill response team members are listed below in Table 4.1.

TABLE 4.1 SPILL RESPONSE TEAM		
<i>Title</i>	<i>Contact Name</i>	<i>Responsibilities</i>
Exploration Manager	Des Olsen (or designated alternate)	Management of the all Tahera exploration programs.
Exploration Coordinator	Ferg McDonnell (or designated alternate)	Management of petroleum products and hazardous materials on site. Responsible for management of clean up activities.
Field Operations Supervisors	Dave Carson Andrew Coster Deanna Hanchar	Alternates for above positions

TABLE 4.1 SPILL RESPONSE TEAM		
<i>Title</i>	<i>Contact Name</i>	<i>Responsibilities</i>
Field Staff / Contractors	Designated Tahera employees / contractors with required training	Carrying out spill clean up activities under supervision of preceding positions.

In the event of an emergency requiring the activation of the spill contingency plan, **Des Olsen** (Exploration Manager) or **Ferg McDonnell** (Exploration Coordinator) for Tahera Diamond Corporation can be contacted 24 hours per day.

When On-site:

- Tak Camp office phone (number to be determined)
- Iridium portable satellite phone (number to be determined)
- Portable HF radio

When Off-site:

- Tahera Vancouver exploration office phone: (604) 519-1977
- Des Olsen mobile phone: (604) 837-8877

5. Reporting Procedures

5.1 REPORTING

The following reporting procedure will be posted at telephones and other locations at the Tak Camp.

When a spill of any size has been discovered:

1. The person finding the spill must report the spill to their immediate supervisor. The on site spill report will then be directly relayed to the Exploration Coordinator and the Exploration manager. The appropriate supervisor will assume the responsibilities of the On-scene Coordinator.
2. In the event that a spill is beyond the threshold quantities provided in Schedule B of the Spill Contingency Planning and Reporting Regulations (refer to Table B in Appendix B). The Exploration manager will report the spill to the following:

If the spill is of reportable size, to the GNWT 24-hour spill line

(867) 920-8130

and to KIA, Kugluktuk: (867) 982-4010, fax: (867) 982-3310

Irrespective of the size of the spill, all spills of hazardous materials (as defined by *Transportation of Dangerous Goods Act*) will be logged. The log book will be available for government inspectors upon request.

Other Important Phone Numbers (all area code 867) are listed in Table 5.1:

TABLE 5.1	
EXTERNAL EMERGENCY CONTACT NUMBERS	
Environment Canada 24hr emergency hotline	920-8130
Poison Control, Stanton Hospital	669-4100
Poison Centre	1-800-332-1414
Yellowknife RCMP	669-1111
Cambridge Bay RCMP	983-0123
Kugluktuk RCMP	982-1111
GNWT OH&S, Mine Safety Division	1-800-661-0792
GNWT WCB, Yellowknife	1-800-661-0792
GN, Environmental Protection Service, Iqaluit	975-5900
Nunavut Water Board Inspector, Gjoa Haven	360-6338
Indian and Northern Affairs Canada, Iqaluit	975-4500
INAC Water Resources	975-4548
INAC Land Administration	975-4275
INAC Land Use Inspector	982-4306
Environment Canada, Environmental Protection Branch, Yellowknife	920-5131
DFO, Area Manager Nunavut	975-8011
DFO, Habitat Coordinator	669-4911
DFO, Director, Conservation and Compliance	669-4903
RWED, Wildlife Emergency Department	873-7181

TABLE 5.1	
EXTERNAL EMERGENCY CONTACT NUMBERS	
Emergency Measures Organization of the NWT, Yellowknife	873-7554
Fire Marshall's Office, Yellowknife	873-7944
Department of Environmental Health, Cambridge Bay	983-7328
Mackenzie Regional Health Services, Yellowknife	920-6592

5.2 OTHER EMERGENCY CONTACTS

Additional emergency contact numbers are provided in Table 5.2, below.

TABLE 5.2	
ADDITIONAL EMERGENCY CONTACTS	
CANUTEC (Spill Support Information)	613-996-6666
CHARTER AIRCRAFT (FOR EVACUATION)	
Air Tindi, Yellowknife	669-8200
First Air, Yellowknife	983-2077
Arctic Sun West, Yellowknife	873-4464
Nunasi Helicopters, Yellowknife	873-3306
Canadian Helicopters, Yellowknife	669-9604
Great Slave Helicopters, Yellowknife	873-2081
Adlair Aviation, Cambridge Bay	983-2569

5.3 SPILL REPORT

A Nunavut Spill Report Form will be submitted to Indian and Northern Affairs' Water Resources Officer no later than thirty (30) days after initially reporting the spill to the Spill Report Line. The Nunavut Spill Report Form template is attached to this document in Appendix C.

A copy of the Nunavut Spill Report will be filed with the Tahera Diamond Corporation's exploration office (as per internal reporting procedures) and with Tahera's Vice

President, Nunavut Affairs (fax: 1-416-777-1898). The exploration manager will retain a copy on site.

6. Action Plans

6.0 INITIAL PROCEDURES

Spill response contact telephone numbers are listed in Section 5. The numbers will be posted at telephones at the camp and in all portable satellite phones.

All employees will record any information they receive as soon as they have an indication that an emergency may exist.

The following will be recorded:

- (a) Who is reporting, how can they be contacted
 - Date, time
 - Person calling, title
 - Telephone number (if applicable)

This information will always be taken before the details on the nature and extent of emergency, in case of call interruption or the need to clarify the situation.

- (b) Nature of emergency
 - Location
 - Type of container (if applicable)
 - Materials involved (if known)
 - Leaking (if applicable)? How quickly (if applicable)?
 - Contamination of soil?
 - Contamination of surface water body?
 - Contamination of air?
 - Time of incident
 - Other materials involved (if applicable)?
 - Is wildlife involved?

Many emergencies are often initially overstated or understated; one of the most difficult tasks is to get a true appraisal of the situation. To this end all available resources must be used to get knowledgeable persons to the scene as quickly as possible.

- (c) Who has been notified?
 - Refer to Response Organization Table (Table 4.1).

- (d) Who is in charge of spill?
- Name and phone number, if available (this will normally be the Exploration Manager or Environment, Health and Safety Advisor).

6.1 PETROLEUM SPILL CLEANUP

6.1.1 General

The first priority in an effective control program is to make all possible efforts to limit the spread of the oil/petroleum mass. Proper response and speed of response are indispensable elements of effective control of an oil spill. Petroleum spills within contained areas can be cleaned up as personnel are available; other spills will be cleaned up immediately. Spills on water are discussed in detail in Section 6.1.2. Spills on land are discussed in Section 6.1.3.

6.1.2 Water-Based Spills

Water-based spills on the property are a remote possibility, as bulk fuel will be transferred during winter when water surfaces are frozen and the fuel farm will be behind a berm. Furthermore, fuel will be delivered by contractor's truck to the fuel tanks and fuel transfer operations at the mine site will be away from water bodies. In the event of a spill on the winter road, all assistance possible would be provided by Tahera exploration personnel and Jericho Mine personnel, if the spill occurred proximate to the facility.

6.1.2.1 Clean Up Equipment and Supplies

Some, or all, of the following will be available, either through the fuel supply contractor, or at various sites on the property:

- booms for containment of oil on water;
- hand tools as appropriate for clean up; and
- sorbent materials of sufficient quantity to absorb the petroleum product.

6.1.2.2 Procedures

Clean up will involve either or both water contained within the containment booms and the shoreline. Clean up of water and materials contained within booms should not result in the spread of oil pollution outside the containment zone. The method of disposal of oil-contaminated absorbent materials and oil-water mixtures will be acceptable to and approved by NWB, Environment Canada and/or DIAND.

Shoreline cleanup is usually most efficiently completed with small teams equipped with hand equipment: shovels, buckets, portable burners and incinerators. The most important factor for shoreline cleanup decisions is the identification of the coastal land form, beach type and shoreline processes. The following procedures are applicable to Muskox Camp and the Polar Property:

TABLE 6.1						
RECOMMENDED SHORELINE CLEAN-UP METHODS						
<i>Shoreline</i>	<i>Manual Removal</i>	<i>Mechanical Removal</i>	<i>Burning</i>	<i>Chemical Dispersants¹</i>	<i>Mixing</i>	<i>Sorbents²</i>
Gravel	Recommended	Recommended	Applicable	Applicable	Applicable	Applicable
Sand	Recommended	Recommended	Applicable	Applicable	Applicable	Not Applicable

Manual Removal

Manual removal of oil is labour intensive, utilizing small teams of people, buckets and shovels. Manpower and disposal facilities are the major limiting factors. Manual recovery techniques tend to cause the least impact on the shoreline and are recommended for sand and gravel beaches.

Mechanical Removal

On sand beaches, graders or front end loaders can remove large amounts of stranded surface oil. The most common technique for removal of surface oils is to form windrows of the sand and oil mixture with a grader, and then remove the windrows for disposal or cleaning with an elevating scraper. Mechanical removal of oil from coarse sediments is generally more difficult because oil penetrates to a greater depth and heavy equipment is less stable. During cleaning, heavy equipment should be carefully controlled. Excessive removal of material may disrupt normal beach processes.

Burning

In situ burning may be an effective cleanup method under certain circumstances. Slick thicknesses must be two to three millimetres and the slick relatively fresh. Burning is not necessarily a cleanup technique, but rather stabilizing factor (i.e. the toxic light ends are burned) leaving a heavy residue. It causes air pollution and enables various components of the oil to penetrate into the substrate as burning progresses, but burning will leave the contaminated shoreline less sensitive to birds. Various portable incinerators have been constructed to burn oil-soaked debris.

Chemical Dispersants

With government approval, low toxicity chemical dispersants could be sprayed on gravel and sand beaches. Water would then be required to be sprayed on the beaches to move the oil-dispersant mixture to the water surface where it can be boomed and vacuumed up. The decision to use dispersants will likely have to be made on site by government regulators and their use, even if approved, should not be undertaken without consultation with regulatory authorities.

¹ use of chemical dispersants along shorelines requires government permission.

² sorbents should only be used as a final touch up during cleanup operations.

Mixing

Mixing the polluted surface sediments with rakes and harrows will increase weathering processes and speed up the natural degradation of oil. This method is most effective with low viscosity oils that contain a high proportion of volatile components, e.g. diesel.

Sorbents

Sorbents are materials that recover oil through either absorption or adsorption and are commonly used for final cleanup of small amounts of oil. They have been used with some success on gravel beaches and mud flats. There are: natural organic sorbents (e.g. peat moss, straw, hay, sawdust); mineral based sorbents (e.g. vermiculite, volcanic ash, perlite); and synthetic organic sorbents (e.g. foam, polystyrene, polyester, rubber).

6.1.2.3 Spills on Ice

Spills on ice near camp and at all drill sites and locations, would be responded to by exploration personnel, contractors involved and potentially Jericho Mine personnel if deemed necessary. All petroleum contaminated ice would be collected and disposed of at an approved treatment facility on land. Once melted, the oil-contaminated water may be amenable to treatment in an oil-water separator to reduce concentrations to levels acceptable for discharge, or the petroleum product may be separated from the water and incinerated in an approved facility.

6.1.3 Land-Based Spills

6.1.3.1 Containment

Containment is achieved by using one or more of the following:

- diking;
- trenching;
- ditches and small streams;
- weir; and
- dams

The containment method used may entirely depend on circumstances and materials at hand. The primary aim, after safety and rapid containment, is to prevent (where possible) loss of the spilled material(s) to the environment.

Diking

Dikes can be constructed using commercially available units or surrounding soil and other similar materials. Construction equipment can range from hand shovels to backhoes. When flammable products are to be diked, great care must be taken to avoid ignition from the electrical components and moving parts of the unit. This often prohibits the use of larger, mechanical units. Dikes should be constructed a safe distance away from the leading edge of a flammable product.

Two common errors made in constructing or laying dikes are:

- Attempting to contain too large an amount of product in a given area.

- Deploying the dike too close to the leading edge of the spill.

The former leads response personnel to build dikes that are too big and unable to withstand the pressures exerted on them by the liquids they contain. The latter causes breaching of the dike due to incomplete construction or deployment. Dikes should be twice the height of the liquid they are to contain and have a 2:1 slope (i.e. four times the width at the base as the height of liquid that is to be contained).

Initial efforts at construction of dikes will primarily involve the placement of soil or sand. Response personnel should aim to refine the dike construction, as circumstances permit. Typically this involves increasing the amount of material in a dike, adding an impermeable layer (i.e. geomembrane), and constructing secondary barriers.

No dike will ever totally prevent product movement, but significant restrictions and temporary containment can be achieved. Depending on wind conditions and product volatility, dikes may also help to restrict vapour movement.

Once the product is contained, immediate procedures for recovery must be implemented, especially with a low-viscosity product in an area of high soil permeability. Dike soil will likely be contaminated and require shipment to Yellowknife or Jericho for treatment.

Trenching

The exact method of construction and maintenance of trenches will depend on issues such as soil porosity, product solubility, etc. For example, the most effective method of preventing diesel oil permeating a trench bottom is to allow a certain amount of water to enter the trench. If water is not available, then an alternative is to totally line the trench. Interceptor trenches and dikes may still be useful for non-soluble products and those with a relative density greater than water, but effectiveness will be significantly reduced. Once trenches are constructed, monitoring is required to prevent overtopping. In the event that liner material is not available, trenches can be lined with absorbent booms.

Ditches

Spills may collect in pre-constructed ditches. In such circumstances, the primary aim is to control movement of product along the ditch, without hindering the movement of water. This is accomplished by the construction of dams or weir-type arrangements at strategic points.

6.1.3.2 *Small Spill from Equipment*

Small spills from equipment occur from careless refuelling or from leaks on the equipment from hoses or fluid reservoirs. If the spill occurs on soil, the soil will be removed down to a clean surface and shipped off site to Jericho or Yellowknife for disposal. In the case of any spill it will be reported to the on-duty supervisor and the supervisor will decide whether the spill must be reported on the spill line and if so, advise the exploration manager or alternate. If a reportable spill has occurred the exploration manager or alternate will phone the spill line and report the incident. A spill report form will be filled out and faxed within 24 hours to the spill report centre.

6.1.3.3 Recovery of Land-Based Spills

Recovery of land-based spills is usually two-phased: re-containment of spilled product and cleaning or removal of contaminated substrate (sand.). Re-contained product may be used for its intended purpose or disposed of. If disposed of, and the product is a hazardous substance under the *Transportation of Dangerous Goods Regulation* (which is indicated on the MSDS), disposal must be through a contract service licensed to handle hazardous wastes. As well, management must verify that the disposal site is licensed to handle wastes of the type being removed from the spill site. Alternately, and preferably, the waste petroleum product can be incinerated at Muskox camp or Jericho Mine site.

6.1.3.4 Temporary Storage

Emergency Containers

- Drums can be used for small volumes of product.
- The spill coordinator will ensure that the drums to be used for storage are compatible with the recovered product.
- To use, the drum lid must be removed, or commercial drums with removable lids kept on site. Such drums, either plastic or metal, are standard parts of commercially available spill kits.

Lugger Boxes

Lugger boxes are available from waste management companies. Units can be in either closed or open-top configurations. Lugger boxes are bigger than drums (205 L barrels) which may make locating the boxes in proximity to the spill difficult. Lugger boxes are frequently used to transport drums that have been physically altered or damaged.

Portable Tanks

Portable tanks vary from 1895 to 37,900 L (500 to 10,000 gallons) capacity. Construction is either bladder or frame and liner. When using portable tanks the user will:

- Never exceed the tank's rated capacity.
- Ensure that the liner material is compatible with the product to be recovered.
- Remove stones, sticks and any other protuberances from the area where the tank will be sited to avoid the risk of tank puncture.
- Keep one person at the tank at all times to monitor the liquid level.

Drums and Cylinders

This section deals with drums and cylinders involved in spill incidents, rather than temporary containers of spilled product.

Drums

All drums that contain hazardous materials require safety marks to be applied. These marks are dictated by Canadian statutes, and are designed to indicate the hazardous

nature of the drum contents. Both *Transportation of Dangerous Goods Regulation* and WHMIS/Right to Know labels may be affixed.

Drum cache locations are clearly marked with stakes at the camp making them visible throughout the year. Larger caches will be inspected daily by the Environment, Health and Safety Advisor or designate; smaller caches will be inspected weekly. An inspection log will be kept for review by an NWB inspector.

Spill incidents involving drums will follow the procedures below:

- Approach the spill site and determine clearly the contents of each drum: note which drums are leaking. If the shipping document is available, try to compare it to the drums found.
- Consult appropriate technical data (MSDS) to assess the potential for reactivity (this should be done by all employees handling chemicals, for the chemicals under their responsibility, **prior** to an incident).
 - Re-enter the site and stabilize any leaking units by repositioning if possible. That is, if a drum is holed and the hole is at ground level, attempt to rotate it until the hole is adjacent to the vapour space.

The next stage involves carrying out temporary repairs to damaged drums and over packing. If there is insufficient over pack drums available to allow over packing of all units, all temporary repairs will be designed to permit safe transportation to a site where the drum contents can be handled.

Another alternative to be considered before patching will be transferring the contents of a damaged drum into an intact unit, but again, this will depend on the availability of clean drums. Where drum repair is attempted, one of several commercially available kits designed specifically for these techniques will be used. Additionally, various types of chemical patch kits are available. These either require the mixing of two chemicals to form a malleable material that sets hard, or a single malleable material that sets hard upon exposure to air.

Cylinders

Cylinders containing compressed gases are usually not safe to handle until the gas has escaped. Evacuate the area and notify your supervisor. Once the gas has escaped and vapours are no longer explosive or at toxic levels (refer to MSDS), the cylinder can be handled.

6.1.4 Spills on Wetlands

Spills of petroleum products on wetlands are unlikely because of the limited exposure of wetlands to potential spills. Spills during the winter would be treated in a manner similar to spills on snow or ice: the contaminated snow or ice would be removed and placed in the facility designated for contaminated snow. Treatment of spills during the open water season would depend on the amount of standing water (if any) present in the wetland. Sorbent booms may be deployed; if running water is present a coffer dam may need to be built. Contaminated water would be treated as discussed in Section 6.1.2 and contaminated soil and vegetation as discussed in Section 6.1.3.

6.2 PRODUCT SPECIFIC ACTION PLANS

The following section outlines specific actions plans to be followed during potential spill events. The action plans apply to the following products:

- Diesel;
- Jet fuel;
- Unleaded gasoline;
- Propane;
- Hydraulic and motor oils; and
- Ethylene glycol.

6.2.1 Diesel Fuel Spill – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- **Stop** the flow of fuel if possible.
- **Eliminate** all sources of open flame and ignition.
- **Evacuate** personnel from danger area.
- If safe, contain the flow of fuel by any means available.
- If flow has reached water, deploy absorbent booms.
- Submit Nunavut Spill Report.

Hazards

- Flammable. Remove all sources of open flame and ignition.
- Toxic. Avoid contact with eyes, skin and clothes. Avoid ingestion and inhalation.

Recovery

- Recover as much spilled fuel as possible into storage containers.
- Recovered fuel can be soaked up with sand, peat moss, snow or other natural or synthetic absorbents.
- Fuel entering ground can be recovered by trenching or digging sumps.
- Fuel on water recovered with skimmers and absorbent booms.

Disposal

- Obtain appropriate approval for planned disposal method.
- Ship recovered fuel and contaminated materials to proper disposal facility.
- Incinerate under controlled conditions.

Environmental Concerns

- Toxic to aquatic organisms and wildlife
- Will create film on water and will discolour tundra.

6.2.2 Jet Fuel (Jet-B) Spill – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- **Eliminate** all sources of open flame and ignition, including cigarettes, engines, static discharge, etc.
- **Evacuate** personnel from danger area.
- **Stop** the flow of fuel if safe.
- **Carefully consider the hazards** of trying to contain the spill. If not safe, do not attempt containment and let the fuel evaporate in situ.
- If deemed safe, contain the flow using techniques that will not produce sources of ignition.
- If flow has reached water and is deemed safe, contain with absorbent booms.
- Submit Nunavut Spill Report.

Hazards

- Highly flammable and easily ignitable.
- Remove all sources of open flame and ignition.
- Forms an explosive mixture with air.
- Toxic. Avoid contact with eyes, skin and clothes. Avoid ingestion and inhalation.
- Avoid contact with oxidizing agents.

Recovery

- Recovered fuel can be soaked up with sand, peat moss, snow or other natural or synthetic absorbents.
- Fuel entering ground can be recovered by trenching or digging sumps.
- Fuel on water recovered with skimmers and absorbent booms.

Disposal

- Obtain appropriate approval for planned disposal method.
- Ship recovered fuel and contaminated materials to proper disposal facility.
- Incinerate under controlled conditions.
- Evaporation.

Environmental Concerns

- Toxic to aquatic organisms and wildlife
- Will create film on water and will discolour tundra.

6.2.3 Unleaded Gasoline Spill – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- **Eliminate** all sources of open flame and ignition, including cigarettes, engines, static discharge, etc.
- **Evacuate** personnel from danger area.
- **Stop** the flow of fuel if safe.
- **Carefully consider the hazards** of trying to contain the spill. If not safe, do not attempt containment and let the fuel evaporate in situ.
- If deemed safe, contain the flow using techniques that will not produce sources of ignition.
- If flow has reached water and is deemed safe, contain with absorbent booms.
- Submit Nunavut Spill Report.

Hazards

- Highly flammable and easily ignitable.
- Remove all sources of open flame and ignition.
- Forms an explosive mixture with air.
- Toxic. Avoid contact with eyes, skin and clothes. Avoid ingestion and inhalation.
- Avoid contact with oxidizing agents.

Recovery

- Recovered fuel can be soaked up with sand, peat moss, snow or other natural or synthetic absorbents.
- Fuel entering ground can be recovered by trenching or digging sumps.
- Fuel on water recovered with skimmers and absorbent booms.

Disposal

- Obtain appropriate approval for planned disposal method.
- Ship recovered fuel and contaminated materials to proper disposal facility.
- Incinerate under controlled conditions.
- Evaporation.

Environmental Concerns

- Toxic to aquatic organisms and wildlife
- Will create film on water and will discolour tundra.

6.2.4 Hydraulic Fluid / Motor Oil Spill – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- **Stop** the flow of fuel if possible.

- **Eliminate** all sources of open flame.
- **Evacuate** personnel from danger area.
- If safe, contain the flow of oil by any means available.
- If flow has reached water, deploy absorbent booms.
- Submit Nunavut Spill Report.

Hazards

- Flammable, but low fire hazard.
- Low toxicity; however avoid contact with eyes and ingestion.
- Avoid contact with oxidizing agents.

Recovery

- Recover as much spilled oil as possible into storage containers.
- Recovered oil can be soaked up with sand, peat moss, snow or other natural or synthetic absorbents.
- Oil on or in the ground can be recovered by excavation.
- Oil on water recovered with skimmers and absorbent booms.

Disposal

- Obtain appropriate approval for planned disposal method.
- Ship recovered fuel and contaminated materials to proper disposal facility.
- Landfarm and bioremediate.
- Incinerate under controlled conditions.

Environmental Concerns

- Moderately toxic to aquatic organisms and wildlife
- Will create film on water and will discolour tundra.

6.2.5 Ethylene Glycol Spill – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- **Stop** the flow of fuel if possible.
- **Eliminate** all sources of open flame.
- **Evacuate** personnel from danger area.
- If safe, contain the flow of oil by any means available.
- If flow has reached water, deploy absorbent booms.
- Submit Nunavut Spill Report.

Hazards

- Flammable, but low fire hazard.
- Toxic if ingested. Avoid inhalation of mist and contact with eyes.
- Avoid contact with oxidizing agents.

Recovery

- Recover as much spilled fluid as possible into storage containers.
- Recovered fluid can be soaked up with sand, peat moss, snow or other natural or synthetic absorbents.
- Small quantities of fluid on the ground can be diluted with copious amounts of water.

Disposal

- Obtain appropriate approval for planned disposal method.
- Ship recovered fluid and contaminated materials to proper disposal facility.
- Incinerate under controlled conditions.

Environmental Concerns

- Moderately toxic to aquatic organisms.
- Toxic if ingested by wildlife, with attractive small and sweet taste.
- Soluble in water.

6.2.6 Propane Leak – Action Plan

Initial Response

- **Inform** the Exploration Manager or alternate of spill to initiate response team action.
- **Report spill using 24 hour emergency spill line: (867) 920-8130.**
- For very minor leaks valve leaks, attempt to shut of the valve if possible.
- **Eliminate** all sources of open flame and ignition.
- **Evacuate** personnel from danger area.
- **Wait** until cylinder has completely vented.
- **Do not** attempt to contain.
- Submit Nunavut Spill Report.

Hazards

- Highly flammable and easily ignitable.
- Remove all sources of open flame and ignition.
- Highly explosive.
- Below -42°C will be in liquid state and will boil at this temperature.
- Avoid inhalation of fumes.
- In liquid state, may cause burns due to freezing.

Recovery

- No recovery possible as propane will diffuse into atmosphere.
- Do not attempt to recover propane in liquid state. Allow it to evaporate naturally.

Disposal

- Ship recovered propane cylinders to proper disposal/recycling facility.

Environmental Concerns

- No concerns due to rapid volatilization.

7. Environmental Mapping

Please refer to Section 3 (Site information) and to Appendix A for details regarding:

- site maps of Tak camp and Anuri kimberlite drilling;
- drainage, water bodies and contour isobars; and,
- locations of fuel storage sites and spill response equipment depots.

Tahera's environmental policy is stated in Section 2.

8. Resource Inventory

8.1 INVENTORY

The following three tables list the resource inventory available for spill response on the property. The resources listed in Table 8.1 are available year round for any exploration activities taking place and are stored in MuskoX camp. Tables 8.2 and 8.3 list the resources available only when the MuskoX to Jericho winter road is operational. This road will only be operational during the MuskoX bulk sample RC drill program.

<i>Resource</i>	<i>Quantity</i>	<i>Location</i>
Personnel (when camp in-use)	10-20	Tak camp
Spill response kits (details in Sections 3.2 and 8.2)	4	Tak camp
40' x 15' x 12" Fuel berm with rain drain	2	Tak camp
Hand tools (shovels, picks etc.)	many	Tak camp
Empty fuel drums for waste storage	many	Tak camp

8.2 SPILL RESPONSE KIT DETAILS

Spill response kits will be located at all fuel storage locations, drill sites and in all vehicles (except snowmobiles). Spill kits and supplies will be supplied by Tahera and by all contractors working for Tahera (drill companies, trucking companies etc). The Tahera owned on-site spill response kits are supplied by Raymac Environmental Inc. and are described below. The details of the contractor supplied spill kits has yet to be determined.

8.2.1 Spill Response Kit (SRK)

100 oils sorbent pads, 6 small pillows, 2 large pillows, 5 – 10’ socks, 25 lb bag granular, plug pattie (instant leak stop), neoprene drain cover, 2 disposal bags, 1 splash goggles, 1 pair nitrile gloves, 1 poly-coated Tyvek suit and a disposable respirator. Capacity 231 litres

8.2.2 Spill Response Unit (Extra large) (SRU-XL)

300 Oil sorbent pads, 8 – 8’ socks, 8 – 4’ socks, Plug N Dike 10 lb container, 12 large pillows, 8 small pillows, 2 plug patties (instant leak stop), 2 neoprene drain covers, telescopic shovel, 25 lb Bag granular/peat, 2 pair Nitrile gloves, 2 Tyvek poly-coated suits, 1 roll (20) disposal bags, 1 roll of barrier tape. Capacity 546 litres

8.2.3 Qwik Response Kit (QRK)

50 oil sorbent pads, 4 small pillows, 2 large pillows, 4 – 4’ socks, 1 – 8’ sock, plug pattie (instant leak stop), 2 disposal bags, 1 pair Nitrile gloves, 1 splash goggles, 1 disposable respirator. Capacity 120 litres

9. Training and Exercises

Training will be provided by a combination of Tahera staff and outside training service organizations, as appropriate. All members of the on site spill response team will have current WHMIS certification and relevant personnel will have Transportation of Dangerous Goods certification.

The environment, health and safety advisor will provide an overview of the spill contingency plan to all persons in camp in conjunction with the camp orientation. This will include a familiarization with site specific fuel distribution procedures and equipment as well as the location and proper use of on site fuel spill clean up equipment. Topics to be covered would include but not be limited to the following:

- reporting procedures for personnel
- shutdown procedures for equipment and electrical systems
- types of potential emergencies
- risks associated with all hazardous materials
- procedures for handling flammable liquids

- importance of safe work habits
- procedures for control and cleanup of leaks and spills; and
- procedures for disposal of waste materials.
- when to attempt immediate response to an emergency and when to call for help

On site training will be conducted as needed on a daily basis as personnel arrive on site. Any changes or developments in the spill contingency plan will be reviewed as necessary and discussed during weekly safety meeting.

Mock spill response exercises will be created periodically as necessary to familiarize on site personnel with fuel spill clean up procedures and equipment. Exercises will be logged and the information used for plan review and available to government inspectors upon request.

10. Product Information

Transportation of hazardous materials is governed by the federal *Transportation of Dangerous Goods Act (TDGA)* and *Regulation*. Transportation of all goods to the Property will be the responsibility of carriers who must be appropriately licensed. Exploration personnel handling hazardous materials will receive TDGA training. All employees will obtain *Workplace Hazardous Materials Information System (WHMIS)* training which includes familiarization with Material Safety Data Sheets (MSDS) for materials they handle.

The MSDS for all hazardous products potentially on-site are located in Appendix D. All MSDS for non-hazardous petroleum and drilling products are included in Appendix E.

10.1 PRODUCT HANDLING PROCEDURES

10.1.1 Personal Protective Equipment

Personal protective equipment recommended by manufacturers in Material Safety Data Sheets (MSDS) is listed for each product in Table 10.1 and safe handling procedures are listed in Table 10.2.

TABLE 10.1			
PERSONAL PROTECTIVE EQUIPMENT FOR FUEL PRODUCTS			
<i>Product</i>	<i>Personal Protective Equipment</i>		
	<i>Eyes</i>	<i>Skin</i>	<i>Respiration</i>
Diesel	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required

TABLE 10.1			
PERSONAL PROTECTIVE EQUIPMENT FOR FUEL PRODUCTS			
Product	Personal Protective Equipment		
	Eyes	Skin	Respiration
Motor Oil	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required
Jet-B Fuel	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Unleaded Gasoline	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Hydraulic Fluid	For splash protection use chemical goggles	None usually required	None usually required
Automotive Grease	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Propane	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Ethylene Glycol	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation

TABLE 10.2	
SAFE HANDLING PROCEDURES FOR FUEL PRODUCTS	
Product	Handling Procedures
Diesel	<p>Do not get in eyes, on skin or on clothing. Avoid breathing vapours, mist, fume or dust. Do not swallow. May be aspirated into lungs. Wear protective equipment and/or garments if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use with adequate ventilation.</p> <p>Keep away from heat, sparks, and flames. Store in a well-ventilated area. Store in a closed container. Bond and ground during transfer.</p>
Motor Oil	Wear protective clothing and impervious gloves when working with used motor oils.

TABLE 10.2
SAFE HANDLING PROCEDURES FOR FUEL PRODUCTS

<i>Product</i>	<i>Handling Procedures</i>
Jet-B Fuel	<p>Do not get in eyes, on skin or on clothing. Avoid breathing vapours, mist, fume or dust. Do not swallow. May be aspirated into lungs. Wear protective equipment and/or garments, (minimum safety goggles with side shields and gloves). Wash thoroughly after handling. Launder contaminated clothing before reuse. Use with adequate ventilation.</p> <p>Avoid contact with sources of ignition, flames, heat and spark. Material will accumulate static charge, causing spark. Use proper grounding procedures. Fumes are heavier than air and may travel considerable distances to ignition sources and flashback.</p> <p>Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours.</p> <p>Only qualified and properly trained persons shall fuel aircraft, using Transport Canada approved procedures.</p>
Unleaded Gasoline	<p>Do not get in eyes, on skin or on clothing. Avoid breathing vapours, mist, fume or dust. Do not swallow. May be aspirated into lungs. Wear protective equipment and/or garments if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use with adequate ventilation.</p> <p>Avoid contact with sources of ignition, flames, heat and spark. Material will accumulate static charge, causing spark. Use proper grounding procedures. Fumes are heavier than air and may travel considerable distances to ignition sources and flashback.</p> <p>Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours.</p>
Hydraulic Fluid	<p>Keep container closed until ready for use.</p>
Automotive Grease	<p>Minimize breathing vapour, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean before re-use; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.</p> <p>To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Code. Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.</p>

TABLE 10.2
SAFE HANDLING PROCEDURES FOR FUEL PRODUCTS

<i>Product</i>	<i>Handling Procedures</i>
Propane	<p>Avoid breathing vapour. Wear protective goggles and gloves. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Vapours may accumulate and travel to distant ignition sources and flashback.</p> <p>Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours.</p> <p>Do not pressurize drum containers to empty them. Hot surfaces may be sufficient to ignite liquid even in the absence of sparks or flames. Extinguish pilot lights, cigarettes and turns off other sources of ignition prior to use and until all vapours are gone. Vapours are heavier than air and will settle and collect in low areas and pits, displacing breathing air.</p>
Ethylene Glycol	<p>Use adequate ventilation, wear protective gloves and chemical safety goggles if possibility of eye contact.</p> <p>Keep in tightly closed container, stored in a cool, dry, ventilated area. Separate from acids and oxidizing materials. Containers of this product may be hazardous when empty since they retain product residues (vapours; liquids).</p>

10.2 STORAGE LOCATIONS

Storage locations for fuel products and hazardous materials are covered in Section 3 of this plan.

11. Supporting Documentation

Guidelines For Spill Contingency Planning, Nunavut Water Board, Draft, November 2004.

Spill Contingency Planning and Reporting Regulations R-068-93, April 1, 1999.

Environmental Guidelines for General Management of Hazardous Waste, Nunavut Environmental Protection Service, January 2002.

Nunavut Hazardous Waste Disposal Manual, Nunavut Environmental Protection Service.

Spill Prevention, Countermeasures and Control Plan, Jericho Project, January 2003.

12. Appendices

Appendix A

Site Maps and Figures

(see attached maps at end of document)

Appendix B

Schedule B of the Spill Contingency Planning and Reporting Regulations

TABLE B		
SPILL REPORTING QUANTITIES		
Substance	TDGA Class	Reportable Amount
Compressed gas (flammable)	2.1	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (non-corrosive, non flammable)	2.2	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (toxic)	2.3	Any amount
Compressed gas (corrosive)	2.4	Any amount
Flammable liquid	3.1, 3.2, 3.3	100 L
Flammable solid	4.1	25 kg
Spontaneously combustible solids	4.2	25 kg
Water reactant solids	4.3	25 kg
Oxidizing substances	5.1	50 L or 50 kg
Organic Peroxides	5.2	1 L or 1 kg
Poisonous substances	6.1	5 L or 5 kg
Infectious substances	6.2	Any amount
Radioactive	7	Any amount
Corrosive substances	8	5 L or 5 kg
Miscellaneous products or substances excluding PCB mixtures	9.1 (part)	50 L or 50 kg
Environmentally hazardous	9.2	1 L or 1 kg
Dangerous wastes	9.3	5 L or 5 kg
Other contaminants	None	100 L or 100 kg

Appendix C

MSDS

Hazardous Products

(MSDS have been submitted separately since they apply to several documents in this application)