Richard Dwyer

From: Shirley Standafer-Pfister [shirley@pdiam.com]
Sent: Wednesday, July 14, 2010 4:05 PM
To: David Abernethy; John Craig; Tracey McCaie; Richard Dwyer
Cc: Eno, Robert; Ron.Bujold@ec.gc.ca
Subject: Peregrine-Nanuq Project Spill Plan-Revision for Camp Phone Number
Attachments: PEREGRINE-Nanuq-Spill Plan-Ver4-2010-New Phone Number-2 PAGES.pdf

Greetings, All,

Please find attached a new cover page and a revised Page 6 for the current Nanuq Project Spill Plan *(#N2007C0039* permit, *#2BE-NAN0813* water licence). The reason for the revision is to provide the Nanuq Camp phone number for summer 2010. Please replace the relevant pages in your copy of the Spill Plan.

If you have any questions, please let me know.

Thank you for the opportunity to provide this information.

Best, regards,

-- ssp

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SPILL CONTINGENCY PLAN
NANUQ PROJECT

NANUQ CLAIMBLOCK, KIVALLIQ, NU
PEREGRINE DIAMONDS LTD.

Initial Submission: 01 November 2007
Revision 1: 09 June 2008
Revision 2: 09 November 2009
Revision 3: 14 July 2010

_____ = identifies changes for Revision 2

_____ = identifies changes for Revision 3

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NOTE: Page numbers have been adjusted for Revision 2 (2009)

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(See CD accompanying land permit and water licence applications for individual MSDS)

(NOTE: Should any additional substances be contemplated by the drilling contractor or for camp, additional MSDS sheets will be supplied).

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INTRODUCTION

The Nanuq Project Spill Contingency Plan of Peregrine Diamonds Ltd. (PDL), which is found on the following pages, shall be in effect from the current date (November 2009) until the end of November 2010, and is subject to revision as required. The Nanuq Project is scheduled to occur between April and September 2010 and is to be comprised of airborne and ground geophysical surveying, a core drill programme carried out by up to two drills, followed (if required) by further core drilling to recover a mini-bulk sample of approximately 200t, followed by a surficial sediment sampling programme. The tent camp was relocated approximately 1km NW in spring 2008, to the northerly end of a natural-sand airstrip. Support services will come principally from Rankin Inlet, approximately 252km S. The Nanuq claimblock is contained within NTS mapsheet 56G. It also must be noted that the property is remote; no communities are nearby, and thus no persons other than the camp population (up to 20 in 2010) of Peregrine geologists and geophysicist, geophysical contractor personnel, a helicopter pilot and engineer, shift-drillers and foreman, cook/first-aider, camp attendant(s) and till samplers would be affected in the event of an incident.

All employees, whether permanent or casual, and programme contractors, are required to be trained in Peregrine procedures, field safety, wildlife safety, spill and fire procedures and environmental awareness prior to engaging in work at a Peregrine site. Peregrine is keenly aware that planning for an emergency situation is not an option but an obligatory activity, equal in importance to the exploration programme itself. This Contingency Plan will be posted in camp and at the drillshack(s) and will be distributed to supervisory personnel for dissemination to staff and contractors.

BASIC STEPS – SPILL PROCEDURE

A spill is classified as the discharge of petroleum products or other dangerous substances into the environment. Potential hazards created by the spill for humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors, including nature of the material, quantity spilled, location and season. Refer to the detailed section *Spill Response Actions: By Product* for specific response information. The general emergency response to be followed in the event of a spill at the Nanuq Project, Kivalliq, NU, is:

Protect people - prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion

Identify the product and its source - check container design, warning labels, markings, Material Safety Data Sheets, etc., to enable prompt and appropriate response

Stop the flow at the source - reduce or terminate the flow of product without endangering anyone

Assess the seriousness of the spill - assess potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources

R*eport the spill* – complete a NU Spill Report Form and contact the NU 24-hour Spill Report Line. Provide information on the form and to the Environment Canada officer by phone/FAX/e-mail (*cf.* Figures 1 and 2), including location of spill, (company) name of polluter, type and amount of material spilled, date and time of the spill, any perceived threat to human health or the environment, and remedial actions taken and planned.

Clean up the spill - follow procedures appropriate for the location, environment, material and time of year

Evaluate and learn – after the emergency has passed, evaluate the incident and the clean up with the goal of continuous improvement in prevention and response; train or re-train personnel and ensure a practice incident-and-response drill is held at least once per field season.

24-Hour Spill Report Line: (867) 920-8130 or fax (867) 873-6924

Environment Canada Enforcement: 24-Hour Emergency Line: (867) 920-8130
Indian and Northern Affairs (INAC) Water Resources Officer
(Iqaluit): (867) 975-4298
Indian and Northern Affairs (INAC) Land and Water Inspector
(Rankin Inlet): (867) 645-2831
INAC Lands Administrator (Iqaluit): (867) 975-4275
Government of Nunavut (GN) Dept. of Environment (Iqaluit): (867) 975-4644

PERMITS AND AUTHORISATIONS

Peregrine currently holds 321 mineral claims comprising the property – *NAN-01* through *NAN-144, NAN-201* through *NAN-262, NQ 93* through *NQ 114, NQ 58* through *NQ 82, NQ 1* through *NQ 57, NQ 83* through *92,* and *CAMP 1* (site of the Nanuq camp). The property totals 314 904.20 ha. All claims are on Crown land.

Peregrine holds an INAC Class A Land-Use Permit – *#N2007C0039* – and a Type B water licence from the Nunavut Water Board (NWB) – *#2BE-NAN0813.* Peregrine currently is seeking to extend its land-use permit for one year and also is seeking to amend its water licence to permit on-ice drilling. Peregrine also will obtain approval of a Safe Work Plan from the Workers' Safety and Compensation Commission – Mine Health and Safety (WSCC) and an Extended-Hours Permit from Nunavut Labour Standards prior to the spring 2010 programme.

SPILL-RESPONSE TEAM LEADERS

The following are in charge of the Nanuq site, in respect of management or control of contaminants.

Peter Holmes, VP – Exploration: (604) 408-8880; 24-hour mobile: (250) 830-4443.

Shirley Standafer-Pfister, Manager, Regulatory and Environmental Affairs: (250) 686-1769 (business phone and 24-hour mobile).
Duncan McBean, Project Manager: 24-hour mobile: (778) 238-4847; site phone: **(604) 434-9130**.

Name and address of proponent in charge of the Nanuq Project:

Peregrine Diamonds Ltd.
Suite 201-1250 Homer Street
Vancouver, BC V6B 1C6

FACILITY DESCRIPTION

Facility – seasonal tent camp accommodating up to 20 persons in 2010, with above-ground fuel storage in 205L drums (diesel, Jet-B, petrol/gasoline) and propane in 45kg cylinders.
Location - Camp: approximately 13km SW of the closest proposed 2010 drill target, at 65^0 13' 34" N – 91^0 05' 23" W. Fuel: stored on a vegetation free, natural-sand area, a safe distance from the tents and well away (>30m) from waterbodies.

Table 1: Projected Fuel and Oil Use for 2010 Exploration Activities

Fuels	No. of Containers	Capacity of Containers
Diesel for camp stoves, drills + heaters	500 drums	205L
Aviation turbine fuel (Jet-B)	300 drums	205L
Unleaded petrol (gasoline)	10 drums	205L
Propane	25 cylinders	45kg
Oxygen (welding and medical)	4 cylinders	45kg
Acetylene	4 cylinders	45kg
Oils/lubricants/cleaners	140	1L to 5L (typical sizes)

Empty drums, cylinders regularly backhauled.

Table 2: Contents of Spill Kits – Spring/Summer 2010 – Nanuq Property

Drillshack – Spill-Kit Drums – 1 or 2 (1 per Drillshack; if 2 Drills, there will be 2 Kits)

Location: Moves with drillshack: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. (For example, Peregrine has used a 205L H.O.W. Spill Response Kit at other sites. (*Information on specific kit will be supplied as available, and the Spill Plan will be revised accordingly.)*

Fuel Cache in Drill Area (if Established) – Spill-Kit Drums – 1
1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. (*Information on specific kit will be supplied as available, and the Spill Plan will be revised accordingly.)*

Camp – Spill-Kit Drums – 3
Location: 1 stationed at gen-shed, 1 at camp diesel cache, 1 at camp heli-pad: Each complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. Additional small 20L spill kits may be deployed in the tent area. (*Information on specific kits will be supplied as available, and the Spill Plan will be revised accordingly.)*

At all locations, additional bundles of absorbents will be present in addition to the spill kits.

Table 3: General Response Inventory – Spring/Summer 2010 – Nanuq Property

- Fire extinguishers (valid/recharged) in each structure: Tents, drillshack.
- Water pump and spare at camp and at drillshack; hoses and fittings
- Hammers, assorted weights, at coreshack and at drillshack
- Assorted 10L-20L plastic pails; galvanised metal pails (approx. 10L each)
- Ice auger (gas-powered) c/w extensions (for spring conditions)
- 127L plastic garbage bags (boxes of 20 each) – kitchen and latrine
- Plastic tarps – assorted sizes
- Liner material (minimum 30ml), for lining sumps, if required
- Extra bundles of absorbents
- Fuel-transfer pump at camp, and 1 at drillshack
- Refuge drums (empty drums for contained spilt substances): 4 recommended.

TRAINING AND PRACTICE DRILLS

All members of the programme response team – as well as members of the general team, such as the Environment Manager and the Expeditor – will be familiar with the spill-response resources at the Nanuq worksite (including their location and how to access them), this Spill Plan, and appropriate spill-response methods. Involvement of other personnel may be required, from time to time. This familiarity will be acquired through:

1. Initial or refresher training (practice drills), as appropriate, provided once per field season.

2. Regular inventory updates, provided in list form to all team members. Information to be reported includes listing of all resources, number of items, their location, condition, date of last inspection and any special comments (such as expiry dates, under whose authority they may be accessed and special handling instructions, if any).

Table 4: Nanuq Inspections Log

Spring-Summer 2010

PEREGRINE DIAMONDS LTD.
Inspection Log for FUEL-STORAGE AREAS AND CACHES*

* As per NIRB Recommendation #16b accompanying Nanuq Land-Use Permit #N2007C0039

Site Options: #1 (Camp-Diesel), #2 (Camp-Aviation Fuel), #3 (Cache at Drill Area, if Required)

FUEL-STORAGE SITE (Pick #1, #2 or #3)	INSPECTION DATE (DD/MM/YY)	INSPECTION RESULT: Held + OK (✓) OR Held + Action Req'd (X)	ACTIONS TAKEN OR REQUIRED (e.g., tightened bungs, removed dented drum, etc.)	ADDITIONAL COMMENTS

NANUQ-Inspections Log for Revised SpillPlan-Table 4-2010 1

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FUEL SPILLS: RISK ASSESSMENT AND PREVENTIVE MEASURES

The possibility of a fuel spill on Peregrine projects will vary, depending on a number of factors, including human error, mechanical failure, road conditions, weather conditions, etc.

Risk Assessment & Preventative Measures

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Diesel or Oil Major leak from drums	High	Low	Training/refresher training for site personnel who handle fuels. Daily inspections and monitoring will take place during the programme by designated site personnel. Placement of drums in a suitable area (e.g., depression, vegetation-free and boulder-free), with natural drainage pattern away from water, and the required setback from shoreline. Berming with peat bales or snow. Secure drums in use on proper stands or racks.
A spill from a valve left open or a break in a transfer hose.	High	Moderate	Daily inspections to ensure all valves are either closed (when not needed), or that a catch pail is installed beneath valves, e.g., at tents, drillshacks, or that an enviro-tainer is in use. Fuel transfer hoses will have a double locking mechanism and undergo daily inspection as part of the routine work cycle, to check for soundness and wear. Markers around all fuel transfer lines.
Pump Failure	Low	Low	Pumps are to be inspected weekly and - serviced monthly.

Power Outages	Low	Low	In case of gen-set failure/power loss, any refuelling or maintenance under way in the gen-shed will cease immediately and the spare gen-set will be brought on line before refuelling or maintenance resumes.
Broken Or Blocked Drill Sludge Lines	Low	Moderate	Lines are inspected daily as part of the routine work cycle.

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Chemical Spills	Low – High	Low	Training in the handling of chemicals will take place to ensure safe handling. Chemicals will be stored in their original labelled drums, bottles, canisters or packages. Chemicals will be stored in such a way as to protect from the weather or spillage, and be in non-reactive trays, underlain with liner material or absorbents to prevent chemicals coming into contact with soil or tent floors. Regular inspections will take place of stored chemicals. Inventory controls in place.
Gases (oxygen, acetylene, propane, argon, carbon dioxide)			Training/refresher training for site personnel who handle gases. Stored in designated areas until required, secured upright. Daily checks of cylinders in use, including gas-detector monitoring, as necessary.

FIGURE 1: Updated NWT-Nunavut Spill Report Form

Northwest Territories | Nunavut | Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER -
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # TO THE ORIGINAL SPILL REPORT	
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION **Station operator**	EMPLOYER	LOCATION CALLED **Yellowknife, NT**	REPORT LINE NUMBER **(867) 920-8130**

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

FIGURE 2: Instructions for Completing the NT-NU Spill Report Form

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank**. This box is for the **Spill Line's use only**.

PRODUCT CATEGORIES

The materials in this Spill Contingency Plan are generally divided into five categories:

Flammable Immiscible Liquids
Soluble Solids/Oxidizers
Flammable Compressed Gases
Soluble Liquids
Toxic Solids

Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions.

Petrol (gasoline) and aviation fuels pose the greatest fire and safety hazard and are not recoverable when spilled on water.

Action Plan Steps

Confirm that a spill has occurred. It may not be obvious if a spill has occurred - look for:

pooled liquid.
damage to equipment/tanks.
smell of fuel or chemicals and
leaks from hatches, valves or other fixtures

Assess the Situation

Before initiating response actions, take the time to determine the nature of a spill and to collect some or all of following facts:

potential risk of fire, explosion and environmental damage.
extent of injuries to co-workers or the public.
source and approximate size of the spill.
possible methods to stop the flow of product; and
proximity to water.

Take Action

Eliminate ignition source(s) if safe to do so.
Shut off spill source if safe to do so.
Attend to any injured persons.
Restrict personnel to the spill site using barriers or marker tape.
Warn others in the area of the spill.
Use an explosion meter to monitor atmospheric gas concentrations.
Report spill to Peregrine management.
Transport Spill Kit to the spill site.
Control spreading and minimise impacts.

Spill Containment and Recovery
Special care should be taken to ensure that spilled material does not reach waterbodies where recovery is more difficult. Ice augers (under appropriate conditions) can be effective in terms of locating and exposing oil for burning or pumping off.

Waste Disposal
At the Nanuq camp, all combustibles are incinerated on a daily basis. This includes food scraps, office garbage, etc.

Non-hazardous solid "inert" waste generated (e.g., scrap metal, pipe, wood) or potentially hazardous waste (e.g., plastics, liners, Styrofoam) will be transported off site for disposal according to its nature.

All hazardous wastes and waste items that cannot be incinerated are securely packaged, flown out on aircraft backhauls, and disposed of in designated locations off-site.

Prior to disposal, the hazardous waste will be properly packaged, labelled, and stored and manifested in a Transportation of Dangerous Goods (TDG) approved shipping container. (A waste generator number has been obtained from the Government of Nunavut (GN) Department of Environment. GN Waste Generator Forms will be used).

The container will have the appropriate hazardous waste labels.

All Federal, Provincial and Territorial regulations will be adhered to.

Used Container Disposal
To ensure the proper disposal of used containers that have contacted, collected or contained a hazardous or regulated substance (e.g., paint cans, oil cans, acid containers, aerosol cans).

Containers having contacted, collected or contained an acute hazardous material, corrosive or reactive substance will be triple washed with water prior to disposal. (Contaminated wash-water can report to labelled refuge drums).

Metal containers can be disposed of as scrap metal and flown off-site for disposal. Any free liquid in the container will be disposed of properly, and the residual material allowed to dry or solidify.

Used Drum Disposal
The majority of used fuel drums (205L) for Jet-B fuel and unleaded petrol are returned to the supplier. However, during operations, some drums will be set aside for usage as refuge drums, for storage of other "used" products (i.e., used glycol, used oil, spillt materials, oil filters, etc). These drums will be properly labelled and stored prior to acceptable removal and disposal off-site at an approved facility.

RESPONSE ORGANISATION

On rare occasions, additional company and outside resources may need to be brought in to support the spill cleanup. For a major incident, the Project Manager (*cf. Page 6*) would mobilise Peregrine, contractor and outside expertise for the response.

GENERAL RESPONSIBILITIES

The following provides a general guide to the Spill Response Organisation responsibilities. In some cases, certain Peregrine personnel may fill dual roles, depending upon the circumstances of the incident.

In most incidents, the Site Supervisor, working with the site Spill Response Team, will handle the initial response, containment and cleanup. In larger incidents, Peregrine management will play a more active role. In all cases, Peregrine management will be notified immediately of a spill and will be responsible for notifying the 24-hour Spill Line or assigning this task to a designate.

Other contractors and specialists may be brought in to assist in response to a major incident.

Individual Discovering Incident

- Assess the initial severity of the spill and safety concerns.
- Identify the source of the spill
- Report all spills to Supervisor.
- Determine the size of the spill and stop or contain it, if possible.

Spill Response Team

- Conduct the cleanup of spills under the direction of the Supervisor.
- Deploy booms, absorbent and other equipment and materials as required.
- Take appropriate response measures.
- Continue the cleanup as directed by the Supervisor or until relieved.

Supervisor

- Assist in initial and ongoing response efforts.
- Supervise the Spill Response Team.
- With work crew, take initial action to seal off the source and contain spill.

◙ Decide with Peregrine management if mobilisation of additional equipment is required.

◙ Assess whether burning is a viable cleanup measure. Consult regulatory agency (Environment Canada on Spill Line can provide initial guidance).

◙ Ensure co-ordination of equipment and manpower as needed (Peregrine and contractors)

◙ Ensure expeditious response and cleanup of spill site and impacted area.

Additional Resources – Support Team to the Spill-Response Team

◙ Provide assistance to Supervisor as required.

◙ Responsible for mobilising additional Peregrine support staff, security and other contractors as required.

Peregrine Management

◙ Records the time of the report, source of information and details on location, size, type of spill and any other information available on the Spill Report Form.

◙ Ensures that the spill is reported to the NU 24-Hour Spill Report Line.

◙ Oversees or directs the cleanup operation until it is satisfactorily completed.

◙ Together with the Supervisor, decides if additional equipment is required to contain and cleanup spills.

◙ Maintains contact with Supervisor to ensure final inspection and sign-off on the spill.

◙ Notifies internal company departments.

◙ Initiates Mutual Aid Agreements if so required.

◙ Oversees completion and distribution of the Spill Report.

◙ Ensures investigation identifies measures to prevent similar spills.

◙ Provides cleanup advice to the Supervisor.

◙ Assists with preparation of press releases.

◙ Provides advice on storage and disposal options.

- Ensures that there are followup reports prepared on the spill event, cleanup and environmental impacts.

- Ensures that post-spill reports are completed and takes action, as necessary, to prevent a recurrence.

- Liaises with government agencies (as required)

Response Resources

A wide variety of spill control/recovery equipment and material exists for dealing with spills of petroleum products and chemical reagents (*cf. Pages 6-7*).

Response Equipment Deployment.

All equipment is stored in such a manner as to be readily available on short notice.

The Supervisor would immediately respond to a reported spill site by notifying site personnel to move into place material necessary to provide control and cleanup (e.g., shovels, refuge drums, tarps, liner material, etc.). Emergency spill containment and recovery materials and supplies are available on site for immediate mobilisation at any time.

PEREGRINE DIAMONDS LTD.

CONTACT LIST – SPILL RESPONSE/ASSISTANCE OR ADVICE

Mobile Emergency Spill Response Unit Canadian Northern Oil (Shell Canada Bulk Plant, Yellowknife)

	Matthew Wasserman	867) 873-3337 (during business hours)
	Peter Lane	(867) 669-1459 (24-hour mobile number)

M & T Enterprises	htatty@gmail.com	(867) 645-2778
Local Expeditor	Hamish Tatty	(867) 645-2590 (FAX)

Environment Canada	24-hour line	(867) 766-3737
Indian and N. Affairs Canada	Inspector – Crown Lands	(867) 975-4295
Indian and N. Affairs Canada	Regional Inspector	(867) 645-2831

GN Dept. of Environment		(867) 975-4644
	Mgr. Pollution Control & Air Qual.	(867) 975-7748
	Mgr. of Wildlife, David Vetra dvetra@gov.nu.ca	(867) 857-2828

Lands Administration, Indian and Northern Affairs Canada

Lands Administrator,	(867) 975-4275
Nunavut (Iqaluit Office)	(867) 975-4286 (FAX)

Water Res. Officer Indian and Northern Affairs (Rankin Inlet)	Current Officer	(867) 645-2831
RCMP, Rankin Inlet detachment	Emergencies only:	(867) 645-1111
RCMP, Baker Lake detachment	Emergencies only:	(867) 793-4111
Rankin Inlet Fire Department		(867) 645-2525 (emergency)

24-hour spill line: (867) 920-8130 spills@gov.nt.ca

Kivalliq Regional Environ. Protection Officer (Arviat) – Alain Chouinard **–** (867) 857-2828

Environ. Conserv. Officer	Johanne Coutu-Autut GN-DOE – Rankin Inlet Office	(867) 645-8084
Environ. Conserv. Officer	GN-DOE- Iqaluit Office	(867) 975-7700

Workers' Compensation Board –Occupational Health and Safety (Iqaluit Office)
(877) 404-4407

Workers' Compensation Board-Exploration Site Accident Reports
(800) 661-0792 (24hr)

SPILL RESPONSE ACTIONS: BY PRODUCT

At the Peregrine Nanuq Project, “safety first” is the abiding principle which guides response: Spills and products are to be handled as/if safety permits.

After adequate safety precautions, effort will be concentrated on stopping or eliminating the source of ignition.

Diesel

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Clear, Yellow or Red FLASH POINT: 40°C (Minimum) ODOUR: Petroleum POUR POINT: -50° to -6°C SOLUBILITY: Insoluble VISCOSITY: Not Viscous VAPOUR DENSITY: Will Sink to Ground Levels SPECIFIC GRAVITY: Floats on Water (0.8 – 0.9)	
SAFETY MEASURES	
WARNING	Vapours are heavier than air and form easily at high temperatures. Empty containers can contain explosive vapours. Toxic gases form upon combustion. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemica1-resistant clothing, gloves, footwear, and goggles; nitrile and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE.) Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.

RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, and alcohol foam or water fog. Use water to cool containers exposed to fire.

Hydraulic Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES			
APPEARANCE:	Straw-Yellow Liquid	FLASH POINT:	215°C (Minimum)
ODOUR:	Petroleum	POUR POINT:	-25°C
SOLUBILITY:	Generally Insoluble	VISCOSITY:	Medium (265 x ST, 15°C)
VAPOUR DENSITY:	Few Vapours Emitted	SPECIFIC GRAVITY:	Floats on Water (0.9)

SAFETY MEASURES	
WARNING	Vapours are heavier than air but are unlikely to form. Toxic gas can form in fire and at high temperatures. CO, CO_2, and dense smoke are produced upon combustion. Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.
PERSONAL PROTECTION	Always wear impervious, chemical -resistant clothing, gloves, footwear, and goggles; PVC, nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.

RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol, foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers exposed to fire.

Lubricating Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES			
APPEARANCE:	Amber Liquid	FLASH POINT:	190° to 2220°C
ODOUR:	Petroleum	POUR POINT:	-35° to -40°C
SOLUBILITY:	Generally Insoluble	VISCOSITY:	Medium (255 xST, 15°C)
VAPOUR DENSITY:	Few Vapours Emitted	SPECIFIC GRAVITY:	Floats on Water (0.9)

SAFETY MEASURES	
WARNING	Vapours are heavier than air but are unlikely to form. Toxic gas can form in fire and at high temperatures. CO, CO_2, and dense smoke are produced upon combustion. Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.

RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA and eye protection when responding to lube oil fires. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers, exposed to fire.
ON LAND	Prevent additional discharge of oil. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with absorbent and/or peat moss. Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.
ON WATER	Use booms to contain and concentrate spill. Remove spill using absorbents or skimmer. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labelled containers in cool, and ventilated areas away from incompatible materials.
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during fina1 disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT) water for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Waste Oil

ON LAND	Prevent additional discharge of oil. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with absorbent pads and/or peat moss. Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.
ON WATER	Use booms to contain and concentrate spill. Remove spill using absorbents or skimmer. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during fina1 disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Petrol (Unleaded Gasoline)

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colourless Liquid (Can Be Dyed) FLASH POINT: -50°C ODOUR: Gasoline/Petroleum POUR POINT: -60°C SOLUBILITY: Insoluble VISCOSITY: Not Viscous (<1 cSt) VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Floats on Water (0.7 - 0.8)	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Empty containers can contain explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE). Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.

ON LAND	ELIMINATE IGNITION SOURCES. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with peat moss and/or absorbent pads. Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.
ON WATER	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labelled container in cool, ventilated areas away from incompatible materials. Electrically ground containers and vehicles during transfer.
DISPOSAL	Place contaminated materials into segregated marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Jet-B (JP-4) OR Jet-A Fuel

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: White or Pale Yellow Liquid FLASH POINT: -20°C to -25°C ODOUR: Gasoline/Petroleum POUR POINT: -50°C SOLUBILITY: Negligible VISCOSITY: Not Viscous (<7 cSt) VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Floats on Water (0.75 - 0.8)	
SAFETY MEASURES	
WARNING	Vapours instantaneously form, and are heavier than air. Low-lying areas can trap explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE). Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.

ON LAND	ELIMINATE IGNITION SOURCES. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with peat moss and/or absorbent pads. Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.
ON WATER	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labelled containers in cool, ventilated areas away from incompatible materials. Electrically ground containers and vehicles during transfer.
DISPOSAL	Place contaminated materials into segregated marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Fuel Dye

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Dark Red Liquid FLASH POINT: -28°C ODOUR: Aromatic Hydrocarbon POUR POINT: -45°C SOLUBILITY: Negligible VISCOSITY: Not Viscous VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Floats on Water	
SAFETY MEASURES	
WARNING	Vapours instantaneously form, and are heavier than air. Low-lying areas can trap explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material contains xylene, benzene and ethyl benzene. Inhalation of vapours can cause nausea, headache and dizziness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE OR PVC). Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.
PRECAUTIONS	Avoid breathing vapours or mist. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, AFFF foam or water fog. Use water to cool containers, exposed to fire.

Propane

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colourless Gas FLASH POINT: -104°C ODOUR: Natural Gas Odour POUR POINT: -190°C SOLUBILITY: Insoluble VISCOSITY: N/A VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Liquid Floats on Water	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; Nitrile: and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC). Avoid frostbite bum to skin and eyes from contact with propane. Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.

ON LAND	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
ON WATER	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
STORAGE & TRANSFER	It is not possible to collect released material.
DISPOSAL	Consult with environmental authorities if the disposal of any contaminated materials is required.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Acetylene

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colourless Gas FLASH POINT: -18°C ODOUR: Garlic-Like POUR POINT: -82°C SOLUBILITY: Slightly Soluble VISCOSITY: N/A VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Liquid Floats on Water (0.06)	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Empty containers can contain explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; use suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC). Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol, foam, or water fog. Use water to cool containers, exposed to fire.

Antifreeze (Ethylene Glycol)

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colourless Liquid FLASH POINT: 111°C ODOUR: Slight; Undetectable <25 ppm POUR POINT: -13°C (48% Solution) SOLUBILITY: Soluble in All Proportions VISCOSITY: Not Viscous (=22 cSt) VAPOUR DENSITY: Will Sinks to Ground Level SPECIFIC GRAVITY: Same as Water (1.0)	
SAFETY MEASURES	
WARNING	Vapours are heavier than air. Ingestion of significant quantities can be lethal. Eye contact causes irritation. Skin contact can cause intoxication due to absorption. Inhalation of vapours can cause intoxication, headache, vomiting, unconsciousness with convu1sions, and even death Avoid inhaling vapours, particularly in enclosed places.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; neoprenes, nitrile, PVC are suitable protective materials.
PRECAUTIONS	Monitor empty containers for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. (Note: Water or foam may cause frothing). Use water spray to cool containers exposed to fire.

ON LAND	Block entry into waterways. Do not flush into ditch/drainage systems. Contain spill by diking with earth, snow or other barrier. Remove minor spills with universal type absorbent. Remove large spills with pumps or vacuum equipment.
ON WATER	Ethylene glycol sinks and mixes with water; contain spill by isolating contaminated water through damming or diversion.
STORAGE & TRANSFER	Store closed, labelled containers in cool, ventilated areas away from incompatible materials
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove contaminated clothing. Wash skin thoroughly soap and water. Get medical attention.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	INDUCE VOMITING IMMEDIATELY if victim is conscious; Get prompt medical attention.

SPILL PLANNING AND LOGISTICS

The feasibility of containing and recovering a spill will be generally determined by its location and the rate of release, spreading, transport and evaporation. These rates should be compared with the total time needed to deploy response equipment in order to evaluate whether or not containment, and/or absorbent and skimming operations, can be effectively implemented. The pre-assembly of spill cleanup kits will expedite response and reduce the total deployment time needed, including:

Equipment and support material mobilisation time.
Personnel mobilisation time, including transit and assembly.
Actual equipment setup and deployment time.

a. Determine whether or not a spill has entered a waterway and whether or not access by land or water to control points is possible so that booms, absorbents and skimmers can be deployed. Check maps and consult with personnel familiar with the spill area.
b. Establish priorities to optimise use of personnel and gear needed for all cleanup phases (containment, removal, storage, transfer and disposal) at selected sites.
c. Allow additional time for adverse weather and flying.

MONITORING SPILLS

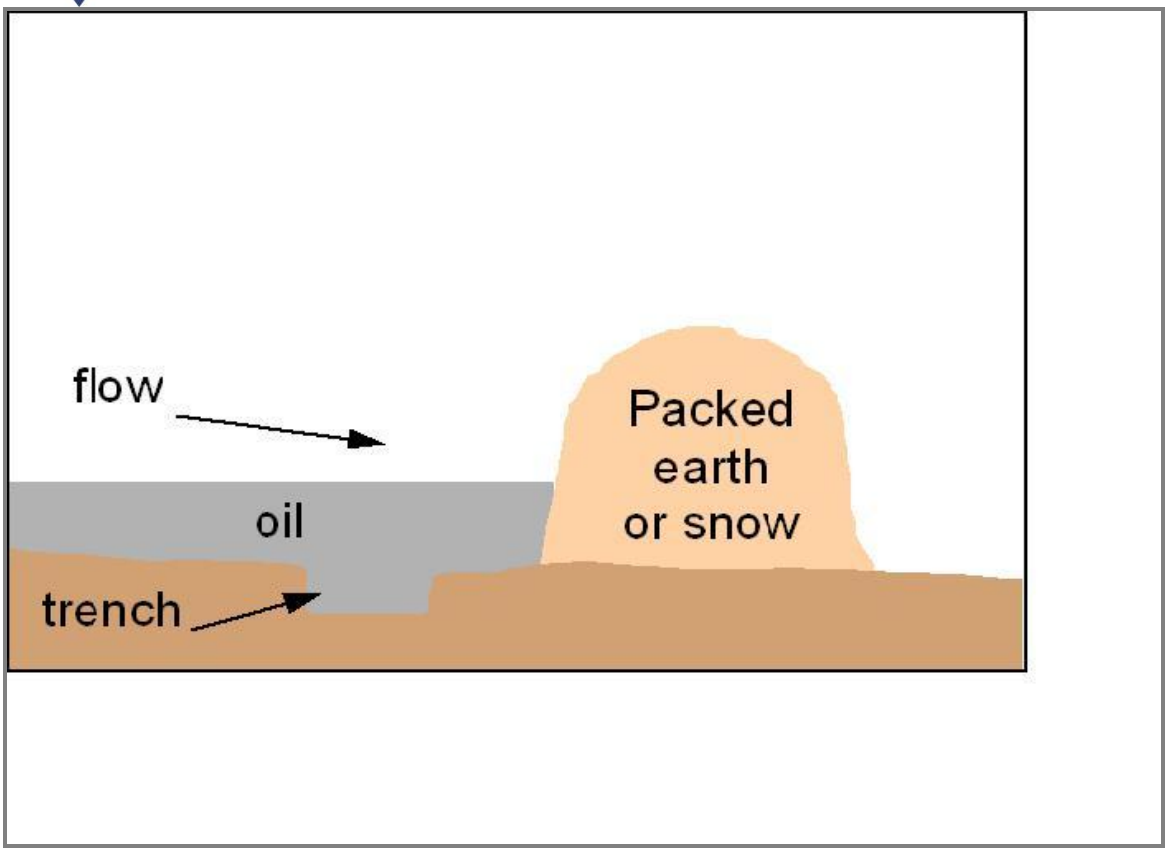
Peregrine will monitor spills throughout the response to ensure safety and to direct cleanup efforts:

Explosive gas concentrations in the atmosphere using an explosion meter.
Spill movement and behaviour, in order to properly direct response efforts.
All threats to the safety of people, property and the environment.

SPILLS ON LAND

Spills on land should be contained as close to the source as possible, if safety allows. Peregrine will make every effort to ensure that a spill does not reach water, where its containment and recovery (after breakup) are more difficult and the potential environmental impacts are greater. Containment can be achieved using:

A berm or dyke around the spill source.
A trench or ditch downslope of the spill source.



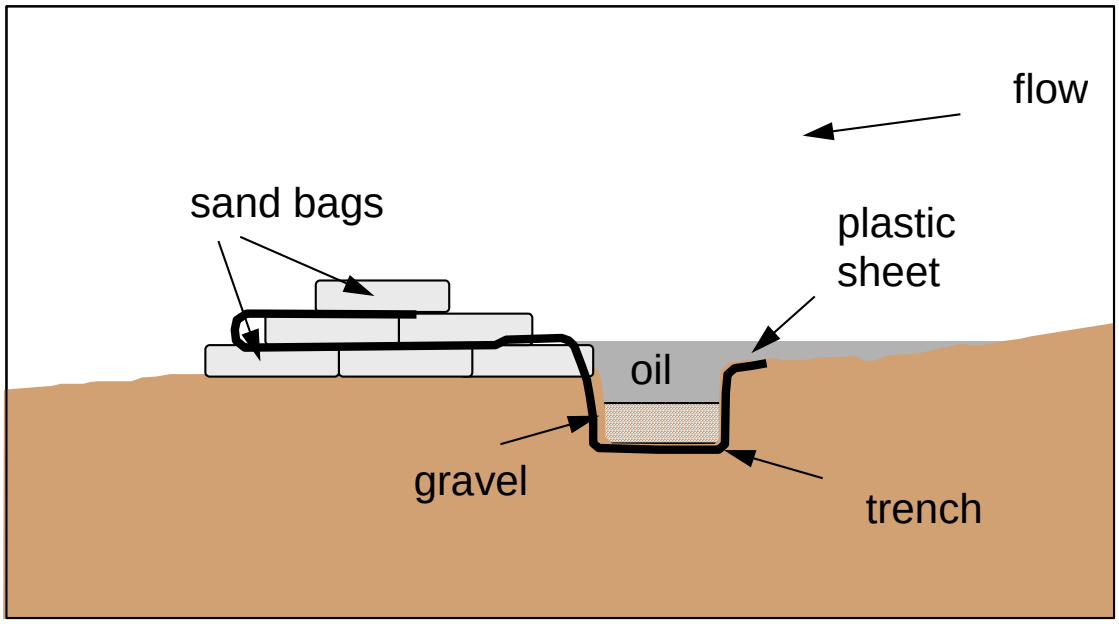
Earthen Berm/Trench

If possible, locate the berm/trench sufficiently downslope of the release point to complete its construction before the spill arrives. Dig the trench along a natural drainage contour.

It should be approximately 0.5 m deep with a relatively flat bottom. The excavated material can then be combined with other available material to build the berm.

Sand Bag Berm/Trench

Sand bags can be used where available and if the earth is too hard or frozen and cannot be excavated or compacted. A plastic liner can be used to seal the trench and bags should be anchored with gravel or rocks and be woven between layers of bags.



Spills on Muskeg

Muskeg is generally poorly drained, wet and spongy. Internal drainage is usually slow and the depth of peat over mineral soil varies greatly. Muskeg is also highly acidic and low in nutrients, making biodegradation very slow, even during the summer months.

It is recommended that small oil spills in muskeg be mixed with peat moss and allowed to degrade during the summer months, since more damage can be done by attempting cleanup using mechanical removal methods.

In the event of a small spill, it is important to weigh the advantages or cleanup versus the potential negative impacts on the terrain. Both personnel and equipment on wet or sensitive areas can cause considerable damage. In many cases, the best solution may be to add nutrients to the contaminated area and monitor the site to ensure that the spill does not migrate to an adjacent sensitive area. In all cases, appropriate environmental advisors and regulatory authorities should be consulted.

SPILLS ON WATER

Containing spills in water is often difficult because oil quickly spreads. In turbulent water, oil and chemicals are likely to mix into the water column, making recovery impractical. For these reasons, it is important that if the spill reaches water, that containment be attempted as close to the source as possible, and that the spill be prevented from reaching a flowing stream.

Spills in lakes should be contained, if possible, before reaching outlets where containment and recovery can be difficult and dangerous.

Efforts to contain spills in large streams should be limited to land-based operations where the oil might pool in accessible back eddies. The recovery of water-soluble chemicals is not possible.

In flowing streams, oil travels at the same speed as the surface current. On larger rivers or in open lake areas, slicks are also transported at 3.5% of the wind speed. Although a comparatively small effect, it can be an important factor if the wind is at right angles to the water flow and if the water surface is extensive. The wind can force the spill to the sides of the river where flows are slower or the shore of a lake. Long reaches of the river may become contaminated, although containment and recovery might also be possible.

In smaller streams, the wind will have less impact and the slick speed can be easily estimated. Placing a small stick in the middle of the stream and determining the length of time required to travel a given distance, typically 10 m. This information can be quickly converted to speed (36/time (sec) = km/h) to determine the estimated travel time to a confluence or other sensitive area.

Containment Strategies for Spills on Water

Determining the best strategy for containment will depend on a number of factors:

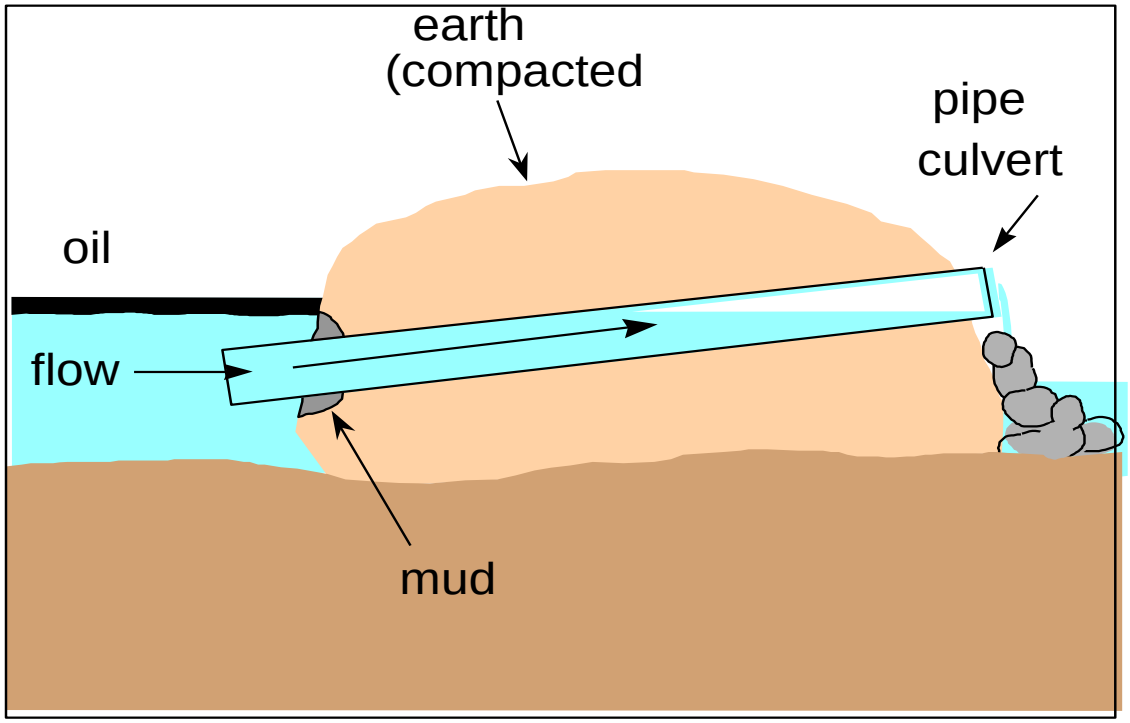
Speed of oil-slick travel
Location of possible containment sites
Availability of personnel and equipment
Location of sensitive areas
Safety of operations

Spills on water can be contained by using floating booms (absorbent or non-absorbent) or by constructing a temporary berm or inverted weir. The objective is to build a barrier against which the (normally floating) oil will pool whilst allowing the underflow of water.

Inverted Weir:

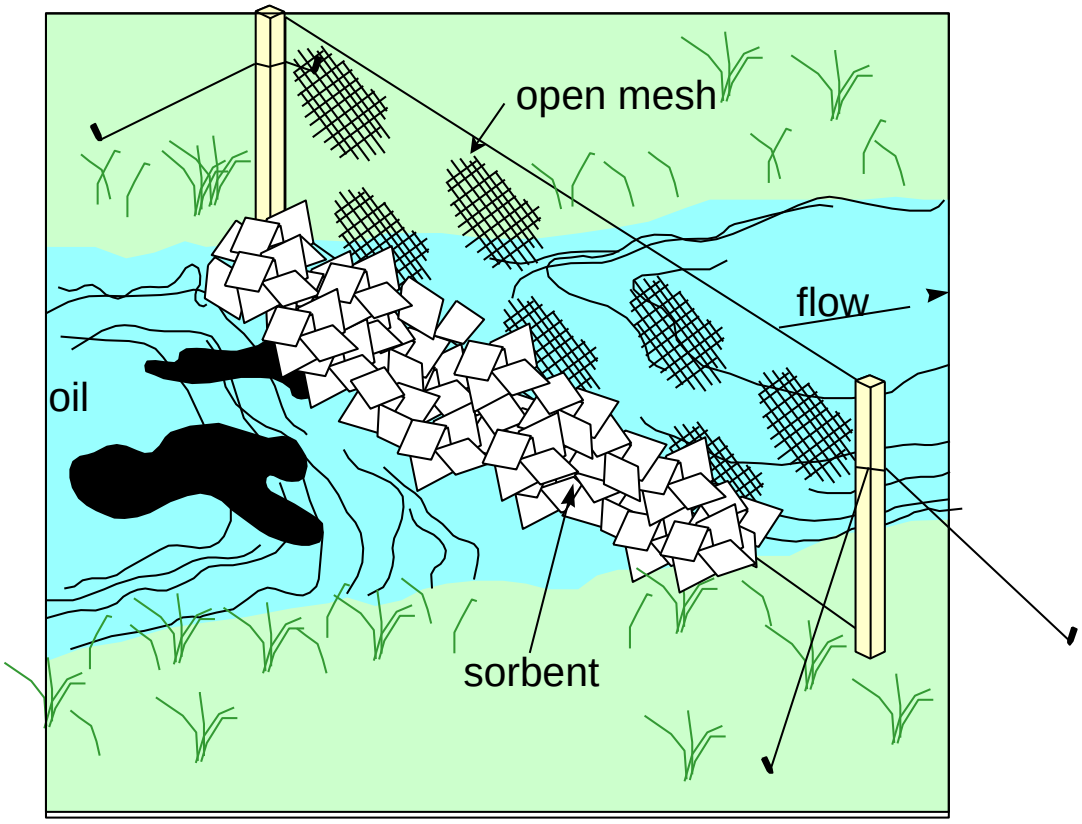
Booms

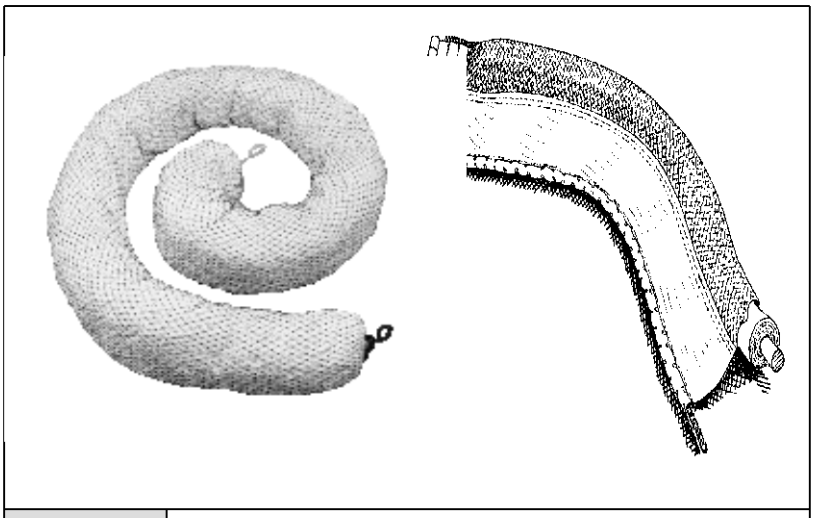
Booming with either absorbent or non-absorbent booms can also be an effective means of containing spills on slow-moving waters and in lakes. Effective containment using conventional booming techniques will be difficult in streams or rivers where currents exceed 0.7 knots (0.4m/s). At these speeds, oil will become entrained in the water flowing under the boom, resulting in significant Losses. Some improvements can be achieved in waters flowing at 1-2 knots (0.5-1 m/s) if the boom is deployed at an angle of less than 90 degrees to the direction of the flow.



Absorbent booms or socks can also be used to provide a barrier to floating oil. These types of booms should be checked regularly to ensure that they do not become saturated with either water or oil, since they will tend to float very low in the water or even sink and release oil downstream.

Filter Fence:





Booms	10 ft (3 m) by 6-10in(15-25 cm) used to contain spills in calm water

SPILLS ON ICE AND SNOW

Oil can remain relatively fresh, i.e, in an unweathered state under snow and ice for several months or more after a spill.

Evaporation rates will still be high when oil is ultimately exposed to the atmosphere, except in very low temperatures. Oil can also move up and down small hills (several metres high) due to the capillary action of the snow.

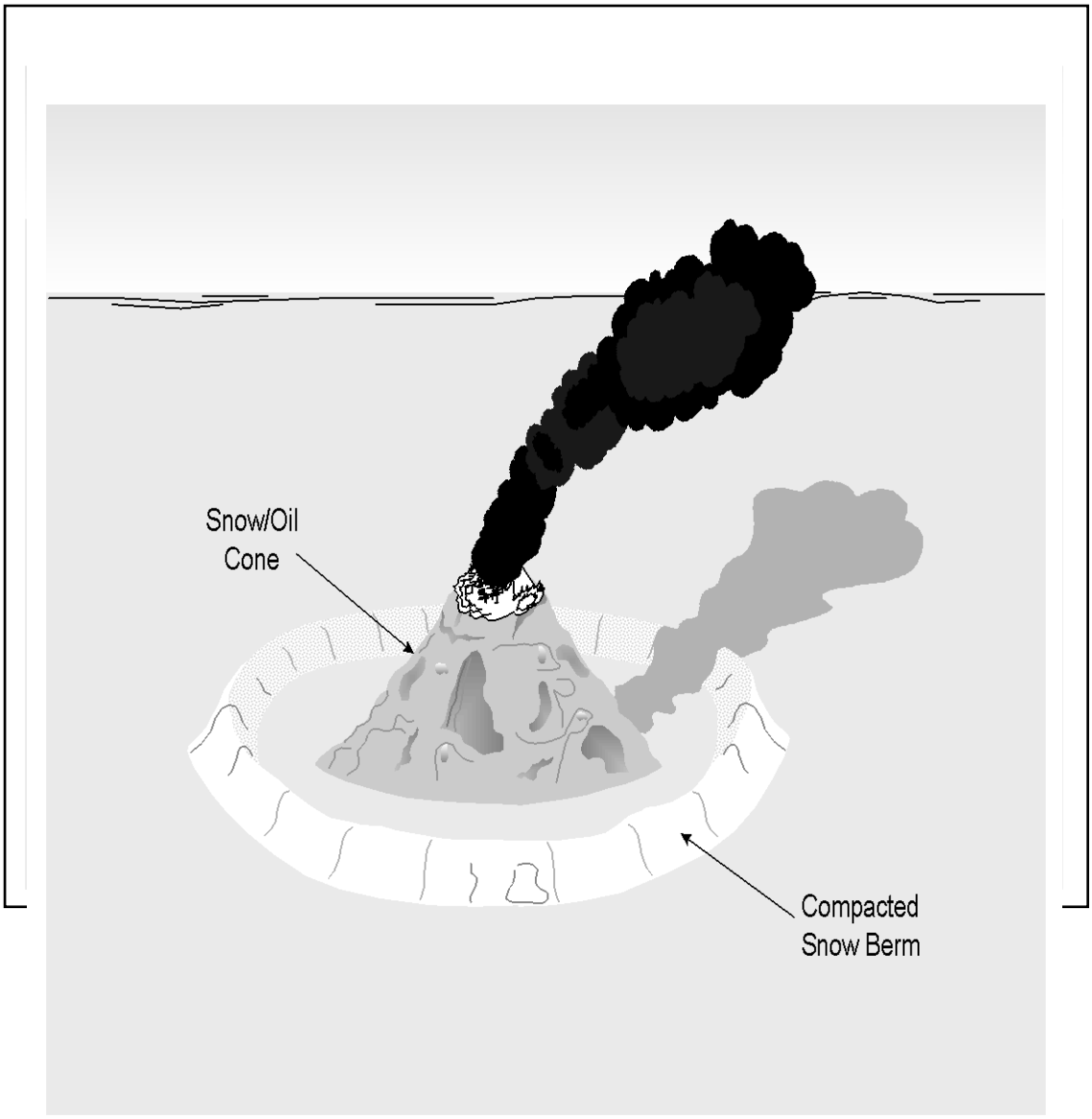
Containment

Snow and ice can be used to create berms to keep spills from spreading. In frozen rivers, angled slots about 1 m wide or holes can be cut in the ice, where safety permits, to allow possible spill recovery. The oil will rise up into the openings where it will concentrate and be available for recovery using skimmers or pumps.

Disposal

Oil spills in snow and ice can sometimes be burned if the spill can be isolated from the source. Although there is generally a reduced fire hazard, due attention to safety of operations is still required. If burning is not effective, recovered contaminated material will be collected and transported to a designated disposal/treatment facility.

Burning Snow Cone:



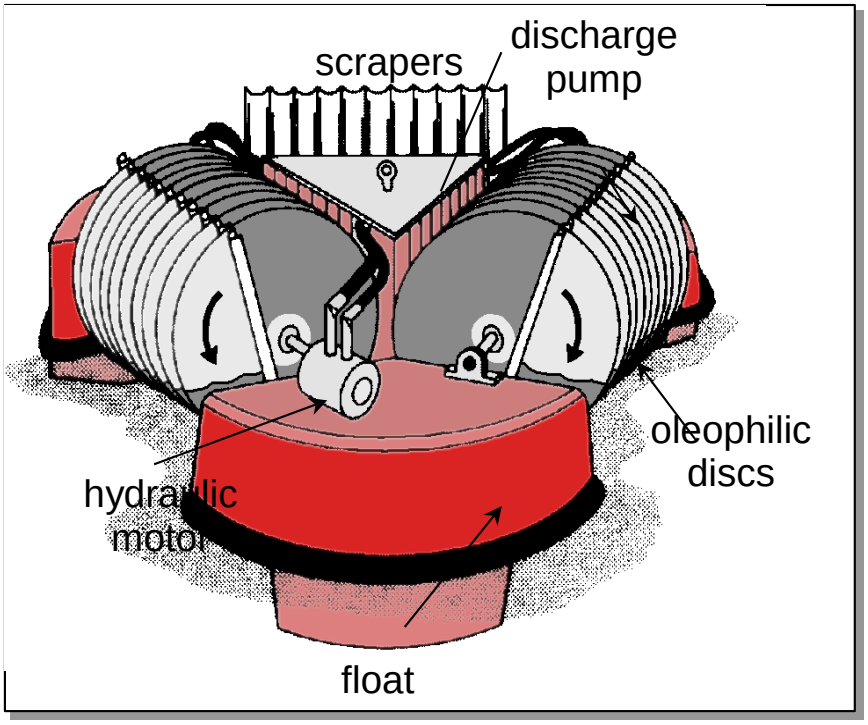
When large volumes of oil have been contained either through natural or mechanical containment, it will be necessary to remove or recover the accumulated oil. This will generally occur in excavated trenches or adjacent to berms or natural barriers and occasionally in slow running streams or quiet ponds.

Vacuum trucks are not feasible at fly-in sites, but would be suitable for sites served by a seasonal or winter road and where a large volume of oil has pooled that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion.

Oleophillic devices, such as disc or drum skimmers, can selectively recover oil in water, and are better suited to applications where the oil has formed a distinct layer on top of quiet water. Accumulations adjacent to an inverted weir are an example. A vacuum truck would be largely ineffective in this instance, since it would recover large amounts of water, particularly in a thin layer of oil with water flowing through the pipe or culvert.

When using disc or drum skimmers, ensure that small items of debris are periodically removed from the scrapers to ensure their efficient operation.

Disc Skimmer



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APPENDIX TO SPILL CONTINGENCY PLAN – NANUQ PROPERTY

MATERIAL SAFETY DATA SHEETS (MSDS)

(See MSDS on CD accompanying original applications for a land-use permit and water licence). Should additional products be added, a new CD will be issued.)

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MATERIAL SAFETY DATA SHEETS

FUELS, FUEL ADDITIVES, OIL
Nanuq Project – Spring-Summer 2010 Programme

(See MSDS on accompanying CD)
- Regular Unleaded Gasoline - Shell
- Diesel Fuel – Petro-Canada
- Jet A-1 – Shell
- Jet B – Shell
- Jet B – ESSO (Imperial Oil)
- Jet A-1 – ESSO (Imperial Oil)
- Propane – Superior Propane
- Diesel Fuel Oil Conditioner – Kleen-Flo
- Kleen-Start Starting Fluid – Kleen-Flo
- Duron Multigrade Engine Oil – Petro-Canada
- Hydrex MV 22, 36, 60 – Petro-Canada
- Chain Oil (Summer, Winter) – Petro-Canada
- Polaris 2T VES Synthetic Oil – Polaris Sales
- Amsoil Synthetic 2-Cycle Oil
- Polaris Premium Blue Semi-Synthetic Blend – Polaris Sales

DRILLING MUDS, GREASES, LUBRICANTS
Nanuq Project – Spring-Summer 2010 Programme

(See MSDS on accompanying CD)
- EZ-MUD – Baroid of Canada
- QUIK-GEL – Baroid of Canada
- NL-165 Drilling Mud – Baroid of Canada
- Drill Rod Heavy Grease – Petro-Canada
- API Modified Thread Compound – Petro-Canada
- Grease OG-0, OG-1, OG-2 – Petro-Canada
- Poly Drill Clay Treat II – Poly-Drill
- Poly Drill 1300 – Poly-Drill
- WD-40 Aerosol – WD-40 Products
- Traxon XL Synthetic Blend 75W-90 – Petro-Canada
- Traxon 80W-90, 85W-140 – Petro-Canada

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MISCELLANEOUS CHEMICALS
(FIRE EXTINGUISHER CHEMICAL, BATTERY, ANTIFREEZE, SOLVENT, SPRAY PAINT)
Nanuq Project – Spring-Summer 2010 Programme

(See MSDS on accompanying CD)
- Fire Extinguisher Chemical (ABC) – Flag Fire
- Lead-acid Battery – Exide Technologies
- Gas Line Antifreeze – Petro-Canada
- Spray Paint (Fluorescent, Marking) – Rust-Oleum
- Polaris Antifreeze 50/50 Pre-Mix PG – Polaris