

Hackett River Camp Fuel Spill Contingency Plan

1. Site owner in charge of contaminants.

Sabina Resources Ltd.
309 Court Street S.
Thunder Bay, Ontario
P7B 2Y1
Ph: (807) 346 – 1668
Fax: (807) 345 – 0284

2. Name, address and telephone number of the employer.

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309 Court Street S.
Thunder Bay, Ontario
P7B 2Y1
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3. Name, title and 24 hour contact number for the person or persons responsible for activating the spill plan. These people have the authority to activate the spill plan and to call in additional support.

Harvey Klatt
Project Manager
Hackett River Camp office ph: (604) 677 – 0669
Hackett River Camp alternate ph: (604) 677 – 0670
Hackett River Camp fax (604) 677 - 0660

If Harvey Klatt is not available the alternate is:

Scott Burgess
Assistant Project Manager
Hackett River Camp office ph: (604) 677 – 0669
Hackett River Camp alternate ph: (604) 677 – 0670

4. Location and detailed description of the exploration camp facility.

The Hackett River mineral exploration camp is located at:
Latitude: 65° 55'N, Longitude: 108° 22'W

and in UTM coordinates the camp is located at:
620025 E, 7312150N on NTS Map Sheet 76 F/16

The following map shows the layout of the camp infrastructure, the location fuel caches as well as spill kits.

In general, bulk potential contaminants are stored south and west of the metal clad building in camp. Small quantities of potential contaminants are located in nearly all of the other structures in camp north of the metal clad building – mostly as diesel fuel used for heating.

The following list of camp structures indicates the location and quantity of potential contaminants in or adjacent to the structures together with the location and size of the various Spill Response Kits located in camp.

Function	Tents	Potential Contaminant	Quantity
Kitchen	1 large tent	Diesel (for stove) Propane (for range)	Less than 200 litres 100 lb tank
Food Storage / freezer	1 tent	None	
Shower / laundry	1 tent	Diesel (for stove) Propane (for water heater)	Less than 200 litres 100 lb tank
Dry (contains a 20 litre spill response kit)	1 large tent	Diesel (for stove)	Less than 200 litres
Tool shed / machine shop (contains a 205 litre spill response kit)	1 large tent	Diesel (for stove) Motor oil Rod grease Linseed Soap Poly-Drill OBX Poly-Drill 133-X Poly-Drill 1330	Less than 200 litres Up to 3 cases Up to 3 tubs Up to 10 tubs Up to 10 tubs Up to 10 tubs Up to 10 tubs
Office / telecommunications	1 large tent	Diesel (for stove)	Less than 200 litres
Generator (contains a 20 litre spill response kit)	Small shed	Diesel (for generator)	Less than 200 litres
Recreation / smoking / TV	1 tent	Diesel (for stove)	Less than 200 litres
Core cutting	Small shed	Propane (for daisy heater in winter)	100 lb tank
Core logging building (contains a 205 litre spill response kit)	Large metal building	Diesel (for stove)	Less than 200 litres
Drill Foreman Office / Sleeping (contains a 20 litre spill response kit)	1 tent	Diesel (for stove)	Less than 200 litres

First aid / Head cook and helper	1 large tent	Diesel (for stove)	Less than 200 litres
Drillers sleeping quarters	2 tents	Diesel (for stoves)	Less than 200 litres at each tent.
Geophysics tent (contains a 20 litre spill response kit)	1 tent	Diesel (for stove)	Less than 200 litres
Helicopter pilot & engineer (contains a 20 litre spill response kit)	1 tent	Diesel (for stove)	Less than 200 litres
Geology crew	1 tent	Diesel (for stove)	Less than 200 litres
Support crew	1 tent	Diesel (for stove)	Less than 200 litres

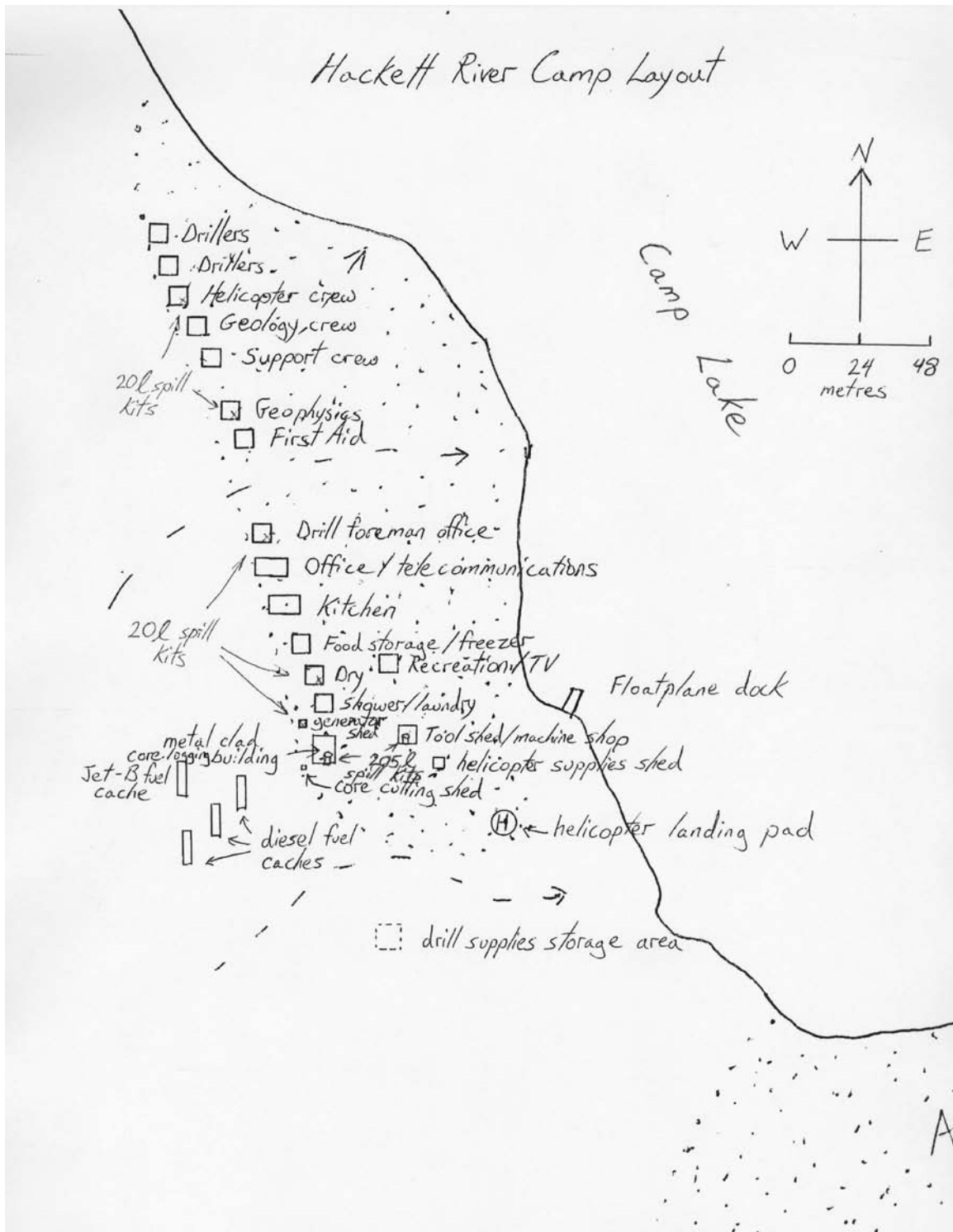
In the area south and west of the metal clad building are located drummed fuel caches, a helicopter landing pad and a drilling supplies storage area. The fuel caches consist of:

Potential Contaminant	Container Size	Maximum Quantity	Comments
Diesel	205 litre drums	1110	Stored in 3 caches, each within an impermeable secondary containment berm
Jet-B	205 litre drums	310	Stored in 1 cache, within an impermeable secondary containment berm
Gasoline	205 litre drums	2	Stored separately in an upright position separate from the other fuel caches
Propane	100 lb cylinders	12	Stored on a wooden deck and secured in an upright position adjacent to the Tool shed / machine shop

Within close proximity to the helicopter landing pad are located drums of Jet-B fuel. The quantity of fuel stored at the helicopter landing pad will vary according to use but would ordinarily be 8 drums or less.

Within the drilling supplies storage area calcium chloride salt is located. A maximum of 35 pallets of salt would be located on site. Each pallet contains 56 plastic bags of salt weighing 22.68 kg (50 lb) each. The maximum amount of salt stored on the site would be 44.45 tonnes. The salt is shipped in plastic bags and would be restacked in woven plastic Megabags for storage on site. The Megabags would be stored up off the ground on pallets.

At each of the two drill would be located a 205 litre Spill Response Kit.



5. A description of the type and maximum amount of potential contaminants that may be on site is listed below:

Drill Additives

Brand Name	Constituent	Maximum Quantity on Site
Poly-Drill O.B.X.	Liquid Polymer	10 tubs (5 gallon size)
Poly-Drill 133-X	Liquid Anionic Polymer	10 tubs (5 gallon size)
Poly-Drill 1330	Liquid Anionic Polymer	10 tubs (5 gallon size)
Westcoast Drilling Supplies	Linseed Soap	10 tubs (5 gallon size)
Peladow	Calcium Chloride salt	44.45 tonnes

Fuels

Type	Maximum Number of Containers	Capacity of containers
Diesel	1110	205 litre
Gasoline (lead free)	2	205 litre
Aviation Fuel (Jet B)	310	205 litre
Propane	12	100 lb

Lubricants

Product	Maximum Quantities on Site
Drill Rod Heavy Grease	3 tubs, each tub containing 5 gallons
Duron Multigrade Engine Oil SAE Viscosity Grades 10W-30, 15W-40	3 cases, each case containing 12 litres

Other chemicals that would be used in small quantities during the drill program would include kitchen soaps and cleaning agents, bleach, soaps and shampoo and mosquito repellant. Kitchen cleaners would be kept in the kitchen tent, bleach, soaps and shampoo would be stored in the shower / laundry tent. Mosquito repellant would be stored with office field supplies in the office tent.

6. Steps to report, contain, clean-up and dispose of a spill.

Reporting a Spill

First call the Nunavut/NWT 24 hour spill line at **(867) 920 – 8130**. The spill line will then contact the lead regulatory agency. Collect calls are accepted.

Please ensure that as much information as possible is included in the notification however do **not** jeopardize personal safety to obtain this information. Do not delay reporting a spill because you do not have all the requested information.

Information that is most useful includes:

- Spill location with map coordinates (if known) and direction (if moving).
- Date and time or estimated time of spill and the time of observation of the spill.

- Who is the party responsible for spill (who is in charge or has control of the contaminants at the time of the spill)?
- What product or products spilled and what are the estimated spilled quantities (in metric if possible)?
- What caused the spill?
- Has spill been stopped?
- If spill is continuing provide an estimate of the rate of spillage.
- Is further spillage possible?
- What is the extent of contaminated area (in square meters if possible)?
- What factors are affecting the spill, weather, snow cover, terrain, etc.)?
- What containment measures are in place or are being used (natural depression, dykes, booms, absorbent pads, etc.)?
- What actions, if any, are being taken to contain, recover, clean-up and dispose of the spilled product and contaminated materials?
- Do you require assistance to contain, recover, clean-up and dispose of the spilled material?
- What are the possible hazards to persons, property or environment (e.g. fire, drinking water, fish or wildlife habitat)?
- Any other relevant information.
- Who is making this report, your job title, employer and address?
- What is your contact phone number?

If you are not sure if the spilled product is classified as a contaminant or if you are not sure if the volume of the spill is a reportable quantity, it is recommended to report the incident.

It's a regulatory requirement that all spills and leaks of gasoline or diesel fuel must be reported to the Environmental Protection Branch. Any leak or spill of any amount into a watercourse, water body or groundwater must be reported.

Any spill, or incident that may likely result in a spill, of an amount equal to or greater than the amount listed in the table below shall be promptly reported.

Item No.	TDGA Class	Description of Contaminant	Amount Spilled
1.	1	Explosives	Any amount
2.	2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 litres.
3.	2.2	Compressed gas (non-corrosive, non flammable)	Any amount of gas from containers with a capacity greater than 100 litres
4.	2.3	Compressed gas (toxic)	Any amount
5.	2.4	Compressed gas (corrosive)	Any amount

6.	3.1, 3.2, 3.3	Flamable liquid	100 litres
7.	4.1	Flamable solid	25 kg
8.	4.2	Spontaneously combustible solids	25 kg
9.	4.3	Water reactant solids	25 kg
10.	5.1	Oxidizing substances	50 litres or 50 kg
11.	5.2	Organic Peroxides	1 litre or 1 kg
12.	6.1	Poisonous substances	5 litres or 5 kg
13.	6.2	Infectious substances	Any amount
14.	7	Radioactive	Any amount
15.	8	Corrosive substances	5 litres or 5 kg
16.	9.1 (in part)	Miscellaneous products or substances, excluding PCB mixtures	50 litres or 50 kg
17.	9.2	Environmentally hazardous	1 litre or 1 kg
18.	9.3	Dangerous wastes	5 litres or 5 kg
19.	9.1 (in part)	PCB mixtures of 5 or more parts per million	0.5 litres or 0.5 kg
20.	None	Other contaminants	100 litres or 100 kg

After the spill has been called in complete a written Spill Report Form appended to this document.

Spill Clean up

It is much more difficult work to clean up a spill than to prevent it from occurring. Prevention is better than containment and containment is better than no containment. Clean-up from a secondary containment berm or drip pan is easier than from the natural environment. Effective spill prevention requires education, regular practical training sessions, regular inspections and awareness.

Leak Prevention

Leaks most often occur during handling of the fuel but may also develop slowly over time. Fuel drums in any fuel cache will be inspected regularly for leaks.

Adequate worker training is required to avoid puncturing the fuel drums during handling. Fuel drum storage locations must be inspected for, and cleared of, puncture or tipping hazards. An impermeable geomembrane sheet will be put down before drums are stored at any fuel caches.

Workers will be trained in refueling techniques to prevent the spillage of fuel.

Propane tanks will be stored securely upright to prevent tipping and possible breakage.

Leaks or Spills

Action Plan in the event of a spill or leak:

- Evaluate the scene and ensure personal safety and the safety of any others.
- Find and locate the source of the spill and either stop or contain the spill if possible. Contain the spill by damming with earth or other suitable material.
- Remove all sources of ignition. Be prepared to use a fire extinguisher. **Remember gas vapors flow down hill and are extremely explosive.**
- Work from the upwind side to avoid inhaling fuel vapors and becoming engulfed in flames if a fire starts.
- Notify the Camp Supervisor or Project Manager who will activate the Spill Contingency Plan and call the 24 hour Spill Report Line at (867) 920 - 6130.
- Don't wash spilled fuel or contaminant into potentially higher risk areas. Protect water sources and septic systems.
- Clean up and dispose of all fuel or contaminant by shoveling the contaminated earth or absorbent material into metal containers. Dispose of contaminated cleanup materials in an approved manner.
- Clean up the spill site using site appropriate absorbents, tools and procedures. Clean up and dispose of all fuel contaminated soil or absorbent material by shoveling into sealed containers.
- Dispose of contaminated cleanup materials in an approved manner.
- Record the spill on the Spill Report form and conduct follow-up monitoring if required.
- Ensure that all ignitable vapors are dispersed before resuming normal activities.
- Review the incident with others in camp and share ideas on to prevent a similar type of spill from occurring again.

Fire Prevention

The most serious spill incident would involve fire and a fuel contaminant. In order to minimize the risk of fire, **No Smoking** and **Flammable** signs will be posted near to any fuel cache along with a dry chemical fire extinguisher. Fire extinguishers will also be located at each site where fuel is used. Workers will be trained in the use of the fire extinguisher and be instructed of the risk caused by electrical and open flame fire hazards near fuel. The fuel caches will be located well away from camp buildings and will be kept clean and free of litter to reduce risk.

Fire

In the event of a petroleum fire:

- Raise the alarm! Warn others and call for assistance.
- Personal safety comes first, make sure you and others nearby are safe. Evacuate if necessary and account for everyone.
- If necessary provide first aid and locate any missing workers. Remove any injured people to a safe site, generally upwind from the fire.
- If a person, who is splashed with fuel, catches fire, wrap him in a blanket or roll him on the ground to remove oxygen and extinguish the fire. If this doesn't work, use an ABC, dry chemical, fire extinguisher to put out the fire
- If there is a danger of explosion get away!
- If possible, stop the flow of fuel feeding the fire.
- Remove on-going sources of ignition i.e., shut off the electricity.
- Attempt to extinguish flames using approved equipment. Remember, diesel fuel and gasoline float. Don't wash flames to an area of higher danger.
- Remember the order of priority, human safety comes first, then property. Don't risk your life for possessions.
- Notify the Camp Manager or Project Manager who will implement the Action Plan for Leaks or Spills once the fire is out and who will also notify authorities, if required.
- Conduct follow-up monitoring, if required.
- Clean-up the site when allowed to do so.
- Review the incident with others in camp and discuss ways to prevent similar fires in the future.

Leak Containment

Secondary leak containment requires the planned use of absorbent pads, drip buckets, drip pans, or impermeable geomembrane sheets to catch any slow or unexpected leaks. The use of these collection methods requires regular monitoring to ensure that the leak collection device is not exceeded. In the event that the previously listed secondary containment devices are exceeded use a shovel to create an earth berm or use any other suitable absorbent media to slow or halt the spread of a spill.

Locations containing fuel drums (near generator, fuel supplied for tents, main fuel cache) will be equipped or fitted with absorbent pads, pans, buckets or impermeable geomembrane sheets to prevent the escape of fuel to the environment. A regular inspection program will be established to monitor the

condition of the leak containment devices so they do not overflow. Drums in the fuel cache will be inspected daily. In the event a drum shows leakage it will be removed from the fuel cache and the fuel will be transferred to a suitable empty refuge drum.

Disposal

Appropriate disposal for any recovered product and contaminated soil, water or absorbent clean up materials is regulated and must be authorized by the agency investigating the incident. Obtain approval from all appropriate government agencies before disposal.

Fuel contaminated soil can be remediated on site through landfarming, incineration or thermal desorption. Alternatively the contaminated soil can be flown out to Yellowknife for disposal in an approved dump site.

Any unreuseable recovered product, contaminated soil and clean up materials will be stored in containers on site prior to disposal. First choice would be the spill kit containers with a lid. If additional capacity is required contaminated material would be stored in open headed drums and would be later covered to keep out any rain or snow.

Additional advice on how to treat or dispose of contaminated materials or soil as well as environmental site assessment and remediation may be obtained through:

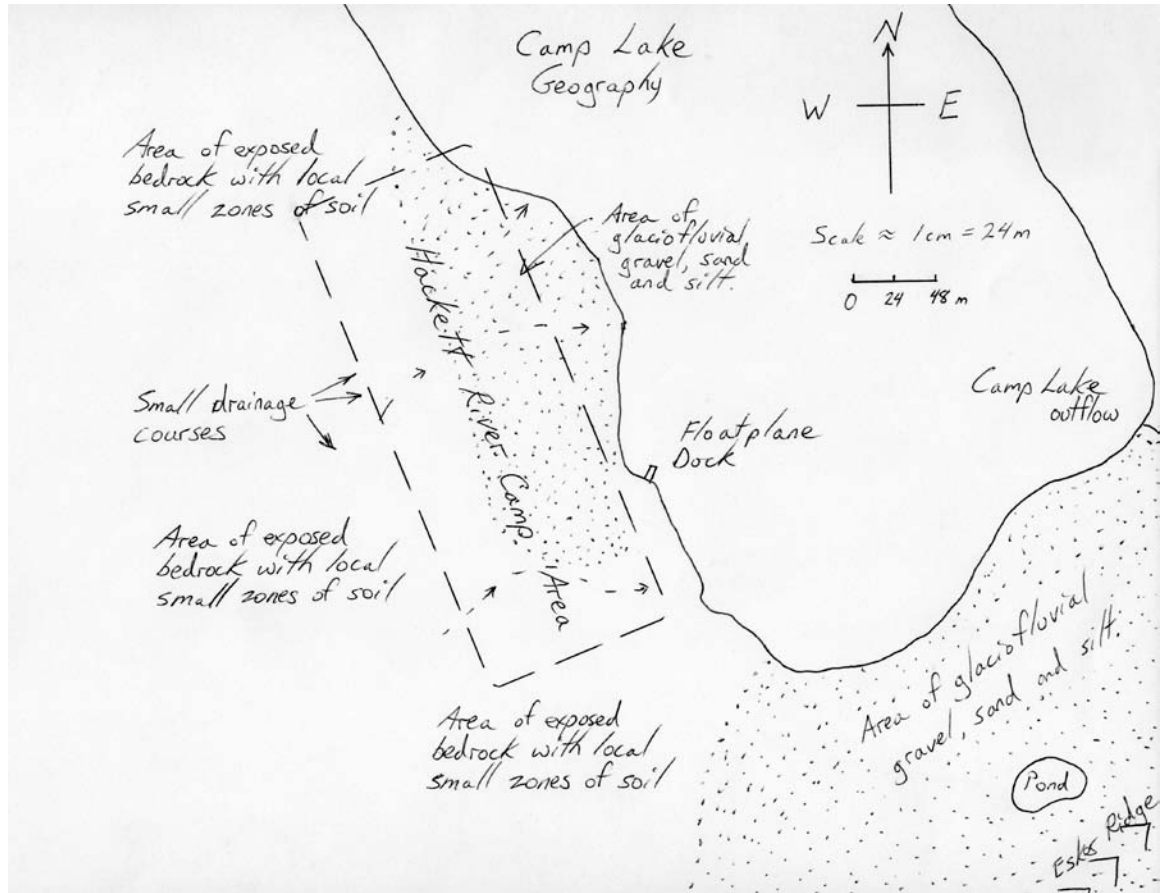
Gartner Lee Environmental
4912 – 49th Street, Box 98
Yellowknife, Northwest Territory
X1A 2N1

Tel: (867) 873 – 5808
Fax: (867) 873 – 4453

Unused quantities of contaminants at the end of the exploration program will be returned for recycling.

7. A site map of sufficiently large scale to show the locations of buildings, contaminants storage areas, sensitive areas such as water bodies, probable pathways of contaminant flow and general topography.

The following map shows the physical geography of the Hackett River Camp and complements the map shown with question #4.



8. A description of the spill response training provided to employees who will respond to a spill.

All employees in camp will be provided a W.H.M.I.S. training session at the start of the exploration program.

All employees in camp will be provided Standard Level Enhanced First Aid training at the start of the exploration program if they lack a valid first aid certificate.

On site orientation will be provided to all employees so as to ensure that all employees are aware of:

- The location of MSDS sheets, Spill Report Forms, and Spill Record Book.
- The location of the various fuel caches.
- The location of the various Spill Response Kits.
- The location of the Muster Station, Fire Station, fire extinguishers and water pump and fire fighting equipment.
- The location of any taps that may be used to stop the flow of a fuel.
- The location of the Spill Action Plan and the Fire Action Plan.

On site training will be provided to all employees as to the use of:

- Spill kit contents.
- Fire extinguishers and water pump.

Training will be provided to all employees so that they are able to:

- Turn off the tap to stop the flow of fuel.
- Activate the Spill Action Plan and the Fire Action Plan.
- Identify, evaluate and mitigate the hazards posed by any spilled product by using appropriate PPE (personal protective equipment).
- Identify and avoid the conditions which may lead to a spill.
- Develop an understanding of the potential environmental impacts of a spill.
- Develop an understanding of the financial costs of a spill.
- Recognize the hazards associated with sources of ignition (smoking, electrical sparks) near a fuel source.

For employees involved in fuel handling, additional training would be provided regarding appropriate refueling techniques and drum handling procedures.

Simulated fuel spill exercises will be conducted approximately every 6 weeks to ensure familiarity with the Spill Action Plan and ensure that the plan is relevant and useful throughout the exploration season.

9. [An inventory of and the location of response and clean-up equipment available to implement the spill contingency plan.](#)

A total of five **20 litre Spill Response Kits** and four **205 litre Spill Response Kits** will be available to implement the spill contingency plan. The location of the various spill response kits is indicated in the table of camp structures listed above under question # 4.

Spill Response Kit Contents

<i>20 litre All Purpose Spill Response Kit</i>	<i>205 litre H.O.W. Spill Response Kit</i>
1 - 20 litre poly containment pail	150 - 17" X 19" oil absorbent pads
12 - 16" X 20" oil absorbent pads	8 - 3" X 48" oil absorbent socks
2 - 3" X 48" oil absorbent socks	2 - 5" X 120" oil absorbent booms
1 - heavy duty disposal bag (8 mil)	4 - temporary disposal bags 42x48-XS
1 - pair Chemi-Pro gloves	1 - pair nitrile gauntlet gloves
3 - lbs of all purpose absorbent	1 - pair disposable coverall
	1 - pair clear safety goggles
	1 - 4 oz temporary Gapseal stick

	1 - 205 litre containment drum (metal/poly) with quick release lever lock system
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Micellaneous equipment in camp would be made available for spill response and clean up. This equipment would include spades and snow shovels, a gas powered water pump, hand crank fuel pump, hand and power tools and any suitable absorbent or containment materials found in the supplies tent or core shack.

The placement and number of spill kits will be re-evaluated during each 6 week spill response simulation exercise.

10. Date of Spill Response Plan was prepared.

April 29, 2004