Baffinland Spill Response Plan

Spill Response Plan

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. The general response to be followed in the event of the spill is:

Identify the product and source of the spill – check container design, warning labels, markings, etc.
Protect people – prevent personnel from approaching the site and keep them at a distancesufficiently removed that they will not be injured by, or cause, a fire or explosion
Stop the flow at the source – reduce or terminate the flow of product without endangering anyone
Assess the seriousness of the spill – evaluate potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources
Report the Spill **–** provide basic information such as location of spill, name of polluter, type and amount of material spilled, date and time of the spill and any perceived threat to human health or environment (complete Nunavut (NWT?) Spill Report form)
Clean up the spill – follow procedures appropriate for the location, environment, and material and time of year

24- Hour Spill Report Line (867) 920-8130 or fax (867) 920-8127
Water Resources Inspector (867) 979-4405

Detailed Response Plan

(a) On-site person in charge, management or control of contaminants

Michael Zurowski; Baffinland. (416-364-8820/camp phone number to be provided at future date)

(b) Name and address of employer of personnel described in part (a)

Baffinland Iron Mines Corporation
56 Temperance Street, Suite 500
Toronto, Ontario
M5H 3V5
Phone: (416) 364-8820
Fax: (416) 364-0193

(c) Description of the facility

Facility – temporary, 25-30 person mineral exploration camp (tents) with above ground fuel storage facility
Locations – Camp likely located on Crown Lands along the east shore of unknown lake at north end of Mary Lake 71° 18' 30" N / 79° 23' 30" W; Fuel to be stored on naturally vegetation free site located a safe distance from the tents and well away (>100m) from water bodies.
Size – fuel stored at above ground facility in sealed 205 litre (45 gal.) steel drums
Storage Capacity – Maximum fuel stored at site will be 250 drums (50,000 litres) of Jet-B, Diesel, and minor aviation fuel and gasoline combined, plus 30-40 100lb-propane cylinders. Once experience is established with fuel re-supply and consumption within the exploration programme has been obtained, the fuel cache will be minimised.

(d) Description of the type and amount of potential contaminants normally stored on-site

JET B fuel for the helicopter – 25,000 litres (125 drums)
Diesel for the drill and camp – 25,000 litres (125 drums)
Gasoline - 2000 litres (10 drums)
Aviation Fuel 2000 litres (10 drums)
Propane for cooking, etc. – thirty (30) to forty (40) 100 lb. tanks

(e) Steps to be taken to report, contain, clean up and dispose of a contaminant in the case of a spill

Preventative Measures/Early Detection

Fuel drums will be monitored for any signs of leakage:

i) Immediately after they arrive on-site,
ii) Once they have been transported to the designated storage area, and
iii) Regularly after that time (i.e. as the stocks are accessed).

Drums will be stored on their sides, with bungs at 3 and 9 o'clock positions on flat stable terrain to reduce chances of a leak. A hypolon or similar impermeable liner will be under the cache to further mitigate chance of a leak. If available, a natural depression situated well away from water bodies will be utilized for storage and a berm will be constructed around the cache to catch any potential spillage... The contents of any drum that leaks, or shows the potential to leak, will be transferred by wobble pump or similar device to a different drum. With the exception of the container in use, all fuel container outlets will be kept sealed to prevent leakage. On-site equipment (e.g. helicopter) will be refuelled at

some distance from the main storage facilities to reduce potential danger should a fire occur.

Reporting

i) *Identify the product* – check container design, warning labels, markings etc.
ii) *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
iii) *Stop the flow at the source* – reduce or terminate the flow of product without endangering anyone
iv) *Assess the seriousness of the spill* – evaluate potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources
v) *Report the spill to the 24- Hour Spill Report Line (867) 920-8130* - provide basic information such as location of spill, direction of motion if any, name of contact on-site, type and amount of material spilled, cause of spill, date and time of the spill and any perceived threat to human health or the environment (complete Spill Report form – attached)
vi) *Report the spill* – to Baffinland's office in Toronto

Depending on the severity of the spill – report to the other appropriate authorities (i.e. Nunavut Water Board, Department of Fisheries and Oceans; Regional Inuit Association)

Containment

Oil spill containment techniques include:

i) *Earth dams*- simple and effective control means for surface and small streams
ii) *Interceptor trenches* – control on land and shallow subsurface seepage *Culvert weirs* – not applicable
iii) *Underflow dams* – effective in narrow ditch or stream
iv) *Net and absorbent barriers* – effective in tundra area and slow moving water
v) *Containment Booms* – commercial product for large bodies of water
vi) *Space spraying or "herding"* – Using a very fine water spray as means of cleaning vegetation, shorelines, lake surface etc.
vii) *Absorbent materials* – include fine sand, soil or snow; commercial sorbents include sheets, rolls, pillows and booms that can be rapidly deployed with no preparation

Clean Up

The most likely spill scenario is the partial loss of petroleum products from one of the 205L (45 gal.) drums. Drums will be checked on arrival camp, after transfer to the designated storage facility and periodically thereafter. Contents of any leaking drum will be immediately transferred via wobble pump to an empty, leak free drum. It is unlikely that more than one drum will leak at any time. Any spills will be contained, and pumped into empty barrels.

Six spill kits will be on site (one to be located at each drill site and four for the main fuel cache near the airstrip. Contaminated material will be transported to an approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill. Shovels and a small front-end loader will be available to recover and isolate and contaminated material. Where safe, disposal will be done through controlled in-situ combustion ONLY with the approval of government authorities and under strict supervision. In-situ combustion can be initiated using a portable propane torch (tiger torch). Highly flammable materials such as gasoline may be used to promote ignition of less flammable spilled products. The objective of this is to raise the temperature for sustained combustion of the spilled product.

Disposal

No organic soils are present at the proposed storage site, and if possible, any sands and gravels contaminated by a significant spill of petroleum products will be excavated by hand, incinerated to remove hydrocarbons, and returned to their natural site.

Data Review and Consultations:

North Baffin Land Use Plan

Contingency Planning and Spill Reporting in the NWT – A guide to the new regulations, GNWT, 8pp.

Report All Spills – Environment Series, GNWT Renewable Resources, Pollution Control Division, 1988

Spill Containment and Clean-up Course, GNWT Renewable Resources, Pollution Control Division, 1991, 74pp.

Spill Contingency Planning and Reporting Regulations – Environmental Protection Act – Northwest Territories, July 22, 1993, 11pp.

Spills, Our Record in the Northwest Territories – Environment Series, GNWT Renewable Resources, Culture and Communications, 1990