MELIADINE GOLD PROJECT

# SPILL CONTINGENCY PLAN

Meliadine Camp Site
Meliadine Exploration Sites
All-Weather Road
Discovery Camp Site
Meliadine Type B Pre-development Activities

**In accordance with Water Licences 2BE-MEP1318, 2BB-MEL0914, 2BW-MEL1215, 8BC-MEL----**

**Prepared by:**

**Agnico Eagle Mines Limited, Exploration Division**

**Version February 2014**

# DOCUMENT CONTROL

| Version | Date (YMD) | By | Section | Page | Revision |
|---|---|---|---|---|---|
| 1 | 2012-10-29 | DF, PR, AG | | | Complete document revision and update |
| 2 | 2014-02-03 | DF, PR, AG | | | Revision |
| 3 | 2015-06-26 | SR | | | Title page revisions |
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**February version prepared by:**

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Environment Coordinator

And

Philip Roy and Alexandre Gauthier, Environment technicians

**SUMMARY SPILL RESPONSE PRIORITIES**

**SAFETY FIRST**

**1. RESPOND QUICKLY**

1. Identify the spilled material.
2. Ensure safety of yourself and others.
3. Shut off ignition sources - NO SMOKING.
4. Attend to Injured.
5. Assess the severity of the spill.
6. Call your supervisor and the environment department
7. Site Manager mobilizes Emergency Response Team (if require)
8. Keep unnecessary people out of the area.
9. Wear impervious clothing, goggles, and gloves.
10. Approach spill from upwind IF SAFE TO DO SO.
11. Stop product flow if possible.
12. Contain and recover spill as soon as possible.
13. Notify Henry Kablalik, Resource Management Officer, Rankin Inlet
    Henry.Kablalik@aandc-aadnc.gc.ca, 867 645 2831, fax 867 645 2592
    Notify Peter Kusugak, Field Operations, Iqaluit
    KusugakP@aandc-aadnc.gc.ca, 867 975 4295, fax 867 979 6645

**2. RESPOND SAFELY**

1. Do not contain gasoline or aviation fuel if vapours might ignite.
2. Allow gasoline or aviation fuel spills to evaporate.
3. See Appendix A - Product Guides for further information.

**3. OBTAIN AND REPORT SPILL DETAILS**

NWT Spill Report Forms are in Appendix C of this spill contingency and response plan.

**Table: Reportable Spills**

| *Transportation Class* | *Type of Substance* | *Compulsory Reporting Amount* |
|---|---|---|
| 1 | Explosives | Any amount |
| 2.1 | Compressed gas (flammable) | Any amount of gas from containers with a capacity exceeding 100 L |
| 2.2 | Compressed gas (non-corrosive, non-flammable) | Any amount from containers with a capacity exceeding 100 L |
| 2.3 | Compressed gas | Any amount |
| 2.4 | Compressed gas (corrosive) | Any amount |
| 3.1, 3.2, 3.3 | Flammable liquid | 100 L |
| 4.1 | Flammable solid | 25 kg |
| 4.2 | Spontaneously combustible solid | 25 kg |
| 4.3 | Water reactant solids | 25 kg |
| 5.1 | Oxidizing substances | 50 L or 50 kg |
| 5.2 | Organic peroxides | 1 L or 1 kg |
| 6.1 | Poisonous substances | 5 L or 5 kg |
| 7 | Radioactive substances | Any amount |
| 8 | Corrosive substances | 5 L or 5 kg |
| 9.1 (in part) | Miscellaneous substances | 50 L or 50 kg |
| 9.2 | Environmentally hazardous | 1 L or 1 kg |
| 9.3 | Dangerous wastes | 5L or 5 kg |
| 9.1 (in part) | PCB mixtures of 5 ppm or more | 0.5 L or 0.5 kg |
| None | Other contaminants | 100 L or 100 kg |

**Note**: L = litre; kg = kilogram; PCB = polychlorinated biphenyls; ppm = parts per million.

Note: All releases of harmful substances regardless of quantity are immediately reportable where the release is near a water body, is near a designated sensitive environment or sensitive wildlife habitat, poses an imminent threat to human health or safety or poses an imminent threat to a listed species at risk or it critical habitat.

**FURTHER DETAILS WITHIN THIS DOCUMENT**

# Table of content

# 1. INTRODUCTION

## 1.1 PURPOSE

This Spill Contingency Plan is designed to promote environmental awareness and safety, as well as facilitate the efficient cleanup of spills as the result of:

- transportation incidents while in transit between Rankin Inlet and the Agnico Eagle Mines Limited (AEM) exploration site at the Meliadine Lake, and
- spills during the course of camp and exploration operations involving the following substances:
  - P-50 Diesel
  - Jet A and Jet B turbo fuel
  - Hydraulic Oil
  - Lube Oil
  - Waste Oil
  - Propane
  - Glycol

Principal objectives of the Spill Contingency Plan are:

- To provide readily accessible emergency information to cleanup crews, Meliadine Gold Project personnel, Kivalliq Inuit Association (KIA) and government agencies in the event of a spill.
- To comply with federal and territorial regulations pertaining to the preparation of contingency plans and notification requirements.
- To promote the safe and effective recovery of spilled materials.
- To minimize the environmental impacts of spills to water and/or land.
- To facilitate the management of wastes according to environmental legislation.

## 1.2 SCOPE

This Plan addresses the organization of the Meliadine Gold Project spill response and related emergency measures. Alerting and notification procedures and cleanup strategies are outlined along with the duties and responsibilities of key spill response personnel. Emergency contacts are listed for AEM, AEM's contractors and local government agencies.

More information in support of this Spill Contingency Plan and ensuing spill response actions is provided in the following appendices:

- Appendix A contains summaries of physical / chemical properties and emergency response measures for hydrocarbon substances to be transported to the Meliadine exploration camp;
- Appendix B contains an up-to-date inventory of spill response equipment and kits available at various locations;
- Appendix C contains NT/NU Spill Report Form that is to be used to report spills;
- Appendix D contains a fuel storage monitoring plan;
- Appendix E contains a list of basic components of a Fuel Spill Response Kit;

## 1.3 SITE DESCRIPTION

### 1.3.1 General Layout

The Meliadine Gold Project camp is located approximately 25 km North of Rankin Inlet (63° 01' 30" N latitude, 92° 10' 20" West longitude). The area is located in a low arctic tundra area with a summer active layer up to 1 m on dry exposed ridges and less than 0.5 m in the high organic humic soils under meadows. The camp, with a capacity of up to 200 persons, is located approximately 5 m above lake level on a peninsula surrounded on three sides by the Meliadine Lake. The camp is connected to the hamlet of Rankin Inlet via an all-weather access road.

| Meliadine project fuel tank | | | |
|---|---|---|---|
| Location | Number | Size (Liters) | Description |
| Camp gen set unit | 1 | 50,000 | Steel enviro tank |
| | 1 | 5000 | Steel enviro tank |
| | 1 | 2500 | Steel enviro tank |
| | | | |
| Tank farm | 8 | 100,000 | Steel enviro tank |
| | 2 | 85,000 | Steel enviro tank |
| | 11 | 50,000 | Steel enviro tank |
| | 1 | 50,000 | Steel enviro tank |
| | 3 | 50,000 | Steel enviro tank |
| | | | |
| Camp jet -A | 2 | 85,000 | Steel enviro tank |
| | | | |
| Portal | 1 | 50,000 | Steel enviro tank |
| | 2 | 13,500 | Steel enviro tank |
| | 1 | 2500 | Steel enviro tank |

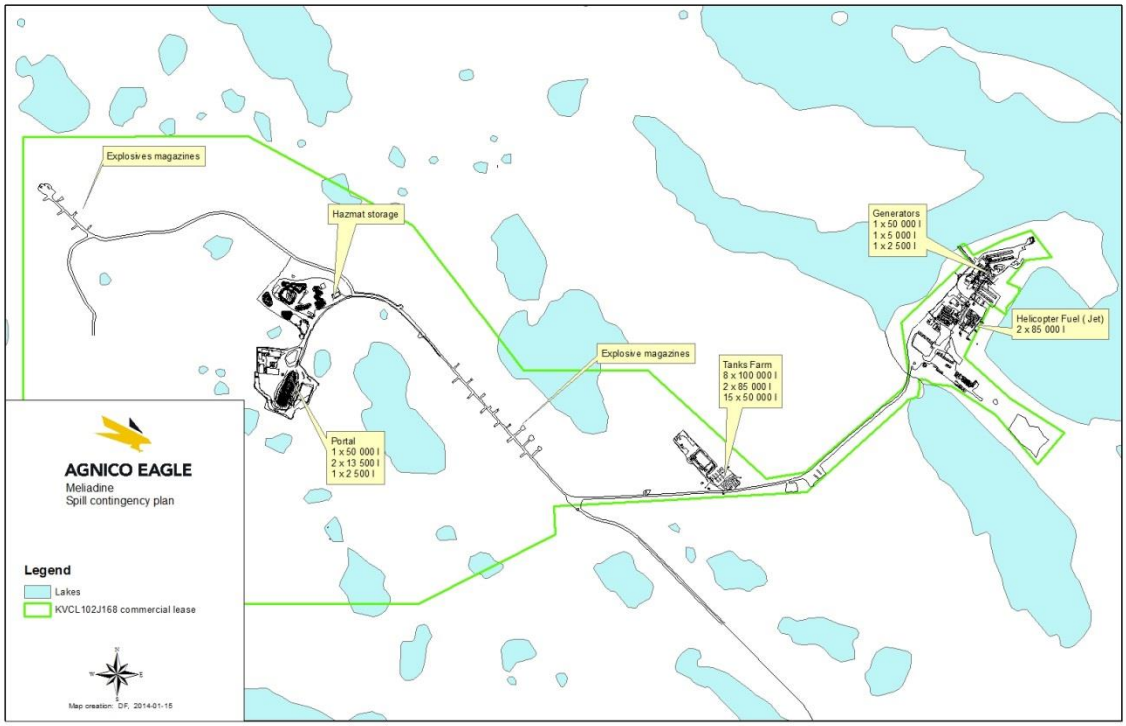
Servicing of vehicles is conducted within the shop established on the Services Pad near the portal entrance or within the garages on the camp site. Best practices will be employed during vehicle servicing including the utilization of spill pans. Shops and garages have shallowly buried sub-floor level liners that will contain any contaminant spills arising from vehicle maintenance. Waste oils, rags, filters and glycol are stored in dedicated waste containments (normally, drums or quatrex bags). The waste oil is securely packaged and returned to a southern facility for proper disposal. The waste barrels or quatrex bags are temporarily stored on the lined pad at the northwest corner of the Operations Pad (Hazmat storage on Figure 1).and in seacans at the laydown and portal. Accumulated hazardous waste will be transported south to a licensed waste treatment facility annually.

The Discovery Camp[1] for Mel East is located at latitude: 62° 57'36"N, longitude: 91° 55'12"W. This camp is not currently used. It covered an area of less than 1.5 hectares and could previously accommodate approximately 15-20 people. Facilities at the site included a plywood kitchen/dry structure, along with a 16'x24' Weatherhaven office tent and a plywood core shack.

[1] In 2009 and early 2010, the Discovery Camp was decommissioned. Final reclamation of the camp area in ongoing in 2012.

Workers were accommodated in five 14'x16' Weatherhaven and two 14'x16' wood framed sleeper tents. The sleeper tents previously housed between two and four people, depending on configuration. The camp had two small plywood storage sheds, a plywood drillers shop, and a plywood generator shed.

**FIGURE 1, GENERAL LOCATION OF THE MELIADINE CAMP**




### 1.3.2 Camp Layout (Figure 1)

The fuel for camp generators is supplied from one 50,000 liters double-walled fuel vault at the north edge of the camp.

Two 85,000 litres double-walled fuel vaults containing Jet A helicopter fuel (170,000 litres capacity) are stationed in the camp area, near of the helipads. The pumping station here is powered by a gasoline generator. Helicopter pilots and mechanics with appropriate training operate this facility. A fuel spill kit is positioned at the pumping station. Variable quantities of drummed Jet B aviation fuel are also stored within the lined area of bladder berms (Figure 1).

Camp waste oils are collected at the generator sites (Figure 1) during routine oil changes. Oil changes are conducted employing drip pans for spill control. Waste oils are transferred to designated waste oil drums located at the generator sites. When full, the drums are transferred to the Hazardous waste material management center (hazmat center). Waste oil-stained rags and filters are also collected in dedicated drums or quatrex bags that are stored in the hazmat storage prior to transport to a designated hazardous waste treatment centre. This awaits personnel training and authorization by the responsible authorities to manifest hazardous waste shipments to a licensed hazardous waste management facility in southern Canada.

### 1.3.3 Main Bulk Fuel Facility

Figure 1 shows the layout of the main bulk fuel facility. The facility contains 15 X 50,000L, 2 X 85,000L and 8 X 100,000L double-walled fuel vaults (total capacity of 1,720,000 litres).
A fuelling area lined and bermed to contain any spills was constructed in 2007 adjacent to the facility. This is the most active fuelling area at the site. A 60 m hose designed for bulk fuel stations in arctic conditions (Plicord Arctic Flexwing – 2 inches) links the fuelling station to the individual double-walled fuel vaults. Two spill kits and fire extinguishers are stationed at the fuelling station to assist in emergency situations. Only trained personnel operates the fuelling station in pair. The fuelling station is located away from road traffic.

### 1.3.4 Drummed Waste

Waste oils, filters, rags, waste fuel, and other contaminants, such as glycol that are housed in dedicated storage drums are stored in the hazmat center (Figure 1). These hazardous wastes are transferred south to a licensed hazardous waste treatment facility during the summer shipping season. This awaits an individual being trained and authorized by the responsible authorities to manifest hazardous waste shipments to a licensed hazardous waste management facility in southern Canada.

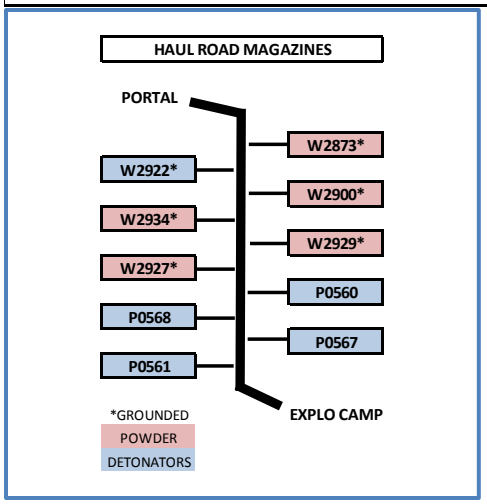
### 1.3.5 Re-supply Route

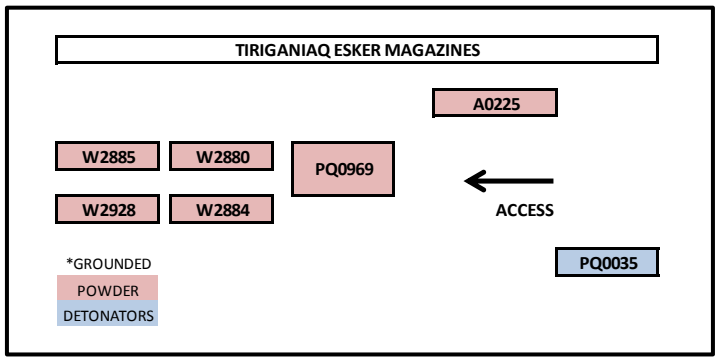
Bulk supplies including fuel for the camp and exploration program are resupply by the all-weather access road from Rankin Inlet.

The route distance from Rankin Inlet to the Meliadine Gold Project exploration camp is approximately 28 km.

### 1.3.6 Explosive Magazines (Figure 1)

| 2014 PERMIT CAPACITIES | | | | | |
|---|---|---|---|---|---|
| Meliadine Magazine | Permit Capacity | Certificate Number | Issued | Expiry Date | Permit Capacity (Meliadine) |
| W 2873 | 10 500 | 2007-0171 | 14/12/2010 | 31/12/2015 | 10 500 |
| W 2880 | 10 500 | 2007-0172 | 30/09/2013 | 31/12/2015 | 10 500 |
| W 2884 | 10 500 | 2007-0173 | 30/09/2013 | 31/12/2015 | 10 500 |
| W 2885 | 10 500 | 2007-0174 | 30/09/2013 | 31/12/2015 | 10 500 |
| W 2900 | 10 500 | 2007-0175 | 14/12/2010 | 31/12/2015 | 10 500 |
| W 2927 | 10 500 | 2007-0177 | 14/12/2010 | 31/12/2015 | 10 500 |
| W 2928 | 10 500 | 2007-0178 | 30/09/2013 | 31/12/2015 | 10 500 |
| W 2929 | 10 500 | 2007-0179 | 14/12/2010 | 31/12/2015 | 10 500 |
| W 2934 | 10 500 | 2007-0176 | 14/12/2010 | 31/12/2015 | 10 500 |
| A 0255 | 35 000 | 2012-0055 | 30/09/2013 | 31/12/2015 | 35 000 |
| PQ0969 | 23 000 | 2013-0094 | 4/10/2013 | 31/12/2015 | 23 000 |
| 227-125 | 20 000 | 2013-0103 | 11/11/2014 | 31/12/2015 | 20 000 |
| | | | | 2014 EXPLOSIVE CAPACITY | 172 500 |
| W 2922 | 25 000 UNITS | 2007-0180 | 11/11/2014 | 31/12/2015 | 25 000 |
| P 0560 | 3 000 UNITS | 2007-0182 | 30/09/2013 | 31/12/2015 | 3 000 |
| P 0561 | 3 000 UNITS | 2007-0182 | 11/11/2012 | 31/12/2015 | 3 000 |
| P 0567 | 3 000 UNITS | 2007-0183 | 30/09/2013 | 31/12/2015 | 3 000 |
| P 0568 | 3 000 UNITS | 2007-0184 | 30/09/2013 | 31/12/2015 | 3 000 |
| PQ0035 | 25 000 UNITS | 2013-0094 | 4/10/2013 | 31/12/2015 | 25 000 |
| 228-125 | 25 000 UNITS | IN PROCESS | - | 31/12/2015 | 25 000 |
| | | | | 2014 DETONATOR CAPACITY | 87 000 |



### 1.3.7 Locations

Spill kits are located habitually, near of fuel tanks, inside machinery and inside vehicles.

Also, an emergency container spill kit is located alongside the all-weather access road at 7.8 km from town at the Meliadine bridge near the AEM Gate House. This container contains a minimum of material that can be used in case of emergency. This location is strategic, because it's located near the bridge. The material included in the container is listed in Appendix B.

### 1.4 Spill Kits and Bladder Repair Kit

Spill kits in bright yellow 200 L containers include:

- basic personal protective equipment including goggles and latex gloves;
- Absorbent materials including pillows, booms, pads and granular substances; and
- Large plastic bags for containing and transferring contaminated absorbent materials.

Additional absorbent is stored in the environment containers.

### 1.5 Secondary Containment / Spill Response Capacity

All long-term bulk fuel on site is stored in double-walled fuel vaults or in drums. Spill kits are stationed at all pump facilities and they are lined if newly constructed or have been provided with spill platforms.

Facilities constructed since 2007 including maintenance tents, storage tanks, and pumping stations are all protected by buried sub-grade impermeable liners.

All spills will be cleaned up by a combination of absorbent materials, containment and collection in empty 205L drums on site. Recovered fuel and absorbent materials used in such operations will be collected in barrels or Q-bags and stored in the hazmat center (Figure 1) to await shipment to a hazardous waste treatment facility.

### 1.6 Contaminated Soils

Spill sites will be identified, monitored and treated with peat moss and fertilizer to enhance plant recovery where growth retardation is evident. Sites that do not respond and do not show any signs of plant growth by the time of site abandonment will become subject to the **Reclamation and closure Plan**. Contaminated soils are stored at a safe location in former bladder berms on impermeable liners and will be subject to the **Reclamation and closure Plan**.

### 1.7 Abandonment and Restoration Plan

The lands that are subject to this Spill Contingency Plan are Inuit Owned Lands belonging to the Kivalliq Inuit Association and are leased to AEM for the purposes of mineral exploration and

development. A revised **Reclamation and Closure plan** has been submitted to the Nunavut Water Board as of August 2013, covering both the Meliadine site and Mel East.

### 1.8 Training

All AEM employees receive spill and waste management training during their initial site orientation, so they are able to respond to small spills and raise the alarm if a larger response is required. ERT members receive more extensive Hazmat training and learn how to respond while wearing personal protective clothing.

The environment department regularly attend tool-box meetings to provide information on spill responses and reporting procedures.

## 2.0 SPILL ACTION PLAN RESPONSE SEQUENCE

### 2.1 THE FIRST OBSERVER SHALL REPORT ALL SPILLS TO

**Environment department and SITE MANAGER** Ph.819-759-3002 (3903 Environment Department) (3906 site manager)

The reporting requirement applies to all spills: on land, on water and on ice, **immediately upon the spill being under control, or on failure to gain control of the situation**.

### 2.2 ALERT AEM Personnel

1. **SPILL OBSERVER** reports to **Environment department** 819-759-3002 (3903) or On site manager (3906)

2. If the spill is more than the amount shown on the "reportable spill table (page iv), report to **MELIADINE GOLD PROJECT Environment Coordinator and notify relevant agencies (section 2.3).**

David Frenette 1 819 874 5980 (3622)
Cell 1 819 355 9271

or

- **Exploration Manager**

Denis Vaillancourt 1 819 874 5980 (3605)
Cell 1 819 354 9023

or

- **Environmental Nunavut Manager**

Stéphane Robert 1 819 759 3700 (5188)
Cell 1 819 763 0229

The reporting requirement applies equally to all substances covered by this contingency plan: fuel, hydraulic oil, lubricants, and waste oil. All reports by telephone must be followed with a fax of the completed form (see Appendix C) to the number indicated on the reporting form.

## 2.3 NOTIFY AGENCIES

| | | |
|---|---|---|
| 24 HOUR NT/NU SPILL REPORT LINE | PHONE | 1 867 920 8130 |
| | **FAX** | 1 867 873 6924 |
| | EMAIL | spills@gov.nt.ca |
| KIVALLIQ INUIT ASSOCIATION | Phone: | 1 867 645 2810 |
| | Phone: | 1 867 645 2800 |
| | Fax: | 1 867 645 2348 |
| ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA | | |
| Iqaluit | | 1 867 975 4275 |
| Nunavut Field Operations | | 1 867 975 4546 |
| Resource Officer, Rankin Inlet | | 1 867 645 2831 |
| ENVIRONMENT CANADA | Iqaluit | 1 867 975 4644 |
| | Yellowknife | 1 867 669 4730 |
| | 24 Hour Number | 1 867 766 3737 |
| FISHERIES AND OCEANS, Rankin Inlet | | 1 867 645 2871 |
| DEPARTMENT OF ENVIRONMENT, NUNAVUT | | 1 867 975 5900 |
| Manager of Pollution Control & Air Quality | | 1 867 975 7748 |
| | Fax | 1 867 979 5981 |

**Emergency Contacts**

| | |
|---|---|
| EMO – Emergency Response (Iqaluit - 24 hrs) | 1 867 766 3737 |
| EMO – Emergency Response – Rankin Inlet | 1 867 645 3625 |
| Rankin Inlet Ground Search and Rescue | 1 867 645 2027 |
| Rankin Municipality (Senior Administrator) | 1 867 645 2895 |
| RCMP – 24 HR EMERGENCY | 1 867 645 1111 |
| Rankin Inlet Health Center | 1 867 645 2816 |
| After Hours | 1 867 645 3311 |
| Midwife (if no answer above) | 1 867 645 4607 |
| Rankin Inlet Fire Department | 1 867 645 2525 |
| Mine Inspector | 1 800 661 0792 |

**2.4 RECORD THE FACTS**

Use Spill Report Form found in Appendix C

**NOT**E: **If the On-Scene Coordinator is not available when a reportable spill is detected, then the spill must be reported directly to NWT 24-hour spill report line without delay.**

**3.0 SPILL RESPONSE ACTION**

**3.1 DIESEL P 50, Hydraulic oil, oil, waste oil, Glycol- SPILL RESPONSE ACTIONS**
**CONSIDER ACTION ONLY IF SAFETY PERMITS!**
**ELIMINATE IGNITION SOURCES, STOP SOURCE OF SPILLED LIQUID IF SAFE TO DO SO**

**ON LAND**

- Do not flush into ditches or drainage systems.
- Block entry into waterways and contain with earth, snow or other barrier.
- Remove small spills with absorbent pads.
- If soil is contaminated, removed the soil and bring it to the hazmat center.

**ON SNOW & ICE**

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with absorbent pads and/or snow.
- Use ice augers and pump to recover diesel under ice.
- Slots in ice can be cut over slow moving water to contain oil.
- Burn accumulated diesel from the surface using Tiger Torches if feasible and safe to do so.

**ON MUSKEG**

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled liquid with pumps, skimmers and absorbent.
- Flush with low-pressure water to direct the spill towards collection point.
- Burn only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low-water table).
- Minimize damage caused by equipment and excavation.

**ON WATER**

- Contain spill as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use absorbent pads to pick up contained oil.
- On larger spills, use skimmer on contained slicks.
- Do not deploy personnel and equipment onto mudflats or into wetlands.

**RIVERS & 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.

**STORAGE / TRANSFER**

- Store closed labelled containers outside, away from flammable items.
- Electrically ground containers and vehicles during transfer.

**DISPOSAL**

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult Environment technicians on disposal procedures.

**3.2 GASOLINE, Jet A & B SPILL RESPONSE ACTIONS**
**CONSIDER ACTION ONLY IF SAFETY PERMITS**

GASOLINE AND JET FUEL FORM VAPOURS THAT CAN IGNITE AND EXPLODE. NO SMOKING

- **ELIMINATE IGNITION SOURCES**
- **STOP SOURCE OF GASOLINE IF SAFE TO DO SO**

**ON LAND**
- Block entry into waterways by diking with earth, snow or other barrier(s).
- Do not contain spill if there is any chance of igniting vapours.
- On shop floors and in work/depot yards, apply particulate absorbents.

**ON SNOW & ICE**
- Block entry into waterways by diking with snow or other barrier.
- Do not contain spill if there is any chance of igniting vapours.
- In work/depot yards, apply particulate absorbents.

**ON MUSKEG**
- Remove pooled liquid with pumps, if safe to do so.
- Do not deploy personnel and equipment on marsh or vegetation.
- Burn CAREFULLY only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low-water table).
- Minimize damage caused by equipment and digging.

**ON WATER**
- Contain or remove spills ONLY AFTER VAPOURS DISSIPATE.
- Use booms to protect water intakes.
- Skimming can be tried once light ends evaporate.

**STORAGE / TRANSFER**
- Store closed, labeled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers and vehicles during transfer.

**DISPOSAL**
- Segregate waste types, if necessary.
- Place contaminated materials into marked containers.
- Consult Environment technicians on transportation and disposal requirements.

**3.3 PROPANE, ACETHYLENE RESPONSE ACTIONS**

**GAS STORED IN CYLINDERS THAT EXPLODE WHEN IGNITED!**

CONSIDER ACTION ONLY IF SAFETY PERMITS

**KEEP ALL VEHICLES INCLUDING SNOWMOBILES AWAY FROM ACCIDENT AREA**

Refer to Product Guide in Appendix A for:

- Physical/Chemical Properties
- Response to Fires
- First Aid

• Vapours cannot be contained when released.

• Water spray can be used to knock down vapours if there is NO chance of ignition.

• Small fires can be extinguished with dry chemical or CO.

• Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

• If tanks are damaged, gas should be allowed to disperse and no attempt at recovery should be made.

• Personnel should avoid touching release point on containers since frost quickly forms.

• Stay clear of tank ends.

**4.0 SPILL RESPONSE CONTACTS**

**Agnico Eagle Mines Limited - Meliadine Gold Project**

TITLE

On-Scene Coordinators

- Environment technician 1 819 759 3002 (3903)

Spill Cleanup Supervisors Meliadine Camp

- Site Manager 1 819 759 3002 ( 3906)

| | | |
|---|---|---|
| **Exploration Manager East Canada** | Denis Vaillancourt | 1 819 874 5880 ext 3605 |
| | Cell | 1 819 354 9023 |
| **Environment Coordinator** | David Frenette | 1 819 874 5980 ext 3622 |
| | Cell | 1 819 355 9271 |
| **Environment Nunavut Manager** | Stéphane Robert | 1 819 759 3700 ext 5188 |
| | Cell | 1 819 763 0229 |

**CONTRACTORS**

| | | |
|---|---|---|
| M & T Enterprises Ltd. Rankin Inlet | 1 867 645 2778 | 1 867 645 2590 |

**OTHERS**

| | | |
|---|---|---|
| Rankin Municipality (Senior Administrator) | 1 867 645 2895 | 1 867 645 2146 |

## 5.0 DUTIES AND RESPONSIBILITIES

Roles and responsibilities of AEM personnel, contractors, and government are described on the following pages.

### AEM and CONTRACTOR PERSONNEL

**Spill Observer** - anyone on route, at fuel cache, camp, or drill site at any time
- Assess the initial severity of the spill and safety concerns.
- Immediately report all spills to the Environment department and/or the site manager and to their supervisor.
- Determine the source of the spill and stop or contain it, if possible.
- Participate in spill response as member of cleanup crew.

**On-Scene Coordinator (OSC**) - AEM Meliadine Environment Technician
- Immediately report the spill the Environment Coordinator and to NWT 24-Hour Spill Report Line at (403) 920-8130.
- Record the time of the report, source of information and details on location, size, and type of spill as well as any other information available on the spill report form.
- Oversee the cleanup operation until it is satisfactorily completed.
- Together with the Spill Cleanup Supervisor, decide if additional equipment is required to contain and clean up spills.
- Notify government agencies, AEM Site Manager and Environment Coordinator on spill details.
- Oversee completion and distribution of Spill Report. Ensure the investigation identifies measures to prevent similar spills in future.
- Participate to training courses for spill response teams.

**Spill Cleanup Supervisors**
- Supervise spill cleanup crew.
- Assist in initial and ongoing response efforts.
- With work crew, take initial action to seal off the source and contain spill.
- Continue actions until relieved or supplemented by other Supervisor.
- Decide with On-Scene Coordinator if mobilization of additional equipment from Spill Response Organization or Contractor is warranted.
- Assess whether burning is a viable clean-up measure; consult with regulatory authorities at spill site.

**Spill Cleanup Crew**
- Conduct cleanup of spills under direction of Spill Cleanup Supervisor(s).
- Deploy booms, absorbents and other equipment and materials as required.
- Take appropriate response measures.
- Continue cleanup as directed by Spill Cleanup Supervisor until relieved.

**Exploration Manager**

- Responsible for all communication with the media.
- Ensure that all press releases are accurate and in accordance with company policy.
- Make financial decisions on major expenses during large spill response.

**Environment Coordinator**

- Provide clean-up advice and directives to the On-Scene Coordinator and Spill Cleanup Supervisor.
- Assist the Exploration Manager in the preparation of press releases, when required.
- Develop safe and effective spill management and prevention practices.
- Provide advice to the Spill Cleanup Supervisor and On-Scene Coordinator for storage and disposal options.
- Update and distribute Spill Contingency Plan.
- Ensure that follow up reports are produced on the spill event, clean up and environmental impacts.
- Ensure On-Scene Coordinator and Emergency Response Team are adequately trained in spill response.

**EXTERNAL RESOURCES** - contractors

AEM Fuel Haul Contractors

- Ensure that their best effort is made to maintain spill equipment which shall be available and be applied to a spill incident on site when required.
- Initiate cleanup in the absence of AEM personnel, however caused.
- Report all spills immediately to the AEM On-Scene Coordinator (OSC) or Site Manager.
- Responsible for the training of their personnel on spill response.
- Develop and maintain company-specific contingency plans for the AEM Meliadine Gold Project, which complies with this AEM Spill Contingency Plan and related policies.

**EXTERNAL RESOURCES - Kivalliq Inuit Association and Nunavut Water Board**

**KIA**

The Meliadine Gold Project exploration program is carried out on Inuit Owned Land administered and managed by the KIA who has issued land use permits to AEM for exploration activities. Inspectors from KIA routinely inspect land use sites for compliance with terms and conditions of permits. While KIA receives data from spills reported to the NWT Spill Line, it is expected that all spills on Inuit Owned Land be reported directly to KIA. The same form as the one used for the Spill Line may be used for reporting to KIA.

**Nunavut Water Board**

The Nunavut Water Board issues water licenses under the Nunavut Land Claims Agreement and the Nunavut Waters and Nunavut Surface Rights Tribunal Act. Conditions of the water license usually include the authorized limits of water use, sources of water use, effluent discharge limits, monitoring and reporting requirements. As well, licenses require that Spill Contingency Plans be submitted for approval. Enforcement of the provisions of the water license is carried out by Inspectors from the Water Resources Division (Department of Indian and Northern Affairs). Periodic inspections are conducted by water license inspectors.

**EXTERNAL RESOURCES - GOVERNMENT**

**Aboriginal Affairs and Northern Development Canada (AANDC)**

The Northern Affairs program of AANDC administers the Territorial Lands Act and Regulations. Through this legislation, land use permits are issued. One of the conditions of land use permits is the requirement to report all spills to a 24-hour government run report line (403-920-8130). Land Use Permits may also address matters of environmental conservation and protection including waste disposal, sources of borrow materials, open pit mining, road alignments, land reclamation and closure requirements. Enforcement of the provisions of the land use permits is carried out by the Operations Division of AANDC through Resource Management Officers located at the District Offices.

Inspection of AEM project activities located on Crown Land by Resource Management Officers is conducted periodically.

AANDC also inspects facilities that have a Water Licence to ensure that terms and conditions are met, and that the effluent quality of any waste released to the environment meets licence limits.

**Environment Canada (EC)**

The Environmental Protection and Conservation Service of Environment Canada administers the Canadian Environmental Protection Act (CEPA) and Section 36 of the Fisheries Act. For the latter, this specifies that unless authorized by regulation, any effluents discharged into fish bearing water must be non-toxic. EC is responsible for providing environmental advice to federal and territorial government agencies and for the preservation and enhancement of environmental quality.

**Department of Fisheries and Oceans (DFO)**

The Department of Fisheries and Oceans (DFO) administers the habitat protection provisions of the Fisheries Act. This includes provisions prohibiting the harmful alteration, disruption and destruction of fish habitat unless authorized. DFO applies a Habitat Management Policy whereby the objective is to achieve a no net loss of fish habitat. On occasion, DFO Inspectors visit spill sites to investigate possible impacts to fish habitats.

## APPENDIX A PRODUCT GUIDES

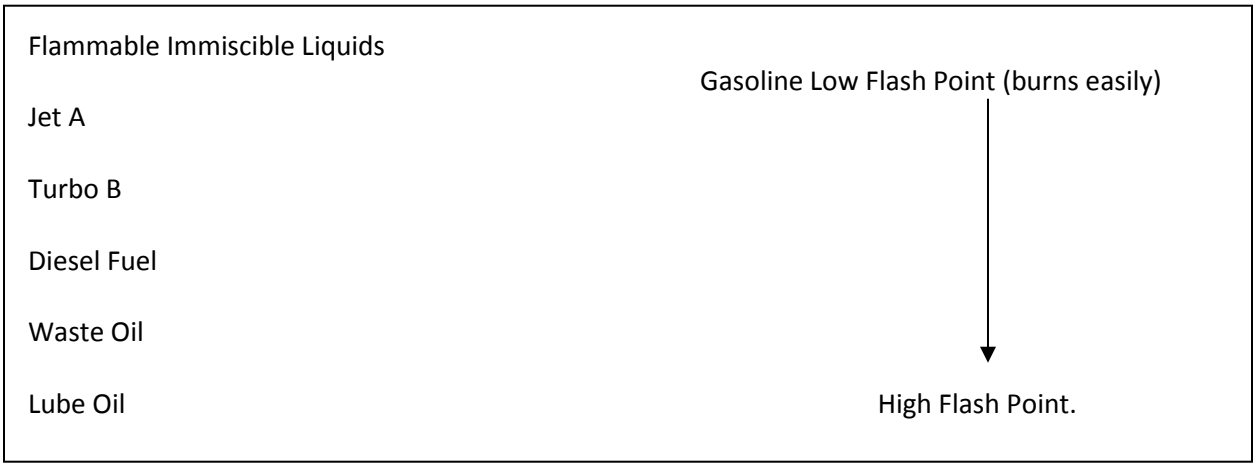
### PRODUCT GUIDES

The materials included in this Plan can generally be divided into two categories:

- Flammable immiscible liquids
- Flammable compressed gases

1 Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions. Gasoline and aviation fuel pose the greatest fire (and safety) hazard and usually cannot be recovered when spilled on water. The remaining materials generally do not pose a hazard at ambient temperatures. They are all insoluble, they float unless mixed into the water column and can be recovered when safety allows.



**DIESEL**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE: Clear, yellow or red | FLASH POINT: 40EC (minimum) |
| ODOUR: Petroleum | POUR POINT: -50 to -6EC |
| SOLUBILITY: Insoluble | VISCOSITY: Not viscous |
| VAPOUR GRAVITY: Will sink to ground level | SPECIFIC DENSITY: Floats on water (0.8 - 0.9) |

SAFETY MEASURES

WARNINGS

- 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, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, 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.

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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

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.
- Remove large spills with pumps or vacuum equipment.

ON WATER
- Use booms to contain and concentrate spill.
- Remove spill using absorbent, skimmer or vacuum truck.
- 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
- 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 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 artificial respiration 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.

**HYDRAULIC OIL**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Straw-yellow liquid
ODOUR: Petroleum
SOLUBILITY: Generally insoluble
VAPOUR DENSITY: Few vapours emitted
FLASHPOINT: 215EC
POUR POINT -25EC
VISCOSITY: Medium (265cSt @ 15EC)
SPECIFIC GRAVITY: Floats on water (0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, 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 fires.
- Shut off fuel supply.
- Extinguish fire with CO2, dry chemical, alcohol foam or water fog.

  NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS

CONSIDER ACTION ONLY IF SAFETY PERMITS!

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 peat moss and/or absorbent pads.
- 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 absorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes/marinas.

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 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 artificial respiration 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.

**LUBE OIL**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE: Amber liquid | FLASHPOINT: 190 to 220EC |
| ODOUR: Petroleum | POUR POINT: -35 to -400EC |
| SOLUBILITY: Generally insoluble | VISCOSITY: Medium (255cSt @15EC) |
| VAPOUR DENSITY: Few vapours emitted | SPECIFIC GRAVITY: Floats on water (0.9) |

SAFETY MEASURES

WARNINGS
- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, 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; nitrile, PVC 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 CO2, dry chemical, alcohol foam or water fog.
  NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

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 absorbent, skimmer or vacuum truck.
- 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 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 artificial respiration 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**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Black to brown liquid
ODOUR: Petroleum
SOLUBILITY: Generally insoluble
VAPOUR DENSITY: Few vapours emitted
FLASHPOINT: 100 to 200EC
POUR POINT: -30 to -400EC
VISCOSITY: Medium (200 - 300 cSt)
SPECIFIC GRAVITY: Floats on water (0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, and dense smoke are produced upon combustion.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, PVC 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 CO2, dry chemical, alcohol foam or water fog.

NOTE: Water or foam may cause frothing.

- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS

CONSIDER ACTION ONLY IF SAFETY PERMITS!

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 peat moss and/or absorbent pads.
- 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 absorbent, skimmer or vacuum truck.
- 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 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 artificial respiration 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.

**GASOLINE**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE: Colorless liquid (can be dyed) | FLASH POINT: -50EC |
| ODOUR: Gasoline/Petroleum | FREEZING PT: -60EC |
| SOLUBILITY: Insoluble | VISCOSITY: Not viscous (< 1 cSt) |
| VAPOUR DENSITY: Will sink to ground levels | SPECIFIC GRAVITY: Floats on water (0.7 - 0.8) |

SAFETY MEASURES

WARNINGS
- 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; nitrile, 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, 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

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 & 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 artificial respiration 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 A**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or pale yellow liquid
ODOUR: Gasoline/Petroleum
SOLUBILITY: Negligible
VAPOUR DENSITY: Will sink to ground levels
FLASH POINT: -20 to - 250EC
FREEZING PT: -50EC
VISCOSITY: Not viscous (<7 cSt)
SPECIFIC GRAVITY: Floats on water (0.75 0.8)

SAFETY MEASURES
WARNINGS
- 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; nitrile and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear 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 CO2, dry chemical, AFFF foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND
- ELIMINATE IGNITION SOURCES.
- Block entry into waterways; do not flush into ditch/drain systems.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with absorbent or explosion-proof pump.

- Cover pools with foam to prevent vapour evolution if avgas presents a fire hazard; otherwise allow vapours to dissipate.

ON WATER
- ELIMINATE IGNITION SOURCES.
- Contain or remove spills ONLY AFTER VAPOURS DISSIPATE.
- Protection booming can be considered for water intakes.
- Recover slicks using skimmer and absorbent, if volumes warrant.

STORAGE & TRANSFER
- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers & vehicles during transfer.

DISPOSAL
- Place contaminated materials in 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 artificial respiration 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.

**PROPANE**

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE: Colorless gas | FLASH POINT: -104EC |
| ODOUR: Natural gas odour | FREEZING PT: -190 EC |
| SOLUBILITY: Insoluble | VISCOSITY: n/a |
| VAPOUR DENSITY: Will sink to ground levels | SPECIFIC GRAVITY: Liquid floats on water |

SAFETY MEASURES

WARNINGS

- 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 burn 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, 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO GAS RELEASES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

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 artificial respiration 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: Colorless gas
ODOUR: Garlic-like
SOLUBILITY: Slightly soluble
VAPOUR DENSITY: Will sink to ground levels
FLASH POINT: -18EC
FREEZING PT: -82EC
VISCOSITY n/a
SPECIFIC GRAVITY: (0.6) Liquid floats on water

SAFETY MEASURES

WARNINGS

- 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; nitrile and Viton are 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO GAS RELEASES

CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND

- ELIMINATE IGNITION SOURCES.
- DO NOT ATTEMPT TO CONTAIN OR REMOVE RELEASES

ON WATER

- ELIMINATE IGNITION SOURCES.
- DO NOT ATTEMPT TO CONTAIN OR REMOVE RELEASES

STORAGE & TRANSFER
- Store closed, labelled containers in cool, ventilated areas away from incompatible materials
- Electrically ground containers & vehicles during transfer.

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 artificial respiration 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.

## APPENDIX B RESPONSE EQUIPMENT INVENTORY

RESPONSE EQUIPMENT INVENTORY

During the exploration phase of the project, spills occurring along the transportation route will be remedied by the appropriate personnel depending on the party responsible for the spill, the location of the spill, and the extent of the environmental threat. Larger spills will involve the coordination of AEM personnel (including the Emergency Response Team) and contractors.

**AEM Inventory (September 2013)**

| Item | Location | Quantity |
|---|---|---|
| Oil Blanket Rolls 30" x 150' | **Seacan 211727-7** | 3 |
| Oil Absorbant Sheets 15" x 19" (white) 100/bag (bag) | **Seacan 211727-7** | 9 |
| HAZMAT Booms 5" x 10' (bags) | **Seacan 211727-7** | 19 |
| HAZMAT Booms 8" x 10' (bags) | **Seacan 211727-7** | 32 |
| Grey All purpose absorbent (clear bag) 40lb bag | **Seacan 211727-7** | 7 |
| Oil gator absorbent (bags) | **Seacan 211727-7** | 17 |
| Rain drain and fitting | **Seacan 211727-7** | 2 |
| Trap cage (wildlife) | **Seacan 211727-7** | 2 |
| Geotube | **Seacan 211727-7** | 2 |
| Remediact Microbial Hydrocarbon Remediation Powder (30lbs pail) | **Seacan 211727-7** | 1 |
| 100' ft contractor boom with 18" skirt (pallet - 5 per pallet) | **Seacan 073900-8** | 3 |
| Secondary containment (2x4 ft) | **Seacan 073900-8** | 3 |
| Secondary containment (2x8 ft) - 4 drum in-line spillpal berm | **Seacan 073900-8** | 6 |
| Secondary containment (4x4ft) | **Seacan 073900-8** | 2 |
| 45 Gal Orange Drums | **Seacan 371649-0** | 6 |
| 45 Gal Blue Drum (Oil Spill Response Kit) | **Seacan 371649-0** | 2 |
| Oil Response Kit in a Bag (box of 5) | **Seacan 371649-0** | 3 box + 2 |
| Yellow drum Oil Spill Response Kit (unit) | **Seacan 371649-0** | 3 |
| White Quatrex Bag | **Seacan 371649-0** | 4 |
| Silt fence | **Seacan 371649-0** | 14 |
| Yellow secondary containment "box" - Poly Safety Pack | **Seacan 371649-0** | 3 |
| 45 Gal Orange drums | **Seacan 12-04** | 11 |
| 45 Gal Plastic blue drums | **Seacan 12-04** | 11 |
| Yellow Ultratech Secondary Containment Spill Pallet | **Seacan 12-04** | 4 |
| Booms 5'' X 10' (4pk) | **Seacan 12-04** | 4 |
| Clear tec Rubberizer Oil Spill Clean-up (5 gal pail) | **Seacan 12-04** | 1 |
| Absorbent pillow 8" x 18" (20pk) | **Seacan 12-04** | 5 |
| Silt fence | **Seacan 12-04** | 1 |
| Yellow Spill Kit in a Bag | **Seacan 12-04** | 10 |
| QUATREX Hydrophobic Spill Kit (Large tote) | **Seacan 12-04** | 2 |
| SP-25 Spaghetti Absorbant - 25 lb bag | **Seacan 12-01** | 2 |
| Socks for Spaghetti Absorbant (filter insert) | **Seacan 12-01** | 9 |
| White QUATREX Bag | **Seacan 12-01** | 20 |
| Black QUATREX Bag | **Seacan 12-01** | 2 |
| QUATREX Hydrophobic Absorbant Booms (5" x 10') - 4pk | **Seacan 12-01** | 16 |
| Black drums | **Seacan 348720-5** | Around 76 |
| Black drums | **Seacan 329090-1** | Around 76 |
| Black drums | **seacan 759444-9** | Around 76 |
| Peat moss (big bags) | **Seacan 12-39** | 8 |
| 55 Gal. salvage drums | **Seacan S-19** | 7 |
| Absorbent roll | **Seacan S-19** | 1/2 seacan |

**Container Spill Kit (on the road)**

| Item | Road Env. Emerg Seacan | Quantity |
|---|---|---|
| Empty drums (Sealed) 45 gal. | **seacan 271029-0** | 4 |
| Quatrex Bags | **seacan 271029-0** | 10 |
| Yellow liner (Q-bag liner) bags | **seacan 271029-0** | 1 |
| Mini Berm 3'x3' | **seacan 271029-0** | 2 |
| Mini berm 2'x3' | **seacan 271029-0** | 4 |
| Spill Kit (what size)! | **seacan 271029-0** | 1 |
| Tarp 8'x10' | **seacan 271029-0** | 3 |
| Universal boom 5"x10' (Chemical) | **seacan 271029-0** | 4 |
| Universal boom 8"x10' (Chemical) | **seacan 271029-0** | 4 |
| Absorbent Sheet | **seacan 271029-0** | 8 |
| Absorbent Roll | **seacan 271029-0** | 5 |
| Absorbent pellet (bags) | **seacan 271029-0** | 10 |
| Long handle round point shovel | **seacan 271029-0** | 3 |
| Chisel point crow bar 16 lbs 57" | **seacan 271029-0** | 2 |
| Ice braker chisel | **seacan 271029-0** | 1 |
| Steel Rod bar (4') | **seacan 271029-0** | 6 |

**Mobile equipment**

**AEM Camp site**

- Snow Machines
- Quads
- 2 Loaders Caterpillar
- Backhoe Caterpillar 420E
- Pick-up
- 2 skidders
- 2 Dozers

Komatsu
Underground equipment
Fuel truck
Snow blower
Snow cat
Boom truck

**M and T Enterprises (867 645 2778)**

Equipment *located in Rankin Inlet that can be used for spill countermeasures includes:*

- 1 740 Champion grader
- 1 BW 75 compactor
- 1 Cat 950 loader
- 1 Cat 966 loader
- 1 Cat D5 dozer
- 1 Cat D6D dozer
- 9 tandem dump trucks
- 1 trash pump
- 1 backhoe
- 1 tractor and end dump
- 1 Cat 966 loader
- 1 Cat D3 dozer
- 1 Cat D6E dozer
- 1 Cat D8K dozer
- 1 5000 gal. skid mounted storage tank

From **Municipality of Rankin Inlet** (645 2525) contact **Fire Department** (645 2895)

Heavy Equipment available:

- portable lighting
- dump truck
- bull dozer
- snow plow
- fire truck.
- front end loader
- backhoe
- grader
- vacuum truck

## APPENDIX C NT -NU 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 NAMED LOCATION | REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN | | |
| 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 | | | |

**PAGE 1 OF _____**

## APPENDIX D FUEL STORAGE MONITORING PROGRAM

The fuel storage monitoring plan will consist of the following weekly inspections conducted by AEM personnel who has been trained in the use of fuel pumping equipment and fuel spill response.

The following inspections will be conducted and recorded on a weekly basis:

1. All tanks, lines, pumps, hoses, valves and fittings will be inspected for leaks or damages.
2. Ensure proper fuel only is dispensed into the correct tanks and barrels for use in the camp and associated exploration work.
3. Ensure that the "No Smoking" signs posted in the area of the fuel tanks are always clearly visible.
4. Ensure that all personnel on site abide by the "No Smoking" rule within the distances outlined in the regulations for fuel tanks.
5. Ensure all spill response equipment and PPE (Personal Protection Equipment) is clearly visible and easily accessible.
6. Fuel levels in all primary tanks checked and compared against the fuel dispensed from each primary tank for each week.
7. Outer tanks checked for fuel leakage from the primary tank.
8. Spill response equipment checked.
9. PPE checked.

## APPENDIX E BASIC CONTENT OF FUEL SPILL RESPONSE KIT

1. Absorbent pads or sheets, booms, pillows, and granular material.

2. Disposable protective gloves.

3. Disposable protective coveralls.

4. Absorbent containment and disposal bags.