

**Appendix C**

**Maze Lake Project**

**Spill Contingency Plan**

**Terrane Metals Corp.**

**Prepared by**  
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# **Maze Lake Project Spill Contingency Plan Terrane Metals Corp.**

## **1. Preamble**

The Spill Contingency Plan is effective from July 1, 2007 to October 30, 2007 and applies to the Maze Lake Project operated by Terrane Metals Corp ("Terrane") 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 application to the Kivalliq Inuit Association (KIA) and a Nunavut Water Board (NWB) permit have been submitted.

The following formal distribution has been made of this plan:  
KIA, NWB, Darren O'brien (VP Exploration - Terrane).

## **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 Terrane 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 in July 2007 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 is located on a flat sandy point adjacent to a large unnamed lake. The camp will be composed of 7 to 8 temporary buildings and a few smaller sheds. See figures 1 and 2. Fuel has been transported to the project area by winter ground transportation. Additional fuel may be transported by fixed-wing airplane or helicopter depending on the condition of the current fuel cache. 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 main camp site in the south end of the property.

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:

<b>Fuels</b>	<b>Camp Fuel Cache</b>	<b>North Fuel Cache</b>	<b>Container Capacity</b>
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

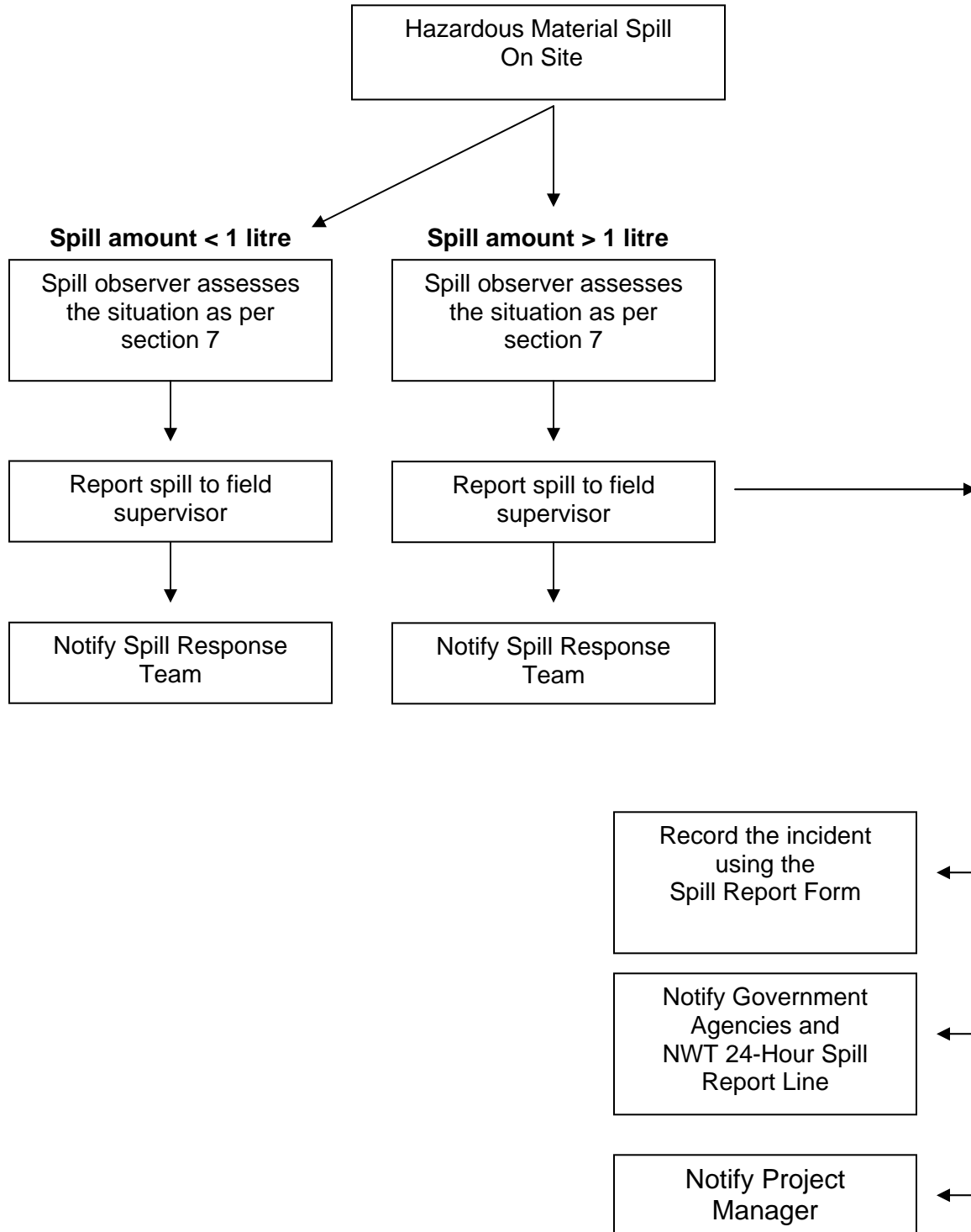
#### **4. Contacts**

People and organizations that can be contacted:

<b>Contact</b>	<b>Name</b>	<b>Phone number</b>
Spill Response Team	To be announced	To be announced
Field Supervisor	Patrick Lengyel	By radio, in person or by Satellite phone: ( to be announced)
VP Exploration	Darren O'brien	Office: 604 681 9930 - ext 227 Cell (24 hr): 604 961 1485
Camp satellite phone		To be announced
Spill Report Line (24 hr)		Tel: 867-920-8130 Fax: 867-873-6924
Environment Canada		Tel: 867 669-4700 Fax:867 873-8185
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

All personnel will be instructed on the Spill Contingency Plan and trained at using safely the equipment. 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**
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.

## 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)

## 9. Resource Inventory

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

- 1 – 360 litre/79 gallon polyethylene drum
- 4 – 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 (in remote spill kit only)
- 1- plastic tarp

This spill kit capacity is 240 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.

## 11. 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 asphyxiant**
- **Dizziness, disorientation, excitation, headache, vomiting, unconsciousness 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 133-X

- 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.

## POLY-DRILL O.B.X

- 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



# 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**

<b>A</b>	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	<b>REPORT NUMBER</b>  _____
	<b>B</b> OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
<b>C</b>	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
	<b>D</b> GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION	
<b>E</b>	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
<b>F</b>	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
	<b>G</b> ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
<b>H</b>	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		
<b>I</b>	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
	<b>J</b> FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
<b>K</b>	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
<b>L</b>	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
	<b>M</b> ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	
<b>REPORT LINE USE ONLY</b>						
<b>N</b>	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER	
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						