MEADOWBANK COMPLEX

Spill Contingency Plan

Meadowbank Mine Site
All Weather Access Road (AWAR)
Whale Tail Mine Site
Whale Tail Haul Road (WTHR)
Baker Lake Facilities

In Accordance with Water License 2AM-WTP1830 & 2AM-MEA1530

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Division

Version 11
July 2020

EXECUTIVE SUMMARY

This document presents the Spill Contingency Plan for Agnico Eagle Mines Limited (Agnico Eagle) Meadowbank Mine Site, All Weather Access Road (AWAR), Whale Tail Mine Site, Whale Tail Haul Road (WTHR), and Baker Lake Marshalling Facilities, which is a requirement of the Meadowbank Gold Project Type A Water License No. 2AM-MEA1530 and 2AM-WTP1830.

The Spill Contingency Plan (SCP) designates lines of authority, responsibility, establishes proper reporting and details plans of action in the event of a spill. This plan applies to the operational phase of the Project and is applicable to all Agnico Eagle employees and any contractors associated with the project located at latitude 65°01'52"N and longitude 96°04'22"W approximately 70 km north of Baker Lake in Nunavut including the Baker Lake Marshalling Facilities located at latitude 64°18'36"N and longitude 95°58'04"W, Whale Tail Project located at latitude 64°24’14” and 96°40’50”, the All-Weather Access Road (AWAR), and the Whale Tail Haul Road between Meadowbank and Whale Tail sites.

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-WTP1830 Part B, Item 11 & 2AM-MEA1530 Part B Item 11, the implementation schedule for this Plan is effective immediately (July 2020) subject to any modification proposed by the NIRB and NWB as a result of the review and approval process.

DISTRIBUTION LIST

Agnico Eagle – Environmental Superintendent

Agnico Eagle – Environmental General Supervisor

Agnico Eagle – General Mine Manager

Agnico Eagle – Engineering Superintendent

Agnico Eagle – Health and Safety Superintendent

Agnico Eagle – Geology Superintendent

Agnico Eagle – Mill Superintendent

Agnico Eagle – Maintenance Superintendent

Agnico Eagle – Mine Superintendent

Agnico Eagle – Energy & Infrastructure Superintendent

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	08/08/08			Comprehensive plan for Meadowbank Mine Site, Exploration Camp and Baker Lake Facilities
2	11/12/04			Update of Contacts, Spill management materials, include AWAR map and Spill KIT Location Map
3	12/07/25			Update of the hazardous materials stored on site
4	2013/11			Comprehensive revision and update with info for Baker Lake Jet-A Tank
5	2014/11	Appendices I & J		Include the prohibition of adding neutralizing chemicals to drainages or near or within water bodies
6	2015/09	3 Table 4 5.1.3 5.6 Appendix L Appendix M		Change definition of a major spill and minor spill Contact Information Add point that procedure MBK-ENV-0016 will be followed for reporting spills Addition of section on event monitoring. Seepage monitoring included in section. Dyno Nobel Emergency Response Plan added in Appendix J MBK-ENV-0016 Spill Response Procedure Added
WT	2016/05	Complete document		Added Whale Tail open pit and haul road to the Spill Plan. Spills at the Whale Tail open pit will be subject to this Plan.
7_NIRB	2018/12	Complete document		Spill Contingency Plan as Supporting Document submitted to the Nunavut Impact Review Board for review and approval as part of Whale Tail Pit – Expansion Project
7	2019/02	Complete document		Added Whale Tail pit and haul road to the Spill Plan.
7_NWB	2019/05	Complete document		Spill Contingency Plan as Supporting Document submitted for the Expansion Project in support of the Nunavut Water Board (NWB) Type A Water License Amendment Process.
8	2019/09	Section 10		Update Section MDMER

9	2019/12	Appendix N Appendix O Appendix P Section 2 Section 2.1 Figure 1 to 4 Section 5.1.3 Section 10		Add Appendix N: MDMER Emergency Plan Cross Reference Table Add Appendix O: STSR Emergency Plan Cross Reference Table Add Appendix P: MSDS Diesel and Jet-A Add info related to tank Km 132 Add info during refueling Update Figure Add info related to spill report Update all section + add Photo 1 to 3 + add Figure 10
10	2020/02	Appendix Q All		Add Appendix Q: Environmental Emergency Regulation Cross Reference Table Update to include E2 regulation
11	2020/07	Complete document		Update 60 days following the approval of the amended Water License 2AM-WTP1830

Prepared By: Environmental Department

Approved By: 

Robin Allard

General Supervisor Environment

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LIST OF ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
ANFO	Ammonium Nitrate Fuel Oil
AWAR	All-Weather Access Road
CCME	Canadian Council of Ministers of the Environment
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EMS	Environmental Management System
ERP	Emergency Response Plan
ERT	Emergency Response Team
ERTC	Emergency Response Team Coordinator
GN	Government of Nunavut
HCN	Hydrogen Cyanide
HMMP	Hazardous Materials Management Plan
LEL	Lower Explosion Limit
MDMER	Metal and Diamond Mining Effluent Regulations
MSDS	Materials Safety Data Sheets
NIOSH	National Institute for Occupational Safety and Health
OHF	Oil Handling Facility
OHSP	Occupational Health & Safety Plan
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
PTA	Product Transfer Area
SCP	Spill Contingency Plan
TBD	To Be Determined
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials Information System
WTHR	Whale Tail Haul Road

SECTION 1 INTRODUCTION

1.1. PURPOSE AND SCOPE OF THE SPILL CONTINGENCY PLAN

The overall purpose of creating a spill contingency plan is to minimize the impacts of spills by the establishment of predetermined lines of response and plans of action.

This plan meets the requirements of section 30 of the Metal and Diamond Mining Effluent Regulation (MDMER) Emergency Response Plan pursuant to the Fisheries Act.

This plan meets the requirements of Environmental Emergency Regulations SOR/2019-51 required for the diesel bulk storage in Meadowbank and Baker Lake Tank Farm. Additional information on tank construction, diesel ship to shore transfer, prevention, inspection and emergency situation can be found in the following plan:

- Emergency Response Plan;
- Oil Pollution Emergency Plan;
- Meadowbank and Whale Tail Bulk Fuel Storage Facilities: Environmental Performance Monitoring Plan; and
- Baker Lake Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan.

This plan has been designed to facilitate effective communication and the efficient clean-up of potentially hazardous materials spills. These materials include:

- Hydrocarbon liquids such as diesel fuel, aviation fuel (Jet-A), gasoline, hydraulic oil;
- Soluble solids such as ammonium nitrate prills;
- Soluble liquids, such as glycols, acids, paints;
- Corrosive liquids such as sulphuric acid and corrosive solids such as sodium cyanide;
- Effluent as defined by the MDMER;
- Seepage from waste related structures that could affect receptors; and
- Any deleterious substances such as suspended solids, arsenic, copper, lead, nickel, zinc, etc.

More specifically the objectives of this Spill Contingency Plan (SCP) are to:

- Identify roles, responsibilities, and reporting procedures;
- 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 or land.

This plan has been prepared in accordance with the following reference documents:

- Crown-Indigenous Relations and Northern Affair Canada (CIRNAC) 2007. *Guidelines for Spill Contingency Planning*;
- Government of Canada, Department of Fisheries and Ocean (DFO) 2016, *Fisheries Act*;
- Government of Canada, Environment and Climate Change Canada (ECCC) 1999, *Canadian Environmental Protection Act (CEPA) and the Environmental Emergency Regulations 2019 SOR/2019-51*;
- Government of Canada, Environment and Climate Change Canada (ECCC) 2008, *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations s.30 to 32, SOR/2008-197*
- Government of Canada, Environment and Climate Change Canada (ECCC) 2017, *Migratory Birds Convention Act* 1994;
- Government of Canada, Environment and Climate Change Canada (ECCC) 2018, *Metal and Diamond Mining Effluent Regulations*;
- Government of Nunavut (GN), *Contingency Planning and Spill Reporting in Nunavut. A Guide to the New Regulations*;
- Government of Nunavut (GN) 2002, *Guideline General Management of Hazardous Wastes in Nunavut;* and
- Northwest Territories Resources Wildlife and Economic Development, Environmental Protection Service. 1988. *Spill Contingency Planning and Reporting Regulations*.

SECTION 2 PROJECT DESCRIPTION

The Meadowbank Gold Project, operated by Agnico Eagle Mines Limited, is located approximately 70 km north of the Hamlet of Baker Lake in Nunavut. The project is located on Inuit Owned surface lands (IOL BL-14) and has the following coordinates:

Latitude: 65°01'52"N

Longitude: 96°04'22"W

NTS map sheet 66H/1

Meadowbank Project components include marshalling facilities in Baker Lake, the 110 kilometer All-Weather Access Road (AWAR) from Baker Lake, the Meadowbank mine site, the Whale Tail Project and the Whale Tail Haul Road between Meadowbank and Whale Tail sites. The Meadowbank mine site consists of the process plant, landfarm, sewage treatment plant, water intake, accommodation buildings, power plant, tank farm, warehouse, truck shop, emulsion plant, open pit (Figure 1). The Baker Lake Marshalling Area consists of a laydown transfer area to temporarily store materials prior to the delivery to the Meadowbank mine site. The Baker Lake fuel farm consists of seven (7), ten (10) million litre tanks for diesel fuel, within secondary containment and eighteen (18) 100,000L double walled tanks, within secondary containment, for aviation fuel (Figure 2). Agnico Eagle also has received approbation to construct an additional 10,000,000 L diesel tank in Baker Lake. The Whale Tail Project (Figure 4) consists of sewage treatment plant, water intake, accommodation buildings, power plant, 1,500,000 bulk fuel storage area, warehouse, maintenance shop, and open pit. The Whale Tail Haul Road has one diesel tank of 1,915L installed at Km 132 on Crown Land. The double wall diesel tank at Km 132 is located in the tundra on a gravel pad near the WTHR. There is not water body in the vicinity of the tank that can be affected by a potential spill. There are no trees and few shrubs in the area surrounding the tank storage facility. The nearest community is located in Baker Lake and there is no risk that a spill at this tank can have consequence on them.

The fuel is delivered in bulk by sealift to the Baker Lake fuel farm. From there, fuel is hauled to the Meadowbank and Whale Tail sites by contractor tanker trucks on the AWAR and on the Whale Tail Haul Road, respectively. Diesel fuel coming from the Baker Lake Tank Farm is stored at the Meadowbank site into a single 5.6 million litre tank, within secondary containment, and the aviation fuel into two (2) – 50,000L double walled tanks in proximity of the airstrip. Fuel at the Whale Tail site is stored in one 1,500,000 L tank. From there, the diesel is redistributed around site by an onsite fuel truck to site fuel tanks. Fuel storage locations have been designed to meet the CCME guidelines for Aboveground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. Diesel is mainly use for the electricity production and mining/hauling activities. Different other process as incinerator and smaller mobile equipment also required smaller diesel usage.

Emergency spill response equipment (i.e. spill kits) is installed at each fuel storage location. Spill kits contain the appropriate type, size and quantity of equipment for the volume and type of product present at the storage location. Transport trucks, heavy equipment and light vehicles are all equipped with spill kits.

Construction at the Meadowbank mine site began with the issuance of the Type A Water License and other relevant authorizations in July 2008 with operations commencing in January 2010. Mining of ore at Meadowbank ceased in 2019. The Meadowbank site is extended to 2026 through the operation of the Whale Tail Project which will supply ore to the Meadowbank process plant. Construction of the Whale Tail open pit started in July 2018 and commercial production achieved on September 30, 2019.

2.1. PREVENTION AND INSPECTIONS

The first step in spill contingency planning is to take actions to prevent spills from occurring. Transport, transfer and storage of materials are performed by trained personnel using secondary containment, with well- maintained equipment and containers. Refueling stations in Baker Lake, at the mine site, and at the Whale Tail site are equipped with a lined area to contain any minor leaks or spills while refueling. A Product Transfer Area Assessment were conducted for the Baker Lake Oil Handling Facility and can be found in Appendix M. No Product Transfer Area Assessment is required for the diesel tank at KM 132 as the tank does not have an aggregate capacity of more than 2,500 L. Transfer of fuel from tanks to tanker trucks are performed with the aid of fuel pumps. During refueling activities, a portable containment is place under the dry quick connect coupling to capture small spills that may result during disengagement of the loading arm. Good housekeeping practices are adopted especially in areas such as storage facilities, loading and unloading zones. Site orientations are conducted with all employees and spill prevention and response is discussed in detail. 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. In addition to work site inspections conducted by area specific employees, the Environmental Department conducts weekly inspections to audit facilities handling or storing hazardous materials (Appendix A).

Agnico Eagle supports the following general principles for spill prevention:

- Provide up-to-date and accessible Material Safety Data Sheets (MSDS) for all hazardous materials;
- Regular inspections of fuel/chemical storage areas for leaks (including flex connectors and plumbing) and platform shifting;
- Regular inspections of hazardous materials storage areas;
- Train workers in the use of safe work procedures for hazardous materials, and procedures to clean up spills;
- Encourage workers to take reasonable measures to prevent spills;
- Keep drums/containers sealed or closed when not in use;
- Place drums/containers within a suitable form of secondary or spill containment;
- Keep “overpack” or “salvage” drums nearby to contain leaking drums;
- Keep storage areas secure from unauthorized access;
- Segregate incompatible materials;
- Ensure chemical storage areas are adequately protected from weather and physical damage; and
- Provide adequate spill response materials at storage areas (details of spill response equipment are outlined in Section 8).

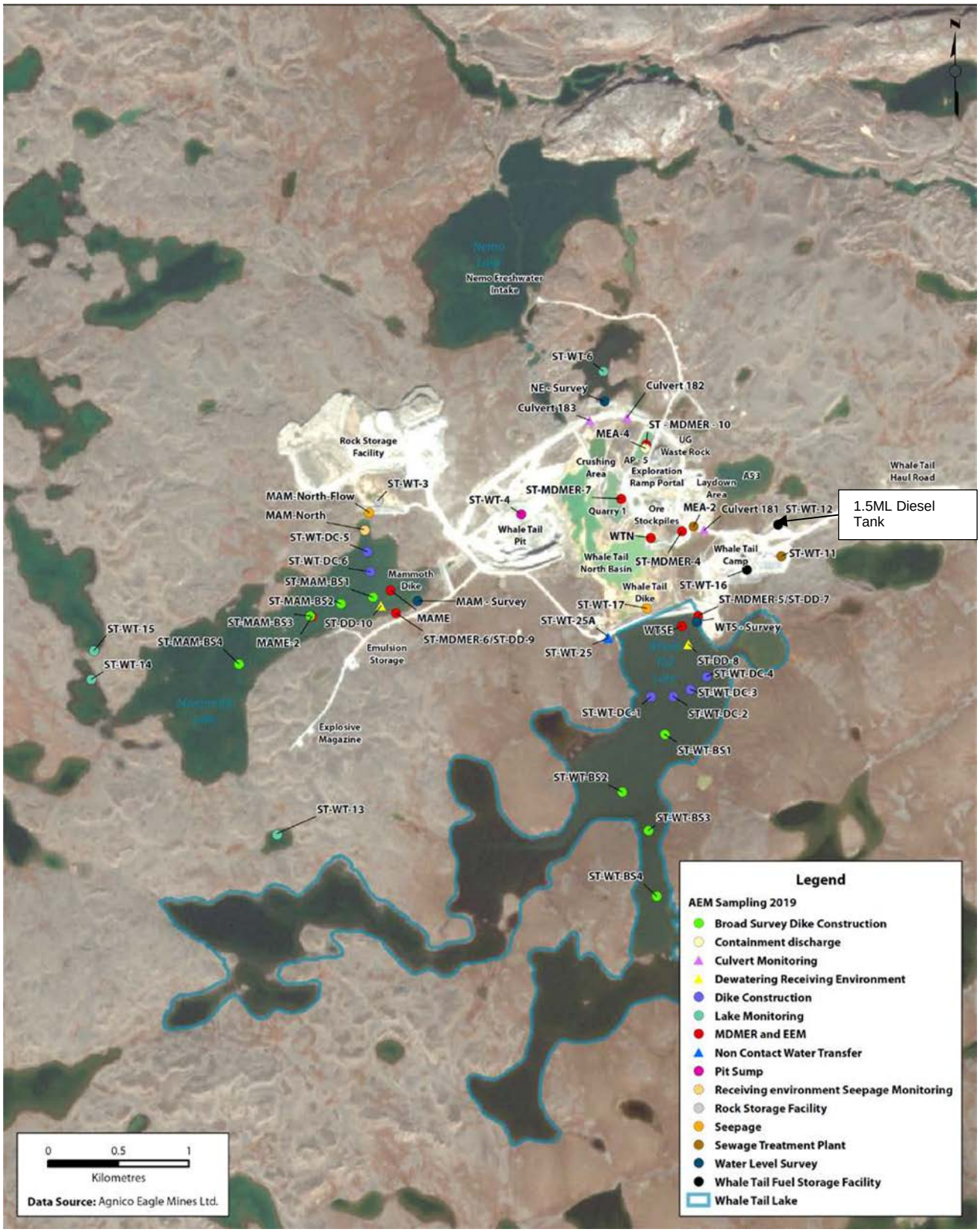
Figure 1: Layout Meadowbank Mine Site

Figure 2: Baker Lake Diesel and Jet-A Fuel Tank Farm

Figure 3: Baker Lake Diesel and Jet-A Fuel Tank Farm location versus Baker Lake Community

Blue dot represents the Baker Lake freshwater intake

Figure 4. Layout Whale Tail Mine Site



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 impacts to the receiving environment, Agnico Eagle property or human health. This can include potential impacts to water, surface and groundwater, land, equipment, buildings, local communities, human health and the atmosphere.

A minor spill is defined as any spill that does not involve a toxic, reactive, or explosive material in a situation that does not pose a significant risk to the environment, human health or Agnico Eagle property. Minor spills are generally contained within Agnico Eagle facilities.

3.2. MATERIALS AND REPORTABLE (TO REGULATORY AUTHORITIES) SPILLS ON SITE

As a precaution, if there is any doubt as to whether the quantity spilled meets the minimum thresholds for reporting to regulatory authorities listed in Table 1, the spill incident will be reported. Furthermore, Agnico Eagle maintain a detailed log of all spills reportable to authorities and those non-reportable for all materials listed in Section 1.1. As part of Agnico Eagle's overall environmental management system and in the spirit of a continuous improvement of environmental performance, procedures will be implemented to ensure **all** spills irrespective of location are reported to the Meadowbank Environment Department.

To ensure compliance with Section 36(3) and 38(5) of the Fisheries Act, Section 5(1) of the Migratory Birds Convention Act, the CEPA Environmental Emergency Regulations, Nunavut Spill Regulation and the Metal and Diamond Mining Effluent Regulations all spills of fuel or hazardous/deleterious materials, regardless of quantity, into a water body (including frozen), shall be reported immediately to the NT-NU 24-HOUR SPILL REPORT LINE (at 867.920.8130 or online at spills@gov.nt.ca). All spills on land that reach the reportable quantity listed in Table 1 need to be report to the NT-NU 24-HOUR SPILL REPORT LINE within 24 hours of the spill occurrence.

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	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

Transportation Class	Type of Substance	Compulsory Reporting Amount
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
None	Deleterious substances, MDMER effluent parameters, Seepage	Any amount

Note: 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 response to an incident.

Figure 6 and 7 illustrates Agnico Eagle's Spill Reporting Procedure Steps in the event of a spill and Sections 4.1 -4.9 list the major responsibilities of site staff that will be participating in the emergency response management.

The first person (first responder) to notice, or come in contact with, any spill situation either initiates a Code 1 (i.e. If a tanker truck overturns on the AWAR/Whale Tail Haul Road) or reports to his/her immediate supervisor (i.e. All other spills on land or water). The supervisor is responsible to report the incident to the designated Incident Commander for a major spill or to the environmental department for a minor spill. If a Code 1 is initiated (as per procedure below), the Incident Commander will respond 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.

At any time, if an emergency happens, the initial call will be a code one call on any operations channel to ensure a proper response. The procedure goes as such:

A *Code One* can be called by any person on site to report an accident, serious incident or fire which requires the response of the ERT (Emergency Response Team).

All *Code One* should be called on any operations channel or on any phone by calling 6911

The procedure steps:

1. Call ***Code One*** over the two-way radio ***three (3) times*** on any operations channel or on any phone by calling 6911

   When a code 1 is called over the radio, please respect the "Radio Silence" and if you are driving on the mine site road, please pull over and safely park your vehicle until an All Clear is given.

2. Give your name, exact location and the nature of the Emergency

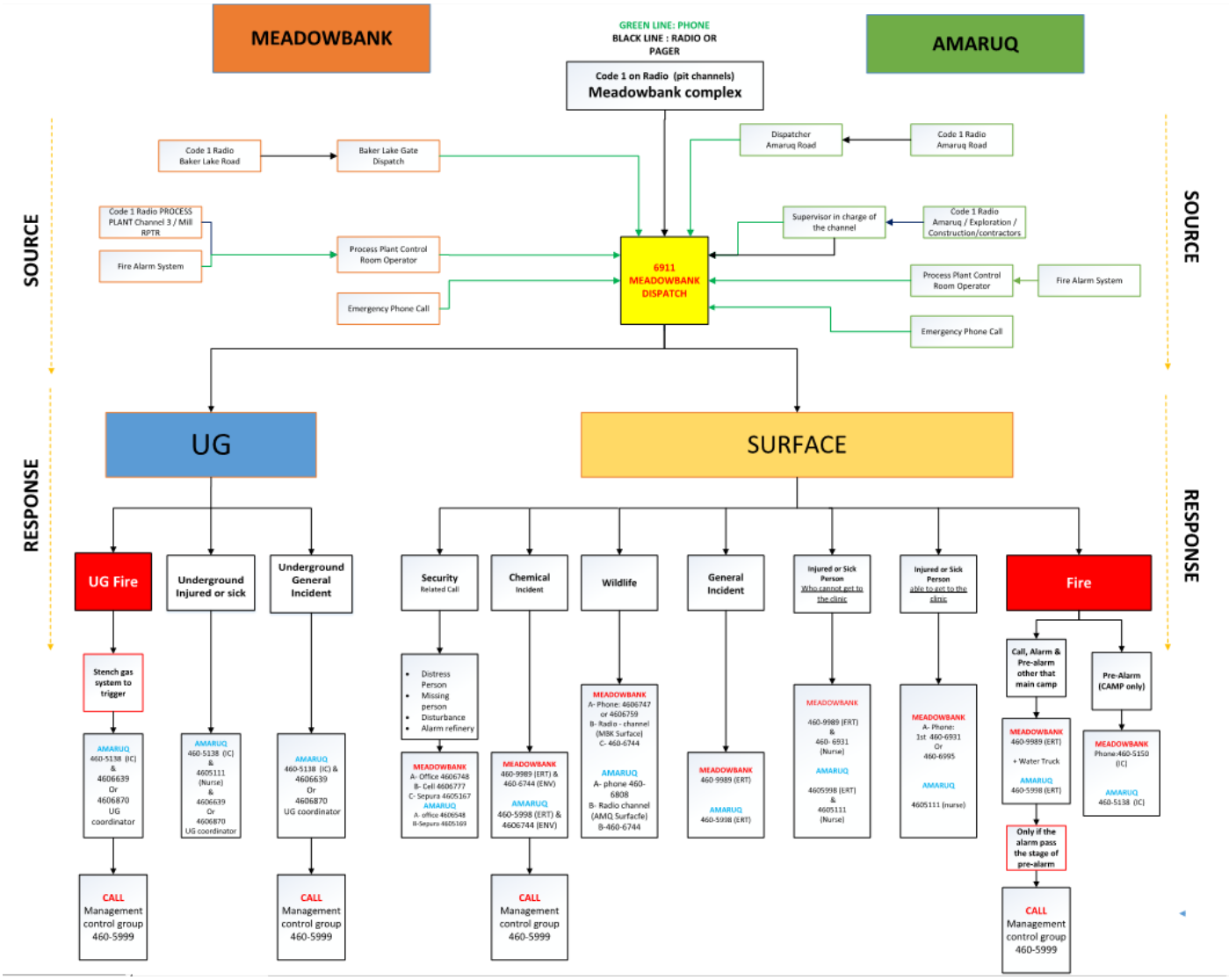
3. Upon notification of the ***Code One,*** the "dispatch" is the only person who will communicate with the person who initiated the Code One

4. The "dispatch" will contact the proper personal to notify them of the ***Code One*** Emergency.

5. If safe to do so the person who called the code one should stay at the location in case any additional information is required or to relay any development which may occur prior to ERT or proper personal arriving to take over the Emergency

Once the ***Code One*** is called, the Incident commander, captain or dispatch determines whether all work in the affected ZONE will be stopped and equipment will be secured so as not to interfere with the response by the ERT. Radio Silence on working channel must be observed until advised otherwise by the Incident Commander or ERT Team Captain.

Figure 5. Emergency Procedure



The Incident Commander will contact the Environmental Superintendent and/or General Mine Manager or alternate, who in turn will inform the Senior Vice President Sustainability. After all information has been collected, the Environmental Superintendent or alternate will submit a spill report and follow up spill report to the NWT/NU Spill Line, Nunavut Water Board, Kivalliq Inuit Association, Environment and Climate Change Canada (ECCC) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). Incidents that require media communications will be the responsibility of Agnico Eagle General Mine Manager or alternate.

In the event of a major spill during a ship-to-ship transfer or due to unforeseen circumstances, the shipping company will be solely responsible for responding to the spill. The containment and cleanup of inadvertent spills resulting from the tankers in transporting the fuel is the responsibility of the shipping company. In the unlikely event where a major fuel spill becomes unmanageable, the shipping company could call on external resources such as the Canadian Coast Guard for assistance. In these situations, Agnico Eagle would provide whatever assistance it can to the shipping company. Agnico Eagle would put its resources to the

best use possible during such an event, and assist as much as possible with the resources at hand. The Shipboard Oil Pollution Emergency Plan (SOPEP) is the responsibility of the shipping company; it covers the ship-to- ship transfer of fuel near Helicopter Island. Please refer to the Oil Pollution Emergency Plan / Oil Pollution Prevention Plan for more details. Please refer to the certificate of entry and acceptance boats of shipping company, communication protocol, safety management system for entry into confined water and monthly safety meeting forms found in the Oil Pollution Emergency Plan / Oil Pollution Prevention Plan.

In the event of a spill during the ship to shore transfer, the Oil Pollution Emergency Plan / Oil Pollution Prevention Plan will be applicable. Please refer to the plan for a complete review of the procedure to be implemented.

Figure 6: Spill/incident reporting procedure

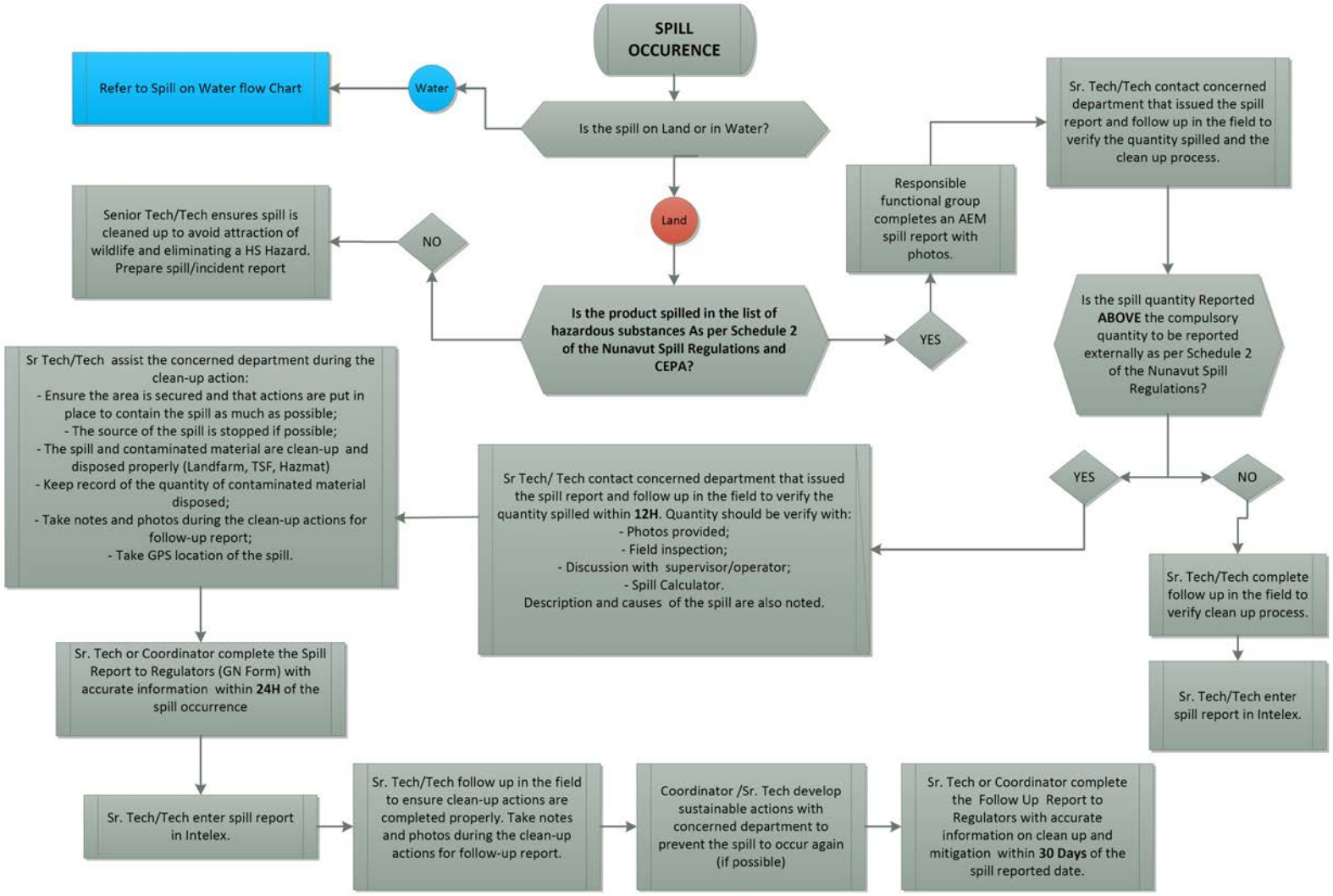
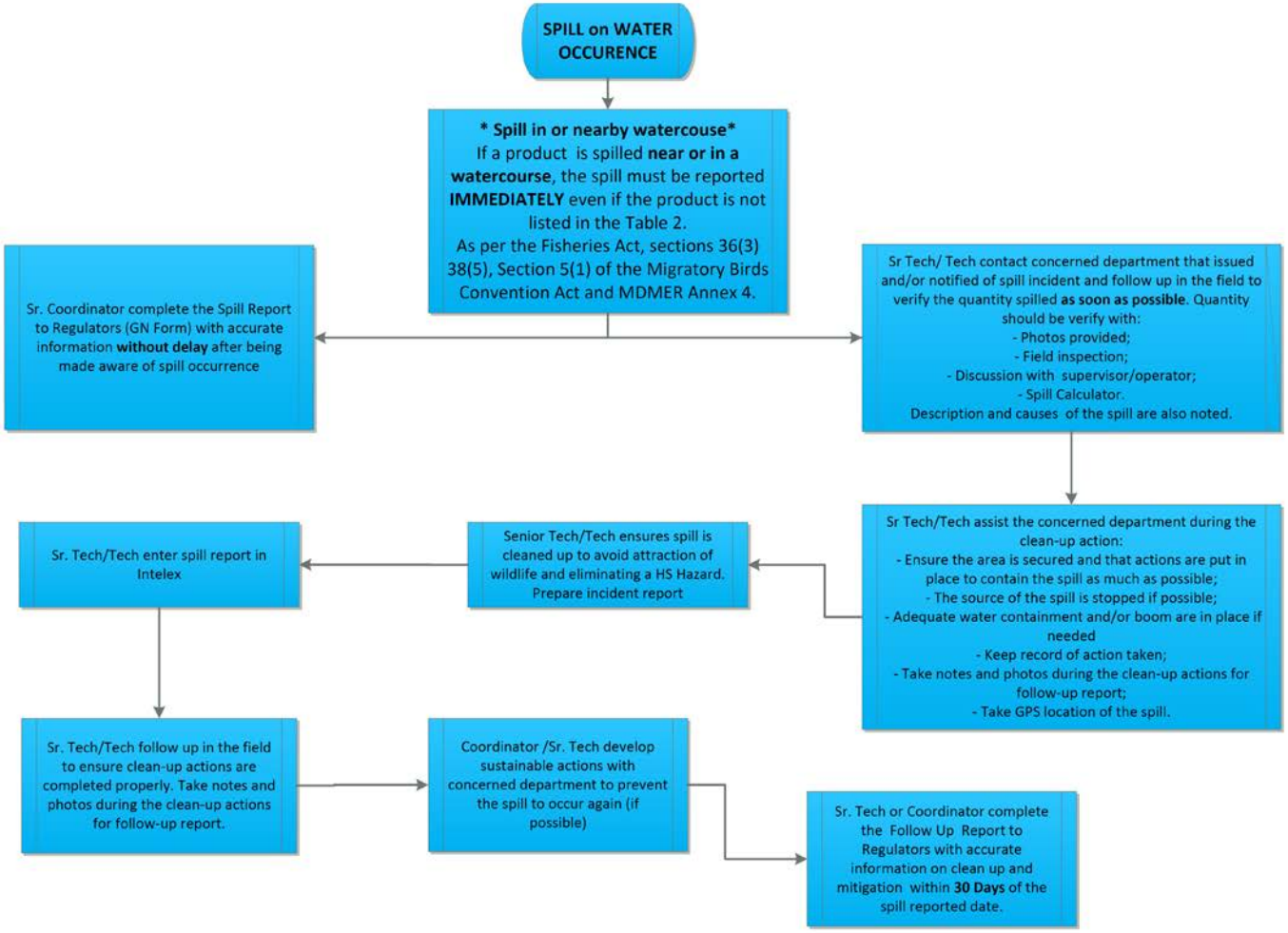


Figure 7: Spill/incident on Water Reporting Procedure



4.1. FIRST RESPONDER

The person who has caused a spill or the first to observe the spill is the first responder. The responsibilities of the first responder are as follows:

- In case of major incident (example: tanker truck overturn) and/or spill in or nearby watercourse, initiate a Code 1. Remain on radio to provide guidance to the ERT;
- In case of spill to land or water, contact the supervisor to report the incident;
- Immediately identify and contain the spill, IF SAFE TO DO SO; commence preparing spill response equipment and
- Participate in spill response as a member of the clean-up crew.

4.2. SUPERVISOR

The responsibilities of the Supervisor are as follows:

- Initial assessment of the severity of the incident;
- Contacts the Incident Commander or Environmental Department;
- Gathers facts about the spill; and
- Participate in spill response as a member of the clean-up crew.

4.3. INCIDENT COMMANDER

Responsibilities of the Incident Commander are as follows:

- Assume complete authority over cleanup personnel and the spill scene, as well as assume responsibility for all mitigation efforts;
- Evaluate the initial situation and assess the magnitude of the problem;
- Activates the initial response plan;
- Alert and assemble key personnel in the response team, as deemed appropriate, to handle the situation;
- In consultation with the Environmental Superintendent or designate, develop the overall plan of action for containment and cleanup of the specific incident, as well as 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 Environmental Superintendent or designate mobilize any additional resources that may be required and arrange for the transportation of necessary personnel and/or materials to the site.

4.4. EMERGENCY RESPONSE TEAM

Agnico Eagle has an Emergency Response Team (ERT) that is trained and responsible for controlling major spills, including those that could occur should a tanker truck overturn along the AWAR or on the Whale Tail Haul Road, and assisting with medical and other emergencies that may occur at the Meadowbank Mine, wherever the location. ERT team members attend regular training sessions.

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

4.6. ENIVRONMENTAL SUPERINTENDENT OR DESIGNATE

The Environmental Superintendent or designate is responsible for implementing and maintaining the SCP. In addition, the Environmental Superintendent's or designates responsibilities in the case of a spill are to:

- 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 reports (see Appendix B for NWT/NU Spill Report Form) to regulators and Agnico Eagle management detailing the occurrence of a spill;
- Contact the Senior Vice President Sustainability immediately for a major spill;
- Act as the spokesperson with regulatory and government agencies;
- If authorized by the General Mine Manager, 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;
- Reviews incident occurrences and recommends preventative measures; and
- Assists in implementing training and simulation requirements for spill response personnel.

4.7. GENERAL MINE MANAGER ON DUTY

The General Mine Manager/designate is required to inform team members of the detailed nature of the operations to be performed in the event of a major spill during the operations phase. The responsibilities of the General Mine Manager/designate are as follows:

- Liaise with Agnico Eagle personnel resources and keep them informed of cleanup activities;
- Incidents that require media communications will be the responsibility of Agnico Eagle General Mine Manager or alternate; and
- Assist the Incident Commander and ERT as needed, particularly in obtaining any additional resources not available onsite for spill response and cleanup.

4.8. HEALTH AND SAFETY SUPERINTENDENT OR DESIGNATE

The following are the responsibilities of the Health and Safety Superintendent 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 will be required;
- Notify the Incident Commander (related to ERT) when retraining is required;
- Ensure that employees are retrained in appropriate emergency response skills, Workplace Hazardous Materials Information System (WHMIS) training, Hazard Communication (HAZCOM), Occupational Health and Safety Administration (OHSA) training, first aid, and respirator fit-testing prior to expiry of existing training certification; and
- Consult with appropriate organizations regarding retraining requirements and schedules.

4.9. ON-SITE HEALTH CARE PROVIDERS

On-site medics are responsible for the following:

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

In addition to the health care providers on site, the Baker Lake Hamlet health professionals will be called first on the scene, if required.

4.10. SPILL RESPONSE TEAM CONTACT INFORMATION

Internal contact information is contained in Table 2 for all Agnico Eagle personnel involved in spill recovery and subsequent reporting. Table 3 provides contact information for Agnico Eagle contractors present at the mine site and transportation contractors. Important external contacts such as regulatory agencies and health organizations are listed in Table 4. Agnico also has a mutual agreement with other mining companies in the north to assist our site in case of a major emergency, the contact information are detailed in Table 5.

Table 2 - Internal Contacts.

Title	Name	Telephone No.
Sr. Vice President Sustainability	Carol Plummer	416.644.2056
Vice President of Environment and Critical Infrastructure	Michel Julien	416-947-1212 ext. 4013738 Cell: 514.244.5876
Senior Corporate Director, Communications, Social and Public Affairs, Communications	Dale Coffin	416.847.8669 Cell: 647.274.4154
Director, Environmental Management	Pascal Lavoie	819.759.3700 ext. 4105822 M: 819.277.0045
Meadowbank General Mine Manager	Alexandre Cauchon	819.759.3555 ext. 4606896 Cell: 819.651.2216
H&S Superintendent	Markus Uchtenhagen	819.759.3555 ext.4606720 Cell: 819.860.6258
Incident Commander	Philip Beaudoin/Richard Jackson	819.759.3555 ext.4606809 Cell: 450.847.4214
Environmental Superintendent	Nancy Duquet Harvey	819.759.3555 ext.4606980 Cell: 819.856.4385
Environmental General Supervisor	Robin Allard	819.759.3555 ext.4606838
Environmental Coordinator	Eric Haley or Tom Thomson	819.759.3555 ext.4606906
Environmental Department	Environmental Technicians	819.759.3555 ext.4606747/4606759
On-site Medics	On-site Nurses	819.759.3555 ext.4606734 or 4606751
Site Security	On-site Security	(867) 793-4610 ext. 4606748

Table 3 - Contractor Contacts

Title	Telephone No.	Contact in Emergency for:
Nolinor Aviation Services	Protocol Agent 867.759.3700 ext. 4608008	Flight services for additional crew, or additional supplies
First Air	1-800-267-1247	Flight services for additional crew, or additional supplies
Calm Air	1-800-839-2256	Flight services for additional crew, or additional supplies
Dyno Nobel Explosives Ltd.	(819) 825-5441	Heavy Equipment, Man power, Emergency Blasting
Desgagnés Transarctik Inc.	(450) 635-0833	Fuel Hauler
Baker Lake Contracting & Supplies	(867) 793-2831 Press #1	Man power, equipment, trades personnel i.e. pipefitter, plumber, electrical
Peter's Expediting	(867) 793-2703	Equipment, man power, Ground transportation services
Arctic Fuel Services	(867) 793-2311	Fuel hauling, trucking, man power.

Table 4 - External Contacts

Organization/Authority	Telephone Number
NT-NU 24-Hour Spill Report Line	(867) 920-8130 spills@gov.nt.ca
Workers Safety and Compensation Commission	(877) 661-0792 (Emergency) or (800) 661-0792
Kivalliq Inuit Association	(867) 645-5725
Nunavut Water Board	(867) 360-6338
CIRNAC Inspector	Jakob Voisey (867) 645-2089
Environment and Climate Change Canada – Pacific Prairies and the North	(780)-951-8600
Government of Nunavut – Department of Environment	(867) 975-7700
Kivalliq Health Services – Baker Lake	(867) 793-2816 *Dial 0*
Baker Lake Hamlet Office	(867)-793-2874
Baker Lake Fire Emergency	(867) 793-2900

RCMP Regular Hour RCMP 24 Hour Emergency Number	(867) 793-0123 (867) 793-1111
Canadian Coast Guard (in the event of a spill to the marine environment) Superintendent Environmental Response	(800) 265-0237 (519) 383-1954 (519) 381-6186 (cell)
Transport Canada – Marine Safety Philip Levesque	 (204)-984-5786 Cell : 204-801-6951

**All above phone numbers are current as of February 2020*

Table 5 - Mutual Aid Contact

Mutual Aid	Telephone Number
Diavik Diamond mines Inc	(867) 669-6500 ext. 5903 Phone number is monitored by Security Control 24 Hours a day
Agnico Eagle Mines Limited (Nunavut Operations)	(819) 759-3555 ext. 4603977 Meliadine
TMAC Resources Hope Bay Project	(867) 998-6882 ext. 104 General Manager Dan Gagnon (867) 988-6882 ext. 138 H&S Manager Doug Brown (867) 988-6882 ext. 150 After hours Mill control room
De Beers Canada – Gahcho Hué	(416) 645-1695 ext. 6699 Phone number is monitored by Security Control 24 Hours a day
Dominion Diamonds Mines Ekati	(867) 880-2201 or (867) 880-4444 Both phone numbers are answered and monitored by Security Control 24 Hours a day
GMRP	24-hour mine number (Security) (867) 446-2647

SECTION 5 ACTION PLAN

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

- Tanks, drums or containers may develop leaks or rupture;
- Failure of equipment such as valves, piping or containment structures;
- Fuel Tank failure;
- Overfilling;
- Improper storage;
- Spills during transfer of fuel, chemicals or waste products;
- Spills resulting from accidents during transportation;
- Fire;
- Seepage that may migrate off site to receiving water or land; and
- Discharge to receiving environment of a deleterious substance exceeding the MDMER and/or NWB Water License and/or any other regulation.

At the Meadowbank and Baker Lake OHF, spill that is more likely to occur is a spill during the fueling of the delivery truck. Quantity will be negligible and can be contained and recovered with the spill material on site. Is it expected, as per the Product Transfer Area Assessment – Baker Lake Oil Handling Facility in Appendix M, that a spill due to a broken piping can release up to 1,000L to the adjacent gravel area. In this case, no fuel is expected to reach any receiving environment and stay within the boundary of the facility. Material on site will be sufficient to contain the spill. If the spill is greater than 1,000L up to 10,000L, it may have a possibility to reach the Baker Lake. In that case, the longest impact distance outside the boundary of the facility can be up to 3.4 Km. The maximum quantity that can be release from the Baker Lake OHF is 10 ML. In that case, fuel may reach Baker Lake and it is expected that the longest impact outside the boundaries of the facility will be around 85 Km. For the Meadowbank tank farm, a spill of the maximum quantity that the tank can contain is not expected to go outside the boundaries of the facility. Spilled fuel is expected to be contain inside the secondary containment and if fuel escape fuel it will still remain inside the facility boundaries due to topography in this area.

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; and
- Contact the Incident Commander, identify the location and request assistance as required. If required the Incident Commander will mobilize the Emergency Response Team.

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. Ensure safety

- 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 vapors 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 dike, trenches or improvise with materials at hand.

5.1.3. Report Spill

- Spill reporting will follow procedure MBK-ENV-PRO-Spill Reporting. This procedure can be found in Appendix K
- Obtain all necessary information to complete the spill report form (reportable or not) and provide to Environment Staff within 12 hours. Spills that meet regulatory reporting criteria must be reported to the NWT-NU 24 Hour Spill Line/CIRNAC/ECCC/Kivalliq Inuit Association and the NWB by Agnico Environment Staff within 24 hours. Any spills near and/or in water (including frozen) must be reported immediately to NWT-NU 24 Hour Spill Line/CIRNAC/ECCC/Kivalliq Inuit Association and the NWB by Agnico Environment Staff even if not meeting regulatory criteria describe in Table 1; and
- For spills that meet regulatory reporting criteria, a detailed spill report will be submitted to the CIRNAC Water License Inspector, ECCC inspector and the KIA Land's Inspector by Agnico Eagle Environment Staff no later than 30 days after the initial reporting of the spill. This report will contain the amount and type of spilled product, the GPS location of the spill and the measures taken to contain, cleanup and restore the spill site. Report will be submitted as per requirement of the Water License and/or Fisheries Act Section 38 (7) and/or MDMER Section 31.

Procedures will vary depending on the season and materials spilled. The MSDS for spilled materials and/or Transport Canada's "Emergency Response Guidebook" 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 control techniques involving the use of two types of barriers: dikes 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 material spilled and will also serve as containment to allow for recovery.

Depending on the volume spilled, the site of the spill as well as available material, a dike may be built with soil, booms, lumber, snow, etc. A plastic liner, if necessary, can be placed at the toe of and over the dykes to protect the underlying soil or other material and to facilitate recovery of the material. Dikes will be constructed 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 material 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. Liners should not be placed at the bottom of the trench to allow water to continue flowing underneath the layer floating oil.

The use of absorbent materials to recover a large volume of spilled liquids such as petroleum based material should be avoided. Large volumes of free-product should be recovered, as much as possible, by using vacuums and pumps, and containerized. Mixtures of water and fuel may be processed through an oil-water separator. However absorbent materials work well for smaller volumes of spilled hydrocarbon based materials such as fuel. Absorbent sheets should be used to soak up residual fuel 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 procedures that include containment, diversion and recovery techniques. The following elements must be taken into consideration when conducting response operations:

- To ensure compliance with Section 36(3) and 38(5) of the *Fisheries Act* and Section 5(1) of the Migratory Birds Convention Act all spills of fuel or hazardous materials, regardless of quantity, into a water body (including frozen), shall be reported immediately to the NT-NU 24-HOUR SPILL REPORT LINE (at 867.920.8130).
- Type of water body or water course (lake, stream, river);
- Water depth and surface area;
- Wind speed and direction;
- Type of shoreline; and
- Seasonal considerations (open-water, freeze-up, break-up, frozen).

The most common type of spill that could be anticipated is a petroleum hydrocarbon (diesel) spill during fuel transfers/transport. 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 circle 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, 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 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 a 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 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, the use of snow as a sorbent material will be limited as much as possible. Snow and frozen ground will also prevent hydrocarbons from migrating down into soil or at least slow the migration process. Ice will prevent seepage of fuel into the water.

Most response procedures for spills on land discussed previously 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 fuel and will also serve as containment to allow recovery of the fuel.

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. DISPOSAL OF SPILLED MATERIAL

All contaminated spill pads, and booms are placed within Quatrex bags for shipment to an approved disposal facility. All the petroleum hydrocarbon contaminated soil is placed into the Meadowbank landfarm for treatment, this includes contaminated soil from the Baker Lake and Whale Tail facilities. Spills over 100 L of non-petroleum hydrocarbon material (e.g. solvents, glycol) will be placed in drums and stored in the on-site hazardous material area for shipment south to approve facilities during barge season. Spills of non-petroleum hydrocarbon material fewer than 100 L will be placed in the Tailings Storage Facility (TSF).

Spills smaller than 100 L of petroleum hydrocarbon contaminated snow will be placed in a designated area

of the landfarm and treated as contact water after snowmelt. Spills over 100 L of petroleum hydrocarbon contaminated snow will be excavated and stored in labeled drums or at the TSF. After snow melt, the contaminated water could be pumped through the site's oil-water separator (carbon filter) to remove petroleum hydrocarbon residue. The treated water will be sampled per the NWB Water License, and discharged to the respective Stormwater Management Pond at Meadowbank and Whale Tail if criteria are met. If criteria are not met, water will be treated as hazardous material and shipped south. Also, after snowmelt, visible product will be cleaned up with absorbent pads or booms.

For more information refer to the Meadowbank Landfarm Design and Management Plan and the Whale Tail Landfarm Design and Management Plan.

5.6. SEEPAGE MANAGEMENT

Seepage from the tailings storage facility (TSF) and waste rock storage facilities (WRSF) are treated as actionable and reportable spills. In the event that seepage is observed, an action plan is implemented to address the problem. The action plan includes: cause identification, mitigation measures used to stop or control the seepage, clean-up actions, disposal of contaminated material if applicable and monitoring requirements.

5.7. EVENT MONITORING

The Event Monitoring (EM) program addresses the site-specific monitoring that is required following any accidental release. A "release" may be caused by a spill or an emergency (Emergency Response Plan; January 2020).

The EM program is designed to verify whether contamination of the surface soil, nearby receiving environment and active zone has occurred as a result of an accidental release of a hazardous material or contaminated water, through monitoring of surface runoff and nearby receiving environment following remediation of any release. It is anticipated that owing to the presence of permafrost beneath most of the mine footprint, there will be minimum impact to groundwater. A complete list of hazardous materials in use during operations at all sites is provided in the Hazardous Materials Management Plan (July 2020).

The EM plan is developed on a site-specific basis subsequent to a spill or accidental release, and considers the type of product spilled, the potential receptors, and the potential for any remaining contamination after clean-up. The plan is done in coordination with the Environmental Superintendent.

In the event of an accidental release, the water quality of the downstream receptor and possibly upstream of the receiving point, if any, is to be sampled (during the ice-free season) and analyzed. Should the spill have happened over snow cover, water and possibly soil sampling is to take place at the earliest feasible time after thaw to verify if there has been any impact to the receiving water or soil quality. The specific parameters monitored as part of the EM program will depend on the nature of the spill, and will be determined for the specific hazardous material released.

EM sampling is to occur following the clean-up of a release and the frequency of sampling will depend on the type of material spilled (wet or dry spill), the environment into which the chemical was released (surface water body or soil; frozen or thawed), and the quantity of spill material. The EM program for a particular spill will cease upon obtaining satisfactory analytical results (within 20% of background level, to accommodate for analytical accuracy) from the potentially affected areas or as required by regulators.

In the event of a seepage from the TSF and/or rock storage facility (RSF), water will be pumped back to the North Cell TSF (or South Cell if necessary). Seepage from the Whale Tail RSF will be pumped to the Quarry

1 or the Attenuation Pond. Visual inspections will be conducted regularly to confirm that the seepage is appropriately contained and will not enter into the receiving environment.

SECTION 6 HAZARDOUS MATERIALS STORED ON SITE

A variety of petroleum products and other hazardous materials will be used as part of mining operations. Large quantities of petroleum products will be stored at various sites at the Meadowbank Mine and at Whale Tail Project. Explosives will also be stored on site. Other hazardous materials will be used but in smaller quantities. Nonetheless, 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 to where hazardous materials or toxic substances are stored or utilized. Appendices C to H provide General Response Procedures for Spilled Chemical Substances.

P50 Diesel is a bright oily substance that has a low viscosity. It spreads rapidly on the water, has a low solubility in salt water (60 mg/L), and a high evaporation rate as described in the text box below. Appendix P provide the MSDS for Diesel and Jet-A.

Predicted Evaporation Rate of Spilled Diesel

Weight percent Evaporation = (5.8 + 0.045T) in(t)
Where T = water temperature
t = time in minutes

After a time span of 60 minutes at a surface temperature of 5°C, up to 25 % weight of the spilled diesel would have evaporated.

After 240 minutes, or 4 hours, the weight percent of the diesel that would have evaporated would be 33%.

Source: Environment Canada, Emergencies Science and Technology Division

Table 6 identifies the predominant hazardous materials transported, stored and generated at the sites. Those destined for use in the process plant will only be stored at Meadowbank. Refer to the Hazardous Materials Management Plan for more details.

Table 6 - Materials stored at site during operations

Material	Maximum Anticipated on -site	Maximum Amount transported per unit	Storage Location
Acetylene	500 cylinders	300 cylinders per sea can	Inventory Lay down
Activated Carbon	350 Mt	10 Mt per sea can	Inventory Lay down and Process Plant lay down
Ammonium Nitrate	10,000 Mt	20 Mt per sea can	Emulsion plant
Ammonium Nitrate Fuel Oil (ANFO)	Manufactured on demand	20,000 kg per truck	Emulsion plant
Motor Oil	Estimated at 800,000L	20,800L per sea can	Inventory Lay down, garage
Trojan Boosters (Blasting Systems)	34,000 kg	15 Mt per sea can	Emulsion plant
Borax, Anhydrous	7,500 kg	3,375 kg per sea can	Inventory Lay down and Process Plant lay down

Material	Maximum Anticipated on -site	Maximum Amount transported per unit	Storage Location
Calcium Chloride	600,000L	10,000L per sea can	Inventory Lay down
Copper Sulphate	500 Mt	20 Mt per sea can	Inventory Lay down and Process Plant lay down
Diesel Fuel	5.6 million Litres	40,000L per tanker	Meadowbank Tank farm
Diesel Fuel	1.5 million Litres	40,000L per tanker	Whale Tail Tank farm
Diesel Fuel	70 million Litres	NA	Baker Lake Tank farm
Diesel Fuel	1,915 Litres	NA	Whale Tail Haul Road Km 132
Dyno Split (Detagel)	135,000 kg	15 Mt per sea can	Emulsion plant
Nonel EZTL	1,400 kg	15 Mt per sea can	Emulsion plant
Nonel MS	1,800 kg	15 Mt per sea can	Emulsion plant
Ethylene Glycol	60,000L	10,000L per sea can	Inventory Lay down
Jet A Fuel	50,000L	11,000L Tanker	Meadowbank Tank, tarmac
Jet A Fuel	1,800,000L	NA	Baker Lake Tank Farm
Lead Acid Batteries	500L	500L per sea can	Warehouse
Magnafloc 10 (Flocculant)	300 Mt	15 Mt per sea can	Inventory Lay down
Nitric Acid	120,000L	8,000L per sea can	Inventory Lay down
Portland Cement	3,500 Mt	20 Mt per sea can	Dyke and Construction lay down
Sodium Cyanide	1,300 Mt	19 Mt per sea can	Inventory Lay down and Process Plant lay down
Sodium Hydroxide	10 kg	10 kg in sea can	Warehouse
Sodium Nitrate	10.2 Mt	5.1 Mt per sea can	Inventory Lay down
Sulfur	4,600 Mt	20 Mt per sea can	Inventory Lay down Process Plant lay down
Unleaded Gasoline	50,000L	40,000L tanker	Meadowbank and Baker Lake Tank
Varsol	4,000L	2,000 L per sea can	Inventory Lay down

6.1. Baker Lake Tank description and surrounding environment

Agnico's Oil Handling Facility (OHF) is located in the area of Baker Lake at latitude 64°18 22.778" N and longitude 95°57'33.990" W. The Baker Lake OHF consists of seven (7), ten (10) million liter tanks for diesel fuel, within secondary containment (Figure 3). The steel fuel tanks have been field erected and built to API-650 standards with each bermed area holding two tanks. This area is capable of containing 110% of the volume of one ten (10) million liters tanks storage tank.

6.1.1.Topography

The bulk fuel storage area is located east of the Hamlet of Baker Lake, approximately 350 m north of Baker Lake (Figure 4). The OHF sits on a low terrace parallel with the shoreline of the lake. There is a gradual slope (5 to 10% grade) toward Baker Lake with an approximate elevation change of 35 m from the OHF to the Baker Lake shoreline. The Baker Lake shoreline is gently sloping, well-drained and is lined with marine gravels, sands and boulders.

6.1.2.Geology

The regional surficial geology is characterized by sandy till, bedrock outcrops, felsenmeer (ice-shattered bedrock) and shallow lakes. The most common soil type in this region is glacial till. Marine beach deposits are found along the north shore of Baker Lake.

The soil near the bulk fuel storage facility is comprised of silts, sands, gravels, cobble and boulders and frost-susceptible glacial till overlying weathered bedrock. The soil thickness is typically less than 1.4 m with permafrost or bedrock encountered at less than 2 m. Approximately 60% of the surface area surrounding the bulk fuel storage facility is comprised of bedrock outcrop.

6.1.3.Flora and Fauna

There are no trees and few shrubs in the area surrounding the bulk fuel storage facility. The site is covered by low-lying vegetation; predominated by grassy hummocks, dwarf willow, sedge, green moss and lichen.

Arctic ground squirrels, ptarmigan and songbirds are inhabitants in the area surrounding the bulk fuel storage facility. Lake cisco, lake trout, arctic char, lake whitefish, round whitefish, slimy sculpin and stickleback are predominant species found in Baker Lake.

6.1.4.Subsurface Conditions

Test pits excavated in 2005 near the Bulk Fuel Storage Facility and between the tanks and the shoreline indicate a saturated top layer (0.2 m) of organic material (primarily green moss). A layer of grey to black medium sand is present up to 0.7 m thickness throughout the area, below which a saturated, grey brown, sand and silt layer is found.

Bedrock is exposed at shallow depths throughout the site in locations where topsoil or till soils are present. Bedrock is encountered at a maximum depth of 1.4 m. As predicted by the soil conditions, seepage flows in test pits indicate high site drainage (Baker Lake Bulk Fuel Storage Facility Environmental Performance Monitoring Plan).

6.1.5.Water Quality

Baker Lake water quality closely resembles distilled water as many conventional water chemistry parameters are at or below detection limits. The water column is generally well mixed and the water

chemistry homogenous. During the open water season there is limited vertical stratification in temperature and dissolved oxygen, with observed higher salinity in the bottom strata.

6.1.6.Bathymetric Data

As required by Water License 2AM-MEA1530 Schedule B, Item 6, a bathymetric survey(s) is conducted prior to each year of shipping at the Baker Lake Marshaling Facility. The result of this annual bathymetry is provided in the annual report.

6.1.7.Tides and Currents that Prevail at the Facility

There is a general southward current in Hudson Bay at Chesterfield Inlet of about 19 km/day (CCG 2008). Tides are 4.6 meters with strong cross-currents at Chesterfield Inlet; usually flowing southwest at about 1.85 km/hr.

6.1.8.Meteorological Conditions Prevailing at the Facility

Monthly meteorological data has been collected from 1971 to 2000 from the Baker Lake “A” climate station, which is a Meteorological Service of Canada climate station. Snow and rain are combined to give monthly average precipitation. The prevailing winds for the area are generally from the north to north-west and average 20.4 km/hr.

6.1.9.Surrounding Area Environmental Sensitivities

The community of Baker Lake is a hamlet in the Kivalliq Region, in Nunavut on mainland Canada. Located 320 km inland from the west coast of the Hudson Bay, it is near the nation's geographical centre, and is notable for being the Canadian Arctic's sole inland community. The hamlet is located at the mouth of the Thelon River on the shore of Baker Lake.

The freshwater provided to the community is taken in Baker Lake. The freshwater intake is located approximately 3.4 km from the Meadowbank OHF. See Figure 4 above for the exact location. In case of a spill during fuel transfer, preventive action will be taken to avoid any contamination in close proximity of the water intake and cause health and safety problems to the community:

1) As part of the spill procedure, Agnico will make the community of Baker Lake aware of any spill to ensure measures can be taken to ensure safety of the community by contacting Mayor / Hamlet counsel and Fire department;

2) As part of the spill procedure, boom and absorbents pads will be deployed to confined and limit the progression of the spill into the water;

3) Booms will be deployed to capture the spill;

4) If spill cannot be captured prior to spreading towards the freshwater intake, booms will be deployed around the freshwater pump and regular inspection will be done to see if there are visible sheen;

5) As a precaution and depending of the spill size, Agnico will work with the Baker Lake Hamlet Counsel to provide a notice to the community of Bake Lake to stop the consumption of the freshwater during the time spill is recovered and until a test on water is conducted. During this time

Agnico will provide potable water to the community[1]. As soon as the spill will be recovered and it's determined that the freshwater intake and distribution system is not contaminated the consumption of freshwater will resume.

6.2. Meadowbank Diesel Tank description and surrounding environment

The Meadowbank Bulk Fuel Storage Facility is located at Meadowbank, east of the main camp facilities adjacent to the mine operations haul road. There is one (1) above ground storage tank with approximately 5.6 million liters capacity within a lined secondary containment able of containing 110% of the volume. The GPS coordinates of the facility is NAD83 14W E 0638083 N 7214288.

6.2.1.Topography

The surrounding area of the Meadowbank site consists of low, rolling hills with many small lakes; Third Portage Lake is located to the south and Second Portage Lake to the north. The bulk fuel storage tank at Meadowbank is bounded to the north by the mine site, a haul road to the east, and the incinerator and waste management area to the south. The surface water drainage at the bulk fuel storage facility is towards the storm water management pond to the north.

6.2.2.Geology

The fuel storage sites have a thin, discontinuous cover of top soil with minimal organic material. Soil thickness is typically between 1 and 5 m below which bedrock is encountered. In the area near, bedrock is encountered within 2m of existing ground surface or is exposed with weathered fractures extending 1 to 2 m into the rock.

6.2.3.Flora and Fauna

There are no trees and few shrubs in the area surrounding the Meadowbank site. The site is covered by low-lying vegetation; predominated by grassy hummocks, dwarf willow, sedge, green moss, and lichen.

Arctic ground squirrels, ptarmigan and songbirds are inhabitants in the area surrounding the fuel storage areas. Lake trout, arctic char, lake whitefish, round whitefish, slimy sculpin and stickleback are predominant fish species found in local lakes.

6.2.4.Subsurface Conditions

Soil is characterized by lateral deposits of glacial till. Bedrock is exposed at shallow depths throughout the sites. There is high site drainage due to limited soil depth, high presence of fractured bedrock and glacial till.

6.2.5.Water Quality

Water quality closely resembles distilled water as many conventional water chemistry parameters are at or below detection limits. The water column is generally well mixed and the water chemistry homogenous. During the open water season there is limited vertical stratification in temperature and dissolved oxygen.

[1] 2The Meadowbank project keeps a supply of 120 twenty litre bottles of drinking water in supply at all times in case of emergency. As well the water treatment plant is capable of producing >200m_3 of water a day and the current usage for the mine site is ~110m_3. Thus, if required the Meadowbank mine can produce drinking water for the community for an emergency cease in the consumption of potable water due to a spill at the Baker Lake Marshalling Facility

6.2.6.Meteorological Conditions Prevailing at the Facility

Refer to Section 6.1.8 above.

6.2.7.Surrounding Area Environmental Sensitivities

There is no local community near the mine site. The surface water drainage at the bulk fuel storage facility is towards the storm water management pond to the north and the risk of affecting surrounding area is pretty low.

The freshwater provided to the mine is taken from Third Portage Lake. The freshwater intake is located approximately 2 km NW from the Meadowbank OHF. See Figure 1 above for the exact location. In case of an emergency spill towards Third Portage Lake, preventive action will be taken to avoid any contamination in close proximity of the water intake and cause health and safety problems:

1) As part of the spill procedure, Agnico will make the community of Baker Lake aware of any emergency spill to ensure measures can be taken to ensure safety of the community by contacting Mayor / Hamlet counsel and Fire department;

2) As part of the spill procedure, boom and absorbents pads will be deployed to confined and limit the progression of the spill into the water;

3) Booms will be deployed to capture the spill; and

4) If spill cannot be captured prior to spreading towards the freshwater intake, booms will be deployed around the freshwater pump and regular inspection will be done to see if there are visible sheen.

6.3. Health and Environmental risk resulting from an emergency release of diesel fuel

Short-term exposure to diesel fuel can cause irritation of the eye, skin or respiratory tract. Dizziness, headache or nausea can also be experienced. Long-term exposure to diesel fuel fumes can cause lung cancer, kidney damage and increased risk of heart attack.

Another risk related to an emergency release of diesel fuel would be the contamination of the drinking water. Diesel fuel is highly flammable and pose a serious fire hazard if not contained.

Diesel fuel is considered a non-persistent oil (as compared to a heavier Bunker or crude oil product) in even the calmest sea conditions, as it will lose 40% of its volume due to evaporation within 48 hours in cold weather. Adverse weather will disperse the sheen into smaller slicks creating a greater surface area for evaporation. In open rough seas, most of the volume released will be dispersed and evaporated within 5 days. Nevertheless, it still poses a threat to marine organisms and particularly birds if they happen to come into contact with the slick.

More details can be found in Appendix P.

The possibility that an environmental emergency occurs, the potential effects of the environmental emergency on the environment and on human life or health and the measures that will be taken to protect the environment and human life or health will be communicate to the members of the community every year, especially prior to the fuel transfer from ship to shore at Baker Lake.

SECTION 7 POTENTIAL SPILL ANALYSIS

To prepare for emergency spill response, potential spill analyses were conducted using various worst-case scenarios. These exercises serve to identify potential risk areas, as well as to determine the fate of spilled products and their environmental effects. One such potential scenario was identified for the Meadowbank Gold Project, this being a tanker truck spilling its contents into a waterbody somewhere between Baker Lake and Meadowbank alongside the AWAR. Such a scenario could also be applied to a tanker truck going off the Whale Tail haul road and spilling its contents.

Scenario #1: Road Accident Tanker Truck Spill on AWAR

Description of incident: Spill of the contents of a fuel tanker to the ground or water during transport from Baker Lake to the Meadowbank site.

Potential causes: Vehicle accident, human error, mechanical failure

Hazardous products spilled: Diesel fuel, aviation fuel

Maximum volume spilled: 40,000 litres

Immediate receiving medium: Stream, river or lake

Distance and direction to nearest receiving body of water: N/A

Resources to protect: Streams, rivers and lakes

Estimated emergency response time: Maximum time is 90 minutes depending on location of spill (assuming truck driver is injured and cannot commence spill response procedures). Minimum time to respond to a spill on the AWAR is 15 minutes.

Spill response procedures: Contain and recover oil slick downriver as described in Section 5.3, protect shorelines using sorbent booms. Collect free-product for temporary storage. Clean-up soiled shorelines. If the response crew arrives before the complete loss of fuel from the tanker truck seal the leak if feasible, contain and recover oil spill on ground using dykes, sumps or trenches as described in Section 5.2. Also, if the truck driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in Section 5 using the spill kit kept in fuel trucks.

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 to Agnico Eagle that will be used for spill contingency 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

If required, additional equipment on site will be made available to assist with spill recovery. Temporary containment systems are also available on site and include:

- Booms
- Drums
- Tanks
- Tailings Pond
- Spill absorbent material packages/pads
- Silt fencing
- Maritime Barrier

Emergency transportations that will be used under an emergency situation are:

- Aircraft (fixed wing or helicopter)
- 4-wheel drive vehicles
- Snowmobiles
- Boats
- Tundra Buggy

- Sherp

Communication equipment at Meadowbank and Whale Tail includes radios, telephones, faxes and other wireless communication systems that will be used in the event of an emergency situation.

Spill Response kits are strategically located where required around the Meadowbank (Figure 8) and Whale Tail (TBD) sites. Tank at Km 132 also have a spill response kit. 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 so on.

All of the mobile equipment on all sites (heavy equipment) contains an emergency spill kit.

An Environmental Emergency Trailer, which is easily accessible and mobile, is located on site at Meadowbank and contains the following items:

- Pump Elastec
- Pump accessories
- Vacuum ends
- 45 gallons top
- Tubing 2 inches diameter
- Tubing 3 or 4 inches diameter
- Diesel Fuel jerry can (place on a miniberm)
- Spill kit accessory (red box)
- Drums opener
- Wescot (to open empty drum screw)
- Empty drums
- 2 drums berm
- 4 drums berm 4x8
- Tarp 20x30
- Tarp 30x50
- Oil white spill pads
- Universal boom 5x10
- Universal boom 8x10
- ABS pipe : 10' (4")
- ABS pipe : 10' (6")
- Cell U-Sorb

- Sphagsorb
- 3 Size of Wedge wood
- Plug pattie
- Quattrex bags
- Hand shovel
- Ice breaker chisel
- Sledge hammer
- Rod bar (4')

Along the AWAR there are 9 environmental emergency sea cans (Figure 9). Currently, there is two (2) environmental emergency sea cans installed along the Whale Tail Haul Road at Km 125.5 and Km 147, between Whale Tail Pit and Meadowbank. More environmental sea can are planned to be installed. Approximate location are detailed on Figure 10 below. These sea cans are, or will be placed, strategically placed along the roads at water crossings. Each environmental emergency sea can contains the following material:

- Empty drums (Sealed)
- Mini berm 36"x36" x4'
- 4 drum spill berm 4x8
- Tarp 20'x30'
- Tarp 30'x50'
- Oil white spill pads
- Universal boom 5"x10' (Chemical)
- Universal boom 8"x10' (Chemical)
- Oil only booms 5"x10' (Hydro-carbons)
- Maritime barrier (Baffle)
- ABS pipe : 10' (4")
- Cell U-Sorb
- Amerisorb peat moss
- Oil gator absorbent
- Plug pattie
- Quattrex bags
- Fork lift crate (pallets)
- Long handle round point shovel

- Chisel point crow bar 16 lbs 57"
- Ice braker chisel
- Sledge hammer 12 lbs 36"
- Rod bar (4')

The following equipment is available right at the Baker Lake OHF at any given time in a sea can designated for Environmental Emergency and can be deployed on scene within one hour, if it's safe to do, to contain and control the spill.

- 3 x Empty drums (sealed)
- 2 x Mini Berm 36"x 36"
- 2 x 4 Drums Berm 4'x 8'
- 4 x Tarp 20'x 30'
- 4 x Tarp 30'x 50'
- 20 x Oil Spill Absorbent Pads
- 10 x Universal Absorbent Boom 5"x 10' (For Hydro-soluble Chemical)
- 10 x Universal Absorbent Boom 8"x 10' (For Hydro-soluble Chemical)
- 10 x Petroleum base Absorbent Boom 5"x 10' (for Petroleum product)
- 8 x Maritime Barrier (Baffle)
- 5 x ABS pipe: 10' long x 4" diameter
- 2 x Cell-U-Sorb (Absorbent)
- 2 x Amerisorb Peat moss (Absorbent)
- 2 x Oil Gator Absorbent
- 1 x Plug Patties
- 4 x Quatrex bags
- 2 x Fork Lift Crate
- 4 x Hand Shovel
- 1 x Crow Bar Chisel
- 1 x Ice Breaker Chisel
- 1 x Sledge hammer
- 15 x Rod bar 4'
- 1 x ½ drum containment
- 1 x 16ft Boat with motor and gasoline jerry can (sea can #321225)

If required, external resources are available in the Hamlet of Baker Lake and those contacts are found in Table 3.

Figure 8: Spill Response Equipment Location at Meadowbank

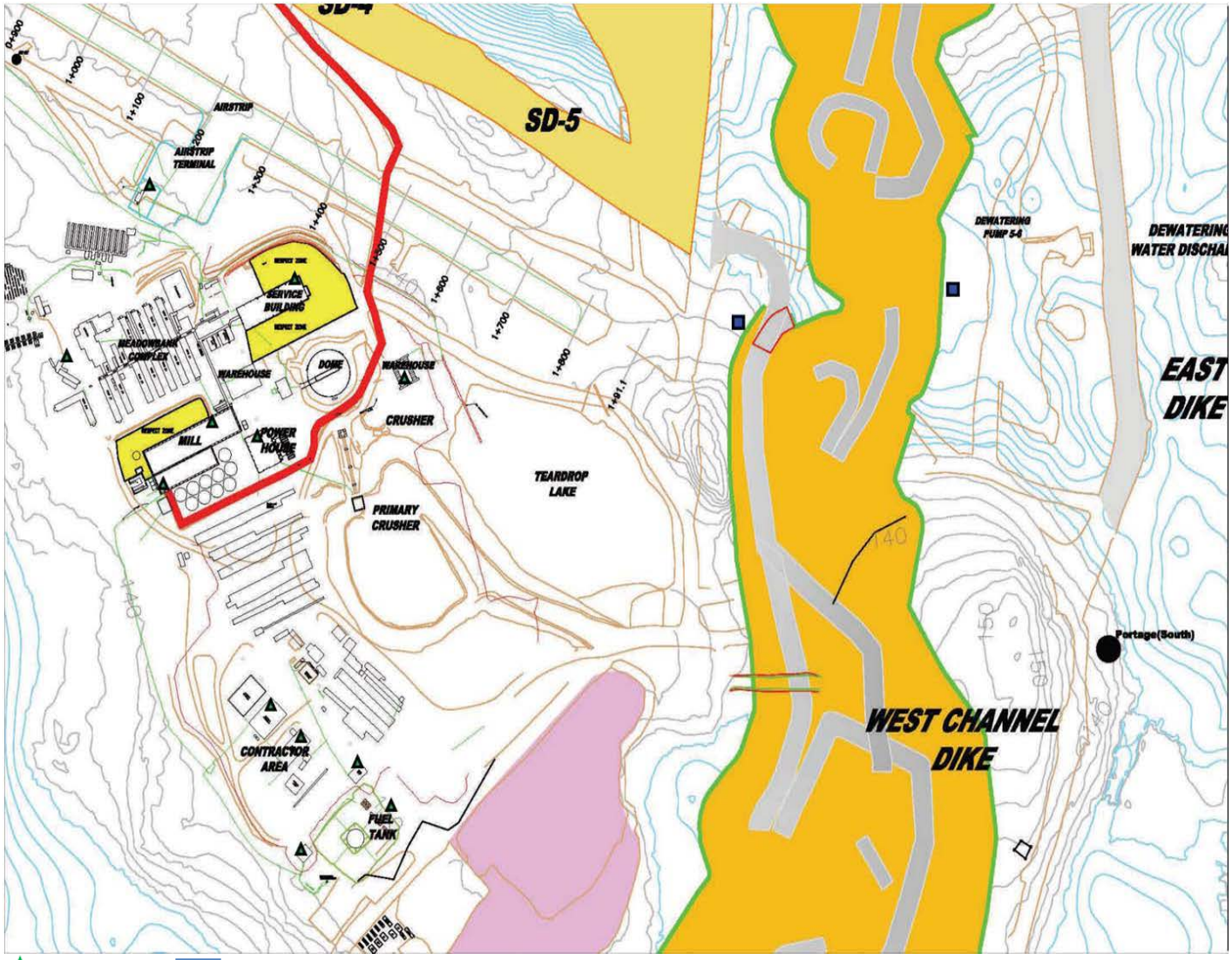


Figure 9: Map of AWAR Including Locations of Environmental Emergency Sea cans

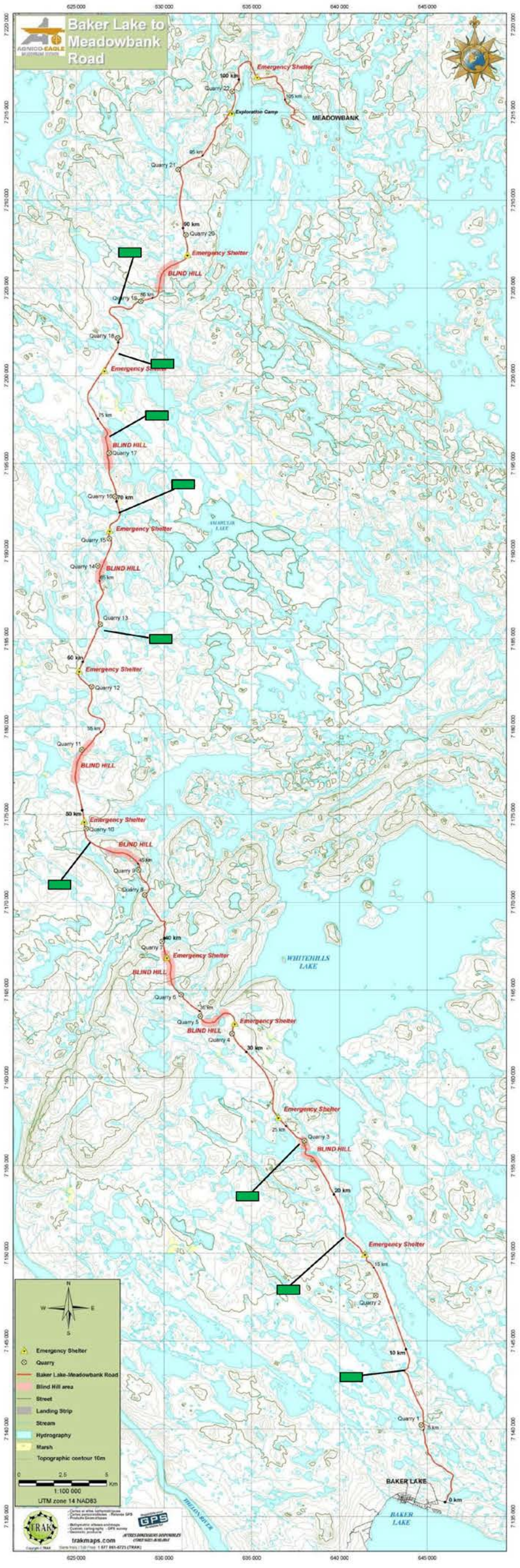
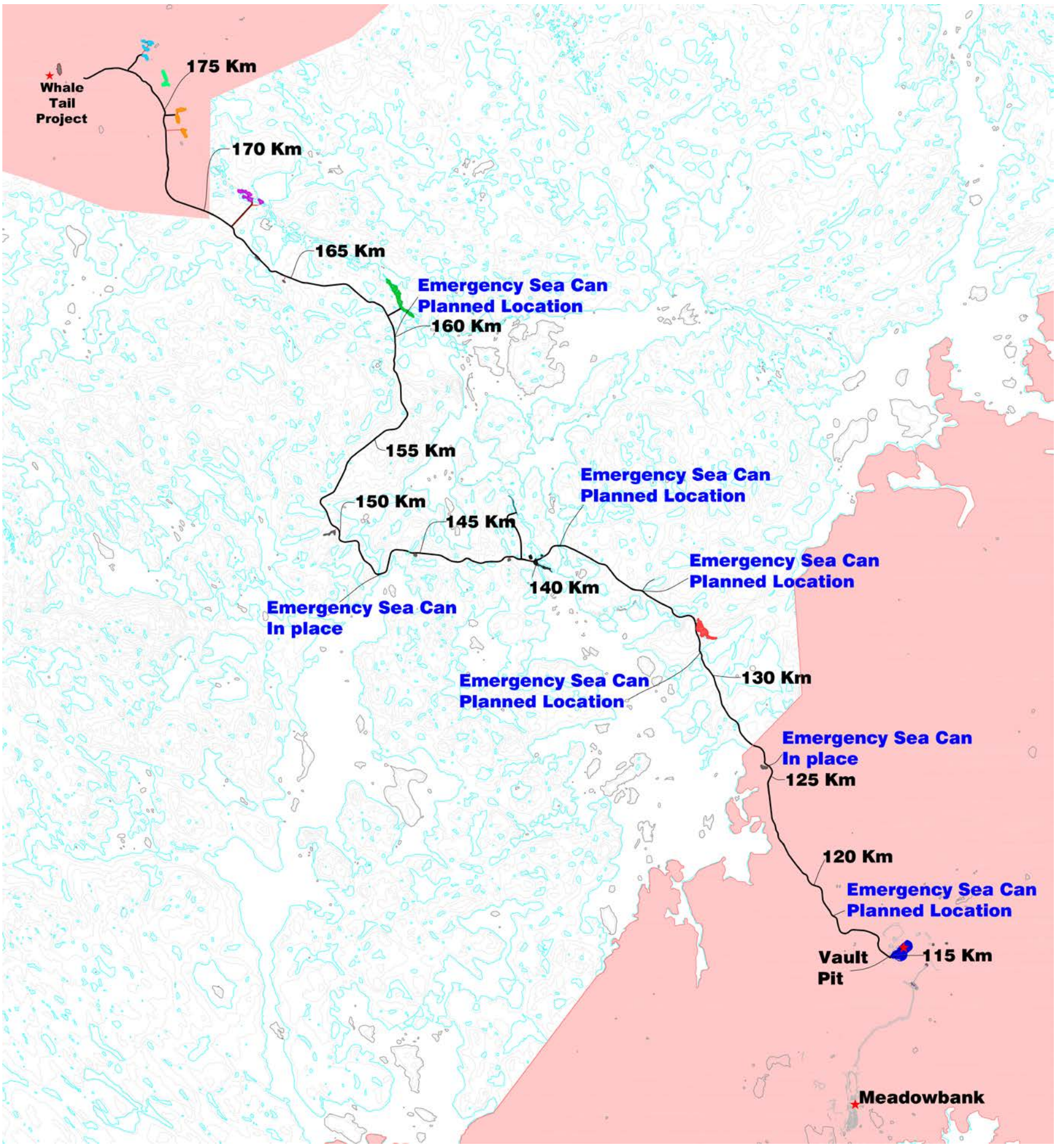


Figure 10: Map of Whale Tail Haul Road Including Locations of Environmental Emergency Sea cans



SECTION 9 TRAINING & EMERGENCY SPILL/EXERCISE

A designated Emergency Response Team (ERT) consisting of on-site personnel has been established at Meadowbank and another team is established at Whale Tail. Agnico Eagle will ensure that the ERTs are trained and present for major spill response at all times. All members of the teams 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.

The following training is included:

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

Every employee at Agnico Eagle receives 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 equipment (PPE).

A training program is being developed to provide more complete training to all personnel (Agnico and contractors) that will cover safe spill response and intervention as well as awareness to different guidelines pertaining to spills. This training would be mandatory for all staff and renewable yearly.

In February 2020, two employees from the Environmental Department followed the Marine Spill Response Operation Course (MSROC) given by the Canadian Coast Guard (CCG).

The road crews between Baker Lake and Meadowbank, and Meadowbank and Whale Tail also received or will receive training regarding the actions that they have to carry out during an emergency or major spill on the road. You can find records of different trainings that Agnico Eagle personnel have attended in Appendix I. Agnico also performed each year a Mock Spill Scenario in Baker Lake. You can find the detailed of the 2019 Mock Spill in Appendix L. As per the Environment Emergency Regulation, a yearly simulation exercise will be conducted and a full-scale exercise will occurred every five year. Debriefing of the simulation exercise will allow to determine the aspect of the current plan (training, prevention, communication) that will need to be improved. This SCP will be updated to reflect the conclusions and improvement needed. A Product Transfer Area Assessment for Baker Lake Oil handling Facility was also completed and can be found in Appendix M. The Environmental Department regularly attends tool-box sessions to provide information on spill response, spill prevention and spill reporting procedures.

SECTION 10 MDMER INFORMATION

The Fisheries Act prohibits the deposit of deleterious substances into fish frequented waters unless authorized by regulation. The Metal and Diamond Mining Effluent Regulations (MDMER) were promulgated under the Fisheries Act and exempts metal and diamond mining industry from subsection 36(3) general prohibition of the Act. The purpose of the MDMER is to improve metal mine effluent management and greater protection of fish, fish habitat and consumption of fish by humans. Being subject to the MDMER sets out limits and parameters that enable industries to deposit deleterious substances into waters frequented by fish. The MDMER includes effluent limits on releases of eight parameters: six metals (arsenic, copper, cyanide, lead, nickel and zinc), radium-226 and total suspended solids (TSS). The MDMER also imposes limits on the pH of effluent and prohibits the discharge of effluent that is acutely lethal to fish, even if it is determined that the eight MDMER parameters and pH effluent is in compliance. Total suspended solid is the parameter in the effluent discharge that is the most likely to give concern for the discharge in freshwater. Arsenic was also identified as a parameter of concern for the Whale Tail Discharge to environment. To prevent this Water Treatment Plant was put in place to treat TSS and arsenic, if needed.

The Final Discharge Point (FDP) means an identifiable discharge point of a mine beyond which the operator of the mine no longer exercises control over the quality of the effluent. For example, sampling within the tailings pond would not be classified as a legal sample as the mine still exercises control over the quality of the effluent within a tailings pond.

For the discharge to receiving environment, before discharging occurs, required samples from the FDP are taken and analyzed to ensure they are compliant. Under the Nunavut Water Board Water Licence 2AM-MEA1530 and 2AM-WTP1830 Agnico Eagle also has to notify CIRNAC before starting the discharge. If analysis indicates a limit is exceeded or a field measurement indicates a trend towards non-compliance, discharge is stopped. Evaluation is done and if necessary, treatment occurs. Agnico Eagle is also required to report the effluent discharge to the Spills line and provide a written report no later than 30 days after the incident.

When potential seepages (dike, infrastructure) are discovered and/or spill from operation happens and can enter fish bearing waters, mitigation measures are taken (building dikes, pumping stations, putting maritime barriers, etc.). As of now, two (2) seepages were discovered entering fish bearing waters at Meadowbank and one (1) at Whale Tail:

1. On November 4, 2013, it was observed that water was seeping through the road in front of the Assay Lab Road. In December 2013, Agnico requested Tetra Tech (formerly EBA) to perform an assessment, drilling delineation program and provide a report with recommendations in early 2014. Construction of an interception trench was completed in April-May 2014 and repairs and sealing of containment structures within the mill were completed during the summer of 2014. In November 2015 work was conducted to repair portions of the mill floor and ensure its watertight integrity. Agnico also put in place an internal action plan and monitoring program for this seep in 2014. The monitoring is part of the Freshet Action Plan. Refer to Appendix D of the 2019 Water Management Report and Plan for more details regarding the monitoring and action taken by Agnico before, during and after the freshet at this seepage area. Daily visual inspections were conducted during freshet. Prior and after freshet, inspections were conducted weekly and after rain events. Monitoring in Third Portage Lake in response to the mill seepage through the assay road (identified in 2013) continues to indicate that there has been no impact to the near shore receiving waters of Third Portage Lake. The seepage appears to be effectively contained through construction of an interception trench (2014).

2. The Portage Waste Rock Storage Facility (PRSF) has been in operation since 2009. In 2013, ponded water was observed at the south-east base of the PRSF (sampling station ST-16). This was first reported in the 2013 Annual Report (as well as to regulators in July 2013) as a small volume of the seepage, with elevated levels of cyanide, nickel and copper (among other constituents) had migrated, through a rockfill perimeter road, to the near shore area of NP-2 Lake. Agnico determined, in 2013, that the seepage contained reclaim water from the North Cell TSF that had flowed under the PRSF to a sump area designated as sampling station ST-16. Mitigation measures were implemented in since 2013 and this included daily inspections during the freshet period, the installation of a pumping system in ST-16 to direct accumulated water back to the North Cell TSF, installation of four thermistors to analyze freezing in the PRSF and installation of a filter barrier along RF-1 and 2 to prevent water and tailings egress from the North Cell (tailings water) through the PRSF to ST-16. As part of progressive reclamation capping of the North Cell tailings commenced in winter 2015 and continued as of today. Thermistors installed in 2013 indicate also that freezeback is occurring along the seepage path. In accordance with the 2019 Freshet Action Plan (see Appendix D of the 2019 Water Management Report and Plan), Agnico continued to monitor water quality and contain the ST-16 Seepage. From 2014 to 2019, average analysis results for applicable parameters confirmed no impacts to downstream lakes (NP-1, Dogleg, Second Portage Lake).

3. As required by Part H, Item 8b of Water License 2AM-WTP1830, Agnico Eagle Mine Limited – Meadowbank Division informed regulators via email on August 25 that during an inspection held on August 24 at 10:30hrs of the Whale Tail Waste Rock Storage Facility (WRSF) Dike, a water flow was observed at the toe of the dike entering Mammoth Lake. Following observation of the water flow, special measures were immediately put in place on August 24 to reduce the flowrate by pumping water out of the WRSF collection pond, with the ultimate objective to stop the flow as quickly as possible. Given the nature of the topography at the toe of the WRSF Dike (flat terrain at an elevation close to the lake elevation with the presence of a boulder field), and its difficult access, installing a pumping station at the toe could not be done rapidly and that the best course of action was a rapid head reduction in the pond by emptying it.

   The WRSF pond was considered to be essentially empty by September 1, within one week of the first observation. In the meantime, an access road to the toe of the dike was constructed to allow the installation of a water collection system to pump the water back upstream. The collection system was operated until the onset of freezing conditions on September 30 but after the pond was emptied. By this time it was mostly collecting drainage water downstream of the dike.

   The visual detection of this seepage downstream of the dike was difficult because of the presence of a boulder field at the toe which caused the flow to be somewhat diffuse as well as the presence of natural runoff reporting in this area.

   A series of samples were taken for analysis on August 26 from the water source (WRSF Pond) as well as from the receiving waterbody (Mammoth Lake). The toxicity test results were provided in the September 13, 2019 report and showed no mortalities.

   Samples were also taken to test the water quality specifically for MDMER related parameters on August 26. Sampling locations were identified as WRSF flow (water sampled downstream of the dike, where the flow was first observed and where a sump was

excavated) and Mammoth Lake receiving (water sampled within a few meters of the shoreline of Mammoth Lake north).

Analysis results from these samples and from subsequent samples taken at both locations showed no exceedances of the MDMER water quality criteria. These results are consistent with the expected water quality for this contact water.

A full complement of samples for extended parameters were also collected on August 27, 30, September 2 and on a weekly basis until freeze up (September 29, 2019) and sent to the accredited laboratory. No MDMER or Water License exceedances were shown for this complement of sampling.

A series of measures have been or will be implemented to minimize the risk of a similar occurrence in the future:

- The water level in the WRSF pond will be maintained at a low level throughout 2020 as per recommendation from the MDRB as a precautionary measure and to ensure protection of the freeze-back of the key trench;
- Permafrost penetration will be promoted during winter 2019-2020 by implementing a series of additional measures to increase the robustness of the infrastructure and in particular the upstream toe against permafrost degradation:
    - Strategic snow removal to keep the toe more exposed to winter conditions;
    - Keeping a low water level (if any) in the pond during winter and summer months;
    - Placing additional thermal cover material on the upstream portion of the dike; and
    - Assessing freeze back performance with periodic instrumentation review;
- A more robust downstream water collection system will be designed and constructed; and
- Thermistors monitoring will continue.

In addition, the following environmental monitoring will be conducted:

- A monthly limnology profile of Mammoth Lake will be completed over the winter and open water conditions;
- A core receiving environment monitoring program will be carried out, including Mammoth lake; and
- A sediment sampling campaign will be executed in the summer at Mammoth Lake.

Agnico Eagle continues to closely monitor the situation and is working on mitigation measures to ensure adequate performance of the structure.

For the discharge to receiving environment, the FDP is located downstream of the Effluent Water Treatment Plant or after the pumping station; beyond that point Agnico Eagle cannot exercise control over the quality of the effluent. FDP water quality is assessed with grab samples; the sampling point is located at a valve along the discharge pipe, at the pump or after the Water Treatment Plant.

Agnico Eagle Meadowbank Gold Project became subject to the Metal Mines Effluent Regulations (MMER), under the Fisheries Act, on January 1, 2010 as the dewatering of Second Portage Lake occurred at a flow rate greater than 50 m^3 per day. Once the dewatering was completed, it became the Portage Attenuation Pond. Water was treated via a water treatment plan and was discharging in Third Portage Lake via a diffuser, to control erosion and disturbance to bottom sediments. On November 19, 2014 tailings deposition commenced in the South Cell (Portage Attenuation Pond) and this represented the end of use of the Portage Attenuation Pond. There has been no further effluent discharge to Third Portage Lake since July 5, 2014. This FDP was official dismantled on May 1, 2019 to ECCC and no more reporting is required on MERS system. Refer to Figure 1 above for the FDP location.

The Vault final discharge (Meadowbank) point became subject to the MMER Regulation on June 27, 2013 at the commencement of the dewatering of Vault Lake. Once the dewatering completed, it became the Vault Attenuation Pond. TSS water treatment plan was not required for discharge to Wally Lake as water was compliant with section 4(1) of the regulation. Water was discharged via a diffuser, to control erosion and disturbance to bottom sediments. Since October 2017, no more water was discharged to Wally Lake and there are no further plans to discharge water from this location in the following year. FDP still active on the MERS system. Refer to Figure 2 above for the FDP location.

The East Dike Seepage Discharge (Meadowbank) became subject to the MMER on January 6, 2014. Water was pumped water from the two collection points, South and North seepage and discharged through a common header through a diffuser, to control erosion and disturbance to bottom sediments environment, into Second Portage Lake. The seepage water was released into the Second Portage Lake, prior to contact with mining activity, without treatment as it is compliant with section 4 (1) of the regulation. FDP still active on the MERS system. Refer to Figure 1 above for the FDP location and Photo 1 below.

***Photo 1*. FDP East Dike Discharge Meadowbank**

At the Agnico Eagle Whale Tail Project, during the in-water portion of the Whale Tail Dike Construction, Agnico had discharge an effluent from the construction dewatering activities. The Whale Tail Site became subject to the MDMER on July 27, 2018 as the discharge occurred at a flow rate greater than 50 m^3 per day. The FDP sample was taken from the Water Treatment Plan prior to the release on the tundra, which flows onto a natural boulder field at the edge of the Whale Tail Lake North Basin (receiving environment). Discharge was stopped since August 27, 2018. This FDP was official dismantled on May 1, 2019 to ECCC and no more reporting is required on MERS system. Refer to Figure 11 below location of the FDP.

During the dewatering of the Whale Tail North Basin to become the Whale Tail Attenuation Pond, a new FDP was created - ST-MDMER-5 WT North Basin Dewatering Phase 1. This FDP was subject to MDMER on March 5, 2019. Whale Tail North Basin dewatering water is pumped and discharge to Whale Tail Lake South Basin without water treatment and via submerged diffuser to control erosion and disturbance to bottom sediments. The final discharge point (FDP) is located on the pipe near the shore of Whale Tail South Basin. Refer to Figure 11 below for the FDP location and Photo 2 below.

Photo 2. **ST-MDMER-5 FDP**

When the water from the Whale Tail North Basin dewatering required treatment for TSS, the water was pumped and treated via the Water Treatment Plan and discharged back in Mammoth Lake via a submerged diffuser to control erosion and disturbance to bottom sediments - ST-MDMER-6 WT North Basin Dewatering Phase 2. This FDP became subject to MDMER on June 17, 2019. Whale Tail North Basin dewatering water is pumped and treated for TSS through the Water Treatment Plant then the water is discharged in Mammoth Lake via a submerged diffuser. This discharge is still active on MERS system but no more water was discharged since October 26, 2019. Refer to Figure 11 below for the FDP location and Photo 3 below.

Photo 3. **ST-MDMER-6 FDP**

Water from Quarry 1 was also discharged to Mammoth Lake via a submerged diffuser to control erosion and disturbance to bottom sediments - ST-MDMER-7. This FDP became subject to MDMER on August 26, 2019. ST-MDMER-7 intake was originally planned to be the Whale Tail Attenuation Pond and the sampling point of the FDP at the Water Treatment Plan. On September 19, 2019 Agnico sent a notification of modification to ECCC to move the intake from Whale Tail Attenuation Pond to Quarry 1. The sampling point of the FDP moved from after the WTP to the intake of the pump in Quarry 1. Water discharged in the same receiving environment (Mammoth Lake) as our original application. On March 20, 2020, Agnico sent another notice of modification to ECCC regarding the FDP sampling and water intake locations. Water intake moved from the Quarry 1 to the Whale Tail Attenuation Pond and FDP sampling location moved from the pump intake in Quarry 1 to a sampling valve installed on the HDPE discharge pipe near the shore of Mammoth Lake, as showed on Photo 4 below. Depending of the water quality, water may be treated by the Water Treatment Plan (WTP) before discharge in the same Mammoth Lake West Diffuser. Exposure sampling point in Mammoth Lake (MAME-2) and diffuser location remained the same as our original application. This discharge is still active on MERS system. Refer to Figure 11 below for the FDP location.

Photo 4. **ST-MDMER-7 FDP**

Agnico submitted an application, as per the MDMER regulation Section 10 (1), to ECCC on May 8, 2019 regarding the creation of the ST-MDMER-8 discharge. Water was first discharged from this FDP on June 17, 2020. The original application for this FDP was a water intake in the Whale Tail Attenuation Pond and FDP sampling location after the WTP. On March 20, 2020, Agnico sent a notice of modification to ECCC regarding the FDP sampling location. Water intake moved from after the WTP to a sampling valve installed on the HDPE discharge pipe near the shore of Mammoth Lake, as showed on Photo 5. Depending of the water quality, water may be treated by the Water Treatment Plan (WTP) before discharge in the Mammoth Lake East Diffuser. Exposure sampling point in Mammoth Lake (MAME-2) and diffuser location remained the same as our original application. This discharge is still active on MERS system. Refer to Figure 11 below for the FDP location.

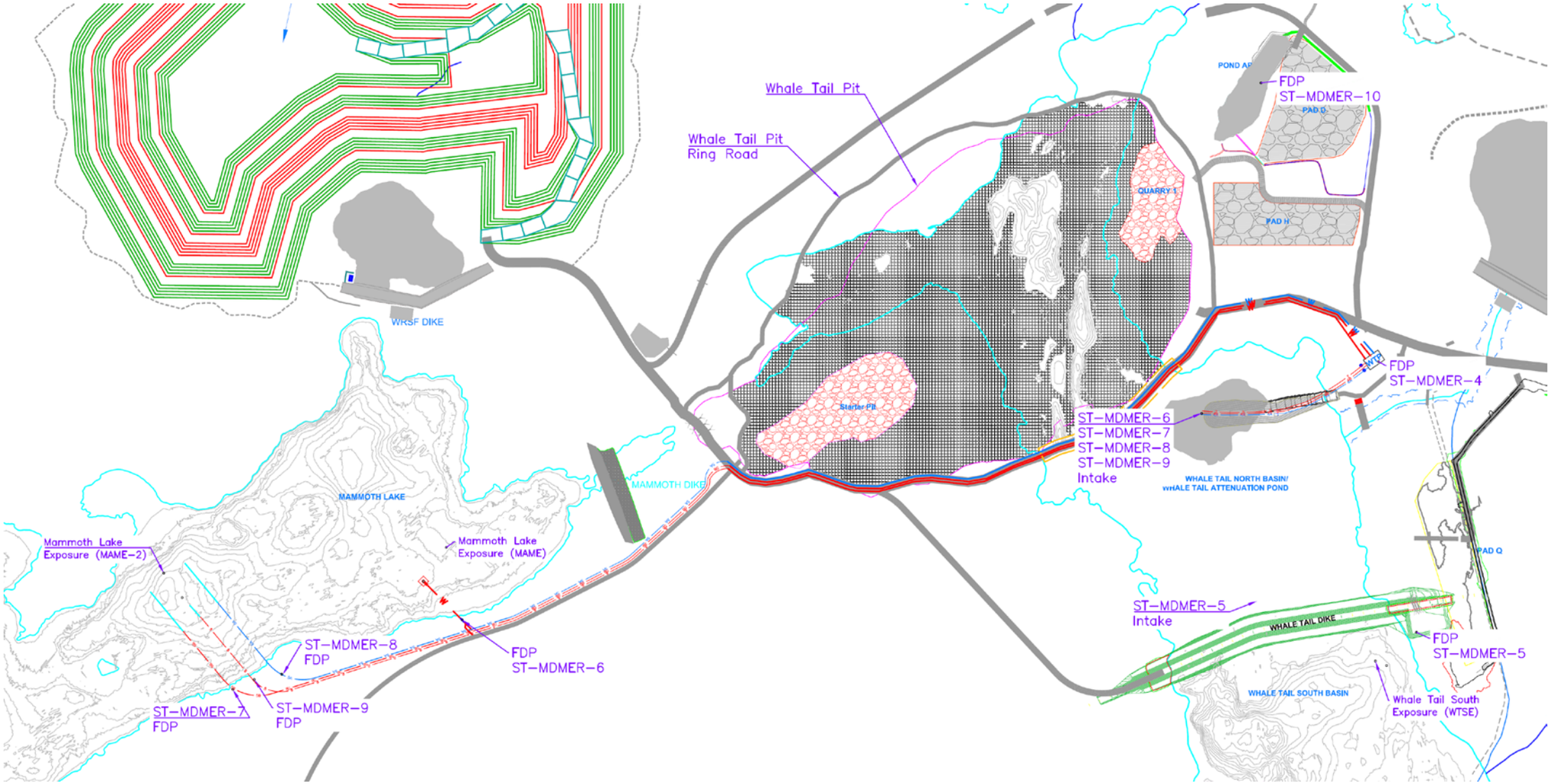
Photo 5. **ST-MDMER-8 FDP**

Application submitted to ECCC on May 8, 2019, as per the MDMER regulation Section 10 (1), also included the creation of the FDP ST-MDMER-9. No water has been discharged yet from this FDP. The original application for this FDP was a water intake in the Whale Tail Attenuation Pond and FDP sampling location after the WTP. On March 20, 2020, Agnico sent a notice of modification to ECCC regarding the FDP sampling location. Water intake moved from after the WTP to a sampling valve installed on the HDPE discharge pipe near the shore of Mammoth Lake. Depending of the water quality, water may be treated by the Water Treatment Plan (WTP) before discharge in the Mammoth Lake winter diffuser. Exposure sampling point in Mammoth Lake (MAME-2) and diffuser location remained the same as our original application. This discharge is still active on MERS system but the exact date of discharge will have to be corrected on MERS once the discharge start as per previous communication with ECCC. Refer to Figure 11 below for the FDP location.

During September 23, 2019 ECCC's MDMER inspection at Whale Tail Site, the Inspector observed a discharge from the A-P5 pond to the tundra towards the Nemo Lake watershed. After investigation, Agnico Eagle was notified on October 3, 2019 that the A-P5 discharge to environment meet the definition of an effluent and thus must submitted to the Minister of the Environment the information required by MDMER Section 9. The requested information was provided on October 31, 2019. A-P5 Stormwater Management Pond is a man-made structure use for the water management on the Whale Tail site. Water collected by this pond is mainly non-contact water but can received contact water from the underground operation or other location around site, if needed. Water from this pond is discharged to tundra in the watershed of Nemo Lake, via one HDEP pipe flowing into a boulder field in a manner to dissipate energy and limit erosion. No water treatment is expected for the discharge as the water quality is expected to reach the MDMER discharge criteria. If not, water will be pumped in the Whale Tail Attenuation Pond. FDP and sampling point (ST-MDMER-10 A-P5 Discharge) for this discharge will be located at the water intake pump. This discharge

is still active on MERS system but no more water was discharged since September 26, 2019. Refer to Figure 11 below. There is no photo of the sampling point available for the update of this Version 11.

Figure 11: FDP Location Whale Tail



Appendix A

Environmental Department weekly inspection template

Environmental Inspection report for MBK Refuelling Station, Jet-A tank and fueling area, Tank farm, and Camp Gensets

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Date: _____ **Inspected By: _____**

Time: _____ **Weekly Inspection**

Compliance with	Subject	Conform	Non-conform	N/A	Comments
NIRB Condition 26	Ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris.				
NIRB Condition 25	Management and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors.				
NWB Part D Item 29 MBK - SCP	Spills on the ground				
NWB Part H Item 4 NIRB Condition 27	Secondary containment for fuel, Jet-A, and chemical storage in place				
NWB Part D Item 29	Refuelling procedures followed (secondary containment at every connection and 3 persons)				
MBK Bulk Fuel Storage Monitoring Plan Section 6.1	Precipitation or runoff accumulation in secondary containment				
MBK Bulk Fuel Storage Monitoring Plan Section 6.1	Any visible sheen on water.				

NWB Part F Item 23	Water in secondary containment of MBK Bulk Fuel Storage Facility and Jet-A storage being measured and recorded in m^3.				
NWB Part F Item 9 NIRB Condition 12	Discharge of water not causing erosion				
MBK Bulk Fuel Storage Monitoring Plan Section 6.1	Any visual structural issues with containment berms				
NWB Part F Item 8	10 days' notice given to inspector prior to discharge?				
NWB Part F Item 6	Water being discharged to land meets water quality limits				
MBK Bulk Fuel Storage Monitoring Plan Section 6.1	Any indicators that would suggest damage to liner for secondary containments				
NWB Part F Item 9	Discharge of water >30m from ordinary high water mark				
NWB Part F Item 5	Discharge from MBK Fuel Storage Facility being directed to Stormwater Management Pond				
NWB Part I Item 10(e)	Is the discharge volume being tracked?				
NWB Part F Item 9	Discharge of water not directly flowing to water body				
NWB Part H Item 3 NIRB Condition 27	Prevention in place to disallow chemicals, petroleum products and waste from entering Water				
NWB Part H Item 5	Date of last Env. visual inspection (weekly)				

MBK Bulk Fuel Storage Monitoring Plan Section 6.1	Weekly manual or electronic dip tests were conducted for inventory reconciliation. Date of last test				
CCME - Above Ground Storage Tank Guidelines	Non-smoking sign, Extinguisher, and tank identification present				
MBK - SCP	Spill Kits Present				
NWB Part D Item 22 NWB Part D Item 33	Erosion present / Erosion control in Place				
NWB Part D Item 36 NIRB Condition 27	All tanks and piping are not altered from approved construction.				
NWB Part I Item 9	Are signs identifying monitoring stations in place and posted in English, Inuktitut and French				
NWB Part I Item 12 (l)	Annual Geotechnical inspection completed				
MBK Wildlife Management Plan	Any nesting taking place on tanks or stairways of tank farm				
BMP	Are there any additional environmental hazards/potential impacts that require attention?				
MINE ACT	Are there any Health and Safety issues that should be addressed to prevent injury to workers?				

Comments/Recommendations:_____

_____

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_____

Environmental Personnel Name: _____

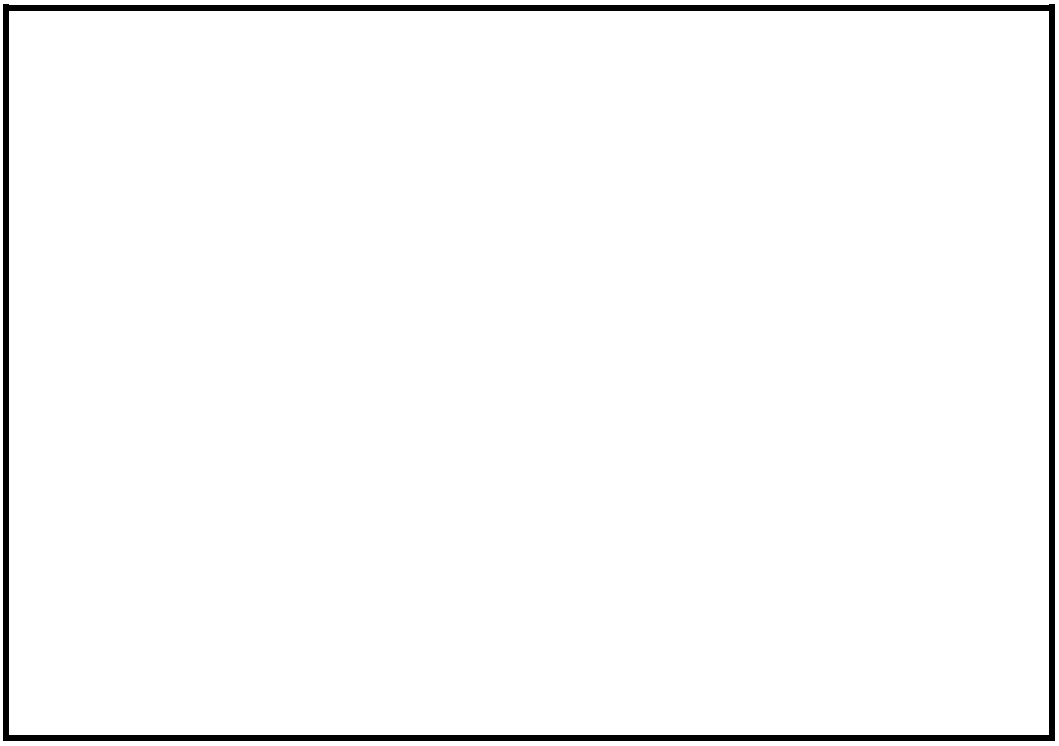
Signature: _____

Actions Corrected:
_____
_____
_____
_____

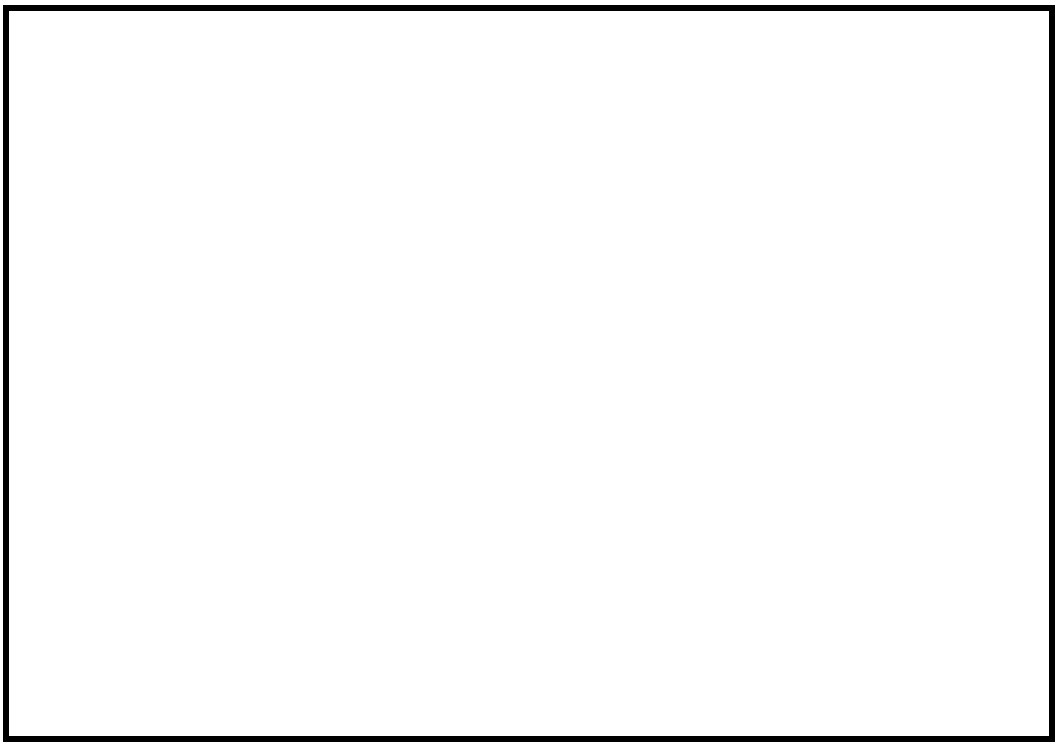
Site Service Supervisor Name: _____

Signature: _____

Picture 1: Description



Picture 2: Description



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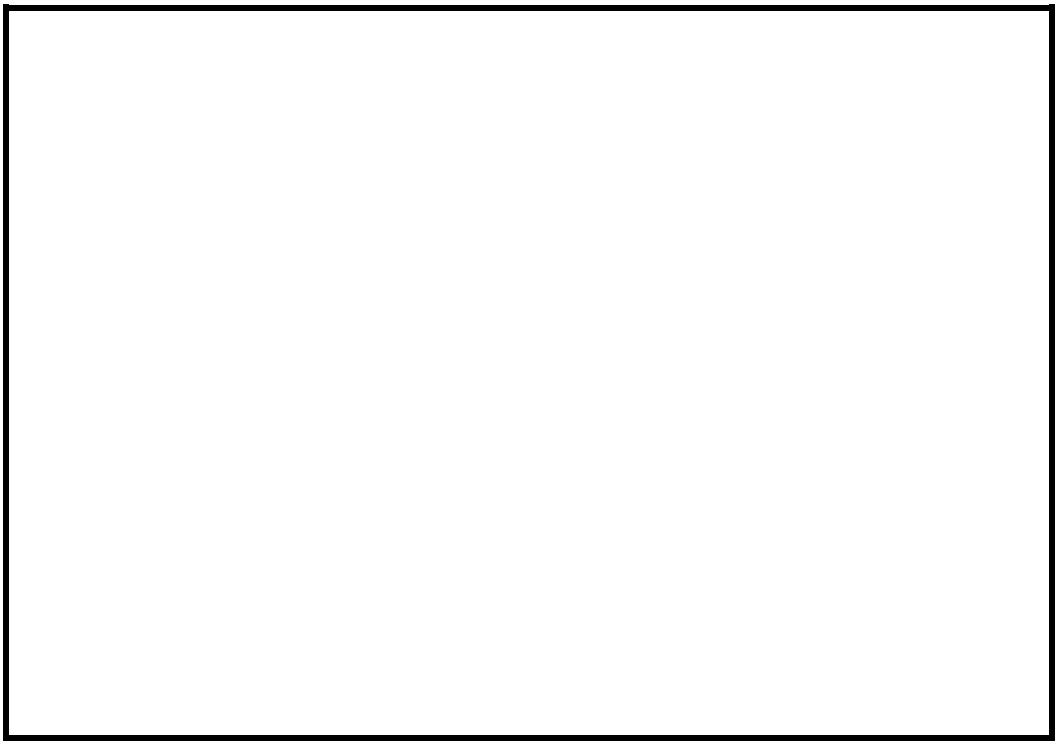
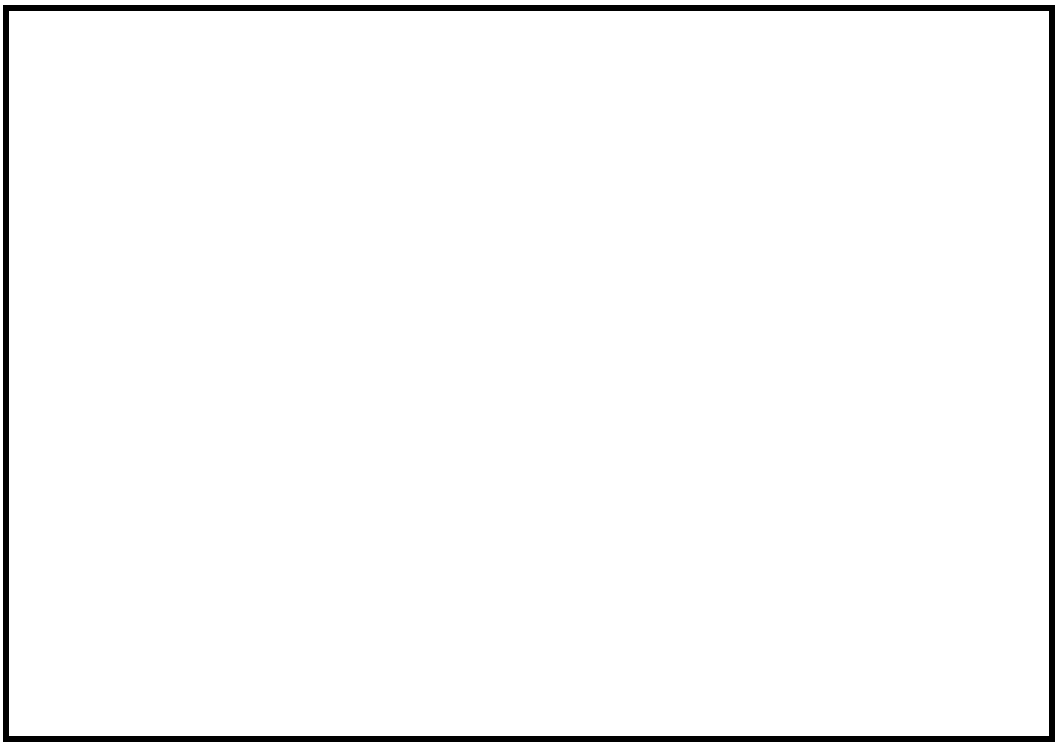
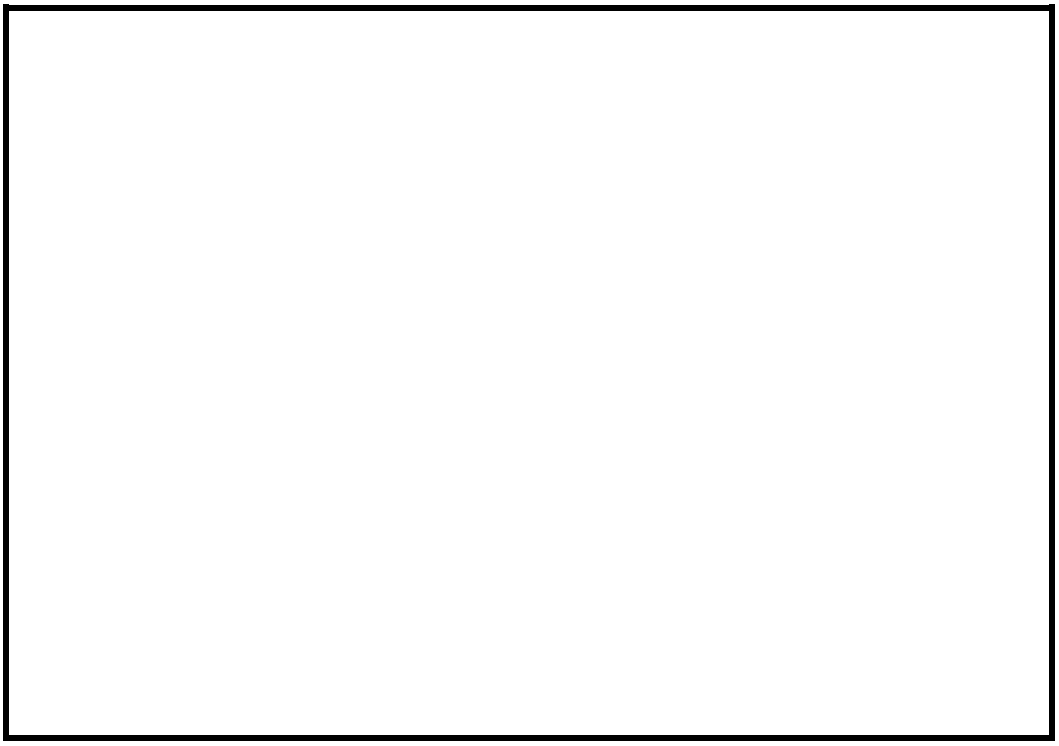


Picture 4: Description



Picture 5: Description



Picture 6: Description

Environmental Inspection report for Baker Lake Marshalling Area, Refuelling Station, Jet-A, and Tank farm

Date **Inspected By**:

Time: **Weekly Inspection**

NWB WL NIRB Cert	Subject	Conform	Non-conform	N/A	Comments
NIRB Condition 26	Ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris.				
NIRB Condition 25	Management and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors.				
NWB Part D Item 29 MBK SCP	Spills on the ground				
NWB Part H Item 4 NIRB Condition 27	Secondary containment for fuel, Jet-A, and chemical storage in place				
NWB Part D Item 29	Use of the bucket when refilling fuel truck				
NWB Part D Item 29	Refuelling procedures followed (secondary containment at every connection and 3 persons)				
MBK - BLFSF Monitoring Plan Section 6.1	Precipitation or runoff accumulation in secondary containment				

MBK - BLFSF Monitoring Plan Section 6.1	Any visible sheen on water.				
NWB Part F Item 23	Water in secondary containment of Marshalling Area Bulk Fuel Storage Facility and Jet-A storage being measured and recorded in m^3.				
NWB Part F Item 9 NIRB Condition 12	Discharge of water not causing erosion				
MBK - BLFSF Monitoring Plan Section 6.1	Any visual structural issues with containment berms				
MBK - BLFSF Monitoring Plan Section 6.1	Any indicators that would suggest damage to liner for secondary containments				
NWB Part F Item 9 NIRB Condition 12	Discharge of water >30m from ordinary high water mark				
NWB Part I Item 8(g)	Is the discharge volume being tracked?				
NWB Part F Item 9 NIRB Condition 12	Discharge of water not directly flowing to water body				
NWB Part F Item 19 NIRB Condition 12	Waste disposal area >30 m from high water mark				
NWB Part F Item 22 NIRB Condition 25	All solid waste disposed of at approved disposal facility				
NWB Part H Item 3 NIRB Condition 27	Prevention in place to disallow chemicals, petroleum products and waste from entering Water				

EC Requirement	Date of last pipe and tank visual inspection Site Services (monthly)				
NWB Part H Item 5	Date of last env. visual inspection (weekly)				
MBK - BLFSF Monitoring Plan Section 6.1	Weekly manual or electronic dip tests were conducted for inventory reconciliation. Date of last test				
CCME Above Ground Storage Tank Guidelines	Non-smoking sign, Extinguisher, and tank identification present				
MBK SCP	Spill Kits Present				
NWB Part D Item 31	No material stored on Ice of lake or streams.				
NWB Part D Item 32	No equipment stored <30m from high water mark				
NWB Part D Item 22 NWB Part D Item 33	Erosion present / Erosion control in Place				
NWB Part D Item 30	Any rutting or ground disturbance present				
NWB Part D Item 36 NIRB Condition 27	All tanks and piping are not altered from approved construction.				
NWB Part E Item 10	Measures in place to prevent the generation and deposition of dust				
NWB Part H Item 7 MBK OPEP MBK SCP	Copies of current OPEP, ERP, and SCP available at Marshalling area				
NWB Part H Item 8 NIRB Condition 27	Designated area present with measures to collect motor fluids, waste, and contain spills in the case of required emergency maintenance and Servicing.				
NWB Part H Item 8 NIRB Condition 27	Emergency maintenance and servicing is being undertaken in designated areas				

NWB Part I Item 9	Are signs identifying monitoring stations in place and posted in English, Inuktitut and French				
NWB Part I Item 12 (l)	Annual Geotechnical inspection completed				
NIRB Condition 81	Is security in place to ensure safe and secure storage of any hazardous or explosive comp				
MBK Wildlife Management Plan	Any nesting taking place on tanks or stairways of tank farm				
BMP	Are there any additional environmental hazards/potential impacts that require attention?				
MINE ACT	Are there any Health and Safety issues that should be addressed to prevent injury to workers?				

Comments :
Recommendation :

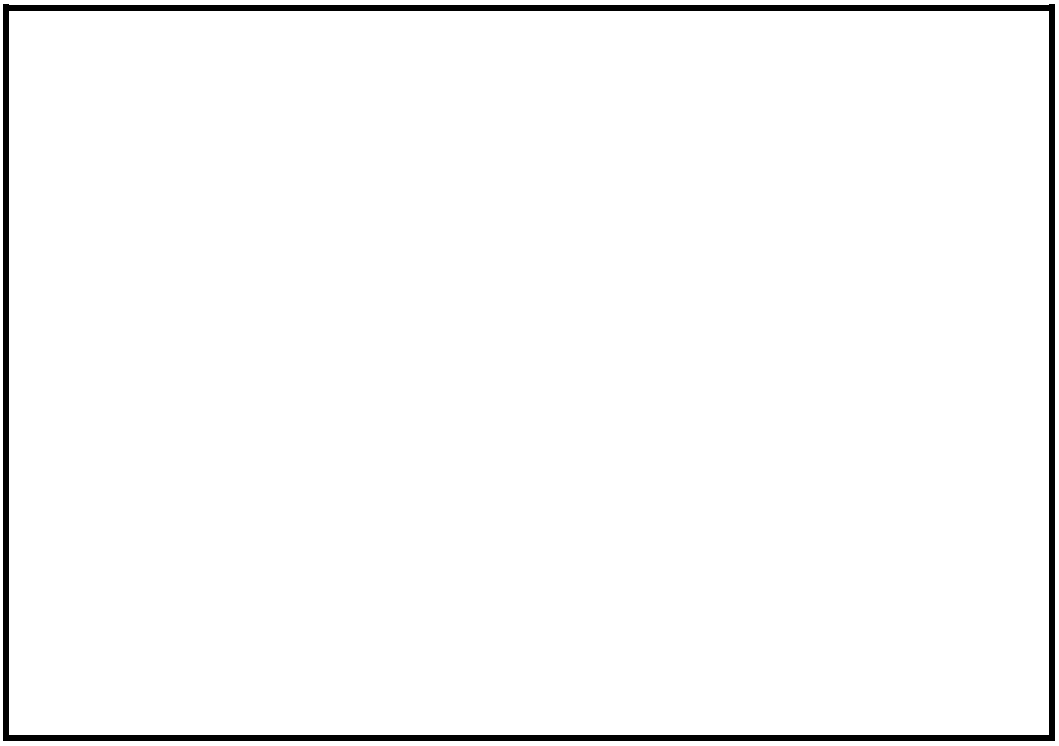
Environmental Personnel Name :

Signature: _____

Actions Corrected:
_____
_____
_____
_____

Site Service Supervisor Name: _____

Signature: _____



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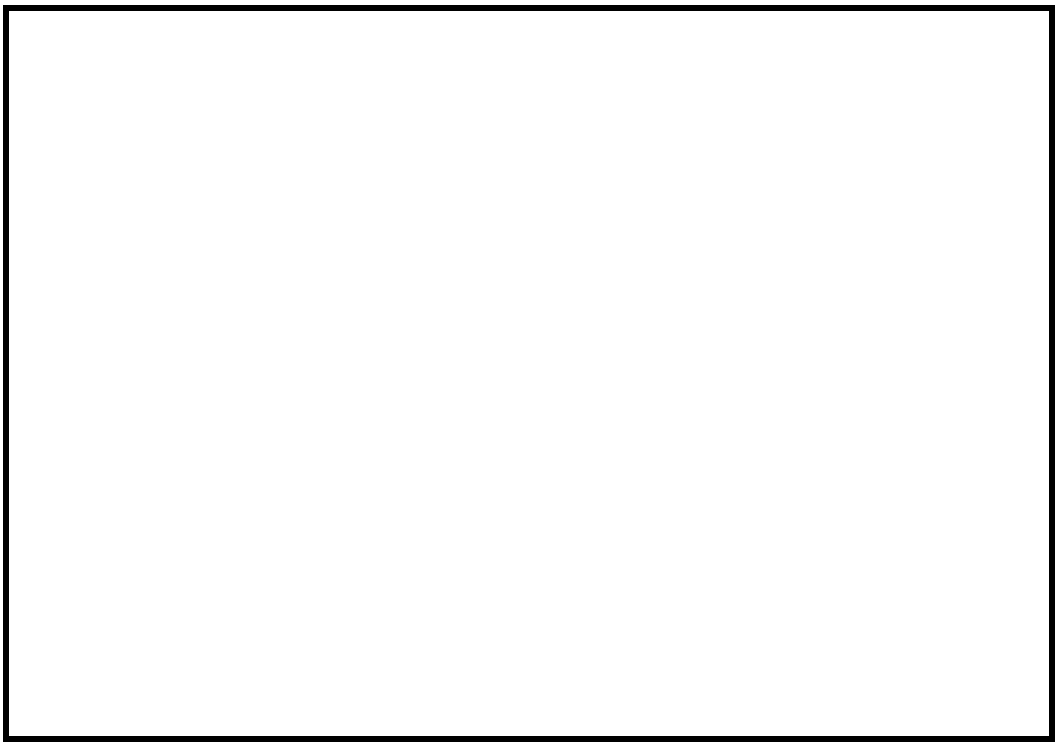
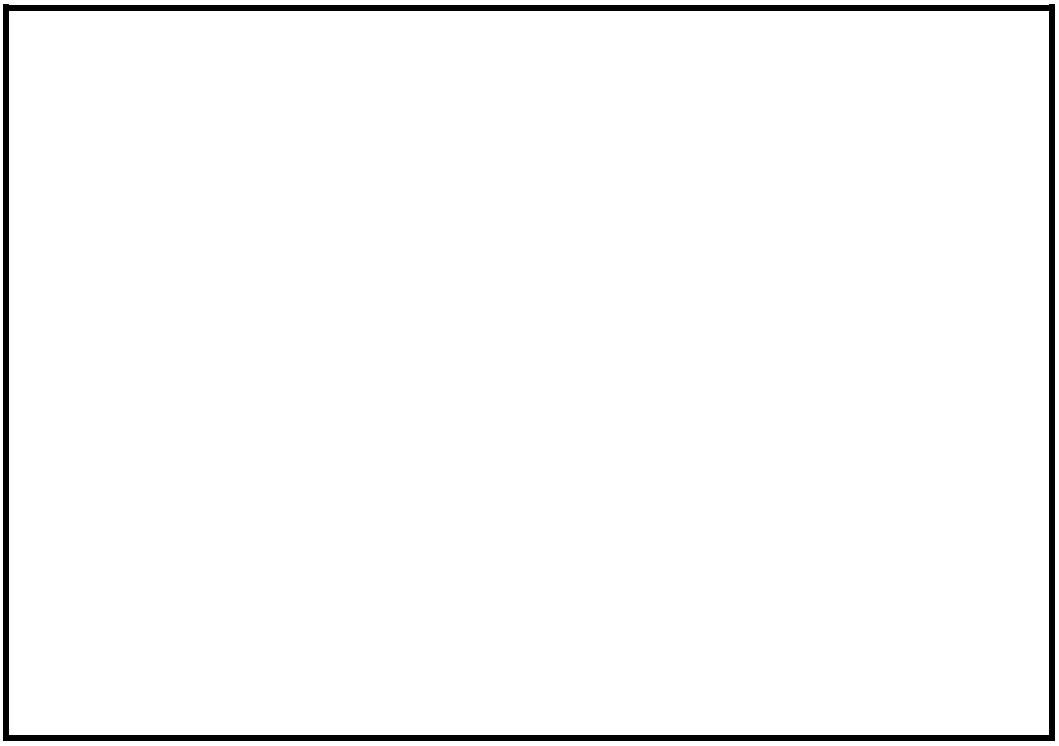
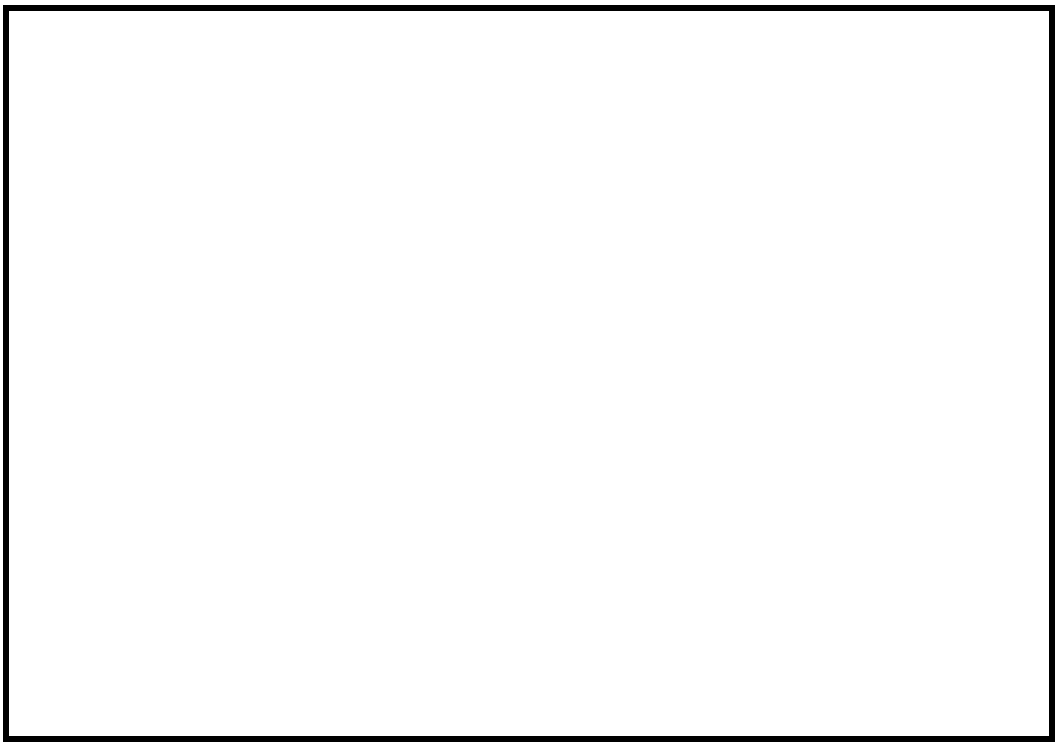


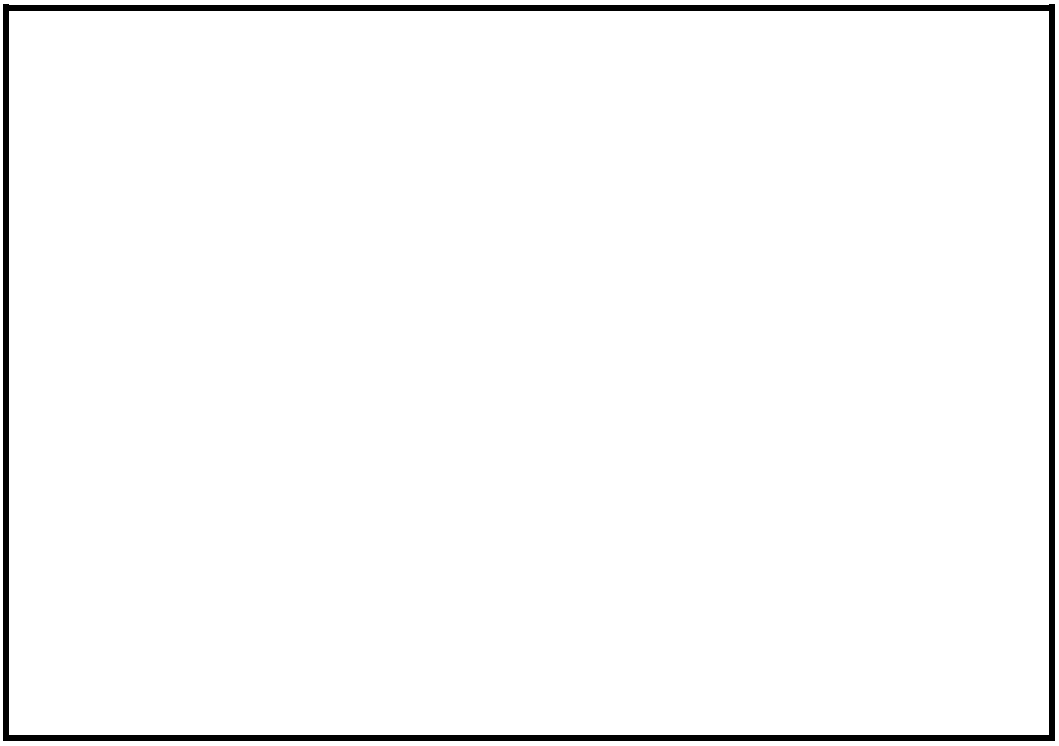
Picture 2: Description



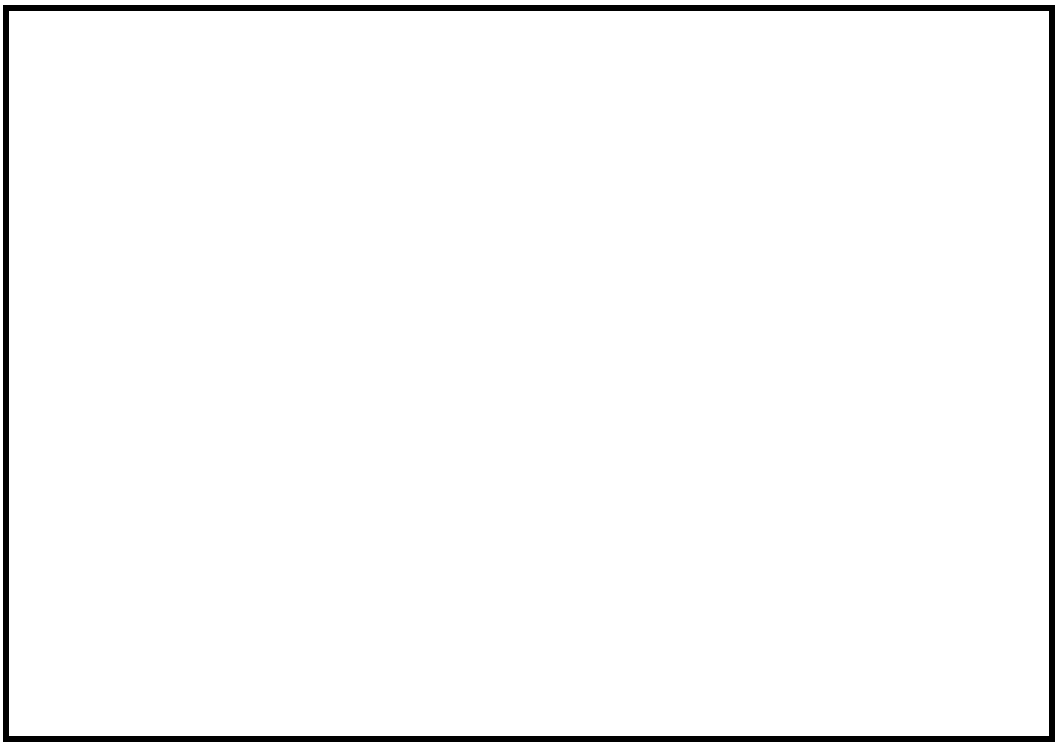
Picture 3: Description



Picture 4: Description



Picture 5: Description



Picture 6: Description

Environmental Inspection Report for the Hazardous Material Storage Area

Date: **Inspected By:**

Location: HAZMAT area **Weekly Inspection**

In Compliance with	Subject	Conform	Non-conform	N/A	Comments
NWB Part B Item 15	Sign posted to inform of a waste disposal facility				
NWB Part D Item 29 MBK SCP NIRB Condition 26	Are there any visual spills?				
NWB Part F Item 19	All Hazardous Waste disposal is located 30m from the ordinary high water mark.				
NWB Part H Item 3	Resources in place to prevent any chemicals, petroleum products, or unauthorized Wastes from entering a water body.				
NWB Part H Item 4	Is secondary containment for chemical storage provided.				
NWB Part I Item 9	Monitoring signs are posted in English, French, and Inuktitut.				
MBK SCP	Spill Kits Present				
NWB Part F Item 14	All Hazardous waste generated is sent off site to an approved disposal facility				
NWB Part F Item 15	All Hazardous waste sent off site is manifested				
NWB Part F Item 15	Manifests are sent to Government of Nunavut				
NIRB Condition 26	Ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-				

	blown debris.				
NIRB Condition 25	Management and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors.				
NIRB Condition 27	Ensure the hazardous material area is contained using environmentally protective methods based on practical best management practices				
	Are storage containers clearly labelled to identify Hazmat substance?				
	Are storage containers in good condition? Is there any visible damage or leaks? Can the doors be sealed shut?				
	Is HAZMAT in containers properly segregated?				
	Is HAZMAT arrangement to prevent from falling or dislodging?				
	Where necessary – Is HAZMAT placed on pallets i.e. Drums?				
	Where necessary – Are containers with product stored in an upright position?				
	Where necessary – Are Quatrex bags closed properly?				
	Do you see any potential environmental hazards posed by these HAZMAT containers/materials?				
BMP	Are there any additional environmental hazards/potential impacts that require attention?				
MINE ACT	Are there any Health and Safety issues that should be addressed to prevent injury to workers?				

Misc.	In the punctured spray can c-can, do we have non-punctured spray can?				
	In the grease c-can, do we have open top drums without top, or screw?				
	In the empty pails c-can, do we have metal pails that should be in the metal recycling c-can?				

Comments/Recommendations :

Environmental Personnel Name: _____ **Signature:** _____

_

Actions Corrected:

_____

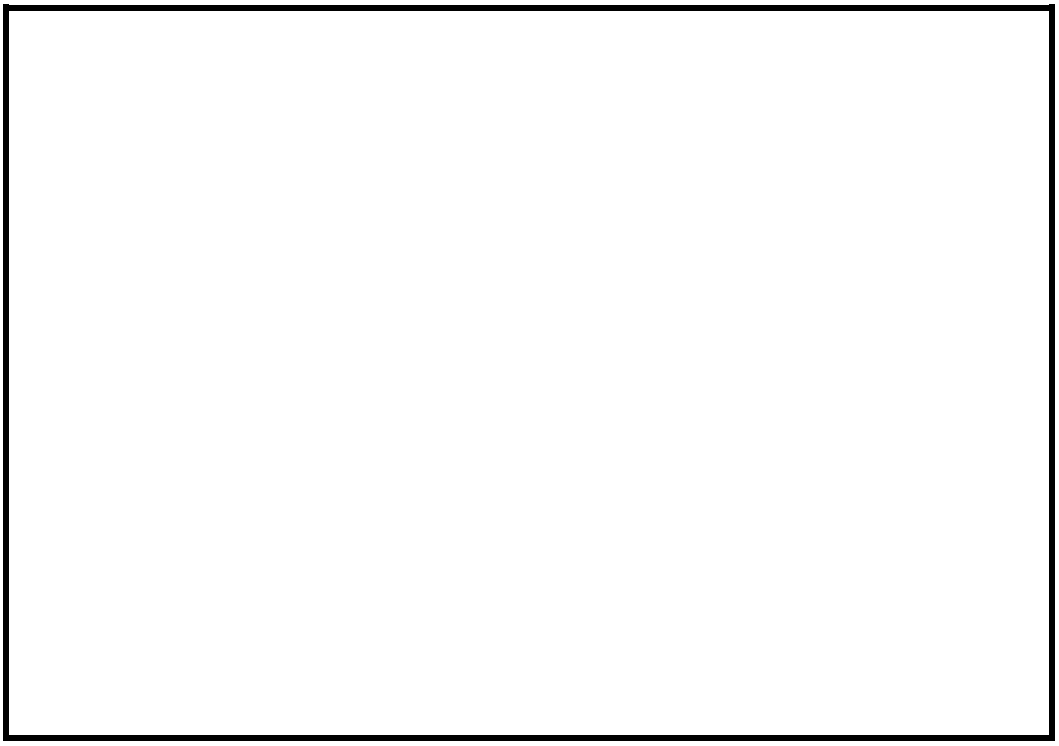
_____

_____

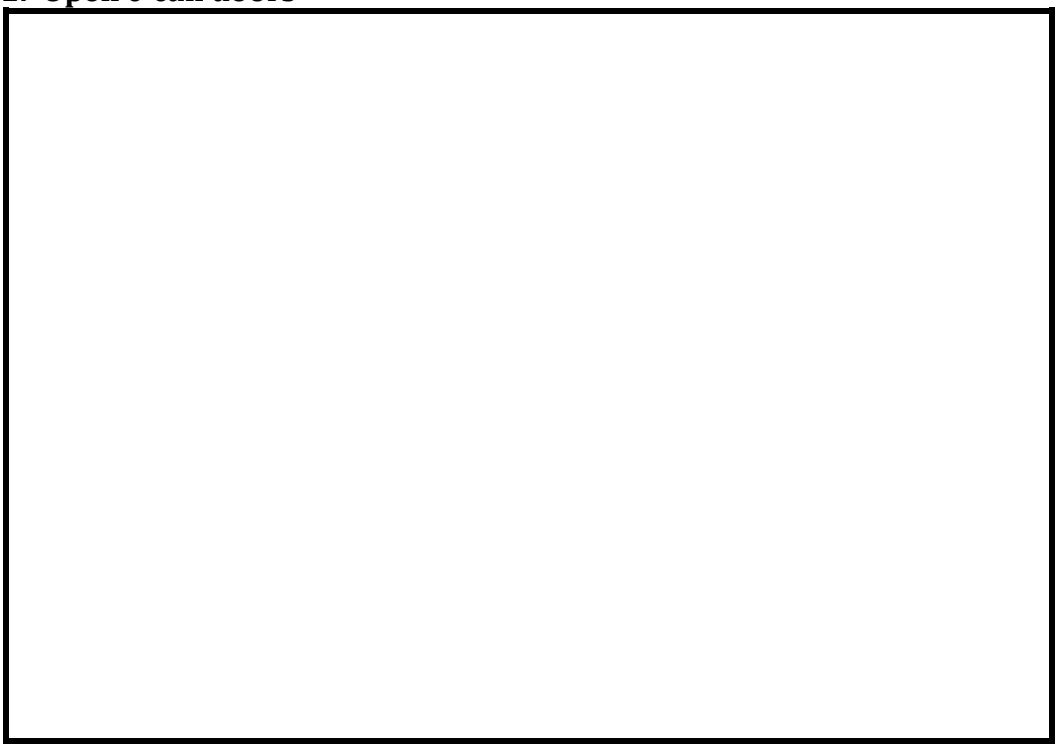
_____

Site Service Supervisor Name: _____

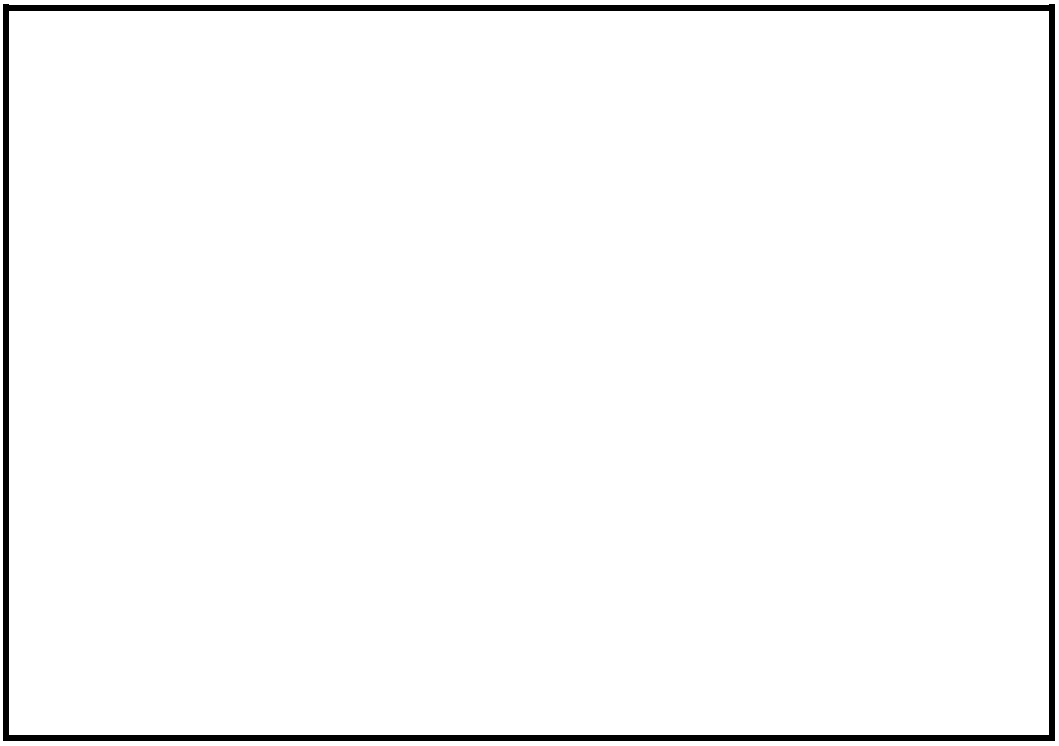
Signature: _____



Picture 1: Open c-can doors



Picture 2:



Picture 3:

Appendix B

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 ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

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 EQUIPMENT
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			

Appendix C

General Response Procedures for Spilled Chemical Substances

Explosives

C.1 Ammonium Nitrate

C.2 Ammonium Nitrate Fuel Oil (ANFO)

C.1 Ammonium Nitrate

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank and Whale Tail sites.

The first step against prevention of potential spills and association hazards is the application of proper storage procedures for bulk Ammonium Nitrate, including the following:

- Good housekeeping of the storage facility will prevent spilling and or contamination of materials;
- Ammonium nitrate should be stored away from combustible materials and fuels, as well as other blasting accessories (i.e. boosters, delays, detonating cords and detonators);
- The storage facility should be well ventilated;
- Proper signage restricting the use/exposure of ammonium nitrate to ignition sources should be posted (e.g. no hot work, smoking or vehicle maintenance); and
- The storage facility should be locked at all times with only authorized personnel allowed access.

The following is a general spill response procedure for ammonium nitrate. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required. Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For an ammonium nitrate spill (solid):

1. Isolate and evacuate the spill area;
2. Contact your Supervisor who will then contact the On-Scene Coordinator and coordinate appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
3. Put on appropriate personal protective equipment. For an ammonium nitrate spill this includes:
    a. Gloves **as recommended by the MSDS or glove manufacturer;**
    b. Protective eyeglasses or chemical safety goggles or face shield **as recommended by the MSDS;**
    c. Lab coat, coveralls or TyvekTM coveralls **as recommended by the MSDS; and**
    d. Half mask air-purifying respirator with cartridges and/filters **as recommended by the MSDS or respirator manufacturer;**
4. Ventilate (open windows/doors to outdoors) closed spaces before entering;
5. Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.,) from spill area;
6. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable absorbent materials, soil or other appropriate barrier;
7. Vacuum or sweep the spill residue using non-metal, non-sparking tools and place the residue in a

labelled, plastic, container (plastic pail with lid or double heavy duty plastic bags) for re-use or off-site disposal at a licensed disposal facility;

Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and ***clearly label the container per WHMIS Guidelines****.*

Note: Minimize dust generation during the operation.

8. Remove and bag personal protective equipment for cleaning and disposal at a licensed facility. Thoroughly wash potential skin contact locations after handling.

C.2 Ammonium Nitrate Fuel Oil (ANFO)

Currently no ANFO is stored at the Meadowbank or Whale Tail sites. ANFO is fabricated on demand using ammonium nitrate and fuel oil. In the event that ANFO would be stored at the sites, Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. Proper handling and disposal of ANFO is an important first step in mitigating against spills and associated hazards.

The proper storage procedures are as follows:

- ANFO should only be used under the supervision of authorized trained personnel;
- ANFO should be kept away from heat, sparks, and flames, as well as initiating explosives, oxidizing agents, combustibles, and other sources of heat;
- Containers should be protected from physical damage and in dry, well ventilated conditions;
- Transportation to the Mine site will be in accordance with Section 14 of the *Mines Act* and Regulations and the *Transportation of Dangerous Goods Act*. Transport vehicles will be in sound mechanical condition and equipped with proper safety equipment. Loaded vehicles will not be left unattended and only authorized personnel will be responsible for the security of the explosives under their control; and
- Explosives that have been identified as deteriorated or damaged will need to be disposed of or destroyed. The appropriate method of disposal or destruction and subsequent course of action will be determined by authorized personnel or the explosive supplier.

The following is a general spill response procedure for ammonium nitrate fuel oil – ANFO. The following procedure does not apply to emulsions or other explosives. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required. Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For an ANFO spill (solid):

1. Isolate and evacuate the spill area;
2. Immediately extinguish any open flames and remove ignition sources (no smoking, flares, sparks in immediate area) IF SAFE TO DO SO. **Fires involving large quantities of ANFO should not be fought;**
3. Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical- specific hazards and to identify any special precautions that must be taken;
4. Put on appropriate personal protective equipment. For an ANFO spill this includes:
    a) Gloves **as recommended by the MSDS or glove manufacturer**;
    b) Protective eyeglasses or chemical safety goggles or face shield **as recommended by the MSDS;**
    c) Lab coat, coveralls or TyvekTM coveralls **as recommended by the MSDS;**
    d) Shoe covers or rubber boots;
    e) Half mask air-purifying respirator with cartridges and/filters **as recommended by the MSDS**

or respirator manufacturer;

5. If the spill has occurred outdoors, stay upwind and avoid low lying areas. Ventilate (open windows/doors to outdoors) closed spaces before entering. Ensure adequate explosion proof ventilation for clean-up;

6. Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.,) from spill area;

7. Do not operate radio transmitters within 100 m of electric detonators;

8. For spill on land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable absorbent materials, soil or other appropriate barrier. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;

9. Collect, sweep or shovel spilled material and the other contaminated material/soil using non- metallic, spark- proof tools and place residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;

   Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and ***clearly label the container per WHMIS Guidelines.***

   Note: The drums/containers/residues are to be stored in ventilated areas away from incompatible materials for eventual off-site disposal at a licensed disposal facility.

10. Remove and bag personal protective equipment for cleaning or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated leather articles including shoes that cannot be decontaminated.

Appendix D

General Response Procedures for Spilled Chemical Substances

D.1 Compressed Gases

D.1 Compressed Gases

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for Meadowbank Gold Project.

The following is a general spill response procedure for compressed gases. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a compressed (inert and flammable) gas leak:

1. IF SAFE TO DO SO and it will stop the gas leak, turn off cylinder valve;
2. If the leak cannot be stopped by closing the cylinder valve, and it is **an inert atmospheric gas** (e.g. nitrogen, carbon dioxide, etc.) isolate and evacuate the affected area. If the leak is a **flammable gas** and the leak is outside of a ventilated building enclosure that will contain the gas, immediately activate the fire alarm system and evacuate the area/building;
3. Contact the On-Scene Coordinator who will assemble spill response team members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
4. If possible and safety permits, adjust leaking cylinder so that gas escapes rather than liquid;
5. If possible and safety permits, eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area) and turn off electrical equipment;
6. If the spilled has occurred outdoors, stay upwind and avoid low lying areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down. Allow vapours to ventilate outdoors by opening windows and doors to the exterior; and
7. Isolate area until gas has dispersed. On-Scene Coordinator to verify safe conditions.

Appendix E

General Response Procedures for Spilled Chemical Substances

E.1 Flammable and Combustible Liquids

E.1 Flammable and Combustible Liquids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for flammable or combustible liquids, particularly petroleum hydrocarbon products. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a spill of flammable or combustible petroleum hydrocarbon product (liquid):

1. Isolate and evacuate the spill area;
2. Immediately extinguish any open flames and remove ignition sources (no smoking, flares, sparks in immediate area) IF SAFE TO DO SO;
3. Stop leak and contain spill (**see Step 9**) IF SAFE TO DO SO;
4. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
5. Put on appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) Gloves **as recommended by the MSDS or glove manufacturer**;
    b) Splash goggles or face shield;
    c) Shoe covers or rubber boots;
    d) Lab coat or TyvekTM coveralls; and
    e) Half mask air-purifying respirator with **organic vapour or combination** cartridges, or **as otherwise recommended by the MSDS or respirator manufacturer**.
6. If the spilled has occurred outdoors, stay upwind and avoid low lying areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;
7. Ventilate (open windows/doors to outdoors) closed spaces before entering. Ensure adequate explosion- proof ventilation for clean-up. A vapour suppressing foam or water spray may be used to reduce vapours;
8. Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area) and combustible materials (wood, paper, oil, etc.) within the spilled area;
9. Contain spill by using spill absorbent, spill pads or pillows, soil or snow to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. If possible, compact soil or snow dikes, and place plastic tarps over the dike and at its foot to allow the product to pool on the plastic for easy recovery;

    Note: Do not use paper towels to absorb spill as this increases the rate of evaporation and vapour concentration in the air.

Note: Do not flush with water into drainage areas or ditches as this will spread spill.

Note: Snow works well as a natural absorbent to collect and contain spilled petroleum hydrocarbons. However, its use in containing a spill will result in a water-contaminant mixture that may be more difficult to manage. It is important to scrape up the contaminated snow and ice as soon as possible.

10. Carefully cover the spill area with spill absorbent, spill pads, soil or snow, starting at the outside and working inward. Do not touch or walk through spilled material;

11. Sweep up or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags). For larger spills to land, excavate impacted absorbent material and soil, place in lined and bermed temporary storage area or directly into sealed drums/containers;

    Note: The drums/containers/residues are to be stored in ventilated areas away from incompatible materials for eventual treatment at on-site landfarm or off-site disposal at a licensed disposal facility. Electrically ground all containers and transporting equipment.

    Note: Larger pools of product may be pumped into empty storage tanks or drums.

12. If spill is indoors, mop the affected area using detergent and water. Dispose of this water to drums for eventual off-site disposal at a licensed disposal facility. Spills to land may require further excavation or remediation of contaminated soil until acceptable soil quality is achieved. The On- Scene Coordinator and/or Environmental Superintendent will assess this requirement;

13. For spills to water, immediately limit the area of the spill on water using absorbent pads and booms and similar materials to capture small spills on water. Deploy and slowly draw in absorbent booms to encircle and absorb the spilled product. Recover larger spills on water with floating skimmers and pumps, as required, and discharge recovered product to drums or tanks;

    Note: Petroleum hydrocarbons are generally hydrophobic, and as such, do not readily dissolves in water. They typically tend to float on the water's surface. Absorbent booms are often relied on to recover hydrocarbons that escape land containment and enter water.

    Note: Antifreeze sinks and mixes with water. If released to water, attempt to isolate/confine the spill by damming or diverting the spill. Pump contaminated water to tanks or drums.

14. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated leather articles, (including shoes) that cannot be decontaminated.

Appendix F

General Response Procedures for Spilled Chemical Substances

Oxidizing Substances

F.1 Liquids

F.2 Solids

F.1 Liquids

Agnico Eagle commits to review, modify and approve as required and to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for liquid oxidizer compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a liquid oxidizer spill:

1. Isolate and evacuate the spill area;
2. Stop leak and contain spill (**see Step 8**) IF SAFE TO DO SO;
3. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
4. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) Gloves **as recommended by the MSDS or glove manufacturer**;
    b) Splash goggles or face shield;
    c) c). Shoe covers or rubber boots;
    d) Lab coat, coveralls or TyvekTM coveralls **as recommended by the MSDS**; and
    e) Half mask air-purifying respirator with cartridges and/or filters **as recommended by the MSDS or respirator manufacturer**.
5. Ventilate closed spaces before entering. Ensure adequate explosion-proof ventilation for clean-up;
6. Remove and/or moisten with water any combustible material (wood, paper, oil, etc.) affected by the spill;
7. Use water spray to reduce vapours or divert vapour cloud drift, if required;
8. Contain spill by using non-combustible spill absorbent, soil or snow to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate;

    *Note: Flushing area with flooding quantities of water may also be appropriate assuming this does not make clean up and waste management more difficult– **refer to the MSDS**.*
9. Carefully cover the spill area with spill absorbent, soil or snow, starting at the outside and working inward. Use non-combustible absorbent. Do not touch or walk though spilled material.
10. Sweep up or shovel the spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off- site disposal at a licensed disposal facility;
11. For indoor spills, mop the affected area using detergent and water. Flushing area with flooding

quantities of water may also be appropriate – **refer to the MSDS**. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate. Spills to land may require further excavation or remediation of contaminated soil until acceptable soil quality is achieved. The On- Scene Coordinator and/or Environmental Superintendent will assess this requirement; and

12. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

F.2 Solids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for solid oxidizer compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a solid oxidizer spill:

1. Isolate and evacuate the spill area;
2. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
3. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) Gloves **as recommended by the MSDS or glove manufacturer;**
    b) Safety glasses or goggles;
    c) Lab coat; and
    d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter or **as recommended by the MSDS or respirator manufacturer**.
4. Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.,) from spill area;
5. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable non-combustible absorbent materials, soil or other appropriate barrier. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
6. Vacuum, sweep or shovel the spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, container (plastic pail with lid or double heavy duty plastic bags) for re- use or off-site disposal at a licensed disposal facility;

    *Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*

    Note: Minimize dust generation.
7. If there is still oxidizer residue left in the spill area, neutralize with appropriate agent **as recommended by the MSDS**, or for spills to land continue to excavate until no visible spilled solid remains. Use non-combustible spill absorbent or soil to absorb the neutralized residue. Place in suitable drums/containers for disposal to a licensed facility;
8. For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate; and

9. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

Appendix G

General Response Procedures for Spilled Chemical Substances

Poisonous and Toxic Substances

G.1 Sodium Cyanide

G.1 Sodium Cyanide

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for solid Sodium Cyanide.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a Sodium Cyanide (solid) spill:

1. Isolate and evacuate the spill area;
2. Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical- specific hazards and to identify any special precautions that must be taken;
3. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:

    a) Impermeable Gloves **as recommended by the MSDS or glove manufacturer;**

    b) TyChem; and

    c) SCBA – Self Contained Breathing Apparatus

    d) Rubber Boots

    Note: For worker safety, maintain readily accessible supply of cyanide response kits on site.

4. Ventilate area of spill or leak;
5. Avoid exposure to acids, water or weak alkalis which can react to form toxic hydrogen cyanide (HCN) gas.
6. Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
7. Shovel the spilled material into labelled drums, containers or plastic bags for re-use or off-site disposal at a licensed disposal facility.

    Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and ***clearly label the container per WHMIS Guidelines****.*

    Note: Minimize dust generation.

8. If there is still spilled sodium cyanide residue left in the spill area, neutralize with appropriate agent **as recommended by the MSDS** (sodium or calcium hypochlorite solution), or for spills to land continue to excavate until no visible spilled solid remains. Use suitable spill absorbent or soil to absorb the neutralized residue. Place in suitable drums/containers for disposal to a licensed facility. Collect material and place in a closed container for recovery or disposal;

IMPORTANT: ***It is strictly prohibited to add any chemicals or neutralizing solutions to a Sodium Cyanide Spill near a drainage system, or near or in a water body.***

9. For indoor spills, mop the affected area using detergent and water. Dispose of this water to waste drums/containers for disposal to a licensed facility; and

10. Remove and bag personal protective equipment for disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

Appendix H

General Response Procedures for Spilled Chemical Substances

Corrosive Substances

H.1 Acids, Liquids

H.2 Acids, Solids

H.3 Bases/Alkali, Liquids

H.4 Bases/Alkali, Solids

Response to Spilled Chemicals

IMPORTANT: ***It is strictly prohibited to add any chemicals or neutralizing solutions to a Spilled Chemicals near a drainage system, or near or in a water body.***

H.1 Acids, Liquids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for liquid acid compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a liquid acid spill:

1. Isolate & evacuate the spill area;
2. Stop leak and contain spill (**see Step 8 below**) IF SAFE TO DO SO;
3. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
4. Put on appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) **Gloves** as recommended by the MSDS or glove manufacturer;
    b) Splash goggles or face shield;
    c) Shoe covers or rubber boots;
    d) Lab coat or TyvekTM coveralls; and
    e) Half mask air-purifying respirator with **acid gas or combination** cartridges, or **as otherwise recommended by the MSDS or respirator manufacturer**.
5. If the spill has occurred outdoors, stay upwind and stay out of low areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;
6. Ventilate (open windows/doors to outdoors) closed spaces before entering;
7. Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area);
8. Contain spill by using spill absorbent, spill pads or pillows, or dry soil to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. Ideally, use spill absorbent that contains a mild neutralizing agent **as recommended by the MSDS;**

    Note: Many acids, particularly concentrated acids react violently in the presence of water. Do not flush

*spill area with water unless the **MSDS** indicates acceptable.*

Note: Nitric Acid reacts violently and explosively with organic chemicals and organic material such as wood, cotton and paper; therefore, do not use organic absorbent material on Nitric acid.

Note: Hydrofluoric acid will fume during neutralization. Provide adequate ventilation and approach from upwind. Neutralize carefully with sodium bicarbonate, soda ash or lime. Use water spray to disperse the gas/vapour if required. Remove all sources of ignition.

9. Carefully cover the spill area with spill absorbent, spill pads or dry soil, starting at the outside and working inward. If practical, neutralize spill using **MSDS-recommended** or commercially available neutralizers. Use pH indicator paper to determine if spill is neutralized (pH 7);

   Note: Use caution as neutralization reactions generate heat.

10. Sweep or shovel the neutralized spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;

11. Check the pH of the spill area. If it is less than pH 6, then further neutralize with a dilute solution of a suitable reagent **as identified on the MSDS** or for spill to land continue to excavate contaminated soil;

12. For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate;

13. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated; and

14. After the spill has been cleaned up, the area should be free of vapours. However, if personnel note odours or irritation, isolate the spill area; re-clean the area as per **Steps 11 and 12** or wait at least **1 hour** before re-entering or until considered safe by the On-Scene Coordinator or Environmental Superintendent.

H.2 Acids, Solids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use on the Meadowbank Gold Project.

The following is a general spill response procedure for solid acid compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a solid acid spill;

1. Isolate and evacuate the spill area;
2. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
3. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) **Gloves** as recommended by the MSDS or glove manufacturer;
    b) Safety glasses or goggles;
    c) Lab coat; and
    d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter, or **as otherwise recommended by the MSDS or respirator manufacturer**.
4. Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, dry soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent reaction and/or subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
5. If necessary to minimize dust production, slightly moisten the solid. Use water, or if the material is water reactive, another inert liquid **as recommended by the MSDS;**
6. Sweep up or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for reuse or off-site disposal at a licensed disposal facility;

    Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and ***clearly label the container per WHMIS Guidelines****.*
7. Remaining solid acid residue may be neutralized using a dilute solution of appropriate agent **as recommended by the MSDS** (e.g. sodium bicarbonate - baking soda), or for spills to land continue to excavate until no visible spilled solid remains. Check the pH of the spill area; the final pH should be between pH 6 and 10. Use spill absorbent, spill pads or dry soil to absorb the neutralized residue;

    Note: Use caution as neutralization reactions generate heat.
8. For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary

sewer, process stream or waste drums as appropriate; and

9. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

H.3 Bases/Alkali, Liquids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank exploration camp.

The following is a general spill response procedure for liquid alkali or base compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a liquid alkali or base spill:

1. Isolate & evacuate the spill area;
2. Stop leak and contain spill (**see Step 8**) IF SAFE TO DO SO;
3. Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical- specific hazards and to identify any special precautions that must be taken;
4. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) **Gloves** as recommended by the MSDS or glove manufacturer;
    b) Splash goggles or face shield;
    c) Shoe covers or rubber boots;
    d) Lab coat or TyvekTM coveralls; and
    e) Half mask air-purifying respirator with cartridges/filters **as recommended by the MSDS or respirator manufacturer**.
5. If the spill has occurred outdoors, stay upwind and stay out of low areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;
6. Ventilate (open/windows to outdoors) closed spaces before entering;
7. Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area) and combustible materials (wood, paper, oil, etc.);
8. Contain spill by using spill absorbent, spill pads or pillows, or dry soil to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. Ideally, use spill absorbent that contains a mild neutralizing agent **as recommended by MSDS;**

    Note: Use caution as neutralization reactions generate heat.
9. Carefully cover the spill area with spill absorbent, spill pads or dry soil, starting at the outside and working inward. If practical, neutralize spill using MSDS-recommended or commercially available neutralizers. Use pH indicator paper to determine if spill is neutralized (pH 7);

    Note: Use caution as neutralization reactions generate heat.

10. Sweep or shovel the neutralized spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;

11. Check the pH of the spill area. If it is greater than pH 10, then further neutralize with a dilute solution of a suitable reagent **as identified on the MSDS**, or for spill to land continue to excavate contaminated soil;

12. For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate;

13. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated; and

14. After the spill has been cleaned up, the area should be free of vapours. However, if personnel note odours or irritation, isolate the spill area; re-clean as per **Steps 11 and 12** or wait at least **1 hour** before re- entering or until it is considered to be safe by the On-Scene Coordinator or Environmental Superintendent.

H.4 Bases/Alkali, Solids

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for solid alkali or base compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

For a solid alkali or base spill;

1. Isolate and evacuate the spill area;
2. Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
3. Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    a) **Gloves** as recommended by the MSDS or glove manufacturer;
    b) Safety glasses or goggles;
    c) Lab coat; and
    d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter or **as recommended by the MSDS or respirator manufacturer**.
4. Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, dry soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent reaction and/or subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
5. If necessary to minimize dust production, slightly moisten the solid. Use water, or if the material is water reactive, another inert liquid **as recommended by the MSDS**;

    Note: Do not use water to flush bases in powdered form, such as calcium oxide (lime), as this material is not very soluble.
6. Sweep or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for offsite disposal at a licensed disposal facility;

    *Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*
7. Remaining solid alkali or base residue may be neutralized using a dilute solution of appropriate acid. Check the pH of the spill area; the final pH should be between pH 6 and 10. Use spill absorbent, spill pads or dry soil to absorb the neutralized residue;
8. For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary

sewer, process stream or waste drums as appropriate; and

9. Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

Appendix I

Agnico Eagle Spill Response Training Records

Group Training Report

Course Name: Emergency Planning and Spill Response Awareness

Trainer's Name: Trever Miller

Date: Jan. 15/2013

Agnico-Eagle Mines Ltd.
Meadowbank Division

M		Name	Company	Signature	Hours TRG.	Hours ASS.	Total Hours	Code
	1	Jeffrey Pratt	AEM				10	
	2	Fanny Laporte	AEM				10	
	3	Richard Jackson	AEM				10	
	4	Tom Thomson	AEM				10	
	5	Maurice Barrieau	AEM				10	
	6	David Alexander	AEM				10	
	7	Martin Theriault	AEM				10	
	8							
	9							
	10							

COMMENTS:

Trainer's signature:

Date: January 15, 2013

Codes:	Assessment Codes:
1. AEM Permit	A+: Very Good
2. Restrictive Permit	A : Good
3. Temporary Permit	B : Average
4. Training Completed	C : Below Average
5. Training Not Completed	
6. Fail	

Tom Thomson

SWAT OILSPILL ISSUES WORKSHOP

Situation Analysis – Truck Rollover

- **Incident** - 45 m^3 diesel spills/plus oil/acid – Originates on Land, flows into the River
- **Spill** - occurred 22:00 hrs on March 20, 2013
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- **Lake** – winds from the North West at 20 km/hr. Tide is high.

Km 23 - Bridge 3

1. List the **issues** linked to this scenario:

Response Time + Moving Equipment / Resources to the Area
Light + Temperature
Fish Bearing Stream
Speed of Containment / Cut off Point
Vast Contaminated area - Type of Contaminate

* Safety of Personel, Communications, Environment, Equipment

2. What **resources** are required?

Baker Lake Contractor / Peters Exp.
Baker Lake Command Center, Camp, at Spill Location
Ert Personal + Relief
Emergency Trailer - Environmental
Emergency C-Cans / Roll offs
Lighting / Generators
Transportation
Safety officer(s)
AEM Personal from Baker Lake
Mapping of Area

3. What are the **initial spill response steps and what does your ICS look like**?

3rd Control / Crisis Centre
On Site Commander
Baker Lake
Logistic, Planning, Finance

1) Review ERP + Spill Contingency Plan
Prepare J.H.A on Spill

Establish Safety Zones - Hot, Warm, Cold

4. What is your oil spill containment and recovery **strategy**?

Shut off/Stop Spill - Identify Source
Contain Spill - Trench - Bell or (POE)
Maritime Booms & Absorbants
Estimate Direction of spill & find a cut off points
By Using 10-30-4 - Protect Shoreline and diverting flow

* Pre plan - Plan it now

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

Vacuum Pump, Absorbants, Oil/water Separater
- Excavate cont Soil
- Vegatated/Rocky Shorelines
-
- Sample & Monitored until we have clearances from DFO, ENV Canada

- Do a quick wash & leave it for Bio remediation

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6. What are some **safety** issues?

[redacted], Drinking Water - Baker Lake

Temperature + H2S of Response Team
LEL's
water + ice

7. How do you manage your **waste**?

Quatrex, 45 Gallons, oil/water separator

Contaminated Soil pad

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

Same as #3 - Notify Proper Personal / Authorities Additional
DFO, EC, Baker Lake Res.

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Fanny Laporde.

SWAT OILSPILL ISSUES WORKSHOP

Situation Analysis – Truck Rollover

45 000 Litres KM 23

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KM 23.

1. List the **issues** linked to this scenario:

Communication issu

Contamination

- Back to land / Water contamination / wildlife. To white ~~hills~~ lake. (Fishing major site for invit)
- Time of day and distance from Camp.
- March → Still snow – could be cold
- Accident → Health & Safety (Driver) and the Responder
- Acid → add another safety issue ↓ less.
- Baker Lake water intake
- Public relation case / inform the Lobby appropriate person Community

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2. What **resources** are required? * 60 people ✓

- Labor → with incident Command Plan / everybody has a task in the organization / ERT Team.
- Commandement Trailer & facilities close to site ✓ ↳ could be a container, heated
- decontamination area.
- Machinery → loader → TRUCK → ~~shovel~~ shovel. ✓
- Disposal and containing material DRUMS/45gall (berm - secondary material) Vacum - emergency trailer with supply. empty tanker.
- Towerlight → because it is night ✓ zodiak helicopter for next morning.

3. What are the **initial spill response steps and what does your ICS look like**?

Command ICS:

INFO. ①
- MSDS Sheets - Planning - Logistic
- JHA
- S.R.P spill response plan. / ERP. / SRP /

② Find ressource / General Briefing.

③ Logistic and reassess at all change (F.L.R.A)

↳ operations.
- Isolation
- Contain
- Recovery - Remediate
- wild life
- Waste management
- Sampling.

Level 3 ~~SPILL~~ emergency

Because it is night and impact can be desastrous

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4. What is your oil spill containment and recovery **strategy**?

0A → Make the environment safe for me and my Team - Gaz det for - PPE
① Stop the leak ✓
② dig a ~~ditch~~ trench to protect the water (shore)
③ evalwate where the contaminent are → wind → slope → current. ✓
④ Instal maritime bariere to contain (or) the biggest part of the oil.
⑤ Snow barrier if needed. ✓
⑥ Cut all entries to other ponds and rivers
⑦ Vaccum the contaminent ✓ and dispose the waste adequatly.
⑧ transpos what is still in the tanker to another container

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

Tundra / Rock ✓ trenches / bell hole.
→ Inspect the shore / contain with ~~Snow~~ Maritime barrier.
→ Monitoring often and sample ✓
→ When melting / sample and Vaccum if needed Quick wash.
→ let nature take over.
→ if ~~too~~ too much → excavate the shore ✓ and remove contaminent. and dispose

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6. What are some **safety** issues? Under the ice. → leave it.

→ LEL / Fire / toxic Gazes.

→ Water / ice / cold for response team and equipment.

→ darkness → uneven Ground / Strain ankle

7. How do you manage your **waste**? 45 Gall.

Used Fuel → sent back south to appropriate place

used absorbant supply → ship down south in Quadrex

material → Land farm brought to

Clean and rinse - PPE

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

See # 4 ~~Exercise~~ answer. ✓

→ cut the Hamlet Water intake. ✓

inform additional Authorities.

Skimmers Vessels

Boats. V V J

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Jeff Pratt

SWAT OILSPILL ISSUES WORKSHOP

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1. List the **issues** linked to this scenario:

- 90km From mine
- Dark out
- Very Cold
- Vacinity to lake
- low tide will suck out

2. What **resources** are required?

- Personnel
- Command center both on site & Baker Lake
- Lightening
- Amenities for personnel
- Spill Response Equipment
- Transportation

3. What are the **initial spill response steps and what does your ICS look like**?

- Alert ERT and immobilize
- Alert ICS

ICS - Review of Spill Contingency - Planning for mobilization

- ERT Captain would assess situation and report incident command

4. What is your oil spill containment and recovery **strategy**?

~~Cont~~

- Stop the release - Plug hole or build berm.
- Contain release - Do Not Let Enter Lake
  - Place boom along ~~mo~~ deltas From the tributaries.
  - Have to create ice road to down stream collection point.
  - ~~Use~~ Extract contaminent from down stream boom point*

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

- Create Hot, Warm, Cold Zones
- Rocky Sandy Substate
- Leave to summer Valatilize

6. What are some **safety** issues?

- No light
- Cold Weather
- PPE for Chemicals

7. How do you manage your **waste**?

- Quatrex bags
- Totes for liquid Contaminants

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

M. Theriault

SWAT OILSPILL ISSUES WORKSHOP

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1. List the **issues** linked to this scenario:

- BL water intake
- impact to the land / to the water
- Going towards white hills lake (fishing lake)
- Distance from camp / time of event / Weather
- H/S for the driver and responder + possible acid reaction
- Spalding of cont.
- Wildlife (fish)
- Public relationship (Must have the appropriate person)
- Dispersion
- Communication, Road Access

2. What **resources** are required?

- Equipment : Boat, Maritime Barrier, Shovel, truck, Quadrex waste disposal, secondary containment, Spot (toward light) Vaccum (Emergency trailer)

Decontamination unit, Commandement unit

- Personnal : Labour, ERT, IC, public relationship

Helicopter

3. What are the **initial spill response steps and what does your ICS look like**?

Planning { MSDS sheet, JHA, ERP, SRP,

Logist. { General Briefing
Find ressource and equipment and make them available

Operation → Field Level Risk Assessment
↳ Isolation - contain - Recovery ~~ect~~. Wildlife - Waste Management
Sampling

Reassess between field and Management by IC.

4. What is your oil spill containment and recovery **strategy**?

Make sure everything is safe, gaz detector, PPE ect.

Plug the hole / Stop the leak

Dig a ditch (trench) close to the shore

Evaluate the location of the contaminate in the watere

Install maritime barrier to enclose (isolate) the leaking shore

Cut all entries to other channels

Vaccum the accumulate diesel / transfert the diesel left in the tanker

Adequately dispose the waste

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

inspect the shore, keep the maritime barrier containing the fuel close to shore, monitore and sample if needed, vaccuum, let nature take over

WASH IT

If too much contaminant keep coming from the underground, dig everything

6. What are some **safety** issues?

- LEL / fire / toxic gasses
- WATER / ICE
- cold weather
- Heavy equipment
- Uneven soil, darkness (strain ankle)

7. How do you manage your **waste**?

- used fuel send back south to appropriate location
- Absorbant stuff used (quadrex) burned or ship down south
- Contaminated soil send to landfarm
- Rinse all the PPE

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

See question #4

R-Jackson

SWAT OILSPILL ISSUES WORKSHOP

23 24

Situation Analysis – Truck Rollover

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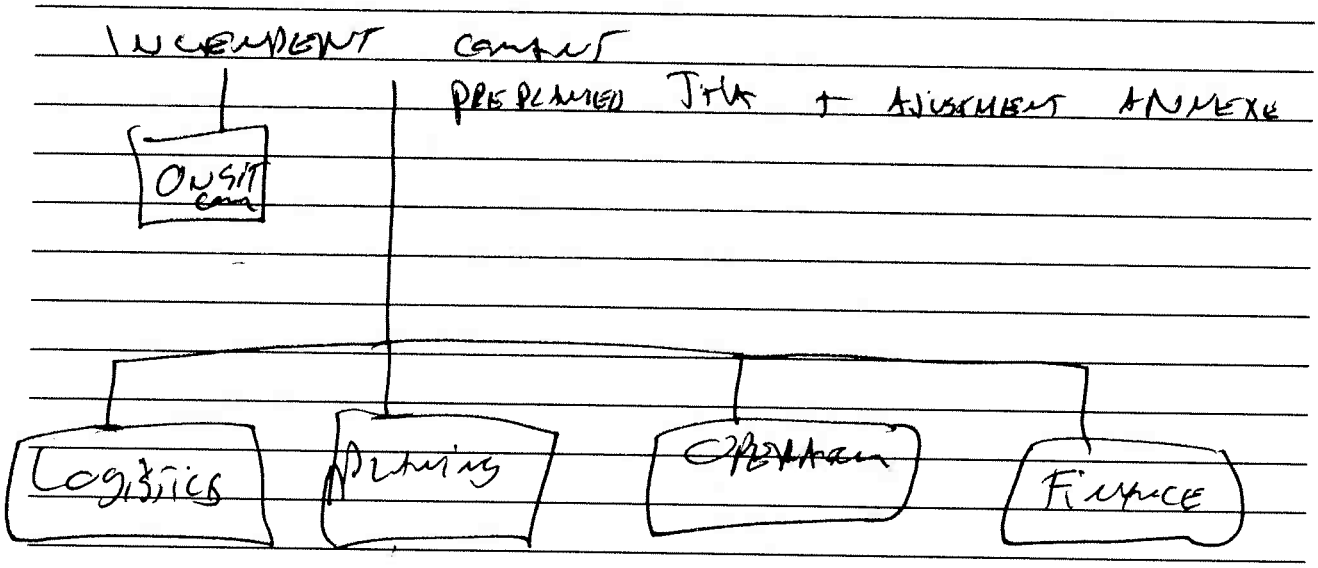
1. List the **issues** linked to this scenario:

- RESPONSE TIMES
- MOVING RESOURCES + EQUIP
- LIGHT FACTOR
- FISH BEARING
- SPEED OF CONTAINMENT
- VAST CONTAMINATED AREA
-

2. What **resources** are required?

- BLCS + PETER EXPEDITING HEAVY EQUIPMENT
- ERT PERSONEL + RELIEF PERSONEL
- COMMAND CENTER ON SITE + AT CAMP
- EMERGENCY SEA CANS ROLL OFF BOX
- LIGHTING + GENERATORS
- INFORMATION + SAFETY OFFICER
- MAPPING OF THE AREA
-

3. What are the **initial spill response steps and what does your ICS look like**?



RL

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4. What is your oil spill containment and recovery **strategy**?

CONTAIN SPILL (STOP SPILL AT THE SOURCE
PREVENT FURTHER ENTRY/ TRENCH BELL HOLE
ESTIMATE DIRECTION OF SPILL MARITIME BOOMING
FIND CULPRITS
BY USING 10/30 Q4 RULE DIRECT FLOW TO AND
PROTECT SHORE LINE

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

- VACU PUMP
- PADS
- SORBANTS
-

6. What are some **safety** issues?

LEL

COLD T°

~~[illegible]~~ INHALATION

CONTAMINATION

FIRE

WATER OVER RUN

7. How do you manage your **waste**?

QUATREX RACKS

45 Gal DRUMS

OIL WAT SEPERATION

CONTAMINATED SOIL PAD

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

D. ALEXANDER

SWAT OILSPILL ISSUES WORKSHOP

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1. List the **issues** linked to this scenario:

WATER INFILTRATION 90KM away
Sound alarm Pitch DARK
Extreme cold
Set-up block before RIVER ~~EMPTIES~~ EMPTIES INTO BAKER LAKE
Low tide when it comes will make it worse

2. What **resources** are required?

~~ERT RESPONSE~~ - ~~ALERT~~ BAKER LAKE FIRE DEPT.
COMMAND CENTRE AT MEADOW + BAKER
LIGHTING
WARM-UP ~~FOR~~ STAFF
SPILL RESPONSE EQUIP.
TRANSPORT FROM MINE
50-60 people fly/bus off site MB

3. What are the **initial spill response steps and what does your ICS look like**?

~~ALERT ERT~~ ALERT ERT, INCL. ENVIRO, MINE SUPER, ~~H+S~~ SUPER, SITE SERVICES HR
REVIEW CONTINGENCY PLAN, PLANNING FOR MOBILIZATION
ERT CAPTAIN - WITH ENVIRO, WOULD ASSES REPORT BACK TO the ICS

4. What is your oil spill containment and recovery **strategy**?

STOP ~~CONTAIN~~ SPILL CONTAIN FROM ENTRY INTO LAKE.
PLUG THE HOLE IN TRUCK OR BUILD BERM
↳ CREW ASSIGNED.
- INSTALL BOOM ALONG THE DELTA MOUTH OF THE RIVER JUST BEFORE IN ENTERS THE LAKE
- MAKE ICE ROAD TO DOWNSTREAM COLLECTION POINT
= WITH VACUUM TRUCK
-ESTABLISH ZONES

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

ROCKY, SANDY SUBSTRATE. WAIT TIL SUMMER
VALITISE.
ZONE OFF.

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6. What are some **safety** issues?

PITCH DARK - NEED
Cold weather
PROPER PPE

7. How do you manage your **waste**?

VACUUM TRUCK

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

CELLULOSE BOOMS

SWAT Consulting Inc.

M. BARIBEAU

SWAT OILSPILL ISSUES WORKSHOP

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- **Lake** – winds from the North West at 20 km/hr. Tide is high.

1. List the **issues** linked to this scenario:

- 90 kms From site
- Pitch dark Very cold.
- Sanuty to Lake.
⇒ Set up on site operational Post.
⇒ Low tide will draw water away.
⇒

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2. What **resources** are required?

=> Manpower.
=> Boat, Light Tower, ammenity.
=> Baker lake Fire dept,
=> Personnel transportation!!
=> Mean of communication.
=> Small loader, Vacuum Truck.

3. What are the **initial spill response steps and what does your ICS look like**?

- Set up ICS,
- H+S, Envi Rapport, HR, Site Service, General Service. spill.
- Review emergency contingency Plan.
- Plan mobolyzation. => ERT Captain. assess situation and Report, =>

Consulting Inc.

4. What is your oil spill containment and recovery **strategy**?

Stop the Release, prevent further entry
- shut off flow, Build Berms,
→ Block off.

Water use Boat to collection Pond;

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

Rocky Sand waves clean till Summer.

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6. What are some **safety** issues?

- Measuring ice thickness
- Wear Proper PPE
- Lighting
- cold weather
- acid
- Ashes Zoning

7. How do you manage your **waste**?

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

Group Training Report

Course Name:

Trainer's Name:

Date: 2013-01-16

Agnico-Eagle Mines Ltd.
Meadowbank Division

M		Name	Company	Signature	Hours TRG.	Hours ASS.	Total Hours	Code
	1	Jamie Kataluk	AEM				10	
	2	Robin Allard	AEM				10	
	3	Dave Holmston	AEM,					
	4	Alain Genesse	A-E-M					
	5	Stéphane Larose	AEM					
	6	Luc Blanchette	FGL					
	7							
	8							
	9							
	10							

COMMENTS:

Trainer's signature: _____

Date: _____

Codes:
1. AEM Permit
2. Restrictive Permit
3. Temporary Permit
4. Training Completed
5. Training Not Completed
6. Fail

Assessment Codes:
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A : Good
B : Average
C : Below Average

STÉPHANE LACOSE

SWAT OILSPILL ISSUES WORKSHOP

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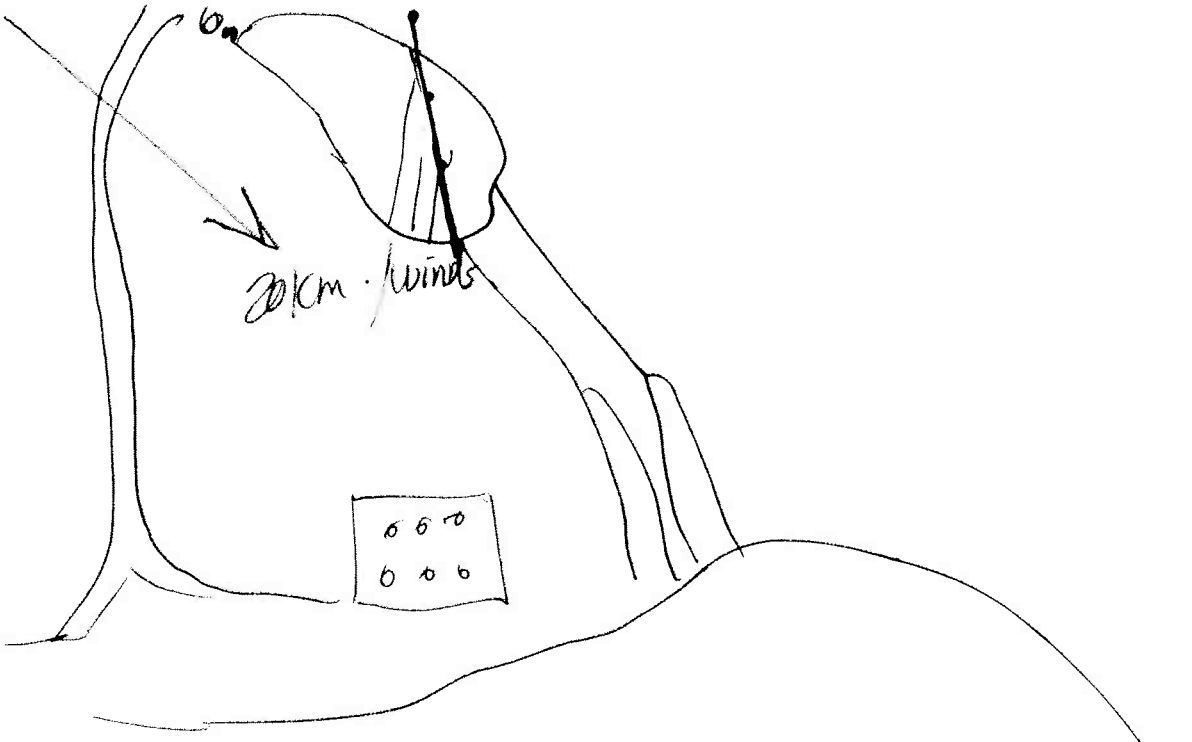

1. List the **issues** linked to this scenario:

→ 45 m^3 diesel / oil / acid flowing to the river heading to Baker lake. (15 km away)
→ Give less than 3 hours to react.
→ Contain the spill before the lake (Before to 2 rivers)
→ Secure and take care of the driver.

2. What **resources** are required?

- Helicopter to have look on the scene (Speed of the spill)
- 1 team at the scene (accident) to contained the spill at the source
- 1 team further down to stop the flow before the lake.
- Boats / maritime barrier / boom, etc... light plan
- ERT TEAM in case of fire.
- empty tanker to pump in.
- Good communication
- MSDS → Proper PPE

3. What are the **initial spill response steps and what does your ICS look like**?

- Scene survey (analyse) (inspection)
- Make the plan (planning)
- Decision (delegatee people)
- Execution
- Call proper authority

command

PLANNING OPERATION logistique cost

Safety first!!!

4. What is your oil spill containment and recovery **strategy**?

→ Install barrier before the rivers (less contamination)
→ Recover the fuel/oil (Skimmer)

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

→ Assest the shoreline situation and ask trained people to evaluate if we need to clean and what we have to do.
→ Flush
→ Is it transferable?

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6. What are some **safety** issues?

- Risk of fire
- Falling into water / ice
- Poor visibility at night.
- Hypothermia
- Hot water.
- PPE (:

7. How do you manage your **waste**?

- Bring to the proper facility disposal (ENV. DEPT.) (QUATREX BAG)

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

- Protect the water intake of the town.
- Do whatever it takes at all cost.
- Inform community

SWAT Consulting Inc.

Dave Holmstrom.

SWAT OILSPILL ISSUES WORKSHOP

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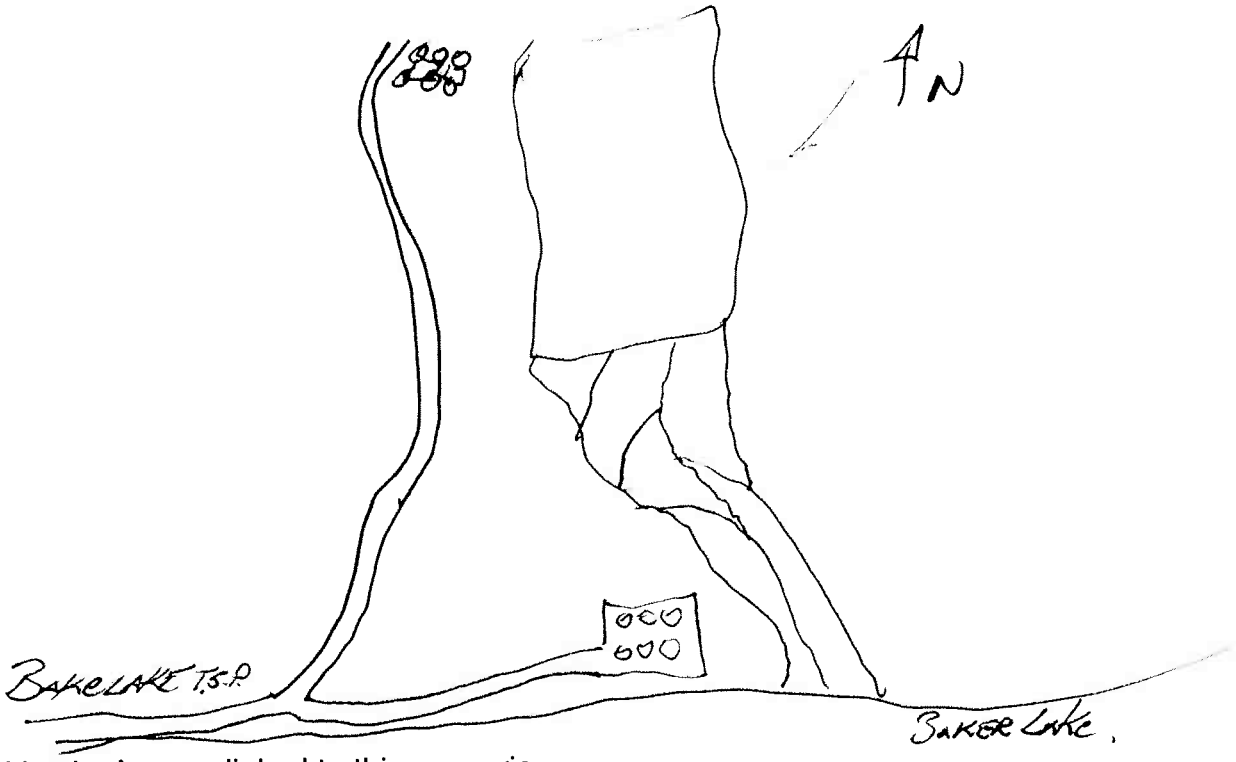


1. List the **issues** linked to this scenario:

- POTENTIAL RISK TO Baker Lake portable drinking water.
- FAST moving water (FRESHET). High travel rate / ICE,
- POTENTIAL Impact to spawning grounds.
- IS IT STOPPED? - Truck Rollover ??? Contained
- what are the sensitive areas.
- Time Frame / Braided channel extended shoreline
- LEL -
- Road traffic / Security

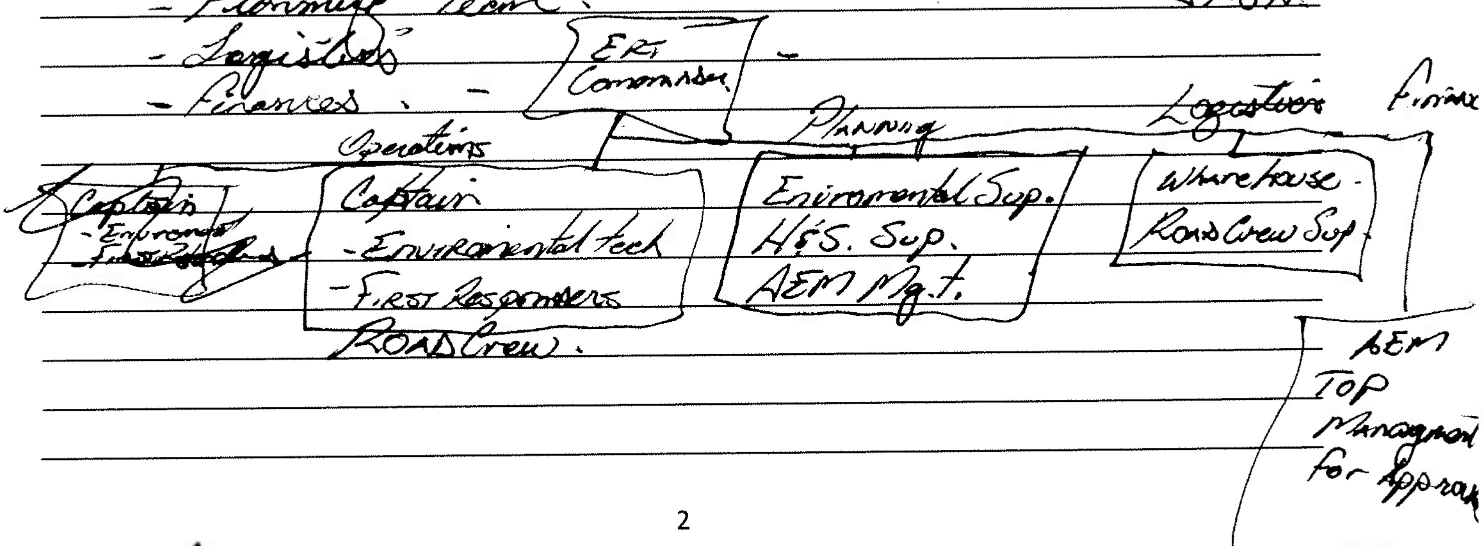
2. What **resources** are required?

- pump trucks - helicopter, - boat
- personal facilities - food, PPE, Bathroom
- personal - clean up, Communication, H&S, Environmental.
- stop & containment resources - booms, pumps, earth
- ~~[illegible]~~, C-Cans for [illegible], earthmovers, storage -
- ERP ~~[illegible]~~ Spill contingency Plan, OPEP, JHA.
- WHMIS,
- Level [illegible] for first 6 Hours Level 2 After.
- TIER 3 response initially

3. What are the **initial spill response steps and what does your ICS look like**?

- Call appropriate personel.
- Evaluate Spill - Immediate danger threat level.
- ~~[illegible]~~ Identify Incident Command team - With ERP
  - Operations personal.
  - Planning Team.
  - Logistics
  - Finances.

- Spill response plan
- JHSA.



4. What is your oil spill containment and recovery **strategy**?

- STOP Source.
- Based on Evaluation → ~~contain~~ Establish Booms for River Containment
- Recover land based spills using
- haul truck, Hoe, Loader. ~~[illegible]~~
- create ditch pump oil from there.
- Water containment - skimmer cleanup -
- pump from bottom of V, U, J, Boom.
- Install booms at 10/30° of 4.
- Install ~~[illegible]~~ bell hole. pump from there.

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

~~Stop~~ Shoreline types.
- Rock
- Tundra Organics.
Using SCAT.
Identified shoreline types - rock - nothing
- Tundra - Absorbants
- and natural recovery
- is it transferable?

6. What are some **safety** issues?

- LEL, Benzine,
- Tired personel.
- recovery of truck
- water / ice operation - PPE's / Assesment.
- other road traffic.
- Possibility of Community water supplys
- Wild Animals.

7. How do you manage your **waste**?

Hazmat / Quadrex / Totes / Drums / Soil Pads.
Soil farms, Incinerate

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

- U-Boom
- V-Boom.
- 5-Boom.
- Corral it.
- Tostall Booms @ POE.

Robin Allard

SWAT OILSPILL ISSUES WORKSHOP

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- **River** – water flow, 5 km/hr, braided channels; approx 15 km to Baker Lake
- **Lake** – winds from the North West at 20 km/hr. Tide is high.

1. List the **issues** linked to this scenario:

Flow in River
→ close Baker Lake - Potential
→ Ice → Flow Forecast
→ Potential Impact to wildlife
Stop possible a spot
Sensitive area
TIME FRAME
+ Surface for Braided.
Road usus.

Safety Driver
LOL ISSUE.
High flow.

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2. What **resources** are required?

→ Pump truck / Machinery
Personnal / facilities . Food / PPE / Tent
HR
Spill - Stop / containment ressources / Lights
Helicopter
Communication
H/S
Environment Dept / Rep.
Documentation (ERP / Spill / OPEP) - JHA / BOAT
WHMIS

TIER III / →

3. What are the **initial spill response steps and what does your ICS look like**?

Evaluate / call
→ STOP if possible / Safety ERP / Spill RP /
Immediate Danger

→ ICS

C → ~~SIT~~ - OSC

O	P	L	F
Capt.	Env.	Wash	Management
Tech.	[illegible]	P/L	
Responder	H/S		
Saber			
Load			

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4. What is your oil spill containment and recovery **strategy**?

→ Prevent from going to WATER.
→ Boom for containment.
→ Recover Truck / DITCH / VAC TRUCK
HOE - IF POSSIBLE

→ WATER CONTAINMENTS - Bottom/End
→ collect. Skim /

Protect Shoreline

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

SCAT.
Rocks / Organic Matter -
→ No SHEEN / Small. minimal.

Rock. Nothing
Org → Standards / mn Nature

TRANSFERT

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6. What are some **safety** issues?

Tired
Recovery of truck
ON WATER/ICE OPERATION/ assessment
FAST WATER
DRINKING WATER.

7. How do you manage your **waste**?

HAZMAT / QUADGEES / TOTES / DRUMS
6S?

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

U BOOM
V BOOM
J BOOM.

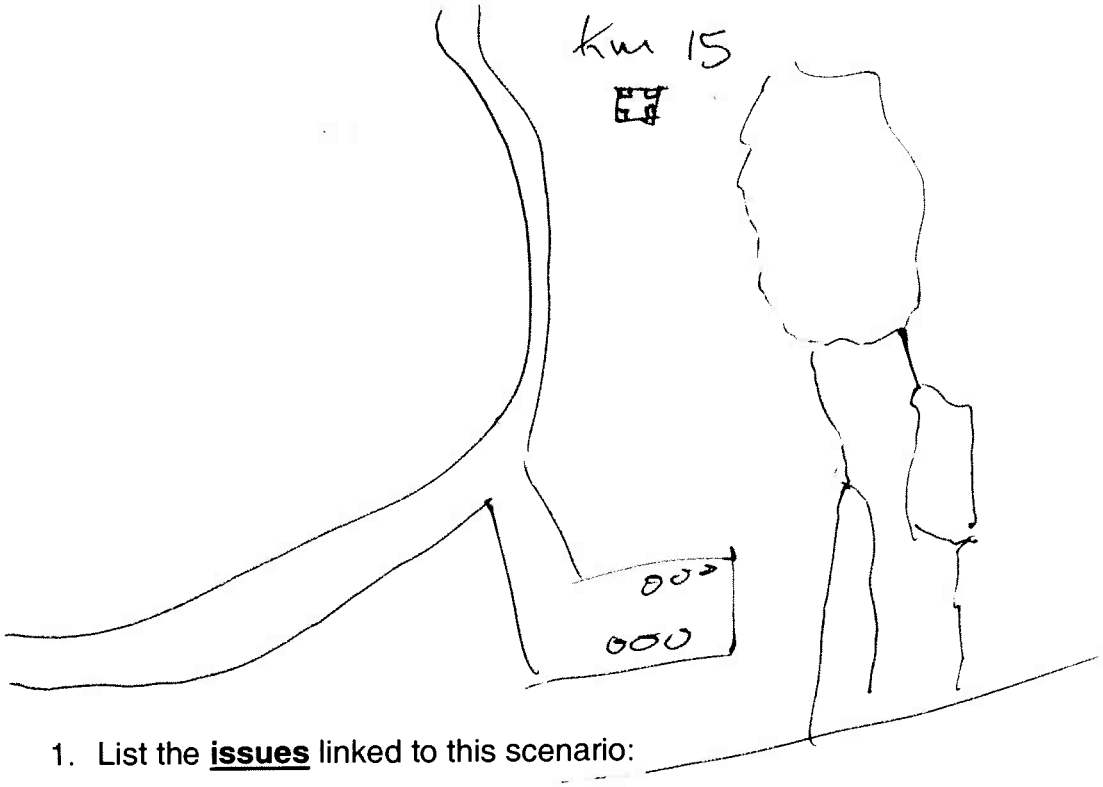
SWAT Consulting Inc.

LUC BLANCHETTE

SWAT OILSPILL ISSUES WORKSHOP

Situation Analysis – Truck Rollover

- **Incident -** 45 m^3 diesel spills/plus oil/acid – Originates on Land, flows into the River
- **Spill** - occurred 22:00 hrs on ~~March~~ June 20, 2013
- **River** – water flow, 5 km/hr, braided channels; approx 15 km to Baker Lake
- **Lake** – winds from the North West at 20 km/hr. Tide is high.



1. List the **issues** linked to this scenario:

- POSSIBLE CONTAMINATION OF COMMUNITIES WATER SUPPLY
- FRESHET WILL MAKE IT HARDER TO COLLECT CONTAMINANTS.
- BRAIDED CHANNELS INCREASE THE CHANCES OF MORE CONTAMINATED AREA
- MAY DISTURB SPAWNING AREAS → FISH
- TIDES WILL INCREASE THE CONTAMINATION OF SOIL.
- SHORT TIME FRAME
- SAFETY OF THE DRIVER
- LEL'S
- OTHER ROAD USERS.

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2. What **resources** are required?

- HEAVY EQUIPMENTS TO BUILD TRENCHES
- ENOUGH MATERIAL TO DO ENTIRE CLEANUP. (LAND & RIVER)
- PROPER PPE TO PROVIDE TO ALL PERSONEL
- ENOUGH MATERIAL TO DISPOSE CONTAMINATED MATERIAL (TUBES, SEALED DRUMS
- ADEQUATE MATERIAL TO BRING CONTAMINATED MATERIAL TO MINE SITE.
- SAFETY MONITORING DEVICE BEFORE STARTING ANY CLEANUP.
- PROPER COMMUNICATION.
- MSDS.
- MATERIAL TO MOVE THE TRUCK.
- H&S AND ENVIRONNEMENT PERSONNEL.
-

3. What are the **initial spill response steps and what does your ICS look like**?

- CODE 1 RADIO CALLED
- IC INFORMS TEAM OF SITUATION AND DOES HEADCOUNT BEFORE DEPLOYING TEAM
- COMMAND CENTRE SET UP - INCLUDE MANAGEMENT TO ASSISTS IN DECISION
- MONITOR AND DEVELOPPE A SAFETY ZONE IN THE SPILL AREA.
- IDENTIFY HAZARDS.
-

COMMAND

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4. What is your oil spill containment and recovery **strategy**?

- PREVENT FURTHER ENTRY.
- BUILD TRENCHES OF BARRIERS TO AVOID THE SPREADING OF THE SPILL.
- PLACE BOOMS INSIDE BARRIERS TO PICK UP CONTAMINANTS
- ONCE BOOMS ARE FULL - REPLACE WITH NEW ONES. PLACE CONTAMINATED BOOMS IN PROPER CONTAINERS.
- SEND QUADREX BAGS TO MINE SITE AND PLACED INSIDE SEACANS, PROPERLY LABELLED
- WATER → PLACE MARITIME BARRIER INSIDE LAKE. PLACE BOOMS OR ABSORBS ON SHORE TO PROTECT SOIL ALSO ALONG MARITIME BARRIERS.
-

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

- ASSES THE SHORELINE.
- FLUSH THE SHORELINE
- STOP THE CLEANING WHEN CONTAMINANTS IS NOT TRANSFERABLE.

6. What are some **safety** issues?

- TIRENESS OF THE CREW
- LELS
- REMOVAL OF THE TRUCK
- WORK ON ICE AND NEAR EAST WATER.
- WILDLIFE

7. How do you manage your **waste**?

- PUT IT INTO DRUMS OR TOTES TO BURN IT OR STORE IT → MINE SITE.
- ~~IF IT HITS THE WATER, SET UP A V, J OR U BOOM.~~

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

SET UP A V, J OR U BOOM.

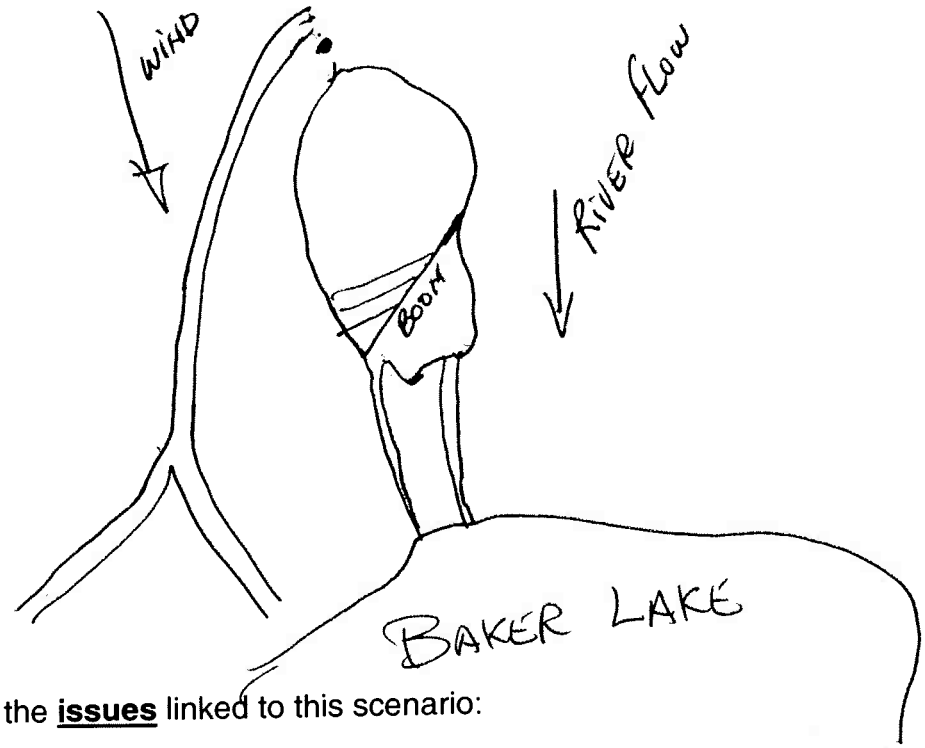
SWAT Consulting Inc.

ALAIN GENESSE

SWAT OILSPILL ISSUES WORKSHOP

Situation Analysis – Truck Rollover

- **Incident** - 45 m^3 diesel spills/plus oil/acid – Originates on Land, flows into the River
- **Spill** - occurred 22:00 hrs on ~~March~~ June 20, 2013
- **River** – water flow, 5 km/hr, braided channels; approx 15 km to Baker Lake
- **Lake** – winds from the North West at 20 km/hr. Tide is high.



1. List the **issues** linked to this scenario:

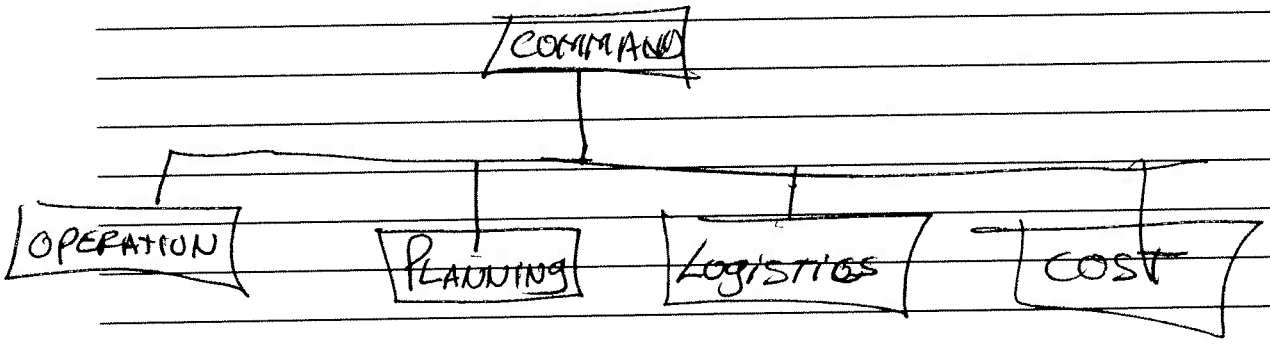
- DIESEL FLOWING INTO THE RIVER, HEADING TO BAKERLAKE (15 KM AWAY) giving us LESS THAN 3 HRS TO CONTAIN THE SPILL BEFORE IT GETS TO THE LAKE.
- ISOLATE THE VEHICULE.
- MAKE SURE THE DRIVER IS OK.

2. What **resources** are required?

- HELICOPTER TO ASSESS THE SPILL ON THE RIVER AND THE ACTUAL SPEED OF THE SPILL.
- A TEAM OF RESPONDERS AT THE ACCIDENT TO CONTAIND THE SPILL AT THE SOURCE.
- ANOTHER TEAM FURTHER DOWN STREAM BEFORE THE LAKE TO PREVENT ANY SPILL INTO THE LAKE
- NEED BOATS, MARITIME BARRIERS, SKIMERS, LIGHT PLANTS
- E.R.T. TEAM IN CASE OF FIRE
- M/T TANKER TRUCK TO PUMP THE REST OF THE LOAD
- M.S.D.S. - P.P.E.

3. What are the **initial spill response steps and what does your ICS look like**?

- ANALIZE THE SCENE, DELEGATE PEOPLE
- MAKE A PLAN, MAKE A DECISION, TAKE ACTION
- CALL PROPER AUTHORITY
- SAFETY



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4. What is your oil spill containment and recovery **strategy**?

- INSTALL BOOM ACROSS THE RIVER (POUND) BEFORE IT GETS INTO THE 2 RIVERS (CREEK) AND THE Big LAKE

FABRICATE A BERM

10-30-4 BARRIER

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

- ASSESS THE SHORELINE SITUATION, ASK TRAINNED PEOPLE TO EVALUATE IF WE NEED TO CLEAN, IF YES WHAT IS THE BEST WAY TO DO IT. (ANY FRAGILE SYSTEM)

- IS IT TRANSFERABLE? YES OR NO

6. What are some **safety** issues?

- RISK OF FIRE
- FALLING INTO WATER
- DEALING WITH POOR VISIBILITY (DARK AT NIGHT)
- WATER & ICE
- POTABILITY

7. How do you manage your **waste**?

- BRING TO THE PROPER DISPOSAL FACILITY.

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

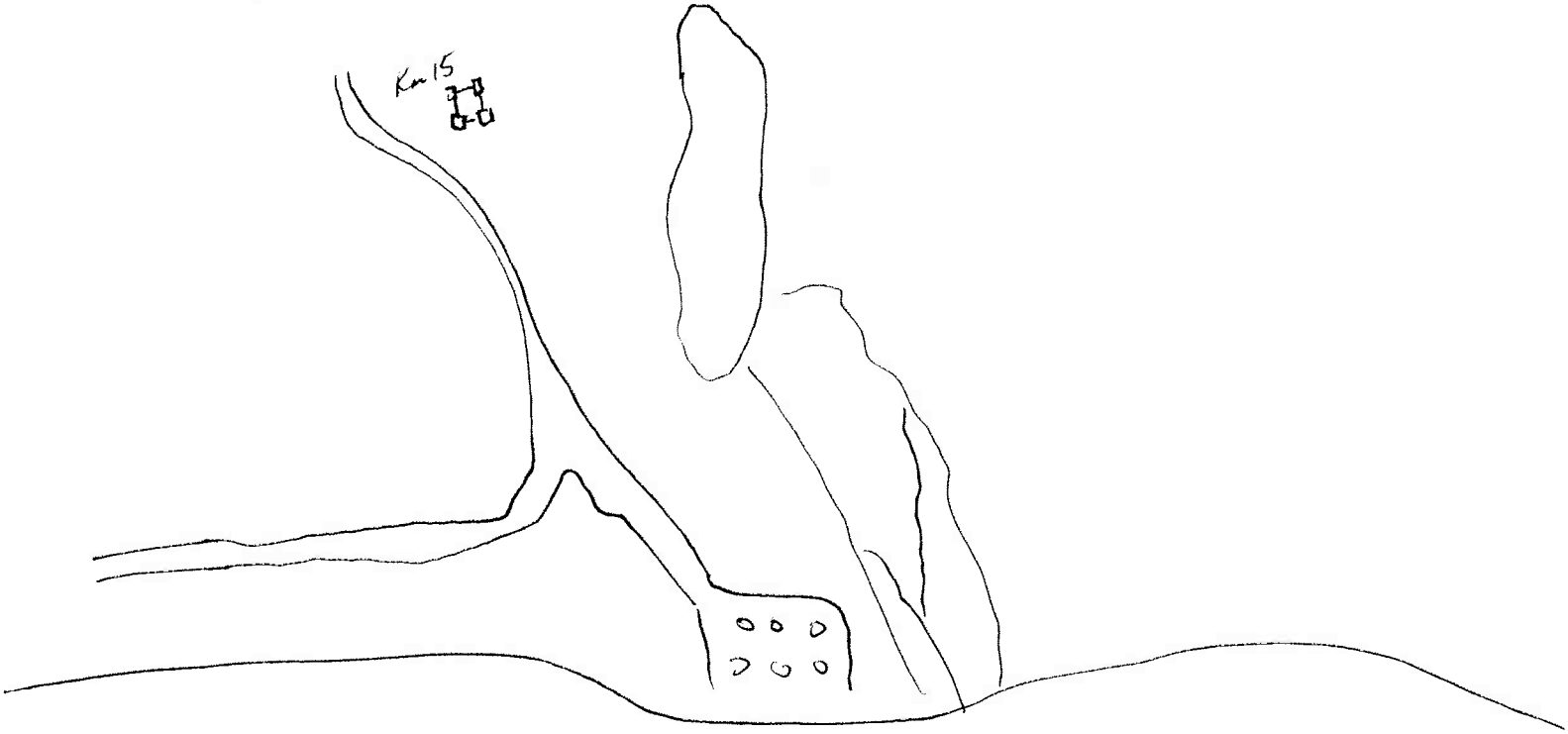
- PROTECT THE WATER INTAKE FOR THE TOWN
- DO WHATEVER IT TAKES AT ALL COST.
- INFORM THE COMMUNITY.
- U-BOOM, V-BOOM, J-BOOM

Janie Katalnik

SWAT OILSPILL ISSUES WORKSHOP

Situation Analysis – Truck Rollover considered Tier 3 incident

- **Incident -** 45 m^3 diesel spills/plus oil/acid – Originates on Land, flows into the River
- **Spill** - occurred 22:00 hrs on ~~March~~ June 20, 2013
- **River** – water flow, 5 km/hr, braided channels; approx 15 km to Baker Lake
- **Lake** – winds from the North West at 20 km/hr. Tide is high.



1. List the **issues** linked to this scenario:

possible contamination of communitys water supply
freshet will make it harder to collect contaminants
braided channels - increases chances of more contamination area
may disturb spawning areas - fish
tides will increase contamination of soil
response time
other road users

2. What **resources** are required?

heavy equipment to build trenches (COMMS) ERP
enough material to do entire clean up
proper PPE for all ~~personell~~ personnel
enough material to dispose contaminated material - totes, sealed drums
adequate equipment to bring contaminated material to mine site
safety monitoring devices before starting any clean up

3. What are the **initial spill response steps and what does your ICS look like**?

- Code 1 on radio called - safety
- IC informs team of situation and does a head count before deploying team
- command centre setup - include management to assist in decisions
- ~~location~~ develop a safety zone in spill area

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4. What is your oil spill containment and recovery **strategy**?

land - build bell holes or barriers to avoid spreading of contaminants
- place booms inside barriers to pick up contaminants
- once booms are full, replace with new ones - place contaminated booms into Quattrex bags
- send Quattrex bags to mine site and placed inside seacans - properly labelled

water - place maritime barrier inside lake
place booms along shore to protect soil - also along maritime barrier
collect

5. What is your strategy for shoreline **cleanup** operations; if using SCAT what are the forecasted shoreline types, what is your treatment options for each type and what is your end point criteria

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6. What are some **safety** issues?

LEL
fatigue
water and ice
removal of truck
other road users
fast water
wildlife

7. How do you manage your **waste**?

place contaminated material - rags, booms - inside Quatrex bags
send bags to mine site - placed into seacans

8. If it were to make it to the lake what is your containment, recovery, cleanup and general overall response?

Group Training Report

Course Name:

Trainer's Name: Robin Allard

Date: June 18, 2013

AGNICO-EAGLE

Agnico-Eagle Mines Ltd.
Meadowbank Division

M		Name	Company	Signature	Hours TRG.	Hours ASS.	Total Hours	Code
	1	JEAN-CLAUDE POITRAS	AEM		1.5		1.5	4
	2	Bernard Paradis	AEM		1.5		1.5	4
	3	MICHEL POITRAS	PRO-AB		1.5		1.5	4
	4	SERGE PARÉ	A.E.M		1.5		1.5	4
	5	RAY CARLSON	AEM		1.5		1.5	4
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							

Trainer's signature:

Date: 18 June, 2013

Induction Department Signatures:	
Human Resources:	
Camp:	
Nurse:	
Security:	
Health & Safety:	
Environment:	
Training:	

Comments:

Codes:	Assessment Codes:
1. AEM Permit	A+: Very Good
2. Restrictive Permit	A : Good
3. Temporary Permit	B : Average
4. Training Completed	C : Below Average
5. Training Not Completed	
6. Fail	

AGNICO EAGLE
MEADOWBANK

Tool box Meeting attendance sheet

Topic: Spill Response (Base BL)
Date 02/Aug/2018
Department INTERTEK - PETRONAV - AGNICO

Name (Print)	Signature
STEPHEN EASTERBY	
Ricardo Echeverria	
Abbassi NACEUR	
Hugo Ferreira Filho	
Fredy Rivera	
Samuel Plante	

Appendix J

Dyno Nobel Emergency Response Plan

EMERGENCY RESPONSE PLAN

Meadowbank Mine Site.

Magazine, Plant and Work Sites

This Emergency Response Plan (ERP) addresses incidents and potential incidents involving the manufacturing, handling and storage of explosives and related products in Dyno Nobel Canada Inc.' magazines, plants and worksites. This ERP has been developed for Dyno Nobel Canada Inc. and all of it's wholly-owned subsidiaries (DNX Drilling). Actions detailed within this plan are compulsory, under the approval and authorization of DNCI's Regional Operations Managers.

"This document, as presented on Dyno Nobel's database, is a controlled document and represents the version currently in effect. All printed copies are uncontrolled documents and may not be current".

Note: Information provided within this document may be privileged and is not intended for general distribution.

Publication/Amendment

Date	Changes To Prior Edition	Pg.
15 Oct 03	**New document**	All
26 Apr 04	**Amendment # 1**	
	Renumbering of Appendices 6 – 13	App. 7 – 14
	Miscellaneous Typos & Amendment Dates	All
17 March 08	Amendment #2	
	Updated Contact information	
	Addition of definitions	
	Included Calling and responding emergency procedures	
	Addition Duties of Key personnel	
	Addition of response to Natural disasters	
	Addition of visitor and contractors access control -	
	Replaced the Appendices and renumbering	
	Included a Emergency Report form	
	Addition of Nitric acid, Aluminum and Diethylene glycol and CFE	
	Addition of alternate methods of communication	
	Addition of Reportable Substance list	
	Miscellaneous Typos & Amendment Dates	All
August 18, 2010	Amendment #3	
	Updated Scope and ERP Outline	
	Added Sign-off sheet for Annual Fire Department Review	
	Added Appendix for Employee Training sign-off	
	Updated Reporting Incidents Flowchart	
	Updated procedure for Raw Material Truck Spills	
	Updated Bomb Threat Checklist	
February 14, 2011	Amendment #4	
	Updated site contacts	
	Updated site evacuation & Muster locations	
July 14, 2011	Amendment #5	
	Updated site contacts	
	Updated site evacuation & muster loaction (Map drawn)	
	Site specific emergency procedures	

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Work Site Phone Numbers and Magazine / Plant Details

Appendix 1 DNCI Emergency report form
Appendix 2 DNCI Corporate Contacts
Appendix 3 ERA Contact List
Appendix 4 Management and Site Contact list
Appendix 5 Site Information
Appendix 6 Bomb Threat Checklist
Appendix 7 New/Transferred Employee or Annual Refresher Form
Appendix 8 Annual Fire Department Review Form
Appendix 9 TDG Regualtion Class Quantity Emission Limit
Appendix 10 Evacuation/Muster locations

1.0 SCOPE

This document provides a Work Site Emergency Response Plan covering fire/explosion, spills, security breach, bomb threat, evacuation and prescribed actions that employees must take to ensure employee and public safety in the event of an emergency. The general reference to DNCI's "Work Sites" throughout this document includes magazines, plants and miscellaneous work locations.

The Emergency Response Plan appearing on Dyno Nobel Canada Inc.' database is a controlled document. Uncontrolled copies of this ERP are provided to customers and associates who own the land on which DNCI's worksite is located, plus applicable municipal and regulatory authorities. As well, uncontrolled copies are issued to all Company employees and are placed in all central offices and Company delivery vehicles.

2.0 RELATED DOCUMENTS

The following documents also relate to emergency situations that can arise and should be held at each Work Site:

- Federal, Provincial and Municipal regulations, standards and guidelines
- Corporate Policies plus HSE Management System Standards & Procedures
- Standard Operating Procedures (SOP's)
- Dyno Nobel General and Specialized Work Rules
- Material Safety Data Sheets
- Prime Contractor's / Customer's ERP
- Transportation ERAP #2-1037
- Crisis Communication Plan

3.0 ERP OUTLINE

3.1 The following materials are covered by this ERP:

Fuel Oil
ATF Hydraulic Fluid
Ammonium Nitrate Prills and Solution
Sodium Nitrite
Sodium Thiocyanate
ANFO
Emulsion
Packaged Explosives
Detonators
Diethylene glycol

3.2 The following situations are addressed in this ERP:

- Fire / Explosion
- Storage Tank Failure
- Spills from Product Delivery Trucks
- Spills from Raw Material Delivery Trucks
- Process Spills
- Shut down due to weather, floods, lightning, fires, explosions and other threats to the security and operation of DNCI's facilities, equipment and material.
- Bomb Threats
- Quantities of spills and reportable to Dyno Nobel and authorities

3.3 This ERP covers:

Preparation	Reporting
Training	Waste Disposal Permits
Lines of Authority	Containment
Notification	Inspection
Decontamination	Maintenance

3.4 The following definitions apply to this plan:

DNCI Corporate contact : A DNCI corporate employee who is assigned to receive Emergency Calls at all times from the answering service.

ER Advisor: Emergency Response Advisor (ERA), who will normally be the applicable General Manager, Area Manager, or Technical Advisor who will liaise with First Responders.

OSC: (DNCI) On Scene Coordinator, the Senior DNCI employee at an incident site who manages and controls DNCI resources in support of First Responders and incident recovery.

ERT: Emergency Response Team, DNCI personnel dispatched to an incident site to assist First Responders and conduct incident recovery under the direction of the OSC.

4.0 PREPARATION AND PLANNING

4.1 In order to provide competent emergency response at Dyno Nobel Canada Inc. magazines, plants and worksites, first responders (local fire departments and mine rescue personnel) must be thoroughly briefed on an annual basis of the potential hazards involved in a Dyno Nobel Canada Inc. worksite fire. To this end, Work Site Supervisors must take fire department plus mine safety and security representatives on an annual magazine/plant tour to view:

Explosives Storage Areas	Evacuation (Meeting) Area
Bulk Emulsion Equipment	Communications Equipment
ANFO Blending Area	Facility Layout
Fire Fighting Equipment Sites	(Waste) Burn Facilities

A record of each explosives worksite tour and the names of the first responder representatives attending are to be documented and kept on file.

Annual Fire Department Review Form (Appendix 9)

4.2 All DNCI employees shall review this ERP on an annual basis and participate in ERP drills / exercises when scheduled.

4.3 All worksite accidents involving fire, explosion, reportable spills/emissions, breaches of security and bomb threats are to be reported to applicable authorities and senior management. As per incident reporting procedure

4. 4 Spill procedures for each of the materials listed in section 3.1 are outlined in Table 6-3. All procedures specify: Method of Cleanup, Method of Disposal and Protective Clothing. Based on the procedures presented in Table 6-3, worksite supervisors must ensure that adequate clean-up equipment and materials are readily available and in good condition.

4.5 Worksite information for each of DNCI's facilities is contained in the attached appendices. The ERP is revised whenever significant changes are made.

4.6 Current Material Safety Data Sheets (MSDS) are to be kept at each Work Site for all hazardous materials that are stored and handled at the Work Site. Copies of current product MSDS' are also made available to customers and landowners. Obsolete MSDS' will be replaced as new ones are issued.

4.7 Each Work Site will hold and maintain in good repair, appropriate fire fighting and spill control equipment for potential emergencies. Fire extinguishers, hoses and other fire fighting equipment are to be visually inspected on a monthly basis to ensure Magazine, Plant, Work Site and delivery vehicle readiness.

5.0 TRAINING

5.1 All employees will complete training on the contents of this Plan during their "new hire" orientation and review the plan annually.

5.2 A trained person is considered to have reviewed all related documents (Section 2.0), to have been instructed on the use of related equipment and procedures, and to have discussed with their Supervisor or trainer, questions and issues of concern.

5.3 Training records, including certificates for training completed, are to be kept onsite in the Employee's Training Record.

5.4 The Magazine, Plant or Work Site Supervisor/Manager will certify their employees as having received training by signing the training form. In signing the training form, the Supervisor / Manager will have satisfied themselves that trained employees are able to:

- Recognize fire and explosive hazards for the materials and processes to which they are exposed /involved with;
- Competently use Fire Fighting / Fire Protection Equipment (Note: employees should receive refresher training in the use of fire extinguishers at least every three years)
- Competently use applicable personal protective equipment (PPE) when handling hazardous substances;
- Recognize and be familiar with substances which become hazardous wastes when spilled; and
- Follow SOP's and use established work practices to minimize the potential for fires, explosions, environmental releases and other accidents.
- Worksite Managers / Supervisors will ensure that all contractors receive a worksite orientation before commencing work or being left unaccompanied in the worksite. Following the orientation process, the contractors will be required to sign off on the Contractor Checklist acknowledging training in the applicable areas including the site emergency response plan.

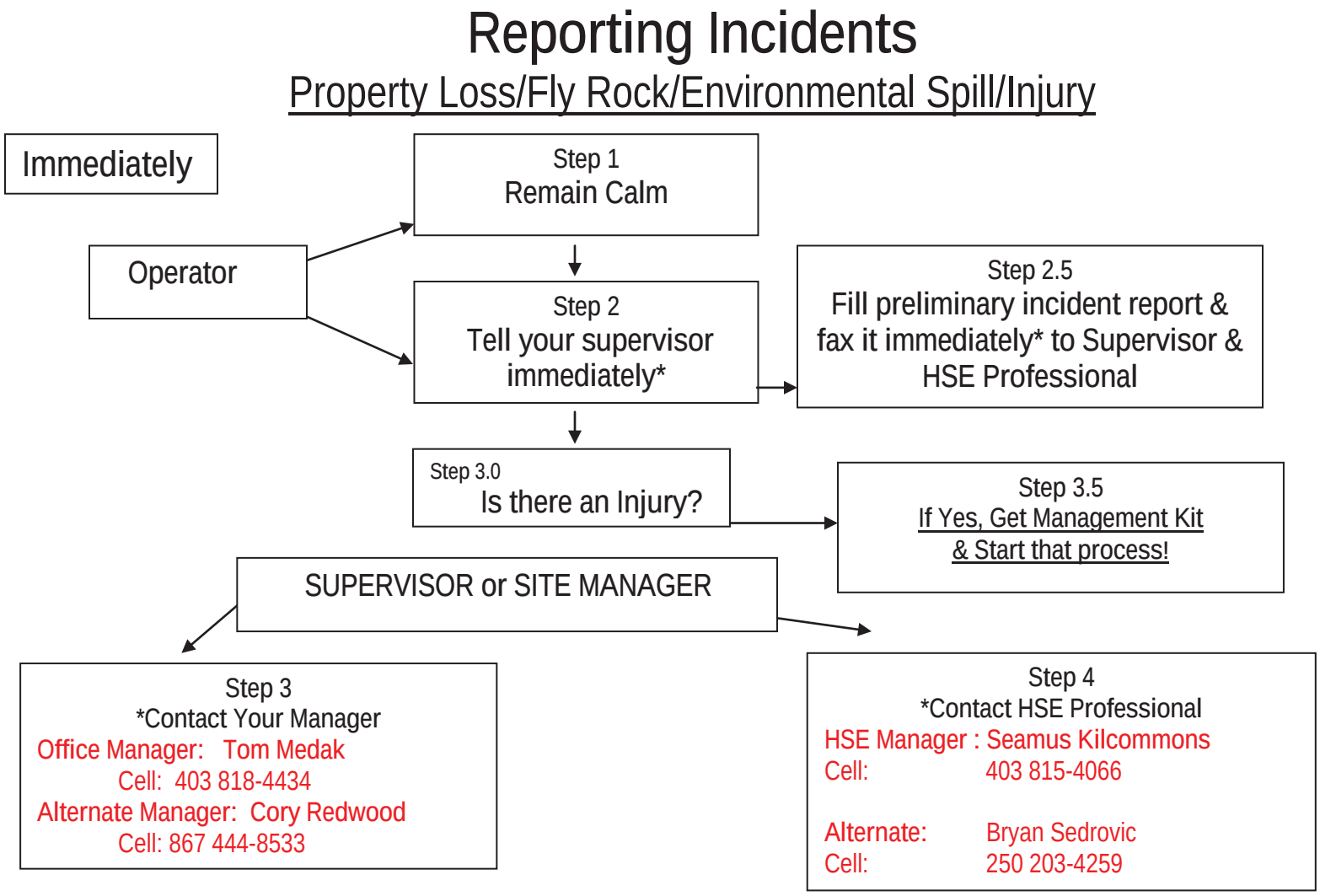
- All Plant & Magazine sites will have in place, a continuous (24 hour) access control system to control the entrance, presence and exit of visitor and contractors and their equipment and materials
- Employees must be trained on Reportable Quantities to the Government in the unlikely event of a spill.
- All employees are aware of evacuation routes, muster point location, and all-clear notice procedure.
- New/Transferred employee or Annual Refresher sign-off form located in Appendix 8

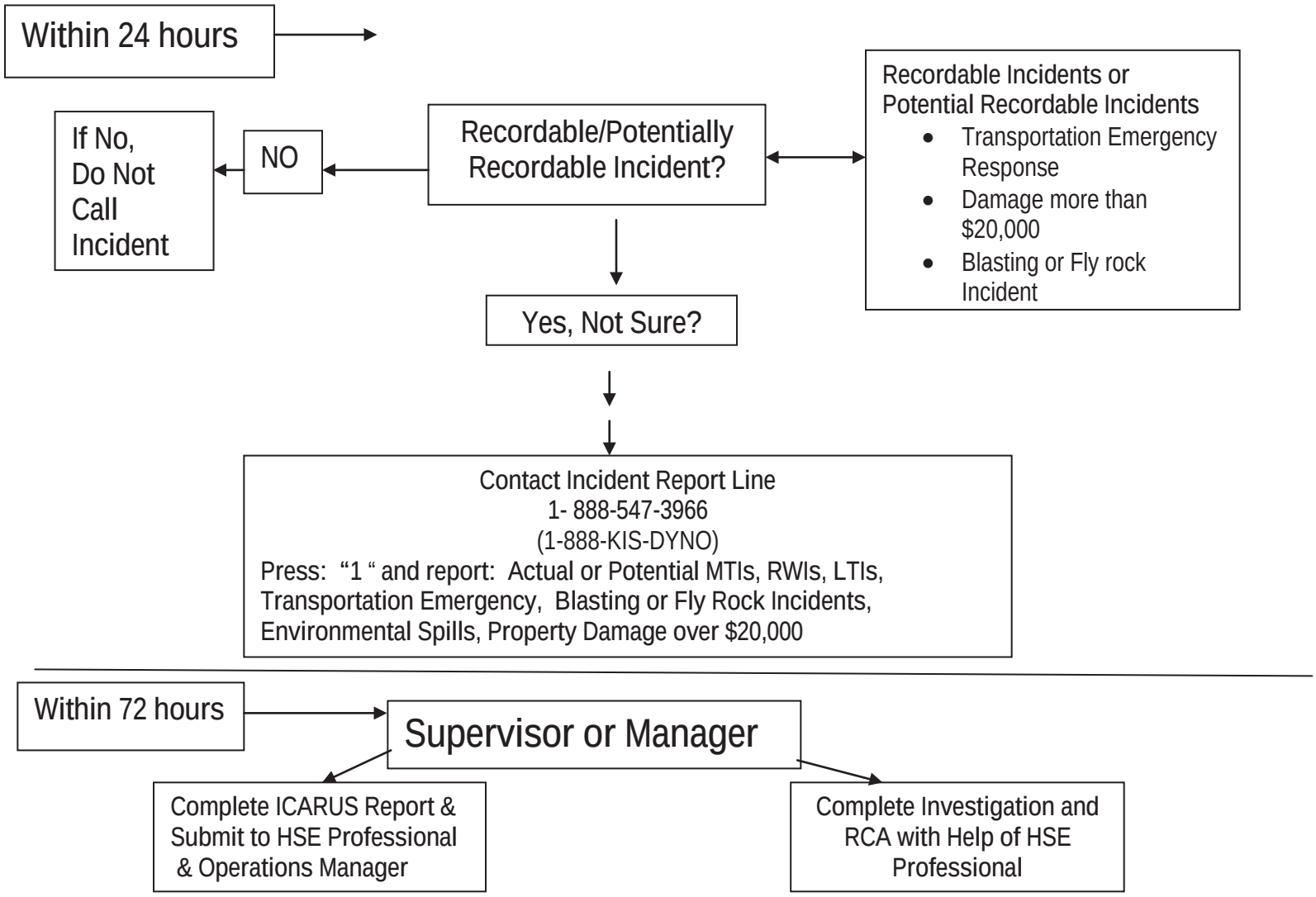
6.0 EMERGENCY PROCEDURES AND LINES OF AUTHORITY

6.1 GENERAL

Reporting Incidents Flow Chart (Following page)

Table 6-1
Emergency Response Flow Chart




Within 24 hours
Recordable/Potentially Recordable Incident?
NO
If No, Do Not Call Incident
Recordable Incidents or Potential Recordable Incidents
Transportation Emergency Response
Damage more than $20,000
Blasting or Fly rock Incident
Yes, Not Sure?
Contact Incident Report Line
1- 888-547-3966
(1-888-KIS-DYNO)
Press: "1 " and report: Actual or Potential MTIs, RWIs, LTIs, Transportation Emergency, Blasting or Fly Rock Incidents, Environmental Spills, Property Damage over $20,000

Within 72 hours
Supervisor or Manager
Complete ICARUS Report & Submit to HSE Professional & Operations Manager
Complete Investigation and RCA with Help of HSE Professional

SITE SUPERVISOR/DELAGATE
EXPERIENCING EMERGENCY / POTENTIAL EMERGENCY

- **CALL FOR EMERGENCY ASSISTANCE**
  In the event of an emergency, accidental release or imminent accidental release involving explosives, eliminate potential sources of detonation where possible (eg. turn off the ignition of a vehicle), call **6911** (or the local emergency number) for immediate assistance, **call the site Supervisor/Area Manager** and initiate the site's Emergency Response Plan. If normal phone systems are down other methods of communication can include two way radios, satellite phones, pager, e mail and vehicle satellite tracking systems.

- **WARN PUBLIC WITHIN EVACUATION DISTANCES IF RISK OF DETONATION**
  Should there be explosive detonations, or the risk of detonations due to the presence of fire or other detonating factors, advise the First Responders (or anyone within the immediate vicinity if First Responders are not at the scene) of the risk and applicable safety distances per Table 6-4, page 17 (liaise with Emergency Response Advisor (ERA) if time permits). Help organize perimeter guards to prevent people from entering the evacuation zone.
  Note: See ERP, page 17 Table 6-4 for Evacuation Procedures.

- **ASSIST LOCAL AUTHORITIES**
  Assist First Responders and Local Authorities in eliminating the emergency situation, and liaise with DNCI's On-Call Employee / ERA until relieved by the Company's Emergency Response Team (ERT).

TO RESPOND TO AN EMERGENCY CALL

DNCI Corporate contact instructions:

Upon receiving a call for emergency response assistance, keep a log of all subsequent communications and actions, and do the following:

1. Immediately obtain the name and callback number of the caller, in case the telephone line is lost.

2. Obtain information as fully and accurately as possible following the emergency report form (see appendix 1).

3. Call an ER Advisor for the applicable Region (see appendix 2) and report the emergency situation. In turn, the ER Advisor will phone the emergency scene caller, establish ongoing contact, assess the emergency, determine what Company resources and/or contracted emergency response services are required and organize an Emergency Response Team – ERT to proceed to the emergency scene if required.

4. Assist the Emergency Response Advisor (ERA).

5. Liaise with Company Executive / Senior Managers.

Emergency Response Advisor (ERA) instructions:

1.Call the Branch/Plant Supervisor nearest the emergency scene plus territorial & federal authorities (see applicable appendix to Annex D) to advise them of the situation and the need for an emergency response.

2. Designate, assemble and dispatch an Emergency Response Team (ERT), made up of Groups 1 & 2 personnel (see ERAP pg. 16 and Annex D) under the leadership of an On Scene Coordinator (OSC), if required.

3. Authorize the dispatching of additional resources, communications, transportation and contracted services as necessary.

4. Contact and instruct the designated Emergency Response Team (ERT) to proceed to the emergency scene with the required vehicles and equipment.

5. Liaise with the Person in Charge of the Emergency) and/or Local Authorities to obtain a situation update.

6.Advise Local Authorities as appropriate, regarding the properties, hazards and handling procedures for the explosives involved in the emergency. In particular, advise the Local Authorities of appropriate evacuation distances per Table 6-4 pg. 17.

7. Continue to consult with the Local Authorities as appropriate, plus the Company's On-Scene Coordinator (OSC), to stabilize and eliminate the emergency.

8. Refer to **Regional Manager** *(Tom Medak, Willard Pierce, Dale Bodnarchuk or Francois Lambert)* for any media requests in accordance to the Crisis Communication Plan (CCP). Media contacts shall be through Regional Manager designated for the area.

9. Contact the explosives supplier and / or transporter (if other than DNCI) to advise them of the emergency and to request their assistance if/as required.

ON-SCENE CO-ORDINATOR (OSC)

- The On-Scene Coordinator (OSC) is the Company's representative and local authority in charge of all company actions and resources at the emergency scene. Once the OSC arrives at the emergency scene, the ERA will transfer communication with First Responders/Local Authorities to the OSC. In turn, the OSC will liaise with the ER Advisor as required. Throughout the Company's emergency response, the OSC will ensure that First Responders and Company personnel (employees and contractors) observe all safety and regulatory standards and procedures.
- The OSC may revise / adjust the composition of the Emergency Response Team (ERT) and supporting resources as required. The OSC may, in consultation with the ER Advisor, contract commercial services to assist in addressing and resolving the emergency situation.

- The OSC will oversee the Company's local involvement with emergency services, government (municipal & provincial) and public interests until the emergency is fully resolved. Post-emergency activities (clean-up, restoration, etc.) under the direction of the Environment Manager may be delegated to an appropriate Branch, Plant or Area Manager. **EMERGENCY RESPONSE TEAM (ERT)**

- Selected emergency response personnel will take their direction to assemble and proceed to the emergency scene from the ERA or their representative. Team members will immediately report to the On-Scene-Coordinator.

- The primary role of the ERT is to provide a competent and trained / certified workforce plus specialized equipment and material to assist First Responders / Local Authorities in the stabilizing and elimination of an 'explosives emergency', and to retrieve / recover, repackage and remove to safe and secure storage, non-detonated explosives.

- While at the emergency scene, ERT members will take their direction from the Company's OSC and remain available until released by the OSC.

NOTE:

ONLY INDIVIDUALS WHO HAVE RECEIVED TRAINING AS REQUIRED UNDER THE TRANSPORTATION OF DANGEROUS GOODS (CLEAR LANGUAGE) REGULATIONS, OR WHO ARE WORKING UNDER THE DIRECT AND CONTINUOUS SUPERVISION OF AN EMPLOYEE WHO HAS BEEN TRAINED FOR CLASS 1 DANGEROUS GOODS UNDER TDG, MAY PARTICIPATE IN SITE CLEAN-UP ACTIVITIES SUCH AS PICKING UP, REPACKAGING AND TRANSPORTING EXPLOSIVE MATERIAL.

6.1.1 In any emergency the Work Site Supervisor/Manager or their delegate must take certain actions, including the following:

- Call local fire/emergency authorities (at mine sites, also call Mine Fire, Safety and Security if different and give relevant information).
- Account for all employees and visitors. Arrange for Rescue of anyone who may be trapped, without endangering oneself or others.
- Notify Dyno Nobel Canada Inc. ERA's so that necessary arrangements can be made for technical / administrative support, including accident reporting and investigation plus continued/alternate production. The following information should be provided and refer to appendix 1:

What Occurred	Time of Occurrence
Action Taken	People Contacted
Status of Situation	Anticipated Follow-up

6.2 FIRE & EXPLOSIVES

6.2.1. There are three categories of fire that may involve explosives:

I. Fires Directly Involving Class 1 Explosives and Blasting Agents

- **DO NOT FIGHT THE FIRE.** Instruct all fire fighters on the scene not to fight fire with explosives.
- Shut off power at main breakers if possible. At mine sites, call Mine Security or Fire/Rescue. At all other DNCI locations call local Fire/Rescue personnel.
- Evacuate all personnel from the Work Site to the safe meeting place as outlined in the Work Site Appendix.
- Set up a communications base at the meeting place and guard
- against anyone entering the area.

II. Fires Involving Components For Manufacture of Blasting Agents

Bulk blasting agents may be in the form of emulsion or ANFO. ANFO is a mixture of prilled ammonium nitrate and fuel oil.

Under conditions of large mass, intense heat, confined dust / vapor buildup, and the right mixture combination of the basic ingredients, emulsion and ANFO will explode. The probability of explosion with

ammonium nitrate (AN) alone is very small, but increases when under intense heat and confinement. Table 6-1 includes recommended fire fighting procedures for each of these substances.

III. <u>Fires Involving Dyno Nobel Canada Inc. Trucks</u>

In cases where the Dyno Nobel Canada Inc. delivery trucks are in a building that is on fire, if there is no explosives and safe to do so, may be moved provided access to the truck and exit from the building is not barred by flames or smoke, with available fire extinguishers with caution only if the fire is small and not in the storage compartment.

Fires on re-pump or other bulk explosive delivery vehicles shall not be fought if the fire involves the explosives compartment. Fire fighting measures should be taken immediately to prevent any fire such as a tire, electrical or cab fire from reaching the explosives compartment.

Fires on other transport vehicles may be fought with caution. Fires that cannot be controlled sufficiently to avoid involvement of the vehicle's fuel compartment shall be left and personnel evacuated to a safe distance.

6.2.2. When a fire is small and does not involve any explosive agents, it may be fought with plant extinguishing equipment. If the fire is widespread and intense, all personnel, including visitors and contractors should be evacuated to the meeting area outside the main gate.

Table 6 - 2
FIRE FIGHTING INFORMATION

MATERIAL	RECOMMENDED FIRE-FIGHTING METHODS	SPECIAL CONSIDERATION
Ammonium Nitrate Prill – Odorless white to light tan crystaline solid	Use flooding amounts of water in early stages of fire. Keep upwind. AN is an oxidizing agent which supports combustion and is an explosive hazard if heated under confinement that allows high-pressure buildup. Ensure good ventilation and remove combustible materials if it can be safely done. Evacuate to designated area if fire cannot be controlled.	Toxic oxides of nitrogen are given off during combustion. Fire fighters require self-contained positive pressure breathing apparatus. Avoid contaminating with organic materials. Many powdered metals such as Al, Sb, Si, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, Sn, Zn and brass react violently and explosively with fused AN below 200˚C Sensitivity to detonation increases when heated.
Ammonium Nitrate Solution- Colorless/Odourless Liquid – white paste like solid when cooled	Use flooding amounts of water in early stages of fire. Cool containing vessels with flooding quantities of water until after fire is out	Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed. These products are nitrogen oxides and ammonia. (NO,NO_2 NH_3). Product may form explosive mixtures when contaminated and comes in contact with organic materials. Explosive when exposed to heat or flame under confinement. Avoid temperatures over 210°C (410°F) A self contained breathing apparatus should be used to avoid inhalation of toxic fumes
Sodium Thiocyanate – White solid - odourless	Use extinguishing media most appropriate for the surrounding fire	Wear self contained breathing apparatus – MSHA/NIOSH approved or equivalent, and full protective gear. During a fire, irritating or highly toxic gases may be generated by thermal decomposition or combustion.
Sodium Nitrite – Oxydizing agent - white to light yellow crystals- faint odour	Flammability class – not regulated. Flood with water only – Isolate materials not involved in the fire and cool containers with flooding quantities of water until well after the fire is out.	Self contained apparatus should be worn in a fire involving Sodium Nitite.Thermal decomposition will cause reddish brown nitrogen oxides to be released.
Fuel Oil (No. 2 diesel) Dyed or pale yellow liquid with petroleum odor; and/or ATF Fluid	Use water spray to cool fire-exposed surfaces and to protect personnel. Shut off fuel from fire. Use foam, dry chemical or water spray to extinguish fire. Avoid spraying water directly into storage container due to danger of boil-over.	Avoid strong oxidizing agents.

Explosive emulsions, ANFO, packaged explosives and firing devices.	**Fire involving explosive materials must never be fought. Evacuate the incident scene. Do not confine (ventilate to prevent / reduce pressure build-up if safe to do so).**	Explosion hazard.
Enviro CFE	Dry chemical, foam, water spray (fog). Use water spray to cool exposed surfaces and containers	OIL FLOATS ON WATER. Do not use direct or heavy water stream to fight fire. Use organic vapour respirator or self-contained breathing apparatus to fight fire.

Table 6 - 3
CONTROL MEASURES FOR FIRE

MATERIAL	RECOMMENDED FIRE-FIGHTING METHODS	SPECIAL CONSIDERATION
Diethylene glycol	Small fire: type ABC dry chemical or CO_2 fire extinguisher. Large fire: water fog.	Keep away from oxidizers (nitrates and perchlorate). Explosion hazard if heated under confinement.

EVACUATION PROCEDURES

Advise the first emergency responders at the scene (police or fire) of the need to evacuate using the guidance in the Emergency Response Plan. Employees at the scene should assist local emergency services to the best of their ability to accomplish this. For incidents within a worksite such as a mine, quarry or construction operation, in most cases access is radio controlled. The quickest way of alerting people, therefore, is by site radio. Clearly state your location, situation and call for assistance in evacuating the area.

DO NOT FIGHT EXPLOSIVES FIRES. EVACUATE THE AREA AND LET THE FIRE BURN ITSELF OUT.

THE MINIMUM EVACUATION DISTANCE IS AS OUTLINED IN TABLE 6-4 (Pg. 17) FOR ALL DIRECTIONS (which is based on a higher traffic / risk / population density within the area, without benefit of protective features such as berms and hills. (**Transport Canada requires 1,600 meters for situations that involve high-risk surroundings**) upon determining actual quantity of explosives refer to Table 6-4 as per ERD quantity of distances.

Table 6 - 4
EVACUATION DISTANCES
Based On Amount of Explosives Present

Explosive Quantity		Metric Distance		English Distance
250 kg		70 Meters		230 Feet
500 kg		100 Meters		320 Feet
1,000 kg		150 Meters		500 Feet
2,000 kg		240 Meters		800 Feet
5,000 kg		400 Meters		1,300 Feet
7,000 kg		450 Meters		1,450 Feet
10,000 kg		480 Meters		1,550 Feet
20,000 kg		700 Meters		2,300 Feet
40,000 kg		800 Meters		2,640 Feet
60,000 kg		870 Meters		2,860 Feet
80,000 kg		960 Meters		3,150 Feet
100,000 kg		1040 Meters		3,420 Feet
120,000 kg		1100 Meters		3,610 Feet
>120,000 kg		1600 Meters		5,250 Feet

6.3 ENVIRONMENTAL RELEASES

6.3.1 Procedure For Fuel Oil Storage Tank Failure

- Assess the magnitude of the leak.
- If the leak is slow and the source can be determined, take the appropriate action to prevent further leakage.
- Transfer fuel from storage tank into drums if necessary.
- Collect spilled material, including contaminated soil, with absorbent pads or inert solid absorbent and store in drums labeled for disposal.
- If the leak is large and further leakage cannot be prevented, allow the dyke to fill. Transfer to drums, label for reuse or disposal, and store.
- Inspect empty tank to identify failure/cause of leak and repair tank.

6.3.2 **Procedure For Raw Material Truck Spills**

- Identify the material involved, assess the magnitude of the spill or leak and assist the driver to take appropriate action to stop the leak, taking care to prevent run off and/or entry into any water course or drainage system near the spill site.
- For AN prill, shovel spilled material into drums, label for reuse or disposal, and store. Use a non-sparking shovel to transfer spilled material into lined drums.
- For spilled fuel, contain by dyking with earth. Collect spilled fuel with absorbent pads or solid inert absorbent, transfer into drums, label and store for disposal.
- Remove contaminated soil for disposal in conformance with Environment Canada standards.

6.3.3 **Procedure For Process Spills**

- Identify the material involved and assess the magnitude of the spill or leak, taking care to prevent run off and/or entry into any watercourse or drainage system near the spill site.
- For AN prill, shovel spilled material into drums, label for reuse or disposal, and store.
- For spilled fuel, contain by dyking with earth. Collect with absorbent pads or solid inert absorbent, transfer into drums, label, and store for disposal.
- In the case of leaking bags of ANFO, sweep or shovel the spilled material into a clean drum or other suitable container, label for reuse or disposal, and store.
- Remove contaminated soil for disposal in conformance with Environment Canada standards.
- Have any process equipment (pumps, process lines, parts, gauges, etc.) involved in a leak or spill inspected and repaired or replaced. Re-inspect and test if necessary after repair is affected.

6.3.4 **Procedure For Emulsion Tank Failure**

- Assess the magnitude of the leak.
- If the leak is slow and the source can be determined, take the appropriate action to prevent further leakage.
- Transfer remaining emulsion from leaking storage tank into another storage tank, a tanker trailer if available, or into drums as necessary.
- Collect spilled material using double diaphragm pump(s) and store in labeled drums for reuse or disposal at the mine.
- If the leak is large and further leakage cannot be prevented, allow the room to fill. Transfer to drums, label for reuse or disposal, and store.
- Inspect empty tank to identify failure/cause of leak and repair or replace the tank

6.3.5 **Procedure For Fire**

- In the event of a raw material or product fire, take care to protect all persons from exposure to smoke and gaseous emissions from the fire.
- Potential toxic gaseous emissions from fires involving explosive materials include:

  Oxides of Nitrogen
  Carbon Monoxide
  Cyanide Gas

- All fires must be reported to local authorities and Mine Site Security as soon as possible.
- Self contained breathing apparatus is required for fighting a fire in the plant.
- Follow procedures outlined above for any spills and leaks resulting from fire when it is safe to do so

Table 6 – 5
ENVIRONMENTAL RELEASE PROCEDURES

MATERIAL	SPILL AND LEAK PROCEDURES	WASTE DISPOSAL
Ammonium Nitrate Prill (odorless white to light tan crystalline solid)	Remove source of heat and ignition. Sweep or shovel spill into a clean, non-combustible container. Wash remaining trace residues with water. Wear rubber gloves and safety glasses to minimize contact with skin and eyes.	Re-use if possible or give it to a farmer as a fertilizer. If not possible, dispose of as-is in approved. Remove as much as possible the spilled material as a solid.
Ammonium Nitrate Solution-Colorless/Odourless Liquid – white paste like solid when cooled	Small spill - Dike and contain spilled material. Ensure spilled material does not enter sewers, wells or water courses. Allow to solidify. Use appropriate tools to place in container for disposal. Larger spill - Dike and contain spilled material. Ensure spilled material does not enter sewers, wells or water courses. Notify downstream water users. Allow to solidify. Use appropriate tools to place in container for disposal.	Call for assistance for disposal. Ensure disposal complies with regulatory requirements and regulations.
Fuel Oil (dyed or pale yellow liquid with petroleum odor)	Eliminate any source of ignition. Prevent spills from entering watercourses or drainage systems. Contain with sand or earth. Recover with pump or inert absorbent material into clean container. Wear safety glasses and rubber gloves to prevent contact with the eyes and skin.	Dispose of recovered material in approved landfill or other waste disposal facility.
ANFO (Ammonium Nitrate Fuel Oil)	This material is an explosive. Remove all sources of heat and ignition. Transfer into clean plastic container with a plastic shovel. Label drums. Wear rubber gloves.	Recycle product, if possible. If not practical, explode it inside a borehole or burn it in an authorized burning ground.
Emulsion	This product is a blasting agent. Remove all sources of heat and ignition. Prevent spills from entering watercourses or drainage systems. If large amount of emulsion is involved, contain spill with earth or sand found locally. Recover spilled material with a diaphragm pump. Use of a diaphragm pump also requires an air compressor. Limitation of the pump suction is approximately 2.5 meters, pump discharge is approximately 8 meters. Use a screening device on pump suction hose. Out of area spills will require taking two pumps and extra hose. Transfer the product into a tanker trailer or clean 200 liter drums. If small amount of emulsion is involved, transfer material into a clean plastic container with a plastic shovel. Label tanker trailer or drums. Wear rubber gloves and rubber boots.	Recycle product, if possible. If not practical, explode it inside a borehole or if large amount is involved, demulsify it with liquid detergent.

Enviro CFE	Eliminate any source of ignition. Prevent spills from entering watercourses or drainage systems. Contain with sand or earth. Recover with pump or inert absorbent material into clean container. Wear safety glasses and rubber gloves to prevent contact with the eyes and skin.	Dispose of recovered material in approved landfill or other waste disposal facility.
Sodium Thiocyanate – White solid - odourless	Ensure adequate ventilation whe handling Sodium Thiocyanate. Keep containers closed when not in use. Wear appropriate PPE – eye protection, gloves and appropriate clothing to prevent skin exposure.	Vacuum or sweep up material and place into a suitable disposal container. Avoid run off into storm sewers and ditches which lead to waterways. Not regulated as a hazardous material. Chemical waste generators must consult appropriate hazardous waste regulations to ensure complete and accurate classification.
Sodium Nitrite – Oxydizing agent - white to light yellow crystals- faint odour	In the event of a spill or leak, contact the vendor (403-263-8660) for advice. Wear respirator, protective clothing and gloves. Vacuuming is the recommended method to clean up spills. Do **not** sweep or use compressed air for clean up. Recover spilled material on non-combustible material, such as vermiculite. Use non-sparking tools and place in covered containers for disposal. Any recovered material mau be used for it's intended purpose , depending on contamination.	Dispose of the waste material at an approved hazardous waste treatment/disposal facility.
Acetic Acid – Colourless liquid with a pungent odour	Wear appropriate PPE – evacuate downind areas as required to prevent exposure and to allow fumes and vapours to dissipate. Prevent entry into sewers or streams. Dike if needed. Eliminate all sources of ignition. Neutralize the residue with sodium carbonate or crushed limestone. Absorb win an inert dry material and place in an appropriate container for disposal. Flush area with water to remove trace residue.	Waste disposal must be done in accordance with provincial and federal regulations. Empty containers must be recycled or disposed of through an approved waste management facility.

6.4 SECURITY

6.4.1. In the event of a breach of security at a Dyno Nobel Canada Inc. Work Site, a call is to be made to the RCMP / local Police Department at the discretion of the Supervisor/Manager, or their delegate. In the case of a breach of security, Dyno Nobel Canada Inc.' HSE, Regulatory Affairs and Executive / Senior Management shall also be informed immediately and provided with the same information as outlined in Section 6.1

6.4.2. Any person(s) apprehended during the course of a serious security breach shall be detained until the Police arrive (note: employees are not to put themselves at undue risk by attempting to apprehend or restrain a potentially violent person).

6.5 BOMB THREAT

6.5.1. The safety of employees and the public is of primary concern. A person receiving a bomb threat over the telephone should attempt to remain calm and keep the caller talking by asking the questions listed in Table 6-6 (ERP pg. 20). Recording (writing) as much information about the caller and their comments is also very important for future reference. If possible, alert a co-worker to the situation while talking to the caller.

6.5.2. The police / mine security should be advised of the bomb threat as soon as possible. Unless there is good reason to the contrary, all personnel should evacuate the Work Site and await the arrival of the police / first responders at the designated meeting area. Suspicious objects should be reported but not tampered with and other people should be prevented from entering the Work Site until the local authority has authorized a return to the Work Site. Employees should be prepared to assist local authorities in their search / inspection of the Work Site as necessary.

Table 6 - 6
CONVERSATION GUIDELINES IN THE EVENT OF RECEIVING A BOMB THREAT

See Appendix 7

6.6 LINES OF AUTHORITY

6.6.1 Based upon the information available at the time of the incident, the Work Site Supervisor/Manager, in consultation with others (such as DNCI Senior Management, Mine/local authorities and/or Dyno Nobel advisors), will evaluate the incident and proceed with appropriate steps to implement this ERP. A decision on when to return to the scene of a serious incident will be made in like fashion, subject to approval by public authorities overseeing the incident.

6.6.2 The Work Site Supervisor/Manager will have overall responsibility for the implementation of this ERP and the supervision of all Company activities. Public authorities and the site owner have ultimate authority regarding the resumption of normal production activities.

7.0 NOTIFICATION AND REPORTING

7.1 Any incident that activates this ERP shall be documented on the DYNO Incident (Cintellate) Report. The Corporate Emergency Response Advisor must also be notified and in turn will advise the:

HSE Manager Vice President Operations
Area Manager

It is the responsibility of the HSE Manager or his delegate to report the incident to DYNO's HSE Management Team. A major incident involving a fire with emissions and/or a hazardous material spill shall be reported to a provincial Environment Officer under the direction of the Environmental Manager. Major incidents shall also be reported to the Chief Inspector, Explosives Branch, Natural Resources Canada; a Provincial/Territorial Safety Officer; and as applicable, an Emergency Measures Official.

Any incident which involves a spill at a Mine Site shall be immediately reported to the Mine Site Environmental Representative, and followed up with a copy of the incident report when complete.

7.2 Spills and Releases – Reportable and Significant Classifications

1) Determine if the spill/release is reportable

All environmental incidents are to be input into Cintellate. Reportable spills/releases are not only input into Cintellate, but the investigation and corrective action sections of Cintellate must be completed. To assist in determining if a spill/release is reportable, a listing of common materials with assigned reportable quantities is referenced (see Appendix 5, Reportable Substance List). The reportable quantities utilize the most stringent "reportable quantity" in Canada. Even if the spill/released material is recovered, the media impacted by the spill/release may be reportable to authorities (e.g., a portion of a spill reaching a source of drinking water or wetland). In addition, a spill/release is reportable if the amount equals or exceeds the Dyno Nobel Default Threshold.

2) Determine if the spill/release is significant

- Significant spills/releases are disclosed in the company's annual report. Significant spills/releases trigger time-critical internal actions as required by the company's procedures (crisis communication, internal investigation, etc)

The following table is provided to assist in making these determinations:

Reporting of Environmental Spills

Is the spill reportable?

- Yes if above a Reportable Quantity
- Yes if oil sheen is visible or sludge/emulsion is deposited beneath water surface
- Yes if water quality standards are exceeded
- Yes if from a UST exceeding 25 gallons or result in a sheen

Is the spill significant?

- Yes if authorities implement a national contingency plan
- Yes if "sensitive" environmental features have been impacted
- Yes if neighbors are evacuated
- Yes if authorities and/or neighbors file complaints and/or demand response activities
- Yes if financial impact is >US$100K
- Yes if media coverage is adverse.

7.3 Internal investigation reports will include:

- Name, work address, and phone number of the investigating (reporting) individual
- Identification and quantity of the released substance
- Time, duration, and location of the release
- Nature and quantity of injuries, property damage, production loss, administrative penalty and/or legal liability
- Precautions taken during the incident
- Relevant environmental conditions
- Corrective actions taken at the time of the incident
- Recommended corrective actions to prevent future occurrence

7.4 Senior Management shall be immediately informed by telephone of any major incident that requires Government notification as per Dyno Nobel's reporting procedures.

7.5 Major incidents involving explosive material shall also be reported to the Chief Inspector, Explosives Branch, and Natural Resources Canada by the applicable Regulatory Affairs Coordinator.

Table 7 – 1
REPORTABLE SUBSTANCE QUANTITY LIST

Material Released	Reportable to Authorities		Dyno Nobel Default Threshold (Proposed)
	If Recovered	If Unrecoverable/ Abandoned / Disposed	
AN Solution	Not Reportable if it can be used as a product	45 Kg (100 lbs) as released oxidizer (not media specific)	225 Kg (500 lbs)
	44 Kg (100 lbs) for ammonia if released into water	45 Kg (100 lbs) for ammonia if released into water	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
	Report if released to aquatic ecosystem (NH3 toxic to fish)	Report if released to aquatic ecosystem (NH3 toxic to fish)	
AN Prill	Not Reportable if it can be used as a product	45 Kg (100 lbs) as released oxidizer (not media specific)	225 Kg (500 lbs)
	45 Kg (100 lbs) for ammonia if released into water	45 Kg (100 lbs) for ammonia if released into water	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
	Report if released to aquatic ecosystem (NH3 toxic to fish)	Report if released to aquatic ecosystem (NH3 toxic to fish)	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
Sodium Nitrite	45 Kg (100 lbs)	45 Kg (100 lbs)	225 Kg (500 lbs)
	Report if released to Drinking Water (DW std at 1mg/L-N)	Report if released to Drinking Water (DW std at 1mg/L-N)	
Fuel Oil	Reportable if sheen on surface of pond, stream, etc. or sludge within such	Reportable if sheen on surface of pond, stream, etc. or sludge within such	225 Kg (500 lbs); 261 L (69 gallons)
	State Regulations - Varies from Any Amount to specific Trigger Amounts	State Regulations - Varies from All Spills to specific Trigger Amounts	
	95 L (25 gallons) from UST	96 L (25 gallons) from UST	
Mineral Oil	Reportable if sheen on surface of pond, stream, etc. or sludge within such	Reportable if sheen on surface of pond, stream, etc. or sludge within such	225 Kg (500 lbs); 261 L (69 gallons)
	State Regulations - Varies from Any Amount to specific Trigger Amounts	State Regulations - Varies from All Spills to specific Trigger Amounts	
	95 L (25 gallons) from UST	96 L (25 gallons) from UST	

Emulsifier Agents	Reportable if sheen on surface of pond, stream, etc. or sludge within such	Reportable if sheen on surface of pond, stream, etc. or sludge within such	225 Kg (500 lbs); 261 L (69 gallons)
	State Regulations - Varies from Any Amount to specific Trigger Amounts	State Regulations - Varies from All Spills to specific Trigger Amounts	
ANFO	Not Reportable if it can be used as a product	45 Kg (100 lbs) as released oxidizer (not media specific)	225 Kg (500 lbs)
	45 Kg (100 lbs) for ammonia if released into water	45 Kg (100 lbs) for ammonia if released into water	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
	Report if released to aquatic ecosystem (NH3 toxic to fish)	Report if released to aquatic ecosystem (NH3 toxic to fish)	
	Reportable if sheen on surface of pond, stream, etc.	Reportable if sheen on surface of pond, stream, etc.	
Emulsion	Not Reportable if it can be used as a product	45 Kg (100 lbs) as released oxidizer (not media specific)	225 Kg (500 lbs)
	44 Kg (100 lbs) for ammonia if released into water	45 Kg (100 lbs) for ammonia if released into water	
	Report if released to Drinking Water (DW std at 10mg/L-N)	Report if released to Drinking Water (DW std at 10mg/L-N)	
	Report if released to aquatic ecosystem (NH3 toxic to fish)	Report if released to aquatic ecosystem (NH3 toxic to fish)	
	Reportable if sheen on surface of pond, stream, etc. or sludge within such	Reportable if sheen on surface of pond, stream, etc. or sludge within such	
Ethylene Glycol	2250 Kg (5000 lbs)	2250 Kg (5000 lbs)	225 Kg (500 lbs)
Sodium Thiocyanate	45 Kg (100 lbs)	45 Kg (100 lbs)	225 Kg (500 lbs)
	Report if released to Drinking Water (DW std at 1mg/L-N)	Report if released to Drinking Water (DW std at 1mg/L-N)	

8.0 DECONTAMINATION

8.1 DNCI's Standard Operating Procedures and safety rules establish work practices that minimize employees' direct and indirect contact with hazardous substances.

8.2 Equipment, rubber boots, gloves and clothes that have been contaminated can be washed with soap and water. Wash water should be collected and disposed of in an approved manner with other contaminated material.

9.0 WORKSITE CLOSURE / SHUT DOWN

9.1 **Plant Shutdown (use appropriate lock-out/tag-out procedures)**

- In the event that a plant is shut down due to weather, flood, or other adverse situation, the Plant Manager / Supervisor or his delegate will ensure that all non-essential power is shut off. The Plant Manager / Supervisor will secure all valves and flow devices so as to prevent accidental opening.
- The Plant Manager / Supervisor shall determine if any raw material or raw material storage will be contaminated or at risk of fire/explosion, and take steps to move the material or isolate it from the contamination / hazard source.
- If the power and/or gas will create a dangerous situation the Plant Manager / Supervisor will cut the outside supply of power, thereby isolating all plant equipment.
- The Plant Manager /Supervisor will advise local Mine authorities of the plant shutdown and preventative actions taken.
- All sensitive documents must be secured.

9.2 **Magazine Closure (use appropriate lock-out/tag-out procedures)**

- In the event that a magazine is closed due to weather, flood, or other adverse situation, the Supervisor/Manager or his delegate will ensure that all non-essential power is shut off. Also, the Supervisor/Manager will ensure that all magazines and compound gates are locked before leaving the site.
- The Supervisor/Manager shall determine if any products or raw materials will be contaminated and take steps to move the material or isolate it from the contamination source.
- If power and/or gas will create a dangerous situation the Supervisor/Manager will cut the outside supply of power, thereby isolating all magazine equipment.

10. RESPONSE TO NATURAL DISASTER

Hurricanes, tornadoes, floods, slides, forest fires, and earthquakes, have the ability to damage or destroy everything in their path. Yet much of the

damage or destruction associated with such phenomena is the result of some secondary event, e.g. fallen power lines, ruptured tanks valves, pipes etc. If reasonable warning of an approaching disaster is received, efforts can be made to minimize damage by taking specific preventative measures. These measures are outlined in the following procedures.

1.Consult the Site Supervisor for guidance and proceed according to his direction.
2. If so directed, notify key personnel regarding the action being taken.
3. Collect important files, records and papers for safekeeping.
4. Open main electrical breaker to cut off all power to the site. (The main breaker is marked for easy identification).
5. Secure all buildings and equipment and lock the site gate.
6. Evacuate the site taking mobile equipment to safety.
7. Post Guards on site access routes to monitor the activities of unauthorized personnel.
8. A report of the incident must be submitted to the Area Manager within 24 hours.

10.1 PREVENTIVE MEASURES

10.2 **Waste Disposal Permits**

If nitrate waste is generated, a disposal permit must be obtained and kept up to date if the product will be disposed of off-site, or in mine tailings. Permits to dispose of other collected waste in the event of spills or leaks (such as described in Section 6.3) must also be obtained in consultation with mine / provincial environmental representatives

10.3 **Liquid Containment**

All fuel / oil storage tanks must be dyked according to the provisions of Federal and/or Provincial regulations (eg. National Fire Code, Environmental Protection Act), or have a double-walled tank.

A plan must be in place and materials on hand to create a dyke in the event of a large fuel or solution leak or spill or other emergency spill situation.

10.4 **Inspection**

All site emergency storage areas and equipment must be inspected monthly by qualified personnel, monthly for physical condition and serviceability, and the results recorded according to quality and safety standard operating procedures.

All recommendations/orders made by NRC Explosives Branch inspectors, Fire Marshals and insurance inspectors must be responded to and acted upon accordingly. Copies of their reports are to be forwarded to DNCI's HSE representative for the region.

10.5 **Maintenance**

All preventive and breakdown maintenance must be carried out and recorded in accordance with standard operating procedures.

11.0 WORK SITE START UP (Restoration of Business)

11.1 Before startup, the condition prompting the shutdown / closure must be over / corrected (i.e. flood, fire, explosion or blizzard).

11.2 All decontamination procedures must be followed and the site cleared and cleaned of any environmental waste hazards.

11.3 All repairs to plant equipment involving safety shutdowns and essential operating machinery must be completed.

11.4 All electrical circuits, plumbing and piping must be tested.

11.5 The Work Site Supervisor / Manager will ensure that all lockout and tag-out procedures have been followed and signed off.

11.6 The Work Site Supervisor / Manager will start up the facility by turning on individual switches to the components that have been shutdown.

11.7 Operational checks will be done to ensure that all equipment is functioning at safe working pressures and voltage.

11.8 The Work Site Supervisor / Manager will give the verbal "all clear" before workers will be allowed to return to work.

11.9 The Work Site Supervisor / Manager or one of their delegates will cancel / remove all roadblocks, terminate evacuation activities, and notify employees to return to normal activities.

APPENDIX 1

DNCI'S EMERGENCY REPORT FORM FOR INCIDENTS INVOLVING EXPLOSIVES

WHO IS CALLING? NAME:_____

PHONE #: _____ TIME:_____DATE:_____

CALLER'S ORGANIZATION:_____

LOCATION OF INCIDENT: _____

WHAT IS THE EMERGENCY?
PROBLEM**:** (Motor Vehicle Accident, Fire, Scattered Product, Disabled Truck, etc.)

_____

PRODUCTS INVOLVED : VISIBLE PLACARDS ? YES_____ NO_____

SHIPPING NAME(S)_____

UN NUMBER(S)_____

HAZARD CLASSIFICATION (ex: 1.1 D) :_____

QUANTITY: _____

INJURIES: _____

PROPERTY DAMAGE:_____

EXPLOSIVES VEHICLE UNIT NUMBER:_____LICENSE NO._____

DRIVER:_____CARRIER:_____

WHEN DID INCIDENT OCCUR? DATE: _____TIME: _____

WHERE IS THE EMERGENCY? (City, Town, Rural Area, Lat. & Long., Specific Directions)

_____

ARE THERE RESIDENCES, BUSINESSES, OR OTHER PUBLIC GATHERING PLACES WITHIN THE EVACUATION ZONE (what, where)?

_____

WHAT ACTION HAS BEEN TAKEN TO THIS POINT IN TIME?_____
(Medical, evacuation, fire fighting, etc.)

_____

APPENDIX 2

DNCI Corporate contact

Name	Position	Cell number
Benoit Choquette	Environmental Manager - Canada	(514) 246-6285
Nicholas Ebsworth	General Manager HSE - Canada	(514) 708-5417
Hubert Fafard	HSE Manager Eastern Canada	(418) 570-9257
Willard Pierce	Regional Manager -West	(403) 836-9029
Francois Lambert	Regional Manager –East	(514) 212-3490
Dale Bodnarchuk	Regional Manager – Central	(705) 715-6672
Seamus Kilcommons	HSE Manager Western Canada	(403) 815-4066
Brad Rhude	Sales Manager - Central	(705) 494-5171
Rick Chopp	HSE Manager – Central Canada	(705) 498-2855
Pierre Poulin	Sales Manager – Quebec/Maritimes	(418) 569-5565
Greg Brown	Sales Manager Western	(403) 512-5127
Bryan Sedrovic	HSE/ Regulatory Affairs Coordinator West	(250) 203-4259

APPENDIX 3

DNCI Emergency Response Advisors (ERA) per area

Name	Position	Cell number	Area (West, Central or East)
Tom Medak	Mgr, Bulk Emulsion Operations	(403) 818-4434	West
Ralph Olson	Operations Manager, Vancouver Island	(250) 713-8720	West
Darren Woodhead	Gregg River worksite supervisor	(780) 223-4491	West
Randy Armella	Bulk Operations Manager	(780) 865-6580	West
Cory Redwood	Manager dnx Drilling/ Joint Ventures	(867) 444 - 8533	West
Kevin S Kelly	Operations Manager – Seismic	(403) 934-0753	West
Tyrone McClean	Operations manager, Manitoba and Saskatchewan	(204) 687-0046	Central
Scott Smith	Operations Manager, Red Lake Ontario	(807) 727-7300	Central
Mike Ertel	Operation Manager – Ontario	(807) 629-9660	Central
Joss Forget	Operations Manager Northern Ontario	(705) 471- 8745	East
David Roy	Manager Plant operations	(418) 570-5604	East
Francois Lambert	Operations Manager	(514) 212-3490	East
Daniel Roy	Dyno Consult , Ste-Sophie	(514) 213-5889	East
Pierre St-George	Regulatory Affairs Canada	(613) 677 - 1051	Canada

APPENDIX 4

SITE: Meadowbank Site

MANAGEMENT AND WORK SITE CONTACT LIST

NAME	TITLE	BUSINESS PHONE	HOME PHONE	CELL PHONE
Doug Robertson	Site Supervisor	(867) 793-4610 *(Option 2; option 1 ext 6804)*		(867) 222-3930
Dennis Wall	Site Supervisor	(867) 793-4610 *(Option 2; option 1 ext 6804)*		(867) 222-3930
Site employees	All employees on shift	(867) 793-4610 *(Option 2; option 1 ext 6804)*		
Tom Medak	Operations Manager	(403) 723-7530		(403) 818-4434
Seamus Kilcommons	HSE Manager	(403) 236-9160 Ext 7547		(403) 815-4066

EXTERNAL CONTACT NUMBERS

ORGANIZATION/CONTACT	LOCATION	PHONE NUMBER
Mine security	Meadowbank	Ext. 6817
Local Fire; ERT	Hinton	Ext 6911
Local Ambulance	Hinton	Ext 6911
Baker Lake RCMP	Hinton	867 793-1111

APPENDIX 5

Area Office Address:
Meadowbank site
Baker Lake, NU

Type of Facility:
Emulsion Plant
AN Tote storage

Emergency Meeting Place Upon Evacuation:
As identified on site orientation forms, employees and visitors are to meet at muster point for head count. Once all persons are accounted for, all will proceed to the Muster Point located at Security Gate #1, located at junction of All Weather Road. (see map)

Emergency Equipment On Hand:
Fire Extinguishers, First Aid Kits, Fire alarm system, video monitoring,

FY 2011 drill conducted

APPENDIX 6

BOMB THREAT CHECKLIST

Exact time of call:			
Exact words of caller:			
QUESTIONS TO ASK			
1- When is bomb going to explode?			
2- Where is the bomb?			
3- What does it look like?			
4- What kind of bomb is it?			
5-What will cause it to explode?			
6- Did you place the bomb?			
7- Why?			
8- Where are you calling from?			
9- What is your address?			
10- What is your name?			
CALLER'S VOICE (circle)			
Calm	Slow	Crying	Slurred
Stutter	Deep	Loud	Broken
Giggling	Accent	Angry	Rapid
Stressed	Nasal	Lisp	Excited
Disguised	Sincere	Squeaky	Normal
If voice is familiar, whom did it sound like?			
Were there any background noises?			
Remarks:			
Person receiving call:		Telephone number call received at:	
Date:		Report call immediately to:	

APPENDIX 7

NEW/TRANSFERED EMPLOYEE OR ANNUAL REFRESHER FORM

HSE Employee Orientation Form

To Be Completed By Supervisor (within 2 to 4 weeks of hiring)

(Employee Surname)	(Given Names)	(Worksite) (Date of Hire)
(Job / Position)	(RFT/ RPT/ Casual / Temp)	(End date if applic)

Show & Tell

	Date Completed			Date Completed
Tour Of Facility			Introduction To Staff	
Emergency/Fire Exits & Procedures			Workplace Hazards & Controls	
Environmental Clothing Issued			First Aid & WCB Reporting	
Overview Of Organization			Telephone Contacts	
Work Schedules			Time Sheets & Pay Periods	
Security & Key Control			E-mail & Website Access	
Expense Claims Procedures			Other:	

Documentation Given To &/or Discussed With Employee

Position Description		DYNO G & S Work Rules	
Worksite ERP, TDG ERAP & CCP		MSDS's	
Handling/Transporting Explosives		SOP's	
Employee Guidelines		Policy: HSE & Quality	
Policy: Privacy & Confidentiality		Policy: Substance Abuse	
icy: Violence In The Workplace		Policy: Security	
Policy: Smoking In The Workplace		Performance Reviews	
Other:		Other:	

New Hire Training Completed

Customer Orientation		WHMIS	
TDG Clear Language		PPE (as applicable)	
Handling/Transporting Explosives		Fire Extinguisher	
ICARUS (Incident Reporting)		Take 5 (Hazard Assessment)	
Worksite ERP, TDG ERAP & CCP			

_____ _____ _____

Supervisor (Print Name) Supervisor Signature Date

APPENDIX 8

QAAQTUQ Dyno Nobel

ANNUAL ERT VISIT REVIEW FORM

Information to be released to Emergency Services

From: Local Emergency Services

Subject: Emergency Response Plan for _____.

The following is a copy of the Emergency Response Plan that has been prepared by Dyno Nobel Inc. Has been received from _____ operations. The ERP has been discussed and being kept on file for future reference. If questions arise, we have been given the contact information for the _____ operations staff.

On _____ the _____ of 2011, AEM ERT responder _____ attended the Dyno Nobel Meadowbank site for an annual visit and ERP review.

Signed:_____

Position:_____

Date:_____

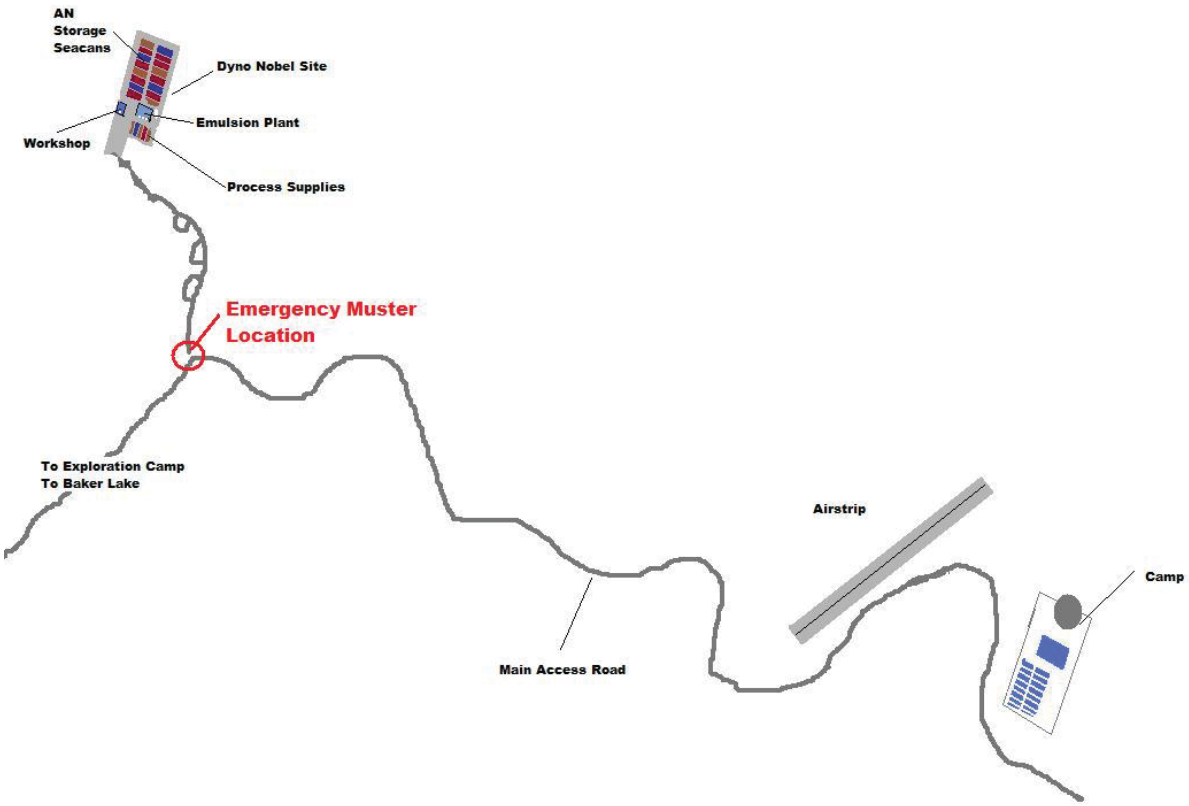
APPENDIX 9

Transportation of Dangerous Goods Regulation
Class Quantity Emission Limit

1	Any quantity that could pose a danger to public safety or 50 kg
2	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
3	200 L
4	25 kg
5.1	50 kg or 50 L
5.2	1 kg or 1 L
6.1	5 kg or 5 L
6.2	Any quantity that could pose a danger to public safety or 1 kg or 1 L
7	Any quantity that could pose a danger to public safety. An emission level greater than the level established in section 20 of the *Packaging and Transport of Nuclear Substances Regulations*
8	5 kg or 5 L
9	25 kg or 25 L

Table identified in Section 8.1(1) of Part 8 of the Transportation of Dangerous Goods Regulation Class Quantity Emission Limit

Evacuation/ Muster location



Appendix K

MBK-ENV-PRO-Spill Reporting Procedure

Spill reporting procedure

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DOCUMENT ID: MBK-ENV-PRO-Spill reporting	
People concerned: Agnico Eagle employees, contractors, visitors on the Meadowbank and Amaruq sites	**Effective Date:**
This procedure corresponds to the required minimum standard. Each and every one also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.	

Rev #	Date	Description	Initiator
	2015-01-18	MBK-ENV-PRO-Spill reporting	Jamie Kataluk
	2020-03-07	MBK-ENV-PRO-Spill reporting	Louis Dubois

Objective:
As per Meadowbank's Water License we must have and employ a Spill Contingency Plan. The overall purpose of creating a spill contingency plan is to minimize the impacts of spills by the establishment of predetermined lines of response and plans of action. The plan has been designed to facilitate effective communication and the efficient clean-up of spills from potentially hazardous materials. The Plan also specifies the reporting of all spills on site to the Environment Department. The Plan details which spills will be reported to regulators.

Definitions (if applicable)

A) **A <u>Major spill</u> is defined as an accidental release of product into the environment that has the potential for adverse impacts to the receiving environment, AEM property or human health. This can include potential impacts to water, surface and groundwater, land, equipment, buildings, human health and the atmosphere.**

B) **A <u>Minor spill</u> is defined as any spill that does not involve a toxic, reactive, or explosive material in a situation that does not pose a significant risk to the environment, is not human health or AEM property.**

Tool/Equipment Required	PPE Required
• Radio • Phone	• N/A

Specific Training Requirements
• Site induction
1. **<u>All Spills</u>** on the Meadowbank Complex site including and All Weather Access Road and Amaruq Road regardless of size, quantity, location, or time of spill are to be reported to the Environment department
2. Spills must be immediately reported to the responsible department Supervisor
3. The supervisor will determine if the spill is a major or minor spill. a. If the spill is *Major*, supervisor will call CODE 1 to dispatch (Mine, AWAR, AMQ Road or Control room). b. If the spill is *Minor* the supervisor will contact the Environment Department AMQ: On **Surface Channel** or extension **460 6808** MBK: On **Channel 9** or extension **460 6747** or **460 6759** Techs / **460 6980** or **460 6744** Coordinators
4. Whether the spill is major or minor the following must be verbally reported: a. Product description (diesel, hydraulic oil, sodium cyanide) b. Estimated quantity of the product c. Location of Spill d. Area contaminated (#meters x # meters) e. Cause of spill – If this is not yet known best assumption ** if photos can be taken of the spill, please submit to the environment department with spill report
5. For a Major Spill the Supervisor will ensure the area stays safe until the ERT team arrives to intervene. The Environment department will assist the ERT team.
6. For a minor spill the supervisor and the Environment department will then determine the clean-up method and the location in which the contaminated material will be disposed. **Environment department may want to investigate the spill prior to clean up.

7. A spill report will need to be completed, ***In Full***, and submitted to the Environment department within ***12 hrs.*** of the spill occurring. Thus allowing time for the Environment department to determine if it needs to be reportable to the Governing bodies.

   Spill report is attached below or can be found here:
   http://mymeadowbank/Top%208%20Documents/ENV/AEM%20Internal%20Spill%20Report%20Form_2020.pdf

8. Spills found on site that have not been reported to the Environment department will be deemed as Non-Reported spills.

Related Documentation (if applicable)

- N/A

References (if applicable)

Appendix (if applicable)

- Pictures
- Plans

Authorization (Print Name)

Approved: _____ Date _____
JOHSC Worker Rep.

Approved: _____ Date _____
Department Superintendent/ Delegate

Approved: _____ Date _____
Health & Safety Superintendent/ Delegate

Appendix L

2019 Mock Spill

Mock spill

Agnico Eagle Mines
Baker Lake Fuel Farm facility

September 22nd, 2019

Contents

Mock Spill Baker Lake 2

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Mock Spill Baker Lake

September 22nd, 2019

Scope/event:

During fuel transfer from the Vessel to the tank at the Agnico Eagle Mines (AEM) Baker Lake Fuel Farm Facility, the manifold flange spill at the connection between the pipe and the hose.

To create a realistic spill effect, a mixture of water and biodegradable soap was used. A pump and a hose were bringing the soapy water from a drum up to the scene. (Photo 1)

Actors on scene:

- AEM Environment department representative: Nicolas Saucier (auditor)
    - Role and responsibility: Monitor and document the actions executed by the on-scene workers during the event in order the see if protocols are followed and to give recommendations to improve the process if deemed necessary.

- AEM Supply Chain: Eric Zugatti
    - Role and responsibility: Control fuel and goods unloaded from the barges and vessels; liaise between contractors and other AEM stakeholders.

- On-shore Vessel representative: David Arsenault
    - Role and responsibility: Inspecting and monitoring the fuel transfer from the shore line hoses up to the permanent pipe.

- Jana's Vessel Captain on duty: Spencer Oliver
    - Role and responsibility: Responsible of the fuel transfer from the Vessel to the permanent pipe.

- Intertek : Emad Baujawi
    - Role and responsibility: Inspecting and monitoring the fuel transfer from the manifold thru the permanent pipe up to the fuel farm.

- AEM Road dispatch
    - Role and responsibility: Monitor and control traffic on the AEM All-Weather-Private-Access- Road, relay the Emergency call to the MBK mine dispatch in order to advise the Emergency Response Team.

Event:

- 16:23 Spill discovered by on-shore ship representative. (Photo 2)
- 16:24 Vessel representative call captain to have the fuel pump stopped on the ship.
- 16:24 Intertek representative going to the spill emergency response seacan to get absorbent material.
- 16:26 Absorbent sheets and booms applied downstream and on the contaminated area. (Photo 3 and 4)
- 16:27 Trench dug downstream of the spill to contain de spilled fluid. (Photo 5)
- 16:28 Radio confirmation that the fuel transfer was stop from the captain.
- 16:29 Boat patrol was launch from the ship with 2 crew members to identify any signs of contamination along the shore.
- 16:31 Confirmation by the captain that no contamination reaches the water body following the inspection by the crew members.
- 16:31 Intertek reach out AEM Supply Chain representative by phone to explain the situation.
- 16:31 Guillotine and valves closed on the fuel line by Vessel representative.
- 16:32 AEM Supply Chain representative call *code one* to the dispatch on AEM Road channel.
- 16:35 Mock spill was ended as the situation was all under control.

Debriefing:

In order to see what would be the reaction of the stakeholders in case of a real situation, the Environmental department representative was an auditor and not an active member of the mock spill, as the Environmental department team members are located at the Meadowbank Mine, 106 km from the Fuel Farm Facility. Adding to that, the simulated spill was started with a very short notice to see the real preparedness level of the workers assigned on the fuel transfer.

Although those facts, the reaction time was good and appropriate as we can see on the time line above. All stakeholders were satisfied and had learned/revised roles and responsibilities due to this exercise.

Recommendations:

- From Intertek:
  - Install camera at every connection/transfer point.
  - Spill kits at every connection.
  - Better communication between AEM, Intertek and the Vessel.

- From AEM Supply Chain representative:
  - Need a way to reach Intertek and the Vessel. None of these two stakeholders have the AEM radio frequency. Also need to be reachable all the time.
  - Training on spill response as he had no knowledge on that matter and did not feel comfortable to be a key player in case of a real situation.
  - Outline the role between AEM Supply Chain and AEM Energy & Infrastructure department regarding the responsibility of the fuel transfer.

- From Vessel captain and on-shore operative:
  - Better communication between AEM, Intertek and the Vessel. Having a radio with AEM frequency.
  - A way to communicate with AEM when there is no representative on site from 6 PM to 6 AM.
  - Need to have the confirmation faster from the Captain that the pump is stopped on the Vessel.
  - Bigger mock spill scenario involving the community and the on-hand resources would be worthy to get to an advanced level of spill response readiness.

- From Environment department representative:
  - All the stakeholders involved in the fuel transfer need to be able to communicate between each other easily, all the time.
  - The communication process needs to be known by everybody.
  - Better communication tools between AEM, Intertek and the Vessel. Having a radio with AEM frequency would be necessary for the contractors involved in the fuel transfer.
  - Need training on spill response for the following AEM department: Environment, Supply Chain and ERT.
  - Intertek and the Vessel crew should get familiar with the spill response equipment available.

Annex 1- Photos

Photo 1- A pump and a hose were bringing the soapy water from a drum up to the scene.

Photo 2 - Spill discovered by on-shore ship representative.

Photo 3 - Absorbent sheets applied on the contaminated area

Photo 4 - Absorbent sheets and booms applied downstream and on the contaminated area

Photo 5 - Trench dug downstream of the spill to contain de spilled fluid

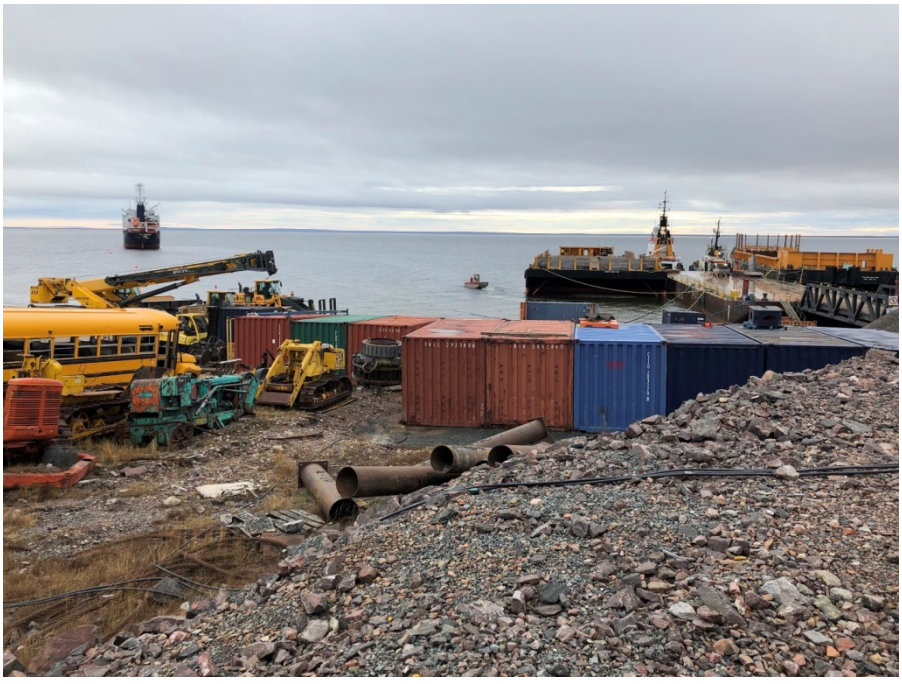


Photo 6 - Boat patrol was launch from the vessel with 2 crew members to identify any signs of contamination along the shore

Appendix M

Product Transfer Area Assessment - Baker Lake Oil Handling Facility

AGNICO EAGLE

Meadowbank Complex

Product Transfer Area Assessment – Baker Lake Oil Handling Facility

February, 2020

Prepared for:

Environment and Climate Changes Canada

Prepared by:

Agnico Eagle Mines Limited – Meadowbank Division

Document Control

Version	Date	Tank/EC number	Section	Revision	Author
1	February 2019	EC# 00025772 and 00026142		Implementation of the Product Transfer Area Assessment – Baker Lake Oil Handling Facility for the ERP	Robin Allard, General Supervisor Environment
2	February 2020	EC# 00025772 and 00026142		Update information to include the seventh fuel tank at Baker Lake	

Prepared by: Environmental Department

Approved By: 

Robin Allard
Meadowbank General Supervisor Environment

1 Introduction

The purpose of this document is to satisfy the requirement of Section 15 of the Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (STSPPR) (SOR/2008-197) made pursuant to Canadian Environmental Protection Act, 1999 which states:

> ***15 (1)*** *The owner or operator of a storage tank system must ensure that petroleum product and allied petroleum product transfer areas are designed to contain any releases in liquid form in the environment that occur during the transfer process.*

In accordance to the STSPPR, a ''transfer area" means:

> *the area around the connection point between a delivery truck, railcar, aircraft or vessel and a storage tank system in which the tanks have an aggregate capacity of more than 2,500 L.*

Furthermore, Subparagraph 2.1(2) of the STSPPR states:

> *a person must not release - or permit or cause any release of - a petroleum product or allied petroleum product, in liquid form in the environment, during the transfer of the product to or from a storage tank system if, in the case of a system that has a transfer area, the release during transfer reaches outside the transfer area.*

In accordance with the above requirement, the following information intents to be the Product Transfer Area Assessment –for the Baker Lake Oil Handling Facility for both the Jet-A and the Diesel Tanks.

2 Fuel Transfer Area Description

2.1 Baker Lake Oil Handling Facility

Agnico's Oil Handling Facility (OHF) is located in the area of Baker Lake at latitude 64°18 22.778" N and longitude 95°57'33.990" W. The Baker Lake OHF consists of seven (7), ten (10) million liter tanks for diesel fuel, within secondary containment (Figure 1). The steel fuel tanks have been field-erected and built to API-650 standards with each bermed area holding two tanks. This area is capable of containing 110% of the volume of one ten (10) million liter tanks storage tank. Agnico Eagle will install another ten (10) million liter tank in following year. The additional diesel tank will not change the current Product Transfer Area Assessment, as the process for fuel transfer will remain the same, i.e. no additional transfer area will be created.

The OHF also consist of eighteen (18), 100,000L double walled tanks, within secondary containment, for aviation fuel (Jet-A) (Figure 1). The steel fuel tanks have been field-erected and built to API-650 standards with the bermed area holding eighteen tanks. This area is capable of containing >110% of the volume of one 100,000L storage tank. Both Jet-A and Diesel storage area were designed by qualified engineering firm.

The Diesel and Jet-A tanks are refilled during the barge season on an annual basis, generally from July to October.

2.2 Ship to shore transfer area

The Diesel fuel transfer area from ship to tank farm consists of a permanent 6 inches steel pipe, 266m long. Two (2) shipper certified transfer hoses, 4 inches and 178m long, are connected to the shore permanent based pipeline manifold for the transfer of diesel fuel to the diesel tank farm (Photo 1). The diesel transfer rate is 200 m^3/hr. At the connection of the ship's transfer hose to the OHF manifold a portable containment pool is erected and in place during the transfer of product. This pool is capable of holding ~250L of liquid in the case that there is a leak at the flange or residual drips out of the conduit or hard wall pipe. Spill "pop-up" pools are also place under each joint for the transfer hose used to fill the Fuel tanks. These popup pools are only capable of holding 20-50 L of fuel and are in place to catch residual and be a first line of defense in the case of a leak. There is also a permanent watcher at the fuel manifold to detect any leak.

For Jet-A fuel, separate shipper certified hoses are laid out from the vessel to the Jet-A manifold located in the Jet-A Secondary Containment (Photo 2). As detailed in Section 2.1 above, this area is capable of containing >110% of the volume of one 100,000L storage tank. A total of 582m of 4'' certified hose are required to reach the Jet-A transfer area. The Jet-A transfer rate is 100 m^3/hr. Spill "pop-up" pools are place under each joint for the transfer hose used to fill the Fuel tanks. These popup pools are only capable of holding 20-50 L of fuel and are in place to catch residual and be a first line of defense in the case of a leak.

2.3 Refueling station to truck transfer area

For both the Diesel and Jet-A transfer area, there is one loading arm with dry quick connect coupling for tank truck filling operation (Photo 3). Loading arm is connected to an insulated pumping station (Photo 5) and consist of a single continuous 4m x 3 ½ inches pipe from the loading arm to the fuel truck. Both refueling system are equipped of a Scully System. These systems are capable of controlling fills and eliminating spills of tanker trucks. All fuel truck are equipped of a sensor that connected directly with the fuel dispenser. When the volume reach 90% of the truck tank capacity, the sensor stopped the refueling. The flow rate is approximately 715 L/min for both the Jet-A and Diesel. During refueling activities, a portable containment is place under the dry quick connect coupling to capture small spills that may result during disengagement of the loading arm. At the Diesel refueling station, a secondary containment area of 5,000L was constructed.

Location: 64°18’22.76” N, 95°57’33.99” W. Baker Lake, Nunavut
Diesel Tank System ID: EC# 00025772
Jet-A Tank System ID: EC# 00026142

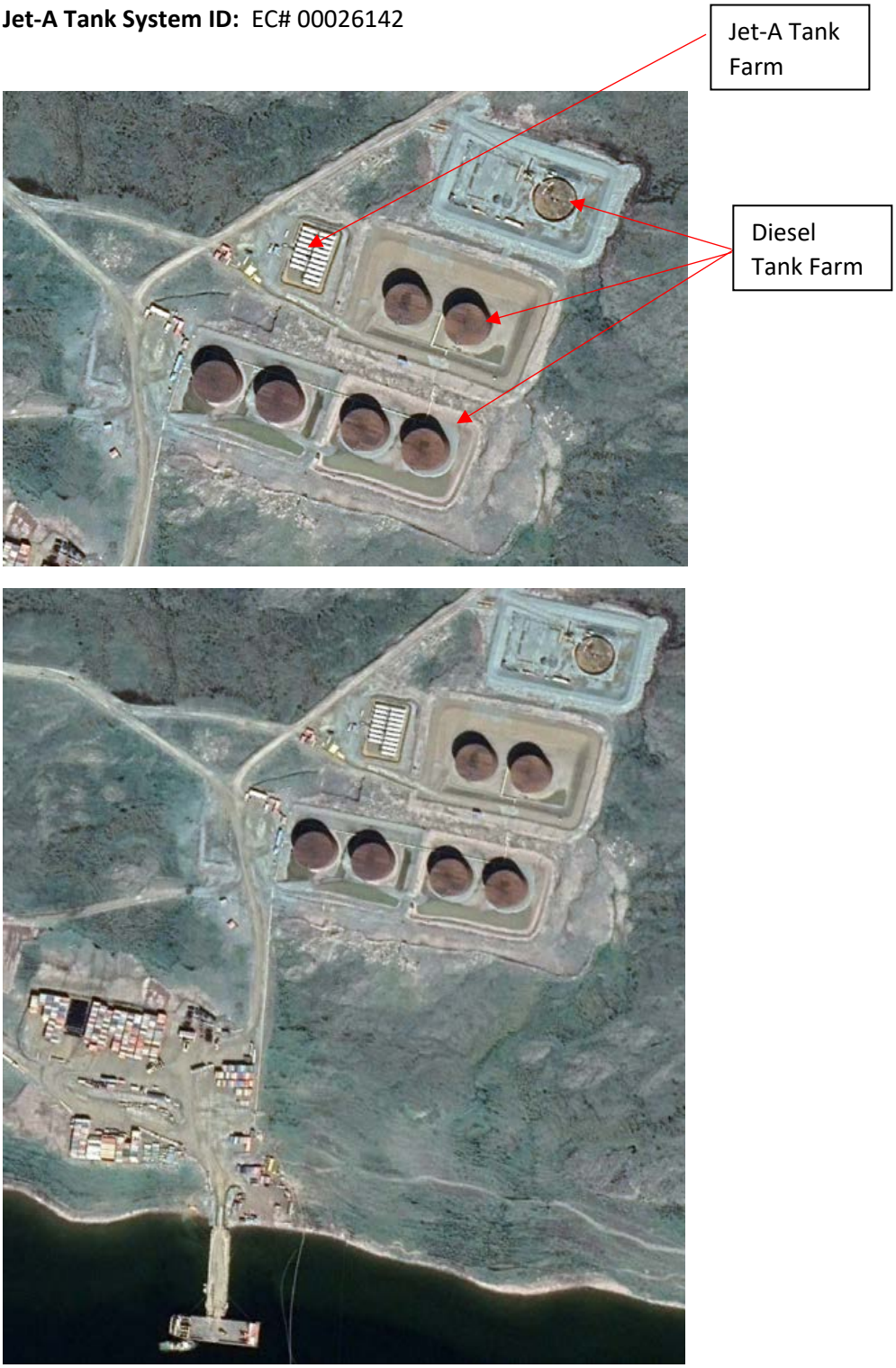


Figure 1: Agnico Eagle Ltd.’s Baker Lake Oil Handling Facility

Photo 1: Diesel Transfer - Connection between shipper transfer hoses and Agnico permanent pipeline

Photo 2: Jet-A Transfer - Connection between shipper transfer hoses and Agnico permanent pipeline

Photo 3: Agnico Eagle Ltd.'s Refueling Station – Loading arm and Scully System

Photo 4: Agnico Eagle Ltd.'s Refueling Station – general view

3 Legislation

3.1 Ship to shore transfer area

Transfer of from ship to shore is performed in conformance with procedures outlined in:

- Canada Shipping Act;
- Response Organizations and Oil Handling Facilities Regulations;
- Vessel Pollution and Dangerous Chemical Regulation;
- Environmental Response Arrangements Regulations;
- Oil Handling Facilities Standards (TP 12402E);
- Response Organization Standards (TP 12401);
- Arctic Waters Oil Transfer Guidelines (TP 10783);
- Environmental Prevention and Response National Preparedness Plan (TP 13585);
- Release and Environmental Emergency Notification Regulations;
- Guidelines for reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants;
- Requirements of the Central & Arctic Regional Response Plan;
- National Fire Code of Canada (NFCC);
- Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations – 2008; and
- Canadian Council of Ministers of the Environment, "Environmental Code of Practice of Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products – 2003 (Updated in 2013).

3.2 Refueling station to truck transfer area

Transfer of fuel into trucks is performed in conformance with procedures outlined in:

- National Fire Code of Canada (NFCC);
- American Petroleum Institute (API) Standard: 2610-94: *"Design, Construction, Operation, Maintenance and Inspection of Terminal and Tank Facilities"*;
- Canadian Petroleum Products Institute (CPPI, 1992*): "Professional Driver's Manual"*;
- Canadian Council of Ministers of Environment (CCME) – Code of Practice (COP) 2003; and
- Agnico Eagle fuel transfer procedure.

4 Analysis of Product Transfer Area Risks

The diesel and Jet-A storage tank system owned by Agnico Eagle Mines, located in Baker Lake, Nunavut, was evaluated in accordance with Environment and Climate Change Canada's (ECCC) approach to transfer area protection. A number of potential incidents, risk and related receiving environments were identified for this product transfer area.

The table below lists potential incidents, outcomes, description of PTA and receiving environments that have been identified for the storage tank system on site. The table also provides an evaluation of identified risks and an assessment on whether further action is required, and a list of mitigation measures.

Table 1: Product Transfer Risk Assessment – Ship to shore

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Leakage if fuel remains in line after offloading and leakage at all couplings in the line (by the boat and outside the connections)	Maximum of ~7,900L of diesel and ~4,800L of Jet-A is released to Baker Lake	Secondary containment Adjacent soil/gravel area within ~10m Baker Lake	Low: the product is confined secondary containment. Moderate: the product reaches bare ground. High: the product reaches a water body.	Moderate	High	No Action Required	Trained Intertek Personal oversee product transfer at all time Line is cleared of fuel following transfer Portable containment used under each transfer hose connection
Coupling/equipment fails at onshore coupling	Maximum of ~7,900L of diesel and ~4,800L of Jet-A is released to Baker Lake			Moderate	High	No Action Required	Ships pumping system shuts off if hose pressure is lost. Trained Intertek Personal oversee product transfer at all time Transfer point is up gradient of pumping point so line does not completely drain if uncoupled Emergency Response Plan and Spill Contingency Plan Oil Pollution Emergency Plan Shipboard Oil Pollution Emergency Plan Marine spill response equipment adjacent to transfer point
Coupling/equipment fails at offshore coupling	Maximum of ~7,900L of diesel and ~4,800L of Jet-A is released to Baker Lake			Moderate	High	No Action Required	Spill contained onboard at pumping area Shipboard Oil Pollution Emergency Plan
Public interference	Transfer hose is damaged by passing boat or			Low	High	No Action Required	Community awareness conducted by Agnico

	transfer impacted by public protest						Boat traffic monitored by Desgagnes and Intertek
Operator spills small amount of fuel while uncoupling hose	~1 L of fuel is captured in secondary containment			High	Low	No Action Required	Portable containment used under each transfer hose connection
Vehicle contact with piping between transfer point and tank	Broken piping releases ~5,000L of fuel to adjacent gravel area, potentially reaching Baker Lake			Low	High	No Action Required	No road where pipes are installed for the transfer Trained Intertek Personal oversee product transfer at all time Fuel lines connected to tank farm can only release contents of the line.

Table 2: Product Transfer Risk Assessment - refueling station to fuel truck

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Overfill during loading of fuel truck	Approximately 95L product is captured in secondary containment	Secondary containment Adjacent soil/gravel area within ~10m Bake Lake	Low: the product is confined secondary containment. Moderate: the product reaches bare ground. High: the product reaches a water body.	Moderate	Low	No Action Required	Secondary containment Scully fitted with optic overfill prevention system Permanent indoor structure with visual display for operator in cold weather Live cameras to Agnico Security Officer office
Overfill device fails	Product flows into secondary containment			Moderate	Low	No Action Required	Shut off button and tanker overfill pipe Scully System Permanent visual contact while refueling
Coupling/equipment fails at pump	Broken piping/hose			Moderate	Moderate	No Action Required	Shut off button, drainage to low point on roadside

station-hose connection.	releases ~121L of fuel to adjacent gravel area.						Emergency Response Plan and Spill Contingency Plan Trained spill response staff and equipment for large spills on site Spill kit
Absence of inspection (pre-op, checklist)	Faulty component or leak is not detected resulting in slow release of ~1L of product			Moderate	Moderate	No Action Required	Pre-op inspection (daily) Standard Operating Procedure (SOP)
Public access	Member of the public attempts to take or release fuel			Low	Low	No Action Required	Signage and surveillance cameras Fuel system security coded Community awareness conducted by Agnico
Vehicle contact with building/equipment	Broken piping releases ~1,000L of fuel to adjacent gravel area.			Low	Moderate	No Action Required	Secondary containment structure protects fuel station from collision by forming a barrier. Fuel lines connected to tank farm can only release contents of the line.
Inappropriate equipment for arctic conditions (arm/valve)	Valves and components fail in arctic conditions releasing ~121L of product			Moderate	Moderate	No Action Required	Valves and hoses suitable for arctic conditions installed. Pre-op inspection (daily)
Operator spills small amount of fuel while uncoupling hose	~1L of fuel is captured in secondary containment			High	Low	No Action Required	Portable containment used under dry quick connection

Please see Appendix A for the calculations relating to the product transfer areas. In summary, potential product spillage, volume has been calculated as follows:

Fueling station: a maximum delivery rate of 715 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 95.36L. Based on 8.9 cm hose at 4.06 m in length, a maximum potential spill at the tank / hose connection would result in an additional volume of 25.24 L, for a total 120.6 L of fuel spilled.

Ship to shore: a diesel maximum delivery rate of 3,333 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 444.4 L. Based on shipper transfer hose (10 cm diameter/178m in length * 2 hoses) and permanent pipeline (15 cm diameter/266 m in length), a maximum potential spill at the tank / hose connection would result in an additional volume of 7,492.65 L, for a total 7,937 L of diesel spilled.

Ship to shore: a Jet-A maximum delivery rate of 1,667 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 222.24 L. Based on 10 cm hose at 582 m in length, a maximum potential spill at the tank / hose connection would result in an additional volume of 4,568.70 L, for a total 4,790.94 L of Jet-A spilled.

5 Mitigation of Risks

5.1 Ship to shore transfer area

In the event of a spill, three (3) potential receiving environments have been identified for the fuel transfer system: the soil/gravel area partially surrounding the transfer area secondary containment and extending a distance of approximately 10 meters, the adjacent soil/ground surface, and the adjacent water body Baker Lake.

Any product amount of 100L or less that spills onto the gravel area can be recovered using the spill kit and shovels/equipment available on site. For spills of over 100 L, the product will likely reach the adjacent soil/ground surface and/or Baker Lake directly via overland surface flow (depending on the season). The following mitigation measures include:

- 250L secondary containment pool at onshore connection point;
- 20-50L spill 'pop-up' pools are also place under each joint for the transfer hose used;
- Pump and 1,000L portable containments on standby during transfer;
- Trained Intertek Personnel oversee product transfer at all time;
- Emergency Response Plan and Spill Contingency Plan on site;
- Oil Pollution Emergency Plan updated annually and review with all personnel involved in the ship to shore fuel transfer;
- Marine spill response equipment on site;
- As the ship to shore transfer only occurred during open water season, there is no potential spill risk during winter;
- Shipboard Oil Pollution Emergency Plan;
- The ship's pumping system is fitted with an emergency shut off system which is activated when pumping pressure is lost; and
- Annual MOCK spill and result analysis.

5.2 Refueling station to truck transfer area

In the event of a spill three (3) potential receiving environments have been identified for the refueling system: the gravel area surrounding the refueling station and extending a distance of approximately 10 meters, the adjacent soil/ground surface, and the adjacent water body Baker Lake.

Any product amount of 1,000L or less that spills onto the gravel area can be recovered using the spill kit and heavy equipment on site. For spills of over 1,000L, the product will likely reach the adjacent soil/ground surface and/or the Baker Lake directly via overland surface flow (depending on the season). During winter, the likely hood of product flowing to the shoreline increases; however, snow berms can be quickly installed. Mitigation measures include;

- Secondary containment for hose storage;
- Secondary containment for refueling of fuel trucks;
- Standard Operating Procedure (SOP);
- Inspection to determine if SOP are followed;
- Trained operators;
- Spill kit at refueling area containing absorbent pads;
- Marine spill response equipment on site;

- Personnel monitor transfer from viewing window in pump station; and
- Scully system - wire optic transfer system to prevent overfill.

6 Standard Operating Procedure (SOP)

6.1 Refueling station to truck transfer area

The Agnico procedure for diesel and Jet-A refueling fuel trucks in summarized as follows;

1. Perform an inspection of the vehicle.
2. Park the vehicle in the vicinity of the refueling tank and shut off your ignition.
3. Install wheel chocks on either side of the tanker tire.
4. Inspect the entire working area including the steps up to the HMI and the area in front of the loading arm and scully system; call your supervisor if there are problems.
5. Install the portable spill containment underneath the connection point.
6. Check the maximum capacity for the tanker being used. Ensure to only fill the tanker at 90% of the capacity to have room for fuel expansion at different temperatures, and a safe level for haulage. Fill the tanker to maximum 40,000L.
7. At the valve control panel, lift all the levers up, and make sure the valves are open.
8. Remove the cap of the scully plug and push and twist it onto the receiving end on the truck. Make sure the green light is on before continuing.
9. Connect the loading arm to the tanker.
10. Make sure the valves are open on each side.
11. Open the valve on the building.
12. Enter the control room and begin to program the fuel loading on the HMI.
13. Enter the applicable Microload identification and load sequence.
14. Enter the volume measure with the pop-up keypad.
15. Select the start button to activate the pump.
16. Once the fueling begins, the operator must monitor the situation diligently; this includes checking for leaks or monitoring any other unusual situations. The operator must be at the connection point at all times during fueling.
17. When finished pumping, close the valve on the building.
18. Disconnect the loading arm first, and then the truck level control.
19. Put the arm back and the truck level control in place. Close the valve.
20. Put the protection bag over the scully and the hose. Verify if the caps are put back on the truck.
21. Put back the portable spill containment.
22. At the valve control panel, pull down all the lever to close valve, and make sure they are closed.
23. Complete the mechanical verification in the pump station. Make sure they have no leaks on the equipment.
24. Before you leave, make sure the three doors are close at the fuel station.
25. Remove the wheel chocks and fully inspect the vehicle before beginning to bring the fuel to the Meadowbank Fuel Tank Farm.
26. If you encounter any emergency or a spill occurs, call your supervisor immediately and the Road supervisor of Agnico Eagle Mine Meadowbank.

6.2 Ship to shore transfer area

For a completed review of procedure during fuel transfer, refer to the Oil Pollution Emergency Plan. The fuel transfer is overseen by Intertek (contracted first responder). The Agnico procedure for refueling diesel and Jet-A tanks in summarized as follows:

1. The Oil Pollution Emergency Plan (OPEP) must be reviewed on an annual basis and updated prior to the first annual discharge. This will include but not limited to:
   a) Reviewing the phone numbers for emergencies
   b) Updating maps
   c) Review and if necessary update equipment lists
   d) Review roles and responsibilities
   e) Update Declaration
2. Contact Canadian Coast Guard and Transport Canada Pollution Prevention and make them aware of plans for transferring of fuel into our Oil Handling Facility (OHF) for that season
3. Complete Inventory report for Spill Response Sea Can at Agnico's Oil Handling Facility in Baker Lake
4. Ensure Shipping Company has provided Hose Testing Annual certification
5. All personnel who will be a part of the fuel transfer (including Baker Lake Supervisor and third part contractor Intertek) must review the OPEP and be familiar with preventive measures to take and with the steps to take in the case of a spill event while fueling
6. Install and monitor secondary containment underneath each connection of conduit on land
7. Ensure there is two-way functional communications between the OHF and the off-loading vessel
8. Ensure there is lighting in place at the transfer flange to provide illumination during any transfers taking place during the low to no light hours
9. Prior to any discharge, Agnico Eagle must receive a copy of the ship/shore checklist completed by the shipping company. Agnico Eagle should also verify this has been completed (as much as realistically possibly without boarding the ship)
10. The Pre-discharge Checklist for Agnico's Oil Handling Facility in Baker Lake must be completed, signed and provided to the Environment Department prior to discharge
11. During the ship-to-shore transfer, Agnico Eagle will have competent personnel on location at all times to monitor the fuel transfer and maintain contact with the tanker's crew
12. Monitor the fuel transfer at the beginning of each transfer and after that on an hourly basis checking the manifold, conduit, tank, and any connection points on land for spills and/or leaks. Communication between shore and ship should take place on an hourly basis
13. Have a fuel spill scenario annually

7 Conclusion

Agnico Eagle have the ability to respond and prevent spill to the fuel transfer area in Baker Lake according to the following management plan and refer the reader to those plan for more details:

- Oil Pollution Emergency Plan
- Spill Contingency Plan
- Shipboard Oil Pollution Emergency Plan
- Product Transfer Area Assessment – Baker Lake Oil Handling Facility

Furthermore, in the event of a spill reaching Baker Lake, a dedicated boat (open water season), containment booms, anchors, trench shovels, absorbent pads, pumps and are accessible year-round, and

regular spill response training is conducted with members of the Meadowbank Emergency Response Team and Environment Department. Meadowbank Environmental Technicians also conduct regular inspections of the Baker Lake OHF in order to ensure proper spill prevention and containment equipment is available, and that proper fuel transfer protocols are followed. All of the measures noted above are in place in order to contain, mitigate and prevent spills during the process of transferring fuel.

Appendix A - Potential Spill Quantities

1- Diesel Ship to shore

Flow rate = 200 m^3/hr (3,333 L/min) maximum rate
Transfer hose length: 17,800 cm, 10 cm diameter
Permanent pipeline: 26,600 cm, 15 cm diameter

Volume of Spill (from time it takes operator to shut off pumping)

3,333L/60s = 55.55 L/s
8s = time it takes for operator to turn off the pump should the tank start to overflow

Volume = 55.55L/s * 8s
= **444.4L**

Volume of the Shipper Transfer Hose

1. Radius = (diameter of the pipe / 2)
   Radius = (10/2)
   = 5

   Volume of a cylinder: V = πr2h
   Volume = 3.14 * 5^2 * 17,800
   = 1,397,300 cm^3

2. 1 Liter = 1,000m^3
   Volume in Liters = (volume in cm^3) * (1L/1,000cm^3)
   Volume = (1,397,300 / 1,000 L)
   = 1,397.3 L

3. Two (2) shipper transfer hose use to connect the permanent pipeline manifold
   = 1,397.3 * 2
   = **2,794.6 L**

Volume of the permanent pipeline

1. Radius = (diameter of the pipe / 2)
   Radius = (15/2)
   = 7.5

2. Volume of a cylinder: V = πr2h
   Volume = 3.14 * 7.5^2 * 26,600
   = 4,698,225 cm^3

3. 1 Liter = 1,000m^3
   Volume in Liters = (volume in cm^3) * (1L/1,000cm^3)
   Volume = (4,698,225 / 1,000 L)
   = 4,698 L

The maximum amount of a potential spill at the site would be **7,937L**.

2- Jet-A Ship to shore

Flow rate = 100 m^3/h (1,667 L/min) maximum rate
Transfer hose length: 58,200 cm, 10 cm diameter

Volume of Spill (from time it takes operator to shut off pumping)

1,667L/60s = 27.78 L/s
8s = time it takes for operator to turn off the pump should the tank start to overflow

Volume = 27.78L/s * 8s
= **222.24L**

Volume of Transfer Hose

1. Radius = (diameter of the pipe / 2)
   Radius = (10/2)
   = 5

   Volume of a cylinder: V = πr2h
   Volume = 3.14 * 5^2 * 58,200
   = 4,568,700 cm^3

2. 1 Liter = 1,000m^3
   Volume in Liters = (volume in cm^3) * (1L/1,000cm^3)
   Volume = (4,568,700 / 1,000 L)
   = **4,568.7 L**

The maximum amount of a potential spill at the site would be **4,790.94 L**.

3- Diesel and Jet-A Fuel Station to Fuel Truck

Flow rate = 715 L/min
Scully arm and hose length: 406cm, 8.9cm diameter

Volume of Spill (from time it takes operator to shut off pumping)

715L/min = 715L/60s = 11.92 L/s
8s = time it takes for operator to turn off the pump should the tank start to overflow

Volume = 11.92L/s * 8s
= **95.36 L**

Volume of Loading Arm

1. Radius = (diameter of the pipe / 2)
   Radius = (8.9/2)

= 4.45

Volume of a cylinder: V = πr2h

Volume = 3.14 * 4.45^2 * 406
= 25,245.02 cm^3

2. 1 Liter = 1,000m^3
   Volume in Liters = (volume in cm^3) * (1L/1,000cm^3)
   Volume = (25,245.02 / 1,000 L)
   = **25.24 L**

The maximum amount of a potential spill at the site would be **120.6L**.

Appendix N

MDMER Emergency Plan Cross Reference Table

MDMER Cross-reference table for section 30(1) to 30(5) for Agnico Eagle Mine

MDMER reference	Information required	Location of information in this emergency plan
s. 30(1)	The owner or operator of a mine shall prepare an emergency response plan that describes the measures to be taken in respect of a deleterious substance within the meaning of subsection 34(1) of the Act to prevent any unauthorized deposit of such a substance or to mitigate the effects of such a deposit.	- Spill Contingency Plan
s. 30(2)	The emergency response plan shall include the following elements:	
s. 30(2)(a)	the identification of any unauthorized deposit that can reasonably be expected to occur at the mine and that can reasonably be expected to result in damage or danger to fish habitat or fish or the use by man of fish, and the identification of the damage or danger;	- Spill Contingency Plan Section 6 Section 10
s. 30(2)(b)	a description of the measures to be used to prevent, prepare for, respond to and recover from a deposit identified under paragraph (a);	- Spill Contingency Plan Section 2, 4 and 5
s. 30(2)(c)	a list of the individuals who are to implement the plan in the event of an unauthorized deposit, and a description of their roles and responsibilities;	- Spill Contingency Plan Section 4 and Table 2
s. 30(2)(d)	the identification of the emergency response training required for each of the individuals listed under paragraph (c);	- Spill Contingency Plan Section 9
s. 30(2)(e)	a list of the emergency response equipment included as part of the plan, and the equipment's location; and	- Spill Contingency Plan Section 8
s. 30(2)(f)	alerting and notification procedures including the measures to be taken to notify members of the public who may be adversely affected by a deposit identified under paragraph (a).	- Spill Contingency Plan Section 4 and 4.7
s. 30(3)	The owner or operator shall complete the emergency response plan and have it available for inspection no later than 60 days after the mine becomes subject to this section.	- Spill Contingency Plan
s. 30(4)	The owner or operator shall update and test the emergency response plan at least once each year to ensure that the plan continues to meet the requirements of subsection (2).	- Spill Contingency Plan Appendix M – 2019 Mock Spill

s. 30(4.1)	The owner or operator of a mine shall, each time the emergency response plan is tested, record the following information and keep the record for at least five years: (a) a summary of the test; (b) the test results; and (c) any modifications that are made to the plan as a consequence of the test.	- Spill Contingency Plan Appendix M – 2019 Mock Spill
s. 30(4.2)	The owner or operator of a mine shall ensure that a copy of the most recent version of the emergency response plan is kept at the mine in a location that is readily available to the individuals who are responsible for implementing the plan.	- Spill Contingency Plan Sent to Distribution List
s. 30(5)	If a mine has not been subject to the requirements of this section for more than one year, a new emergency response plan shall be prepared and completed no later than 60 days after the day on which the mine again becomes subject to this section.	N/A

Appendix O

STSR Emergency Plan Cross Reference Table

Table 1. 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan for Diesel Storage Tank System EC-0004848

STS Regs reference	Information required	Location of information in this emergency plan
s. 30(1)	The owner or operator of a storage tank system must prepare an emergency plan taking into consideration the following factors:	
s. 30(1)(a)	- the properties and characteristics of each petroleum product (i.e. Jet A1) or allied petroleum product stored in each tank of the system and	- Spill Contingency Plan (Section 6) - Appendix P - MSDS for Diesel and Jet-A
s. 30(1)(a) continued	- the maximum expected quantity of the petroleum product or allied petroleum product to be stored in the system at any time during any calendar year; and	- Spill Contingency Plan Section 2 and Table 5
s. 30(1)(b)	- the characteristics of the place where the system is located and of the surrounding area that may increase the risk of harm to the environment or of danger to human life or health.	- Spill Contingency Plan Section 2 and 2.1
s. 30(2)	The emergency plan must include:	
s. 30(2)(a)	- a description of the factors considered under s. 30(1)	- See the rows above and Spill Contingency Plan Section 1.1.
s. 30(2)(b)	- a description of the measures to be used to prevent, prepare for, respond to, and recover from any emergency that may cause harm to the environment or danger to human life or health;	- Spill Contingency Plan – Section 2.1 Prevention and Inspection - Spill Contingency Plan – Section 4 Response Organization - Spill Contingency Plan – Section 5 Action Plan - Spill Contingency Plan – Section 7 Potential Spill Analysis
s. 30(2)(c)	- a list of the individuals who are required to carry out the plan and a description of their roles and responsibilities;	- Spill Contingency Plan – Section 4 Response Organization
s. 30(2)(d)	- identification of the training required for each of the individuals listed under s. 30(2)(c);	- Spill Contingency Plan Appendix L Mock scenario - Spill Contingency Plan Section 9 Training and Emergency Spill/Exercise
s. 30(2)(e)	- a list of the emergency response equipment included as part of the plan, and the equipment's location; and	- Spill Contingency Plan Section 8
s. 30(2)(f)	- the measures to be taken to notify members of the public who may be adversely affected by the harm or danger referred to in s. 30(2)(b)	- Spill Contingency Plan Section 4.7
s. 30(3)	The owner or operator of a storage tank system must ensure that the emergency plan is ready to be implemented:	

s. 30(3)(a)	- in the case of a storage tank system that is installed before the coming into force of these Regs, no later than two years after the day on which these Regs come into force (i.e. by 12 Jun 2010); and	Spill Contingency Plan already implemented – See Document Control Section
s. 30(3)(b)	- in any other case, before the day on which the first transfer of petroleum products or allied petroleum products into any tank of the storage tank system occurs.	Spill Contingency Plan already implemented – See Document Control Section
s. 31(1)	The owner or operator of a storage tank system must keep: - the emergency plan up-to-date and - keep a copy of it readily available for the individuals who are required to carry it out, - as well as a copy at the place where the storage tank system is located if that place is a place of work.	- Spill Contingency Plan - hard copy is available at the tank
s. 31(2)	The owner or operator must notify the Minister of the civic address of each location where the emergency plan is kept.	- No civil address. See Spill Contingency Plan Section 2 Project Description
s. 32(1)	If the owner or operator of a storage tank system has prepared an emergency plan with respect to the system on a voluntary basis or for another government or under an Act of Parliament and the plan meets the requirements of s. 30(1) and (2), they may use that plan for the purposes of meeting those requirements.	- Spill Contingency Plan
s. 32(2)	If the plan does not meet all of the requirements of s. 30(1) and (2), the owner or operator may use the plan if they amend it so that it meets all of those requirements.	- Spill Contingency Plan

Table 1. 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan for P-50 Diesel Storage Tank System EC-00025772 and Jet-A Storage Tank System EC-00026142

PTA Assessment can be found in Appendix M of the Spill Contingency Plan

STS Regs reference	Information required	Location of information in this emergency plan
s. 30(1)	The owner or operator of a storage tank system must prepare an emergency plan taking into consideration the following factors:	
s. 30(1)(a)	- the properties and characteristics of each petroleum product (i.e. Jet A1) or allied petroleum product stored in each tank of the system and	- Spill Contingency Plan (Section 6) - OPEP Appendix C - MSDS for Diesel and Jet-A
s. 30(1)(a) continued	- the maximum expected quantity of the petroleum product or allied petroleum product to be stored in the system at any time during any calendar year; and	- Spill Contingency Plan Section 2 and Table 5 - Spill Contingency Plan, Appendix M – PTA Assessment Section 2.1
s. 30(1)(b)	- the characteristics of the place where the system is located and of the surrounding area that may increase the risk of harm to the environment or of danger to human life or health.	- Spill Contingency Plan Section 2.1 - Spill Contingency Plan, Appendix M – PTA Assessment Section 2 - OPEP Section 4.3
s. 30(2)	The emergency plan must include:	
s. 30(2)(a)	- a description of the factors considered under s. 30(1)	- See the rows above and Spill Contingency Plan Section 1.1.
s. 30(2)(b)	- a description of the measures to be used to prevent, prepare for, respond to, and recover from any emergency that may cause harm to the environment or danger to human life or health;	- Spill Contingency Plan Appendix M – PTA Assessment - Spill Contingency Plan – Section 4 Response Organization - Spill Contingency Plan – Section 5 Action Plan - Spill Contingency Plan – Section 7 Potential Spill Analysis - OPEP s. 10 Spill Procedures s. 10.2 Spill Reporting s. 11 Spill Scenarios and Responses; s. 12 Preventive Measures
s. 30(2)(c)	- a list of the individuals who are required to carry out the plan and a description of their roles and responsibilities;	- Spill Contingency Plan – Section 4 Response Organization - OPEP: s. 9 Roles and Responsibilities Figure 5. Response Management System.

Table 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan (continued)

STS Regs reference	Information required	Location of information in this emergency plan
s. 30(2)(d)	- identification of the training required for each of the individuals listed under s. 30(2)(c);	- Spill Contingency Plan Appendix L Mock scenario- OPEP - Spill Contingency Plan Section 9 Training and Emergency Spill/Exercise - OPEP s. 12.1 Training
s. 30(2)(e)	- a list of the emergency response equipment included as part of the plan, and the equipment's location; and	- Spill Contingency Plan Section 8 - OPEP s. 7 Equipment and PPE
s. 30(2)(f)	- the measures to be taken to notify members of the public who may be adversely affected by the harm or danger referred to in s. 30(2)(b)	- Spill Contingency Plan Section 4.7 - OPEP s. 8.1.1 Communication with the Public
s. 30(3)	The owner or operator of a storage tank system must ensure that the emergency plan is ready to be implemented:	
s. 30(3)(a)	- in the case of a storage tank system that is installed before the coming into force of these Regs, no later than two years after the day on which these Regs come into force (i.e. by 12 Jun 2010); and	Spill Contingency Plan and OPEP already implemented – See Document Control Section
s. 30(3)(b)	- in any other case, before the day on which the first transfer of petroleum products or allied petroleum products into any tank of the storage tank system occurs.	Spill Contingency Plan and OPEP already implemented – See Document Control Section
s. 31(1)	The owner or operator of a storage tank system must keep: - the emergency plan up-to-date and - keep a copy of it readily available for the individuals who are required to carry it out, - as well as a copy at the place where the storage tank system is located if that place is a place of work.	- OPEP is reviewed annually prior every shipping season and a hard copy is available at the Baker Lake Marshalling facility during transfer operations - Spill Contingency Plan - hard copy is available at the at the Baker Lake Marshalling facility during transfer operations
s. 31(2)	The owner or operator must notify the Minister of the civic address of each location where the emergency plan is kept.	- No civil address. See Spill Contingency Plan Section 2 Project Description

Table 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan (continued)

STS Regs reference	Information required	Location of information in this emergency plan
s. 32(1)	If the owner or operator of a storage tank system has prepared an emergency plan with respect to the system on a voluntary basis or for another government or under an Act of Parliament and the plan meets the requirements of s. 30(1) and (2), they may use that plan for the purposes of meeting those requirements.	- OPEP and Spill Contingency Plan
s. 32(2)	If the plan does not meet all of the requirements of s. 30(1) and (2), the owner or operator may use the plan if they amend it so that it meets all of those requirements.	- OPEP and Spill Contingency Plan

Appendix P

MSDS Diesel and Jet -A

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DIESEL FUEL
Synonyms	:	Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC). Marine Gas Oil
Product code	:	101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994

Manufacturer or supplier's details

Petro-Canada
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number		Suncor Energy: +1 403-296-3000; Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use	:	Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes).
Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids	:	Category 3
Acute toxicity (Inhalation)	:	Category 4

Skin irritation	:	Category 2
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Liver, thymus, Bone)
Aspiration hazard	:	Category 1

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements :
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry	:	Eye contact Ingestion Inhalation Skin contact Skin Absorption
Target Organs	:	Skin Eyes Respiratory Tract
Inhalation	:	May cause respiratory tract irritation. Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Skin	:	Causes skin irritation.
Eyes	:	Causes eye irritation.
Ingestion	:	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Aspiration hazard if swallowed - can enter lungs and cause damage.
Aggravated Medical Condition	:	None known.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
kerosine (petroleum), hydrodesulfurized	64742-81-0	70 - 100 %
kerosine (petroleum)	8008-20-6	
fuels, diesel	68334-30-5	
fuel oil no. 2	68476-30-2	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 25 %
Soybean oil, Methyl ester	67784-80-9	0 - 5 %
Rape oil, Methyl ester	73891-99-3	
Fatty acids, tallow, Methyl esters	61788-61-2	

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms : First aider needs to protect himself.

and effects, both acute and delayed

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during firefighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid spark promoters. Ground/bond container and

equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
kerosine (petroleum), hydrodesulfurized	64742-81-0	TWA	200 mg/m3	ACGIH
kerosine (petroleum)	8008-20-6	TWA	100 mg/m3	NIOSH REL

Engineering measures : Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for

		wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright oily liquid.
Colour	:	Clear to yellow (This product may be dyed red for taxation purposes).
Odour	:	Mild petroleum oil like.
Odour Threshold	:	No data available
pH	:	No data available
Pour point	:	No data available
Boiling point/boiling range	:	150 - 371 °C (302 - 700 °F)
Flash point	:	> 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	:	225 °C (437 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	:	6 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	7.5 mmHg (20 °C / 68 °F)

Relative vapour density	:	4.5
Relative density	:	0.8 - 0.88
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C / 104 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, H2S, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact
Skin Absorption

Acute toxicity

Product:

Acute oral toxicity	Remarks: No data available
Acute inhalation toxicity	Remarks: No data available
Acute dermal toxicity	Remarks: No data available

Components:

kerosine (petroleum), hydrodesulfurized:

Acute oral toxicity	LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity	LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist
Acute dermal toxicity	LD50 (Rabbit): > 2,000 mg/kg

kerosine (petroleum):

Acute oral toxicity	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	LD50 (Rabbit): > 2,000 mg/kg

fuels, diesel:

Acute oral toxicity	LD50 (Rat): 7,500 mg/kg
Acute dermal toxicity	LD50 (Mouse): 24,500 mg/kg

fuel oil no. 2:

Acute oral toxicity	LD50 (Rat): 12,000 mg/kg
Acute inhalation toxicity	LC50 (Rat): 4.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae	:	Remarks: No data available
Toxicity to bacteria	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No.	:	1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	3
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

49 CFR

UN/ID/NA number	:	1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	no

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

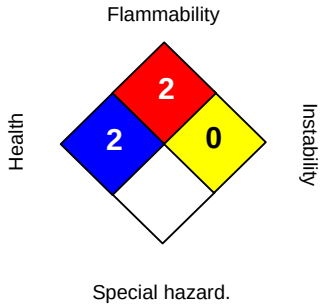
The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
EINECS	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	**2**
FLAMMABILITY	**2**
PHYSICAL HAZARD	**0**
PERSONAL PROTECTION	**H**

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Material Safety Data Sheet

JET A/A-1 AVIATION TURBINE FUEL

1 . Product and company identification

Product name : JET A/A-1 AVIATION TURBINE FUEL

Synonym : Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Turbine Fuel, Aviation, Kerosene Type (CAN/CGSB-3.32)

Code : W213, SAP: 149

Material uses : Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Clear liquid.

Odour : Kerosene-like.

WHMIS (Canada) :

Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

The WHMIS classification of Jet A/A-1 is B3.
The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : CAUTION!

COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Combustible liquid. Slightly irritating to the eyes and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.

Skin : Slightly irritating to the skin.

Eyes : Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

2 . Hazards identification

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Contains material which may cause birth defects, based on animal data.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Complex mixture of petroleum hydrocarbons (C9-C16)*(Kerosene)	8008-20-6	99.9
Fuel System Icing Inhibitor (FSII) (if added**): (Diethylene Glycol Monomethyl Ether)	111-77-3	0.1 - 0.15
Anti-static, antioxidant and metal deactivator additives	Not applicable	<0.1

*Aromatic content is 25% maximum (benzene: nil).
**Please note that Jet A-1-DI, JP-8, Jet F-34 and NATO F-34 all contain Fuel System Icing Inhibitor.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Class II - combustible liquid (NFPA).

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5 . Fire-fighting measures

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Kerosene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8 . Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Clear liquid.

Flash point : Closed cup: ≥38°C (≥100.4°F) [Tag. Closed Cup]

Auto-ignition temperature : 210°C (410°F)

Flammable limits : Lower: 0.7%
Upper: 5%

Colour : Clear and colourless.

Odour : Kerosene-like.

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 140 to 300°C (284 to 572°F)

Melting/freezing point : Not available.

Relative density : 0.775 to 0.84 (Water=1)

Vapour pressure : 0.7 kPa (5.25 mm Hg) @ 20°C (68ºF).

Vapour density : 4.5 [Air = 1]

Volatility : Volatile.

Evaporation rate : Not available.

Viscosity : 1.0 - 1.9 cSt @ 40ºC (104ºF)

Pour point : <-51ºC (<-60°F)

Solubility : Insoluble in water. Partially miscible in some alcohols. Miscible with other petroleum solvents.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents, acids and alkalis.

Hazardous decomposition products : May release COx, NOx, SOx, aldehydes, acids, ketones, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

11 . Toxicological information

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Kerosene	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1863	FUEL, AVIATION, TURBINE ENGINE	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

The WHMIS classification of Jet A/A-1 is B3.
The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		2
Physical hazards		0
Personal protection		H

National Fire Protection Association (U.S.A.) :

References : Available upon request.
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Date of printing : **5/24/2012.**

Date of issue : 24 May 2012

Date of previous issue : 5/24/2012.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Appendix Q

Environmental Emergency Regulation Plan Cross Reference Table

Cross-reference related to Environmental Emergency Regulations, 2019: SOR/2019-51

EER reference	Information required	Location of information in different management plan
4 (2) (a)	a description of the properties and characteristics of the substance and the maximum expected quantity of the substance at the facility	Maximum excepted quantity - Spill Contingency Plan Section 2, Table 6 Substance property – Spill Contingency Plan Section 6 and Appendix P for Diesel MSDS
4 (2) (b)	a description of the commercial, manufacturing, processing or other activity involving the substance that takes place at the facility	Spill Contingency Plan Section 2
4 (2) (c)	-a description of the facility and of the area surrounding the facility that may be affected by an environmental emergency referred to in paragraph (d), including any hospitals, schools, residential, commercial or industrial buildings and any highways, public transit infrastructure, parks, forests, wildlife habitats, water sources or water bodies;	Spill Contingency Plan Section 6.1 and 6.2 Appendix M
4 (2) (d)	-an identification of any environmental emergency that could reasonably be expected to occur at the facility and that would likely cause harm to the environment or constitute a danger to human life or health, including the environmental emergency referred to in paragraph (e) and, if applicable, the environmental emergency that is more likely to occur than the environmental emergency referred to in paragraph (e) and that would have the longest impact distance outside the boundary of the facility	Spill Contingency Plan Section 5 and Appendix M
4 (2) (e) (i)	an identification of the harm to the environment or danger to human life or health that would likely result from an environmental emergency involving the release of the	Spill Contingency Plan Appendix P – MSDS for P-50 Diesel Spill Contingency Plan Section 5, Section 6.1.9 and 6.2.7

	maximum quantity of the substance that could be contained in the container system that has the largest maximum capacity, if a quantity of the substance is in a container system, and	
4 (2) (e) (ii)	an identification of the harm to the environment or danger to human life or health that would likely result from an environmental emergency involving the release of the maximum expected quantity of the substance that will not be in a container system, if a quantity of the substance is not in a container system	Spill Contingency Plan Section 6.3
4 (2) (f)	an identification of the harm to the environment or danger to human life or health that would likely result from the environmental emergency identified under paragraph (d), if any, that is more likely to occur than the environmental emergency referred to in paragraph (e) and would have the longest impact distance outside the boundary of the facility;	Spill Contingency Plan Section 6.3
4 (2) (g)	a description of the measures to be taken to prevent and prepare for the environmental emergencies identified under paragraph (d) and the measures that will be taken to respond to and recover from such emergencies if they were to occur	Spill Contingency Plan Section 1.1, 2.1, 4, 5
4 (2) (h)	a list of the position titles of the persons who will make decisions and take a leadership role in the event of an environmental emergency and a description of their roles and responsibilities	Spill Contingency Plan Section 4
4 (2) (i)	a list of the environmental emergency training that has been or will be provided to prepare personnel at the facility who will respond in the event that an environmental emergency identified	Spill Contingency Plan Section 9

	under paragraph (d) occurs	
4 (2) (j)	a list of the emergency response equipment that is necessary for the measures described in paragraph (g) and the equipment's location	Spill Contingency Plan Section 8
4 (2) (k) (i)	a description of the measures that will be taken by a responsible person or by a responsible person and local authorities, acting jointly, to communicate with the members of the public who may be adversely affected by the environmental emergency referred to in paragraph (f) to inform them, before the environmental emergency occurs, of the possibility that the environmental emergency could occur	Spill Contingency Plan Section 6.3
4 (2) (k) (ii)	a description of the measures that will be taken by a responsible person or by a responsible person and local authorities, acting jointly, to communicate with the members of the public who may be adversely affected by the environmental emergency referred to in paragraph (f) to inform them, before the environmental emergency occurs, of the potential effects of the environmental emergency on the environment and on human life or health, taking into account the factors referred to in paragraphs (a) to (c), and	Spill Contingency Plan Section 6.3
4 (2) (k) (iii)	a description of the measures that will be taken by a responsible person or by a responsible person and local authorities, acting jointly, to communicate with the members of the public who may be adversely affected by the environmental emergency referred to in paragraph (f) to inform them, before the environmental emergency occurs, of the measures that will be taken by the responsible person to protect the	Spill Contingency Plan Section 6.3

	environment and human life or health, and the means by which the responsible person will communicate with them, in the event that the environmental emergency occurs;	
4 (2) (l)	a description of the measures that will be taken by a responsible person or by a responsible person and local authorities, acting jointly, to, in the event that an environmental emergency involving the release of a substance occurs, communicate with the members of the public who may be adversely affected to provide them, during and after its occurrence, with information and guidance concerning the actions that could be taken by them to reduce the potential harm to the environment and danger to human life or health, including an explanation of how those actions may help to reduce the harm or danger;	Spill Contingency Plan Section 4.7
4 (2) (m)	the position title of the person who will communicate with the members of the public referred to in paragraphs (k) and (l);	Spill Contingency Plan Section 4.7
4 (2) (n)	a description of the consultations that a responsible person had with local authorities, if any, with respect to the measures referred to in paragraph (k) and (l); and	Spill Contingency Plan Section 6.3
4 (2) (o)	a plan of the facility showing the location of any substances in relation to the physical features of the facility	Spill Contingency Plan Figure 1-3-4