

Appendix C

Maze Lake Project

Spill Contingency Plan

Placer Dome (CLA) Limited

Prepared by
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Maze Lake Project Spill Contingency Plan Placer Dome (CLA) Limited

1. Preamble

The Spill Contingency Plan is effective from June 1, 2004 to July 16, 2006 and applies to the Maze Lake Project operated by Placer Dome (CLA) Limited in the Kivalliq District of Nunavut, latitude 62° 16' 33" and longitude 93° 37' 39". The project is under agreement with Nunavut Tunngavik Incorporated (NTI). A Land Use permit has been issued by the Kivalliq Inuit Association (KIA) and a water license from the Nunavut Water Board (NWB). See map 1 in the Detailed Project Description-Appendix A.

The following formal distribution has been made of this plan:

KIA, NWB, Jacques Simoneau (Project Manager-Placer Dome), Hervé Thiboutot (Regional Exploration Manager-Placer Dome).

2. Introduction

The purpose of this Spill Contingency Plan is to provide a plan of action for every foreseeable spill event at the Maze Lake project. It defines the responsibilities of key response personnel and outlines the procedures for responding to spill in a way that will minimize potential health and safety hazards, environmental damage and clean up costs. The plan has been prepared to provide easy access to all the information needed in dealing with a spill.

It is Placer Dome policy to comply with all existing laws and regulations to help ensure the protection of the environment, to provide such protection of the environment as is technically feasible and economically practical, to cooperate with other groups working on protection of the environment and to keep employees, government officials and the public informed.

The personnel upon arrival at camp will be instructed on the plan, on how to properly manipulate and store fuel and other hazardous substances and on the location of emergency equipment. A more graphic version of this plan will be posted in common camp areas.

The camp will be built only in July 2004 so the final building layout could change. Updates will be made if necessary and copies sent to the distribution list.

3. Site Description

The camp will be located on a flat sandy point adjacent on the shore of a small lake and adjacent to a large unnamed lake. The camp will be composed of 10 temporary buildings and a few smaller sheds. See maps 2 and 3 in the Detailed Project Description-Appendix A. Fuel will be transported to the project area by winter ground transportation, by fixed-wing airplane or helicopter. All fuel or other hazardous materials will be kept at least 100 metres away from the normal high water mark of any water body.

- The main fuel cache will be located on the camp site

- A secondary smaller fuel cache could be established at the north end of the project area. A few fuel drums are expected to be present on the drill site
- Each of the main buildings will have a drum of fuel supported on a wooden crib
- Other chemicals will be securely stored in the camp area.

Hazardous materials that will be present on the project site are:

Fuels	Camp Fuel Cache	North Fuel Cache	Container Capacity
P-50 Diesel	60 drums	20 drums	205 litres
Gasoline	3 drums	0 drums	205 litres
Jet B	100 drums	25 drums	205 litres
Stove oil	40 drums	0 drums	205 litres
Propane	20 cylinders.	10 cylinders	45 kg

Other	Location	Use	Container Capacity
Dr-133 Polymer	Camp and drill site	Drill mud additive	20 litres
550-X Polymer	Camp and drill site	Drill mud additive	20 litres
Antifreeze	Camp and drill site	Antifreeze	2 litres
Lead acid batteries	Camp and drill site	Electricity	2 batteries

4. Contacts

The employer is:

Placer Dome Canada
130 Adelaide Street West
Suite 3201
Toronto, Ontario
M5H 3P5
1-416-363-5255

The person in charge of the contaminants on the project site and who is responsible to activate the spill emergency plan will be the field supervisor:

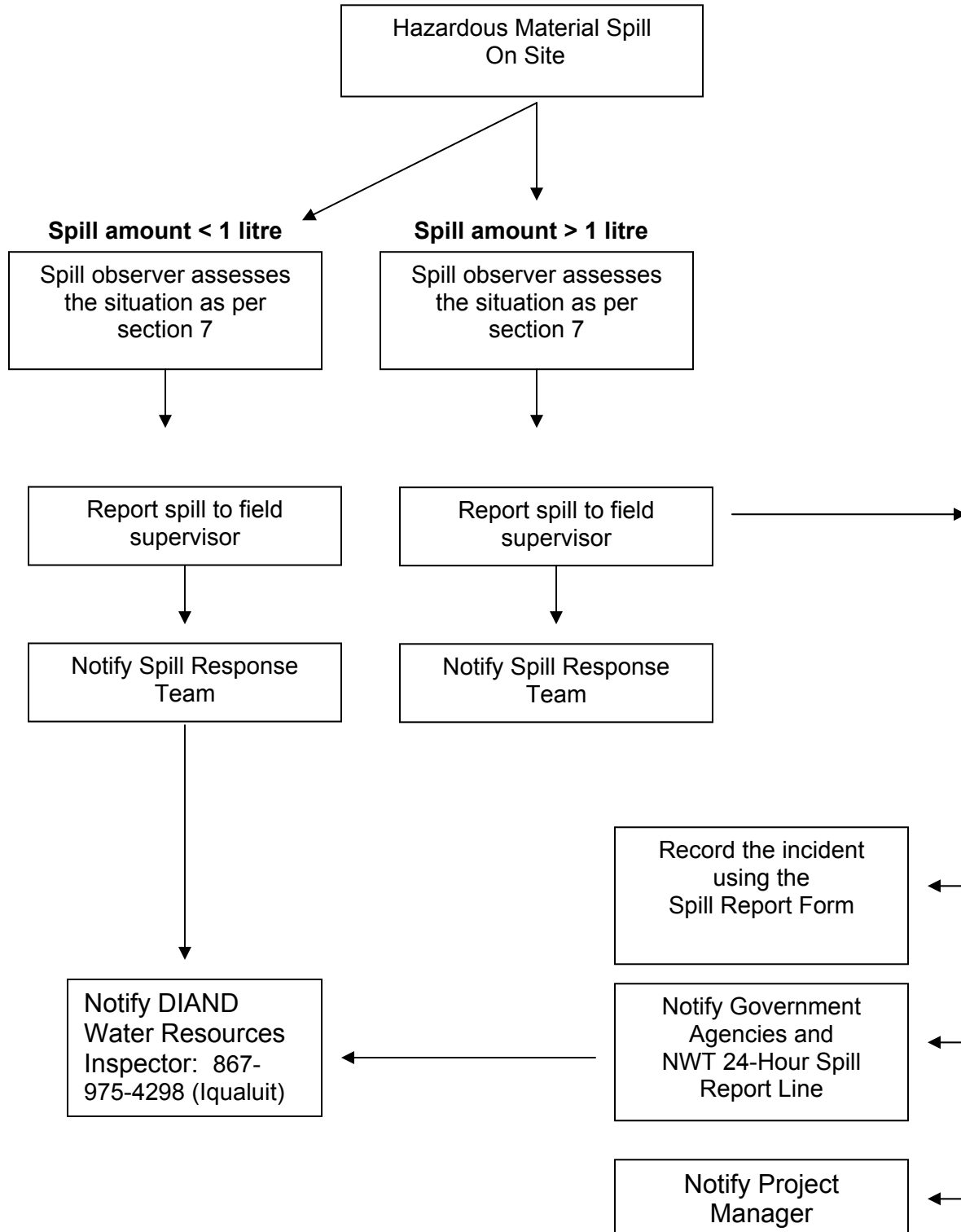
Nathalie Prud'homme
220 Powell Avenue #4
Ottawa, Ontario
K1S 2A5

People and organizations that can be contacted in case of a spill:

Contact	Name	Phone number
Person responsible to activate spill plan (24 hrs)	Nathalie Prud'homme (Field Supervisor)	8816-314-67789 (camp's main sat phone) 8816-314-67439 (camp's second phone)
Spill Response Team (Camp)	Camp manger, Field supervisor and 2 two field assistant	By person, by radio or using the sat phones.
Project Manager (Placer Dome, Toronto)	Jacques Simoneau	Office: 416-363-0380 Cell: 416-910-4769
Regional Exploration Manage (Placer Dome, Toronto)	Hervé Thiboutot	Office: 416-363-5652 Cell: 416-910-9060
Camp satellite phone		8816-314-67789
Spill Report Line (24 hr)		Tel: 867-920-8130 Fax: 867-873-6924
DIAND Water Resources Inspector	Constantine Bodeykevich or Scott Stuart	867-975-4298 (Iqualuit) 867- 979-64445
DIAND Water Resources and Environment		867-975-4550 (Iqualuit)
Environment Canada		Tel: 867 669-4700 Fax:867 873-8185
External help for major spill	Mark Bernarz, BZ Environmental Consulting.	705-268-6220 tel 705-266-0024 cel 705-267-1995 fax
RCMP Whale Cove		Tel: 867-896-1111
RCMP Rankin Inlet		Tel: 867-645-1111
Forest Fire Emergency		Tel: 867-645-2525
Health Centre Rankin Inlet		Tel: 867-645-2816
Health Centre Whale Cove		Tel: 867-896-9916

5. Response Organization

The following is a flow chart to illustrate the sequence of events if a hazardous material spill occurs at the Maze Lake Project.



6. Spill Response Team

A spill response team will be formed. The team will be composed of the field supervisor, the camp manager and the 2 field assistants. But all personnel will be instructed on the Spill Contingency Plan and trained at using safely the equipment.

Upon arrival at camp, every employee will be shown the location of the spill kits and other response material (supplementary fire extinguishers, showels, tarps...), explained the spill emergency procedure and the use of the spill kit. The permanent employees at camp and the drilling contractors will participate in a muck spill training session. A barrel of water will be let to spill at a fast rate and the team will have to use the spill kit to contain it by using the boom, absorbent pads, and to close the leak as fast as possible. Absorbent pads will, for the occasion, be replaced by rags as the pads don't absorb water. Decisions on how to manage the contaminated soil will have to be taken: disposing in the barrel, on tarps or in other available recipients ... (soil won't be really disturbed for the practice) and the reporting procedure will be carried (with a note that this is a test).

Various scenarios of spills will be discussed (punctured drum with a small leak, barrel with an opened bung, spill while transferring fuel, barrels that are dropped on the ground by the helicopter, fire at the fuel cache, leak on equipment or stove connectors).

The Field Supervisor will appoint and train two persons to be the Spill Response Team. They will also be responsible to carry the daily inspections of the fuel caches and equipment. Personnel on site will be limited, so for any large spill most people will likely be needed to help.

Spill Response Team Responsibilities

- Perform daily inspections at the Camp fuel cache, chemical storage areas and to fuel hoses.
- Report any spill to Field Supervisor
- Containment of the spill and site remediation.

Field Supervisor responsibilities

- Assume complete authority over the spill scene and coordinate all personnel involved.
- Evaluate spill situation and develop overall plan of action.
- Activate the spill contingency plan
- Immediately report the spill to the NWT 24-Hour Spill Report Line (867) 920-8130 and regulatory agencies. (For spill greater than 1 litre)
- Fill the Spill Report Form (for spill greater than 1 litre)
- Report the spill to Placer Dome Project Manager. (For spill greater than 1 litre)
- Obtain additional manpower, equipment, and material if not available on site for spill response.

Project Manager responsibilities:

- Provide regulatory agencies and Placer Dome management with information regarding the status of the clean up activities.
- Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

7. Initial Action

These instructions are to be followed by the first person on the spill scene

1. **Always be alert and consider your safety first.**
2. **Wear personal protective equipment**
3. **Do not smoke and eliminate all source of ignition (like sat phone)**
4. Assess the hazard to people in the vicinity of the spill.
5. If possible control danger to human life
6. Do not touch, smell, taste or get close to unknown substance.
7. If substance has been identified and if possible and safe to do so, try to stop the flow of material.
 - If filling is in progress, stop at once
 - If seeping through a small hole, use a patch kit if practical to do so.
 - If necessary and practical, pump the fuel from the leaking container into a refuge container
8. Immediately report the spill to the Field Supervisor and Spill Response Team by radio, satellite phone or in person.
9. Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.
10. If in doubt about cleaning procedures or for a very large spill, regulatory agencies can help.
11. **Large spill:** In a case of a large spill (>2 barrels), where the spill kit alone is not sufficient, various material present in camp could also be used to contain the spill or to dispose of contaminated soil (extra tarps used to cover material, empty fuel barrels that can be opened, plastic buckets for rock samples, plastic bags for rock samples). In this case, the outside contractor (M. Bernaz) will be contacted for more advise and/or to come at the site with necessary material and conduct the clean up.

8. Reporting

The person who notices the spill must immediately notify the Field Supervisor. As soon as possible the Field Supervisor will report the spill to

- The 24-Hour Spill Report Line Phone (867) 920-8130, Fax (867) 873-6924
- Fill out the NWT Spill Report Form *NWT1752/0202* (form included at the back of this document).
- Notify Placer Dome Project Manager for spill greater than 1 litre.
- Notify permitting authorities (Nunavut Water Board, Kivalliq Inuit Association)
- Notify DIAND Water Resources Inspector

9. Resource Inventory

A spill kit will be located at each fuel cache and will contains:

- 1 – 360 litre/79 gallon polyethylene drum
 - 3 – oil absorbent booms (5" X 10')
 - 100 – oil absorbent sheets (16.5" X 20" X 3/8")
 - 1 – drain cover (36" X 36" X 1/16")
 - 1 – Caution tape (3" X 500')
 - 1 – 1 lb plugging compound
 - 2 – pair Nitrile gloves
 - 2 – pair Safety goggles
 - 2 – pair Tyvek coveralls
 - 1 – instruction booklet
 - 10 – printed disposable bags (24" X 48")
 - 1- shovel
 - 1- plastic tarp
 - 2 – bags of 10 pounds of diatome granules
- This spill kit capacity is 205 litres.

Shovels, water pump, plastic pails, garbage bags, extra absorbent pad, drip pans will be available in core shack and/or kitchen. Fire extinguishers will be available in all tents.

12. Hazardous Material Information

This following section lists for each hazardous substance present on the project area, health hazards, spill procedure and disposal procedures. For more detailed information, refer to the MSDS sheets.

DIESEL, JET-B, GASOLINE

Diesel, Jet-B and Gasoline are highly flammable

- **Do not smoke**
- **Will be easily ignited by heat, sparks or flames**
- **Gasoline and Jet-B are more volatile than diesel**
- **Explosion hazard indoors, in confined spaces and outdoors**
- **Vapours may form explosive mixtures with air**
- **Vapours may travel to source of ignition and flash back**
- **Most vapours are heavier than air. They will spread along ground and collect in low or confined areas.**
- **Keep pump or electrical equipment far away, be very careful with metallic tools that could sparks on rocks, wait for vapours to dissipate**
- **Inhalation may cause central nervous effects**
- **Aspiration into lungs may cause pneumonitis which can be fatal**
- **Eye and skin irritation**

- **Prolonged exposure has caused cancers in laboratory animals**

Spill on Land

- Build a containment berm, downslope, using peat, moss, soil material, bags filled with sand or rocks and place a plastic tarp at the foot of the berm to pool the spill. Spill can be pumped if in a large amount
- Soak up spilled substance by using absorbent pads
- Excavate the surface soil if necessary. If large excavation is needed, first contact regulatory agencies for approval.
- Remove spill substance splashed on vegetation by applying a thin dusting of Spag-zorb or other ultra-dry absorbent.
- Dispose hydrocarbons, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.
- On marshy zones, don't destroy vegetal cover, limit personnel and equipment. Remove pooled oil with absorbent pads and/or skimmer.

Spill on Water

- Contain spill as close to release point as possible
- On small spill, deploy hydrophobic absorbent pads
- On larger spill and weather conditions permitting, use containment boom to limit fuel dispersion. Use a skimmer, pump or hydrophobic absorbent pads to remove fuel inside the boom.
- Dispose hydrocarbons, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.

Spill on Rivers and Streams

- Prevent entry into water, if possible, by building a berm or trench.
- Intercept moving slicks in quiet areas using (absorbent) booms.
- Do not use absorbent booms/pads in fast currents and turbulent water.

Spill on Ice and Snow

- Build a containment berm of compacted snow around spill.
- If hydrocarbons are pooling on ice, pump large amount or use hydrophobic absorbent pads.
- Don't delay removing the spill as hydrocarbons could seep through cracks into the water.
- Scrape ice, shovel all contaminated snow in plastic buckets with lids or in drums. Dispose absorbent pads and other contaminated equipment in separated containers. Label and seal the containers.

Spill Disposal

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

PROPANE

Extremely Flammable

- Do not smoke
- Cylinders may explode when heated
- Cylinders may rocket if ruptured
- Will be easily ignited by heat, sparks or flames
- Explosion hazard indoors, in confined spaces and outdoors
- Vapours may form explosive mixtures with air
- Vapours may travel to source of ignition and flash back
- Vapours from liquefied gas are initially heavier than air and spread along ground.
- Contact with gas or liquefied gas may cause burns, severe injuries and/or frostbite
- Keep pump or electrical equipment far away, be very careful with metallic tools that could sparks on rocks, wait for vapours to dissipate
- Liquid may cause frostbites and blisters
- Blurred vision if goes in the eyes
- Narcotic aphyxiant
- Dizziness, disorientation, excitation, headache, vomiting, uncounciousness if inhaled

Spill on Land, Water, Ice and Snow

- Eliminate all source of ignition
- Do not attempt to contain the propane release if not absolutely sure on what to do.
- Do not touch or walk through spilled material
- Stop leak if can be done without risk
- If possible, turn container so that gas escapes rather than liquid.
- Water spray can be used to knock down vapours but don't direct water at spill or source of leak
- Prevent spreading of vapours in confined areas
- If or when possible, confine spill with confinement berm. Throw absorbent pads into spill, retrieved them with gaffs or pitchforks.
- Small fire can be extinguished with dry chemical or CO2.
- Dispose contaminated materials in a labelled drum

Spill Disposal

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods for detective equipment that resulted in the release.

MOTOR OIL, HYDRAULIC OIL, TRANSMISSION FLUID

- **Avoid breathing mists, may cause lung irritation**
- **On skin may cause mild irritation**

Spill Action

- Soak up with absorbent material
- Disposed contaminated soil and material in sealed and labelled container
- Small amount can be incinerated
- Large amount to be disposed as hazardous waste.

ANTIFREEZE

- **Respiratory irritation with prolonged exposure.**
- **Kidney, liver and bladder problems reported in animals**

Spill on Land

- Soak up by using absorbent pads
- Dispose antifreeze, absorbent pad, contaminated soil and cleaning material in an empty drum, seal it and label it.
- On marshy zones, don't destroy vegetal cover, limit personnel and equipment. If possible remove pooled antifreeze with absorbent pads.

Spill on Rivers and Streams

- Prevent entry into water, if possible, by building a berm or trench.

Spill on Ice and Snow

- Build a containment berm of compacted snow around spill.
- If pooling on ice, pump large amount or use absorbent pads.
- Don't delay removing the spill as it can seep through cracks into the water.
- Scrape ice, shovel all contaminated snow in plastic buckets with lids or in drums. Dispose absorbent pads and other contaminated equipment in separated containers. Label and seal the containers.

Spill Disposal

- Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

BATTERY ACID

- **Fire and explosion hazard**

- Can be extinguished with dry chemical fire extinguisher.
- Ventilate area
- Remove combustible materials
- Mist inhalation hazard when being charged or spilled
- Acid burns to skin and eyes irritation

Spill Action

- Neutralize with soda or lime
- Dispose battery and neutralized contaminated material in a sealed and labeled container.
- Dispose as an hazardous waste

POLY-DRILL DR-133

- May cause skin and eye irritation

Spill Action

Soak up with absorbent pad

Dispose residue, contaminated soil and material in labelled containers. Solidify with sand.

Small amount can be incinerated, otherwise dispose as hazardous waste.

550-X Polymer

- Prolonged skin contact may cause irritation
- Possible eye irritation
- Ingestion may cause nausea, vomiting, cramps, diarrhea

Spill Action

Clean up spill with gloves. Scrape soil or surface and disposed in labelled containers

Dispose as hazardous waste