AGNICO EAGLE

# AMARUQ GOLD PROJECT

## Spill Contingency Plan

## Exploration Camp, Drill Sites, Portal/Ramp and Quarry

In Accordance with Water License 2BE-MEA1318

Agnico Eagle Mines Limited – Exploration Division

Version 10

March 2016

## EXECUTIVE SUMMARY

Water licence no. 2BE-MEA1318 was issued on June 09, 2008. The Amaruq Exploration Project Spill Contingency Plan was developed to deal with inadvertent petroleum hydrocarbon and hazardous materials spills that may occur during the operations conducted under the Licence. The Plan encompasses activities associated with the camp, drill sites, far afield exploration activities, portal/ramp development, and quarry operations.

The Spill Contingency Plan (SCP) designates lines of authority, responsibility and establishes proper reporting and details action plans in the event of a spill. This plan is applicable to all Agnico Eagle employees and any contractors associated with the Agnico Eagle's exploration projects.

If a major spill were to occur that is beyond the capabilities of the Amaruq site, the Exploration Division can access resources at the Meadowbank Mine. The spill plans for the Meadowbank and Amaruq sites have commonalities in using many of the same protocols, procedures and practises.

## IMPLEMENTATION SCHEDULE

As required by Water Licence 2BE-MEA1318, this March 2016 update of the Plan is immediately effective and subject to any modification proposed by the NWB as a result of its review and approval process.

## DISTRIBUTION LIST

Agnico Eagle – Exploration Manager

Agnico Eagle – Camp Managers

Agnico Eagle – Geology Supervisors

Agnico Eagle – Ramp Contractors

Agnico Eagle – Quarry Operators

Agnico Eagle – Environmental Coordinator

## DOCUMENT CONTROL

| Version | Date (YMD) | Section | Page | Revision |
|---|---|---|---|---|
| 1 | 2012/09/28 | | | Update to include license requirement for the amendment no 2. |
| 2 | 2013/05/22 | 6 | | Addition of the barrels storage procedure |
| 3 | 2013/05/22 | 2.1 | | Spill kits use |
| 4 | 2013/05/22 | 2.2 | | Refuelling during drilling |
| 5 | 2014/10/17 | | | Document adaptation to include Amaruq, complete revision |
| 6 | 2014/02/18 | 2.3 | | Addition information related to the fuel transport |
| 7 | 2015/06/03 | 2.4 | | Addition of the section 2.4 for the drilling on Barge |
| 8 | 2016/01/21 | 2 | | Increased the number of fuel tanks |
| 9 | 2016/02/23 | | | Updated the entire Spill Contingency Plan |
| 10 | 2016/03/15 | | | Added the portal/ramp and quarry to the spill plan |

**Prepared by**

David Frenette

Environmental Coordinator

**Updated by**

John Witteman

Environmental Consultant

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# SECTION 1 • INTRODUCTION

## 1.1 PURPOSE & SCOPE OF THE SPILL CONTINGENCY PLAN

The overall purpose in creating and implementing a spill contingency plan is to minimize the impacts of spills by establishing predetermined lines of response and action plans. This plan has been designed to facilitate effective communication and efficient clean-up of spills of hazardous materials at the Amaruq site and at other exploration areas covered by water licence 2BE-MeA1318. These hazardous materials include:

- Petroleum hydrocarbon liquids such as diesel fuel, gasoline, hydraulic oil; and
- Soluble liquids, such as glycols, and paints.

More specifically, the objectives of this Spill Contingency Plan are to:

- Provide readily accessible emergency information to the cleanup crews, management, and government agencies;
- Comply with federal and territorial regulations and guidelines pertaining to the preparation of contingency plans and notification requirements;
- Promote the safe and effective recovery of spilled materials; and
- Minimize the environmental impacts of spills to water, snow, ice or land.

The preparation of this plan was guided by the following reference documents:

1. Indian and Northern Affairs Canada (INAC) 2007. *Guidelines for Spill Contingency Planning*.

2. Government of Nunavut (GN), *Contingency Planning and Spill Reporting in Nunavut. Guide to the New Regulations.*

3. Government of Nunavut 2002, *Guideline General Management of Hazardous Wastes in Nunavut.*

*4.* Northwest Territories. Resources, Wildlife and Economic Development. Environmental Protection Service. 1988. *Spill Contingency Planning and Reporting Regulations.*

## SECTION 2. • PROJECT DESCRIPTION

The Amaruq Gold Exploration Project, operated by Agnico Eagle Mines Limited, is located approximately 50 km northwest of the Meadowbank mine and 150 km north of Baker Lake. The Project includes the Amaruq exploration camp, drill sites in the vicinity of the camp, far afield exploration activities, quarry operations and the development of a portal/ramp. The Meadowbank exploration camp is presently not being used, its accommodation trailers were relocated to Amaruq and added to the camp. Nevertheless, some exploration work continues in the vicinity of the Meadowbank mine and the pad is used as a temporary laydown area prior to transportation to the Amaruq site.

Fuel at the Amaruq camp site is stored in 35 envirotanks holding 50,000 litres each[1], 2 envirotanks holding 100,000 litres, and 1 envirotank holding 10,000 litres for a total of 1,960,000 litres.

Emergency spill response equipment (i.e. spill kits) are located at all fuel storage locations. Spill kits contain the appropriate type and quantity of equipment and supplies for the volume and type of product present at the storage location. All heavy equipment and light vehicles are equipped with spill kits.

### 2.1 PREVENTION AND INSPECTIONS

The primary step in spill response is to prevent the spill from occurring. Transport, transfer and storage of materials are performed by trained personnel using secondary containment, with well- maintained equipment and containers. Good housekeeping is practiced in storage facilities, loading and unloading zones. All employees and contractors have an extensive orientation upon arriving on site, including spill prevention and spill response. Regular worksite inspections are conducted to identify measures to minimize the risk of spills. All personnel are trained to be aware of the potential hazards associated with the fuel/chemicals with which they are assigned to work.

Agnico Eagle is guided by the following general spill prevention principles:

- Provide up to date and accessible Material Safety Data Sheets (MSDS) for all hazardous materials;
- Carry out daily inspections of fuel/chemical storage areas for spills and leaks;
- Carry out daily inspections of hazardous materials storage areas;
- Train workers in safe work procedures in handling or working with hazardous materials, and in cleaning up spills of the same;
- Encourage workers to take reasonable measures to prevent spills;
- Keep drums/containers sealed or closed;

[1] This assumes that the portal/ramp and quarry are approved.

- Place drums/containers within a suitable form of secondary containment;
- Keep empty drums nearby for the transfer of product from leaking drums;
- Keep storage areas secure from unauthorized access;
- Keep incompatible materials segregated;
- Ensure chemical storage areas are adequately protected from weather and/or physical damage;
- Provide adequate spill response materials at storage areas (details on spill prevention equipment and supplies are outlined in Section 8); and
- Have a spill kit including shovel, barrels, absorbents, etc., readily available at all locations where fuel is being stored or transferred in order to provide immediate response in the event of a spill.

## 2.2 REFUELLING DURING DRILLING

Refueling will not take place below the high water mark and will be carried out in a manner to prevent hydrocarbons from entering any water body. Additionally, spill response equipment and supplies will be readily available during refuelling

## 2.3 FUEL TRANSPORT ON THE WINTER ROAD

Fuel is transported over the winter road using double walled tanks mounted on skids and pulled by tractor. This reduces the risk of spills.

Spill kits are carried by the tractors and also located at Amaruq and Meadowbank camps. These are available for use in the event of a spill during transportation and fuel transfer to the envirotanks. A mobile spill response trailer is located at Meadowbank and one is to be located at Amaruq once the proposed access road is completed. These allow necessary spill response equipment and supplies to be taken to spill sites along the winter road and elsewhere.

The tractors carry radios and satellite phones to facilitate communication with Agnico Eagle in the event of an emergency situation.

## 2.4 DRILLING FROM THE BARGE

Drilling from the barge uses specialized protocols to minimize risks of contaminating the lake. This includes that fuel will be transported and stored in double walled tanks. When fuel tanks are placed on the deck of the barge, they have tertiary containment in the form of a basin holding the tanks. Other hazardous products such as oil and glycol will be used on the barge in limited quantities and have secondary containment.

Water management is described in the document*, "Waste Management Plan addendum: Drilling from a Barge"*. The Plan describes the management of risks associated with accidental petroleum hydrocarbon and hazardous materials spills on or from the barge.

A further contingency measure is the installation of an oil boom around the drill rig while it is in operation. This boom is hydrophobic and represents a protective measure as it will absorb hydrocarbons that could be present in the waste water resulting from drilling.

A modified spill kit specific to drilling from a barge is located on its deck. To allow an effective and rapid response, it includes a boom to be deployed in the lake in the event of a spill. Further spill response equipment and supplies are available at the Amaruq exploration camp should they be required.

### 2.5 QUARRY OPERATIONS AND PORTAL/RAMP DEVELOPMENT

Spill kits are to be located in the garage for underground equipment maintenance and repair, at the refuge station closest to the working face in the ramp, and near the crusher. The garage floor is to have an impermeable liner to capture small spills that may occur in maintaining or repairing underground equipment. The location of the spill kits will allow rapid spill response that might occur in the garage, quarry or underground.

## SECTION 3. • DEFINITIONS

### 3.1 WHAT IS A SPILL?

For the purposes of this plan, a major spill is defined as an accidental release of product into the environment that has the potential for adverse impact. The Amaruq Emergency Response Team (ERT) is immediately notified when a major spill or emergency occurs. Should the spill be too large for the Amaruq ERT to handle, the Meadowbank ERT will be called for assistance.

A minor spill is defined as any hazardous chemical spill that does not involve highly toxic, highly reactive, or explosive chemicals in a situation that is not life threatening. Furthermore, this type of spill presents a manageable physical or health hazard to personnel who, when wearing proper personal protective equipment, will not be exposed to any chemical at a level that exceeds any recognized action level or permissible exposure limit. Minor or simple spills are still to be reported to the Environment Department but they are not expected to involve emergency responders.

### 3.2 MATERIALS AND REPORTABLE SPILLS ON SITE

As a precaution, if there is any doubt as to whether the quantity spilled meets the minimum reportable thresholds listed in Table 1, the spill incident will be reported. Furthermore, Agnico Eagle will maintain a detailed log of all spills of hazardous materials, including non-reportable spills. As part of Agnico Eagle's overall environmental management system and in the spirit of a continuous improvement of environmental performance, procedures are implemented to encourage all employees to communicate non-reportable spill incidents.

To ensure compliance with Section 36(3) of the *Fisheries Act* and Section 35 of the *Migratory Bird Regulations* all spills of fuel or hazardous materials, regardless of quantity into a water body, shall be immediately reported to the NT-NU 24-HOUR SPILL REPORT LINE (867.920.8130).

**Table 1. Spill Quantities that Must Be Reported to the NT-NU 24-HOUR SPILL REPORT LINE**

| *Transportation Class* | *Type of Substance* | *Compulsory Reporting Amount*[1] |
|---|---|---|
| 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 |

[1] L = litre; kg = kilogram; PCB = polychlorinated biphenyls; ppm = parts per million.

## SECTION 4 • RESPONSE ORGANIZATION

This section addresses the response organization and the responsibilities of each individual during a response to a spill incident.

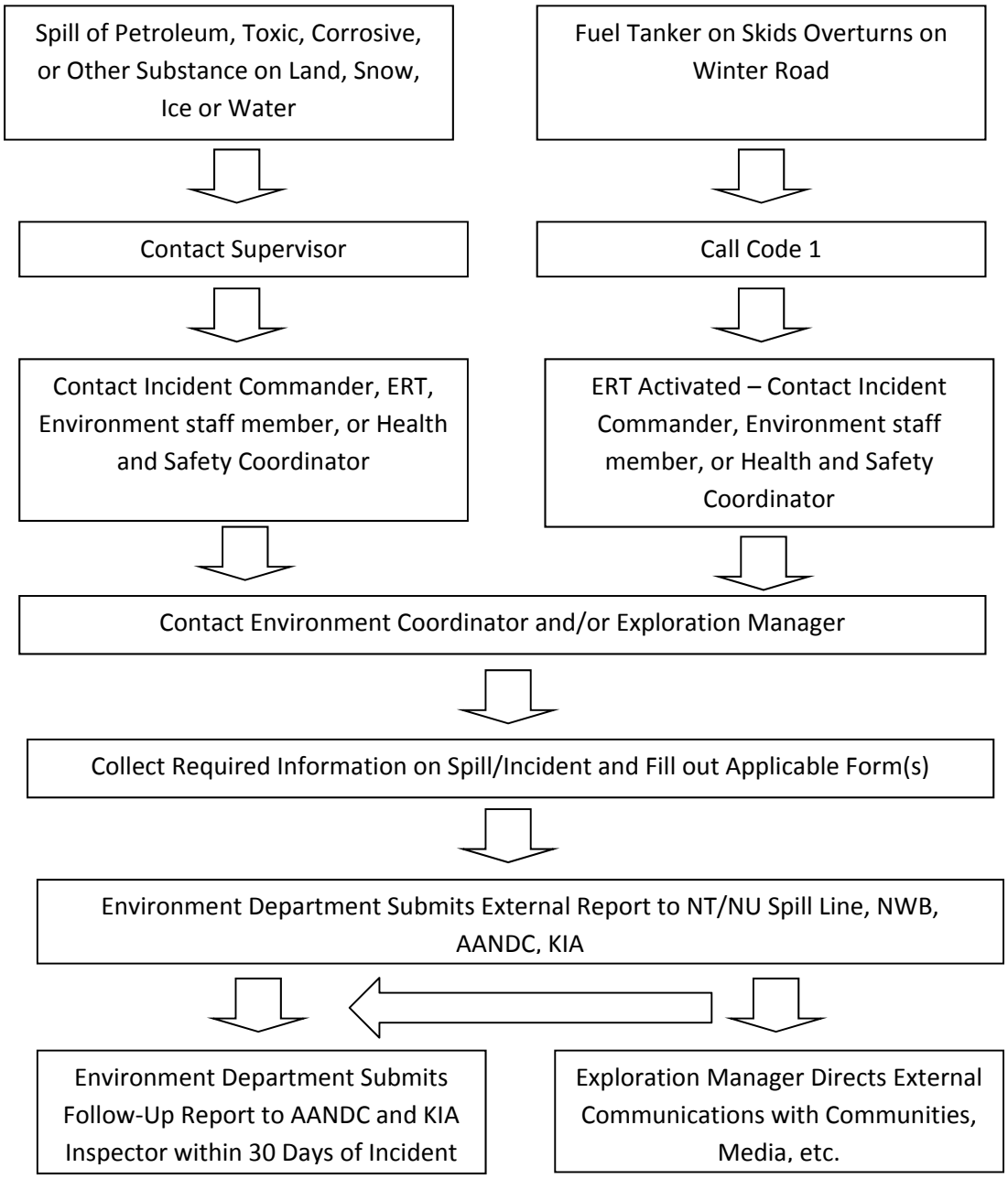
Figure 1 illustrates Agnico Eagle's Spill Reporting Procedure in the event of a spill and Sections 4.1- 4.9 list the major responsibilities of site staff that participate in a spill response.

The first person (first responder) to notice, or come in contact with, any spill situation either initiates a Code 1 (example: in the case where a fuel tanker on skids and pulled by a tractor overturns on the winter road), or reports to his/her immediate supervisor (in the case of all other spills on land, snow, ice or water). The supervisor is responsible for reporting the incident to the designated Incident Commander for a major spill or to the environment department in the event of minor spill. If a Code 1 is initiated, the incident commander will respond to any emergency in conjunction with the Emergency Response Team (ERT). Major responsibilities such as initial coordination, spill clean-up and mobilizing the ERT are part of the Incident Commander's duties.

The Incident Commander will contact the on-site Environmental staff member and/or Site Manager or alternate, who in turn will inform the Exploration Manager and/or Environment Coordinator. After all the information has been collected, the Environmental staff member or alternate will submit an initial spill report to the NWT/NU Spill Line, Nunavut Water Board, Kivalliq Inuit Association and Aboriginal Affairs and Northern Development Canada. Within 30 days of the initial report, a detailed, updated spill report will be sent to all parties indicating the actions taken to clean-up the spill and what was done with the waste resulting from the cleanup.

Incidents that require media communications will be the responsibility of the Exploration Manager or alternate.

**Figure 1. Major spill/incident reporting procedure**



### 4.1 First Responder

The person who causes a spill, or the first to observe a spill, is the first responder. The responsibilities of the First Responder are as follows:

- Initiate Code 1 in case of a tanker on skids and tractor overturning on the winter road;
- Remain on the radio to provide guidance to the ERT;
- In case of spill to land, snow, ice or water, contact the Supervisor to report the incident;
- Identify spilled product and contain the spill, IF SAFE TO DO SO; and
- Participate in spill response as a member of the cleanup crew.

### 4.2 Supervisor

The responsibilities of the Supervisor are as follows:

- Initially assess the severity of the incident;
- Contact the Incident Commander;
- Gather facts about the spill; and
- Participate in spill response as a member of the cleanup crew.

### 4.3 Incident Commander

Responsibilities of the Incident Commander (IC) are as follows:

- Assume complete authority over cleanup personnel and the spill scene;
- Assume responsibility for all mitigation efforts;
- Evaluate the initial situation and assess the magnitude of the problem;
- Activate the initial response plan;
- Alert and assemble key personnel in the ERT, as deemed appropriate, to handle the situation;
- In consultation with the Environment staff member or designate, develop the overall plan of action for containment and cleanup and direct and implement the plan;
- Ensure assigned responsibilities are carried out and the activities of team members are coordinated;
- Assess the requirements for people, equipment, materials, and tools to contain the spill in light of what resources are immediately available - urgency will depend on the nature of the spill; and
- In consultation with the Environment staff member or designate, mobilize any additional resources that may be required and arrange for the transportation of necessary personnel and/or materials to the spill site.

### 4.4 Emergency Response Team

Agnico Eagle Exploration will have an Emergency Response Team (ERT) at Amaruq that will be trained and is responsible for responding to large spills and emergencies. For example, they will be called upon

to respond to spills from a possible tractor and tanker rollovers along the winter road and at the tank farm. These team members will attend regular training sessions in spill and emergency response.

### 4.5 Emergency Response Team Coordinator

The responsibilities of the Emergency Response Team Coordinator (ERTC) are as follows:

- Mobilize all ERT personnel, equipment, Personal Protective Equipment (PPE) and supplies as required to the site of the spill;
- Assist the Incident Commander in obtaining any additional resources not available on-site;
- Ensure that appropriate PPE is worn and used properly;
- Assist in developing and implementing emergency response training programs and exercises; and
- Ensure that all spill response personnel receive adequate training to fulfil their responsibilities as part of the ERT.

### 4.6 Environment Staff Member on site

The Environment Staff member or designate are responsible for implementing and maintaining the SCP. In addition, the responsibilities of the Environment Staff member or designate will be as follows:

- Liaise with the Incident Commander;
- Provide technical advice on the anticipated environmental impacts of the spill;
- Advise on the effectiveness of various containment, recoveries, and disposal options, and suggest the most appropriate approach;
- Prepare and submit any formal report (see Appendix A for NT/NU Spill Report Form) to regulators and AEM management detailing the occurrence of a spill;
- Contact the Exploration Manager and Environment Coordinator immediately in case of a major spill;
- Act as the spokesperson with regulatory and government agencies;
- If authorized by the Exploration Manager or delegate, act as a spokesperson with the public and media, as required;
- Implement a sampling protocol for the collection and analysis of samples to identify and monitor possible contaminant levels resulting from the spill;
- Ensure on-site resources for spill response and cleanup are available;
- Monitor the effectiveness of the cleanup operation and recommend further work, if necessary;
- Review incident occurrences and recommend preventative measures; and
- Assist in implementing training and simulation requirements for spill response personnel.

### 4.7 Site Manager

The Site Manager or designate is required to inform ERT members of the detailed nature of the operations to be performed in the event of a facility malfunction causing a spill. The responsibilities of the Site Manager or designate will be as follows:

- Liaise with AEM personnel resources and keep them informed of cleanup activities; and
- Assist the Incident Commander and ERT as needed, particularly in obtaining any additional personnel and resources not available on-site for spill response and cleanup.

### 4.8 Health and Safety Coordinator

The following are the responsibilities of the Health and Safety Coordinator or designate in conjunction with the Training Department:

- Maintain emergency and health and safety records;
- Assist in conducting emergency spill response exercises;
- Track all emergency and health and safety training that on-site staff have received, and when retraining is required;
- Notify the Incident Commander (related to ERT) when retraining is required;
- Ensure that employees are retrained in appropriate emergency response skills prior to expiry of existing training certification, e.g., Workplace Hazardous Materials Information System (WHMIS), Hazard Communication (HAZCOM), Occupational Health and Safety Administration (OHSA), first aid, respirator fit-testing; and
- Consult with appropriate organizations regarding retraining requirements and schedule.

### 4.9 On-Site Health Care Providers

On-site medics' responsibilities are to:

- Provide on-site first aid and other medical support; and
- Provide additional training for ERT members.

In addition to the health care providers on-site, the Meadowbank Mine and Baker Lake health professionals will be called for assistance, if required.

### 4.10 Emergency Response Team Contact Information

Internal contact information is presented in Table 2 for all Agnico Eagle personnel involved in spill recovery and reporting. Table 3 provides contact information for Agnico Eagle contractors present at the Amaruq and Meadowbank sites. Important external contacts such as regulatory agencies and health organizations are listed in Table 4. Table 5 provides contact information for external contractors should the incident warrant assistance from outside sources[2].

[2] These tables are to be updated frequently due to the changing nature of activities at the Amaruq site.

**Table 2. Internal Contacts**

| Title | Name | Telephone No. |
|---|---|---|
| Environmental Staff member | Nicolas Saucier/Cedin Bonhomme | 867.759.3555 ext.6808 |
| Health and Safety Coordinator | Mike Malocsay | 867.759.3555 ext. 6774 |
| Emergency Response Team | TBD | TBD |
| Incident Commander | TBD | TBD |
| Exploration Manager | Denis Vaillancourt | 819-874-5980 ext 3605 |
| Exploration Environmental Coordinator | David Frenette | 819-874-5980 ext 3622 |
| On-site Medics | On-site Nurses | 867.793.4610 ext.6734 |

**Table 3. Contractor Contacts**

| Title | Telephone No. |
|---|---|
| Orbit Garant | 891.759.3555 ext. 6815 |
| Underground Contractor | TBD |

**Table 4. External Contacts**

| Organization/Authority | Telephone Number | Fax Number |
|---|---|---|
| NT-NU 24-Hour Spill Report Line | 867-920-8130<br>spills@gov.nt.ca | 867-873-6924 |
| Workers Safety and Compensation Commission | 867-979-8637 | 867-979-8501 |
| Kivalliq Inuit Association | 867-645-5725 | 867-645-2348 |
| Nunavut Water Board | 867-360-6338 | 867-360-6369 |
| AANDC Inspector | 867-645-2830 | 867-645-2592 |
| Environment Canada, Enforcement Branch | 867-975-4644 | 867-975-4594 |
| Department of Fisheries and Ocean (DFO), Nunavut Regional Office | 867-979-8000 | 867-979-8039 |
| Manager, Environmental Protection, Government of Nunavut | 867-975-7748 | 867-975-5981 |
| Kivalliq Health Services – Baker Lake (Health Centre) | 867-793-2816 | 867-793-2813 |
| Baker Lake Hamlet Office | 867-793-2874 | |
| Baker Lake Fire Emergency | 867-793-2900 | N/A |

**Table 5. External Spill Response Contractor Phone Numbers**

| Local Contractor | Telephone Number | Area of expertise |
|---|---|---|
| Baker Lake Contracting & Supplies | 867.793.2831 | General |
| Peter's Expediting | 867.793.2703 | Transportation |

## SECTION 5 • ACTION PLAN

Spills may be the result of any of the following events:

- Tanks, drums or containers may develop leaks or rupture;
- Failure of equipment such as valves, piping or containment structures;
- Overfilling;
- Improper storage;
- Spills during transfer of fuel, chemicals or waste products; and
- Spills resulting from accidents during transportation.

### 5.1 INITIAL ACTION

For all spill emergencies, it is required that priority actions be undertaken. These are:

- Respond Quickly;
- Ensure Safety; and
- Report the Spill.

#### 5.1.1 Respond Quickly

- Identify the spilled material;
- Be alert – ensure safety of yourself and others by notifying them of the incident;
- Shut off ignition sources such as vehicles and unplug electrical equipment – NO SMOKING;
- Attend to the injured;
- Assess the severity of the spill;
- Contact the Incident Commander, identify the location and request assistance as required, and the Incident Commander will mobilize the Emergency Response Team if required.

The primary form of ensuring safety is by using preventative measures. All personnel who deal with chemicals must have training in first aid and safe materials handling, including the Workplace Hazardous Materials Information System (WHMIS). In addition, regular training updates and site-specific exercises / drills are integral to preventing incidents.

#### 5.1.2 Respond Safely

- Consult the MSDS and Product Guides for further information on the substance;
- Keep people away from spill site;
- Wear appropriate PPE such as impervious clothing, goggles, and gloves when containing the spill
- Approach spill from upwind IF IT IS SAFE TO DO SO;

- Assess whether the spill, leak, or system failure can be readily stopped or brought under control;
- Stop product flow or leak if possible and IF IT IS SAFE TO DO SO;
- Do not contain compounds (e.g. gasoline, aviation fuel) if vapours might ignite – allow them to evaporate; and
- Depending on the type of compound spilled and IF IT IS SAFE TO DO SO, contain product using booms, berms, absorbent pads, earthen dykes, trenches or improvise with materials at hand.

### 5.1.3 Report Spill

- Obtain all the necessary information to complete the external reportable spill report. External reportable spills must be reported to the NWT-NU 24 Hour Spill Line/AANDC/Kivalliq Inuit Association (KIA) and the Nunavut Water Board by Agnico Eagle Environment Staff.
- A detailed spill report, no later than 30 days after reporting the spill, will be submitted to the AANDC Water License Inspector and the KIA Land's Inspector by Agnico Eagle Environment Staff. This report will contain the amount and type of spilled product, the GPS location of the spill and the measures taken to contain, clean up and restore the spill site.

Procedures will vary depending on the season and hazardous material lost. The MSDS must be consulted to ensure that safety procedures are followed. Response procedures specific to spills on land, water, snow and ice are presented in the following sections as general guidelines.

## 5.2 SPILLS ON LAND

Response to spills on land will include the general procedures detailed in the following section. The main spill control techniques for spilled liquids involve the use of two types of barriers: dykes and trenches. Barriers should be placed down-gradient (down-slope) from the source of the spill, and as close as possible to the source of the spill. Barriers will slow the progression of the spill and will also serve as containment to allow recovery of the product spilled.

Depending on the volume spilled, the site of the spill as well as available material, a dyke may be built with soil, booms, lumber, snow, etc. A plastic liner should be placed at the foot of and over the dykes to protect the underlying soil or other material and to facilitate recovery of the spilled product. Construct dykes in such a way as to accumulate a thick layer of free product in a single area (V-shaped or U shaped).

Trenches are useful in the presence of permeable soil and when the spilled product is migrating below the ground surface. A plastic liner should be placed on the down-gradient edge of the trench to protect the underlying soil. If petroleum hydrocarbons were spilled, liners should not be placed at the bottom of the trench to allow water to continue flowing underneath the layer of floating petroleum hydrocarbons.

The use of large quantities of absorbent materials to recover important volumes of spilled product should be avoided. Large volumes of free-product should be recovered, as much as possible, by using vacuums and pumps, and containerized. If petroleum hydrocarbons were spilled, mixtures of water and petroleum hydrocarbons may be processed through an oil-water separator. Absorbent sheets should be used to soak up residual petroleum products on water, on the ground (soil and rock), and on vegetation. Peat moss may also be sprinkled on vegetation to absorb films of petroleum products.

### 5.3 SPILLS ON WATER

Response to spills on water will include general procedures such as containment diversion and recovery techniques. The following elements must be taken into consideration when conducting response operations:

- type of water body or water course (lake, stream, river)
- water depth and surface area
- wind speed and direction
- type of shoreline
- seasonal considerations (open-water, freeze-up, break-up, frozen)

Containment of an oil slick in water will require the deployment of mobile floating booms to intercept, control, contain and concentrate (i.e., increase thickness) the floating oil. One end of the boom will be anchored to shore while the other will be towed by a boat and used to encircle the oil slick and return it close to shore for recovery using a skimmer. Reducing the surface area of the slick will increase its thickness and thereby improve recovery. Mechanical recovery equipment (i.e., skimmers and oil/water separators) will be mobilized to site, if required.

Measures will be taken to protect sensitive and accessible shoreline. The oil slick will be monitored to determine the direction of migration. In the absence of strong winds the oil will likely flow towards the discharge of the lake. Measures will be taken to block and concentrate the oil slick at the lake discharge using booms where it will subsequently be recovered using a portable skimmer, a vacuum, or sorbent materials.

In small slowly-flowing rivers, streams, channels, inlets or ditches, inverted weirs (i.e., siphon dams) will be used to stop and concentrate moving oil for collection while allowing water to continue to flow unimpeded. In the case of floating oil in a stream heading for a culvert (i.e., at a road crossing), a culvert block will be used to stop and concentrate moving oil for collection while allowing water to continue to flow unimpeded. In both cases the oil will then be recovered using a portable skimmer or sorbent materials.

In the case of spills in larger rivers, with fast moving currents, diversion booming will be used to direct the oil slick ashore for recovery. Single or multiple booms (i.e., cascading) may be used for diversion.

Typically, the booms are anchored across the river at an angle. The angle will depend on the current velocity. Choosing a section of the river that is both wider and shallower will make boom deployment easier. Diversion booming may also be used to direct an oil slick away from a sensitive area to be protected.

### 5.4 SPILLS ON SNOW AND ICE

In general, snow and ice will slow the movement of petroleum hydrocarbons. The presence of snow may also hide the oil slick and make it more difficult to follow its progression. Snow is generally a good natural sorbent, as hydrocarbons will have a tendency to be soaked up by snow through capillary action. However, using snow as a sorbent material will be limited as much as possible. Snow and frozen ground will also prevent petroleum products from migrating down into soil or at least slow the migration process. Ice will prevent seepage of petroleum products into the water.

Most response procedures for spills on land may be used for spills on snow and ice. The use of dykes (i.e., compacted snow berms lined with plastic sheeting) or trenches (dug in ice) will slow the progression of the petroleum products and will also serve as containment to allow for its recovery.

Free-product will be recovered by using a vacuum, a pump, or sorbent materials. Contaminated snow and ice will be scraped up manually or using heavy equipment depending on volumes. The contaminated snow and ice will be placed in containers or within plastic lined berms on land.

### 5.5 SPILLS ON LAND WITHIN 31 METERS OF A WATER BODY

When drilling within 31 metres of a water body, the following conditions will apply:

- Drilling is only to occur within 31 metres of a water body during winter;
- The drill pad is to be on stable ground such as frozen tundra or bedrock;
- All sumps and fuel caches shall be located at a distance of at least 31 metres from the high water mark of any adjacent water body. However, an exception to this condition allows for a limited quantity of fuel required to support the drilling operation to be within 31 metres; and
- All fuel must be in a secondary containment.

In the event of a spill within 31 metres of a water body, a combination of spill response protocols for land and snow will be employed.

### 5.6 DISPOSAL OF SPILLED MATERIAL

All contaminated spill pads and booms are to be placed in Quatrex bags or drums, and contaminated water is to be placed in drums for shipment to an approved disposal facility. All petroleum hydrocarbon contaminated soils are to be removed to the Meadowbank mine for treatment in its landfarm. Soils contaminated with other hazardous materials will be packaged for shipment to an

approved disposal facility.

## SECTION 6 • HAZARDOUS MATERIALS STORED ON SITE

Exploration activities will use a limited variety of petroleum products and other hazardous materials. All these products are considered as potential environmental and safety hazards.

Material Safety Data Sheets (MSDS) of all materials transported, stored and used on-site will be made available at strategic locations near storage areas of hazardous materials or toxic substances, or where they are used.

Table 6 identifies the predominant hazardous materials transported, stored and generated at the site.

**Table 6. Hazardous Materials Stored at Site**

| Material | Maximum Amount Present Onsite | Storage Location |
|---|---|---|
| Acetylene | 30 cylinders | Camp Site |
| Diesel Fuel | 1,750,000 litres | Camp Site |
| Ethylene Glycol | 2000 litres | Camp Site |
| Grease | 2000 kg | Camp site |
| Jet Fuel | 200,000 litres | Camp site |
| Oil | 5,000 litres | Camp site |
| Propane | 100 cylinders | Camp site |
| Gasoline | 10,000 litres | Camp site |

When barreled fuel is used, the barrels must be located in a secondary containment as self-supporting insta-berm, tank palette or a constructed lined berm. When the portal/ramp program commences, ammonia nitrate will be another hazardous material stored and used on site.

## SECTION 7 • POTENTIAL SPILL ANALYSIS

In order to prepare for an emergency spill response, a potential spill analysis was conducted on various worst case scenarios. The exercise serves to identify potential risk areas, as well as to determine the fate of spilled products and their environmental effects. One potential scenario identified for the Amaruq Project centres on the winter road between Meadowbank Mine Site and Amaruq where the contents of a double walled tanker on skids spills its load onto ice.

**Scenario #1: Road Accident Tractor and Tank on Winter Road**

Description of incident: Spill the contents of a tanker on skids onto the ice during transport from the Meadowbank Mine Site to the Amaruq Project.

Potential causes: Vehicle accident, human error

Hazardous products spilled: Diesel fuel

Maximum volume spilled: 10,000 litres.

Immediate receiving medium: Ice and snow on a lake.

Distance and direction to nearest receiving body of water: Spill is on ice

Resources to protect: Lake and downstream water courses

Estimated emergency response time: Maximum time is 2 hours depending on location of spill (assuming tractor driver is injured and cannot commence spill response procedures). Minimum time to respond to a spill on the Winter Road is 60 minutes depending on the location of the spill.

Spill response procedures: Contain and recover oil slick on the ice as described in Section 5.4, minimizing the spread of the spill on ice and keeping it from spreading under the snow using sorbent materials.

Collect free product for temporary storage. If the response crew arrives before the completion of the spill response, seal the leak where feasible, contain and recover diesel spill using snow dykes or trenches as described in Section 5.4. If the truck driver is not injured, he/she will act as a first responder and immediately initiate the spill contingency plan as defined in Section 5 using the spill kit carried on the tractor.

## SECTION 8 • RESPONSE EQUIPMENT

### 8.1 GENERAL EQUIPMENT

This section addresses the emergency response machinery, equipment, tools and other resources that will be made available on-site for spill counter measures.

Mobile Equipment available for spill response at Amaruq include:

- Helicopter
- Backhoe
- Snowmobiles
- ATVs
- Mini excavator
- Excavator
- Dump truck
- Generators

If required, additional equipment is available at Meadowbank to assist in spill recovery. This includes:

- Graders
- Cranes
- Snowmobiles
- Vacuum Truck
- Loaders
- Backhoe
- Bulldozer
- Forklift
- Water Trucks
- Excavators
- Winch Trucks
- Pickup Trucks
- Generator Sets
- Fire Truck
- Aluminum Boats
- Fuel Trucks
- Bobcat
- Haul Trucks
- Snow Cat

Temporary containment systems available on site include:

- Booms;
- Drums;
- Tanks;
- Spill absorbent material packages/pads; and
- Silt fencing.

Emergency means of transportation that will be used in an emergency situation are:

- Aircraft (fixed wing or helicopter);
- Snow Cat

- 4-wheel drive vehicles;
- Snowmobiles; and
- Boats.

Communication equipment onsite includes radios, telephones and other wireless communication systems that will be used in the event of an emergency situation.

A mobile trailer having spill response equipment and supplies will be located at the Amaruq site once the proposed access road from Meadowbank to Amaruq is completed. Spill Response Kits are strategically located throughout the camp site where required. Each department and work area is responsible for providing sufficient spill response kits in their respective work areas. The kits are kept in marked and accessible locations. The locations include all fuel storage areas, chemical storage areas and areas where these products are used or transferred.

All mobile equipment on site (heavy equipment) carry an emergency spill kit. If required, external resources are available at Meadowbank, in the hamlet of Baker Lake and from the contacts provided in Table 5. Spill response supplies located at the Meadowbank and Amaruq sites includes items listed in Table 7.

**Table 7. Spill Response Supplies available at Meadowbank and/or Amaruq**

| Material | Description of Use | Number |
|---|---|---|
| Resorb universal matting roll | Universal | 5 |
| Resorb universal matting | Universal | 10 |
| Resorb oil matting roll | Petroleum hydrocarbons only | 30 |
| Boom 510 (5 inches) | Petroleum hydrocarbons only | 1 pallet |
| Boom 810 (8 inches) | Petroleum hydrocarbons only | 1 pallet |
| Oil dri quicksorb | Petroleum hydrocarbons only | 1 pallet |
| Oil pillow | Petroleum hydrocarbons only | 2 boxes |
| Yellow oil spill kit | Petroleum hydrocarbons only | 3 |
| Quatrex bags | Black no. 27 | 1 pallet |
| White quatrex bags | For used batteries | 5 bags |
| Boom 2-12 | Non-absorbent | 200 feet |
| Containment pallet | 05UT1112 | 4 |
| Silt fence | 36 inches by 100 feet | 4 |
| Peat moss | 5 pound bag | 20 |
| Plug pattie | Plugs holes in tanks | 2 |
| Drums with lids | 205 litres | 20 |
| HDPE liner roll | 1.5 mm thickness | 1 |
| Geotextile roll | | 1 |

If required, external resources are available at Meadowbank, in the hamlet of Baker Lake and from the contacts provided in Table 5.

## SECTION 9 • TRAINING AND EMERGENCY SPILL EXERCISE

### 9.1 TRAINING of Onsite Personnel

Every employee at Agnico Eagle receives spill and waste management training during their initial site orientation. This enables them 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.

At the Meadowbank mine, a designated ERT consisting of on-site personnel was established. Agnico Eagle ensures that the ERT is trained and present at all times. All members of the team are trained and familiar with emergency and spill response resources, including their location and access, the SCP, and appropriate emergency spill response methodologies. The ERT has up to 40 members, each of whom train 8 hours per month. In the event of an emergency requiring outside help, the Meadowbank ERT would be called on. It would travel to Amaruq either by air or winter road.

An ERT modelled on the one at Meadowbank was established at Amaruq and is trained to respond to emergencies and spills. The training of the Amaruq ERT includes the following:

- A review of the spill response plan and responsibilities of the ERT members;
- The nature, status, and location of fuel and chemical storage facilities on-site;
- The on-site and off-site spill response equipment and how to use it;
- Emergency contact lists;
- Desktop exercises of “worst case” scenarios; and
- The likely causes and possible effects of spills.

The Amaruq Environmental Department regularly attends tool-box sessions to provide information on spill response and reporting procedures.

## SECTION 10. • LIST OF ACRONYMS

| | |
|---|---|
| AWPAR | All Weather Private Road |
| DFO | Fisheries and Oceans Canada |
| EMS | Environmental Management System |
| ERP | Emergency Response Plan |
| ERT | Emergency Response Team |
| ERTC | Emergency Response Team Coordinator |
| GN | Government of Nunavut |
| INAC | Indian and Northern Affairs Canada |
| LEL | Lower Explosion Limit |
| Agnico Eagle | Agnico-Eagle Mines Limited |
| MSDS | Material Safety Data Sheet |
| PCB | Polychlorinated Biphenyls |
| PPE | Personal Protective Equipment |
| SCP | Spill Contingency Plan |
| TBD | To Be Determined |
| WHMIS | Workplace Hazardous Materials Information System |

# Appendix A

## NWT/NU Spill Report Form

# 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 | | | |