Appendix 22

Meadowbank and Whale Tail Spill Contingency Plan Version 21

AGNICO EAGLE

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 Complex

Version 21
February 2024

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 Complex 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 construction, operational, and closure phases of the Mine and is applicable to all Agnico Eagle employees and any contractors associated with the mine 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 Mine located at latitude 65°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 (February 2024) subject to any modification proposed by the NIRB and NWB as a result of the review and approval process.

DISTRIBUTION LIST

Agnico Eagle – Superintendent of Environmental and Critical Infrastructures

Agnico Eagle – Environmental General Supervisor

Agnico Eagle – Environmental Coordinator

Agnico Eagle – Environmental Technician

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	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	Change definition of a major spill and minor spill
		Table 4	Contact Information
		5.1.3	Add point that procedure MBK-ENV-0016 will be followed for reporting spills
		5.6	Addition of section on event monitoring. Seepage monitoring included in section.
		Appendix L	Dyno Nobel Emergency Response Plan added in Appendix J
		Appendix M	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	Add Appendix N: MDMER Emergency Plan Cross Reference Table
		Appendix O	Add Appendix O: STSR Emergency Plan Cross Reference Table
		Appendix P	Add Appendix P: SDS Diesel and Jet-A
		Section 2	Add info related to tank Km 132
		Section 2.1	Add info during refueling
		Figure 1 to 4	Update Figure
		Section 5.1.3	Add info related to spill report
		Section 10	Update all section + add Photo 1 to 3 + add Figure 10

Version	Date (YMD)	Section	Revision
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
12	2020/08	Complete document	Adding complemental information for the E2 regulation
13	2021/03	Complete document	Separating information by facility in accordance with E2 regulation. Adding risk assessments for E2 substances – Appendix R. Revised Appendix K
14	2021/08	Table 2 Table 3 Complete document	Updated internal contacts Updated contractor contacts (Woodward) Updated information for Baker Lake OHF Tank 8 addition.
15	2021/11	Section 2 Figure 4 Table 6 Appendix C1	Updated to include emulsion plant at the Whale Tail site Updated to include emulsion plant at the Whale Tail site Update to maximum quantities expected on site Included spill response to include information on ammonium nitrate (solid) spills to water.
16	2022/04	Introduction Section 2 Section 2.1 Fig. 1, 2, 3, & 4 Section 3.2 Table 1 Table 2, 4 & 5 Section 5.5 Section 5.6 Table 6 Section 6.1 Photo 1 Appendix K	Updated to include reference to the E2 Regulations More detail provided on tank capacities and secondary containments Detail added on prevention and inspection requirements Updated figures ICMI information added Infectious substances added Contacts updated Information added for Baker Lake OHF E2 Spill Scenarios Information added for Meadowbank Tank Farm E2 Spill Scenarios Materials stored at site list and quantities updated. Propane added. Information on tank farm secondary containment capacity added New photo of FDP East Dike Discharge Sampling Station added 2021 Mock Spill Minutes included
17	June 2022	2 Table 6 6.2	Update to reflect Type A Water Licence 2AM-MEA1530 Modification for addition of a 3.3 ML fuel tank on-site

Version	Date (YMD)	Section	Revision
18	October 2022	1	Updated to include “closure” as per 66A/8-71-3 Road Lease requirements
		2	Aviation fuel tanks added back to the secondary containment at Baker Lake
		Tables 2 & 5	Contact information updated
		Table 6	Jet-A quantities updated. Diesel quantities at Meadowbank consolidated.
		10	Reference to MDMER concordance table (Appendix M) included.
		Appendix K	2022 Mock Spill Minutes included
19	March 2023	Figures 1, 2, 4	Updated figures
		3.2	E2 and ICMC contact information added
		Figures 6 & 7	Updated position titles in flow charts
		Table 2	Internal contacts updated
		Table 3	ICMC contact information added
		Table 4	E2 Emergency and CIRNAC contact information updated
		5.6.2	Alternate worst-case scenario added for Meadowbank
		6.1 & 6.2	Valve information added for Baker Lake and Meadowbank diesel tanks
		Section 9	Training information updated
		Appendix K	2022 Annual E2 Simulation Exercise for Meadowbank added to appendix
		Appendix L	Updated for current Jet-A tank configuration and maximum transfer rates
		Appendix Q	Risk assessment exercise updated
20	August 2023	Section 10.1.3	Updated Final Discharge Points – Whale Tail
		Photo 5	New photo of FDP ST-MDMER-8 Discharge Sampling Station added
		Photo 6	New photo of FDP ST-MDMER-11 Discharge Sampling Station added
21	February 2024	Figure 1-2-4-10-11	Updated Figures
		Table 2	Internal contacts updated
		Appendix K	Update for the 2023 Mock Spill in Baker Lake and Annual E2 Simulation in Meadowbank

Prepared By: Environmental Department
Approved By:

Eric Haley
Environment & Critical Infrastructures Superintendant

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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
E2	Environmental Emergency Regulations
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
HMI	Human Machine Interface
HMMP	Hazardous Materials Management Plan
LEL	Lower Explosion Limit
MDMER	Metal and Diamond Mining Effluent Regulations
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
SDS	Materials Safety Data Sheets
SWIM	Single Window Information Management System
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 through construction, operation, and closure. This plan is to be reviewed annually, and when applicable updated barring any major changes to the operation and closure.

This Plan meet the requirements of the Environmental Emergency (E2) Regulations, as well as the requirements of section 30 of the Metal and Diamond Mining Effluent Regulation (MDMER) Emergency Response Plan pursuant to the Fisheries Act for both the Meadowbank and Whale Tail sites.

Additional information on tank construction, diesel ship to shore transfer, prevention, inspection and emergency situation can be found in the following plans:

- Emergency Response Plan;
- Oil Pollution Emergency Plan / Oil Pollution Prevention 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 Canada, Environment and Climate Change Canada (ECCC) 2019, *Technical Guidelines for the Environmental Emergency 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 Complex, operated by Agnico Eagle Mines Limited, is located in Inuit-owned surface lands and Crown Land in the Kivalliq region. The Meadowbank mine is located approximately 70 km north of the Hamlet of Baker Lake, Nunavut. The Whale Tail site is located approximately 150 kilometers (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine. The deposit is mined as two open pits (i.e., Whale Tail Pit and IVR Pit) and underground operations, and Whale Tail mine ore is hauled to the approved infrastructure at Meadowbank mine for milling.

The Meadowbank Complex 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 Mine 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, 5.6 ML diesel fuel tank farm and one 3.3 ML tank, two (2) 50,000 L double wall tank for aviation fuel, warehouse, truck shop and depleted open pits (Figure 1). The Baker Lake Marshalling Area consists of a laydown transfer area to temporarily store materials prior to delivery to the Meadowbank mine site. The Baker Lake fuel farm consists of a container system comprising of eight (8), ten (10) million-liter (working capacity) tanks for diesel fuel within secondary containment and a container system of eighteen (18) 100,000 L (working capacity) double walled tanks, within secondary containment, for aviation fuel (Figure 2). In September 2022, two additional 100,000 L tanks were added back to the secondary containment for aviation fuel but have not yet been re-connected to the existing piping system. In total, there are twenty (20) tanks for aviation fuel as per the approved Water License 2AM-MEA1530 at Baker Lake. Jet-A tank reconnection to the system is expected to occur in 2024. The Whale Tail Mine (Figure 4) consists of a sewage treatment plant, water intake, accommodation buildings, power plant, 1,500,000 L (working capacity) diesel fuel storage area within a secondary containment, warehouse, maintenance shop, emulsion plant, open pits and underground mine. The Whale Tail Haul Road has one diesel tank with a working capacity of 1,915 L installed at Km 132 on Crown Land.

The fuel is delivered annually 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 in a 5.6 million liter tank or the 3.3 million liter tank, 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 1.5 million liter 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 processes such as 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.

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 is performed by trained personnel using secondary containment, with well-maintained equipment and containers. Refueling stations at the Baker Lake, Meadowbank, and Whale Tail sites are equipped with a lined area to contain any minor leaks or spills while refueling. A Product Transfer Area Assessment was conducted for the Baker Lake Oil Handling Facility and can be found in

Appendix L. 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 is performed with the aid of fuel pumps. During refueling activities, a portable containment is placed 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. Ensuring that secondary containments are frequently inspected and pumped of standing water and spill kits are inspected and restocked as necessary. Prior to site arrival, each employee is required to complete a series of mandatory E-learning modules. During this training, spill prevention is discussed. Site orientations are conducted with all new employees upon their arrival at site and spill response is discussed in detail. Each employee is required at minimum to undergo WHMIS training to have a basic understanding of hazards in the workplace. The on-site training department keeps record of each employee's training documents. Daily worksite inspections are conducted to identify measures to minimize the risk of spills. Each employee is equipped with a workcard that must be completed daily. This tool is used to assess work-site safety and focuses on inspection of site conditions, including the presence of hazardous materials and spills, prior to starting any work. 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, the Environment Department conducts weekly formal inspections across the entire site to audit facilities handling or storing hazardous materials (Appendix A). These inspections are recorded, non-conformities are noted and sent to departmental stakeholders to ensure that mitigation measures are addressed. Documentation of this correspondence is kept for reference purposes. Annually, a geotechnical inspection of the Meadowbank, Whale Tail and Baker Lake Tank Farm is conducted by an external firm, and any areas of concern are brought to Agnico Eagle management directly. The results of these inspections are submitted to the NWB annually alongside the implementation plan.

Agnico Eagle supports the following general principles for spill prevention:

- Provide up-to-date and accessible Material Safety Data Sheets (SDS) 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 containment that could mitigate the consequences in the event of a spill;
- 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 by adhering to SDS and WHMIS storage guidelines; 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

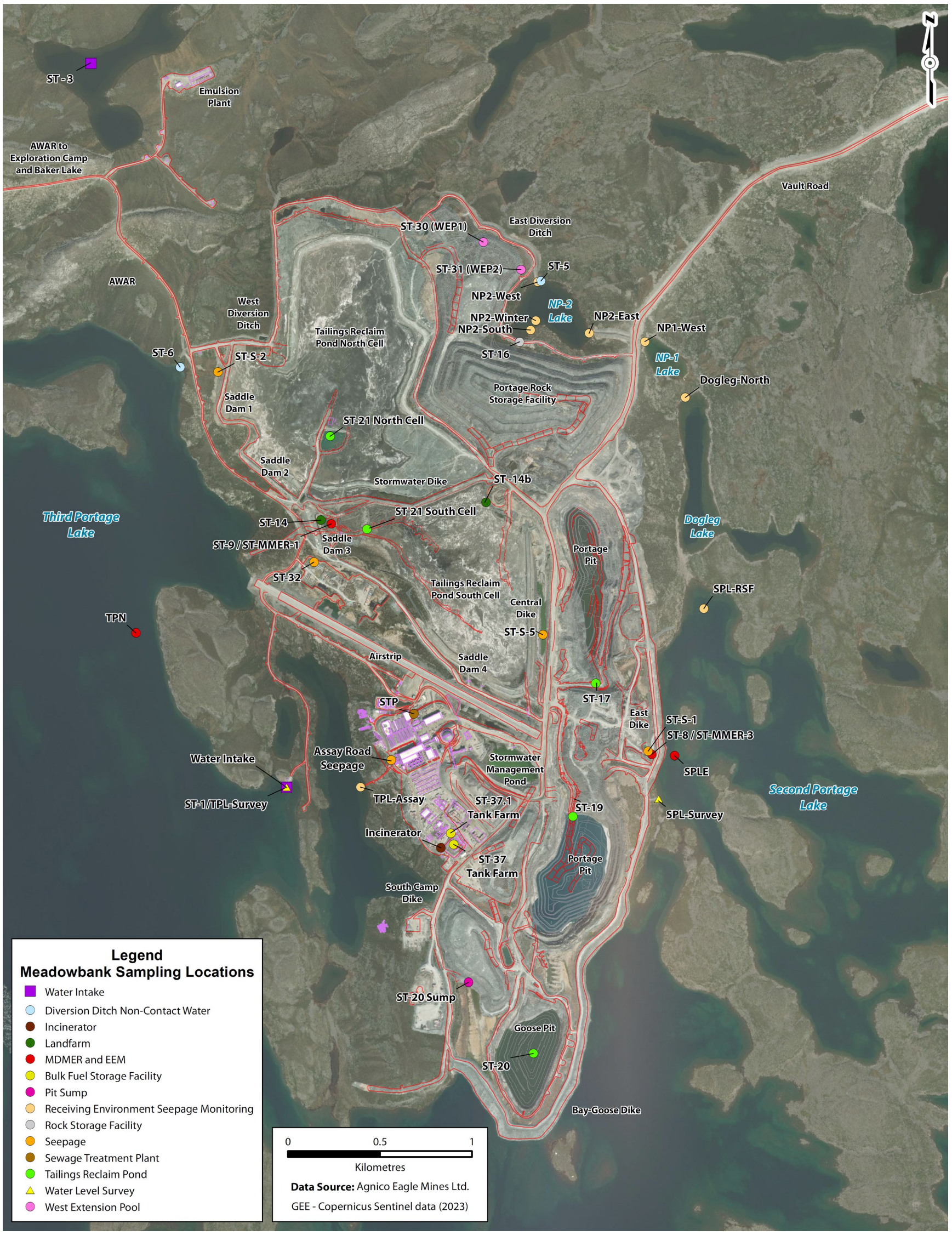


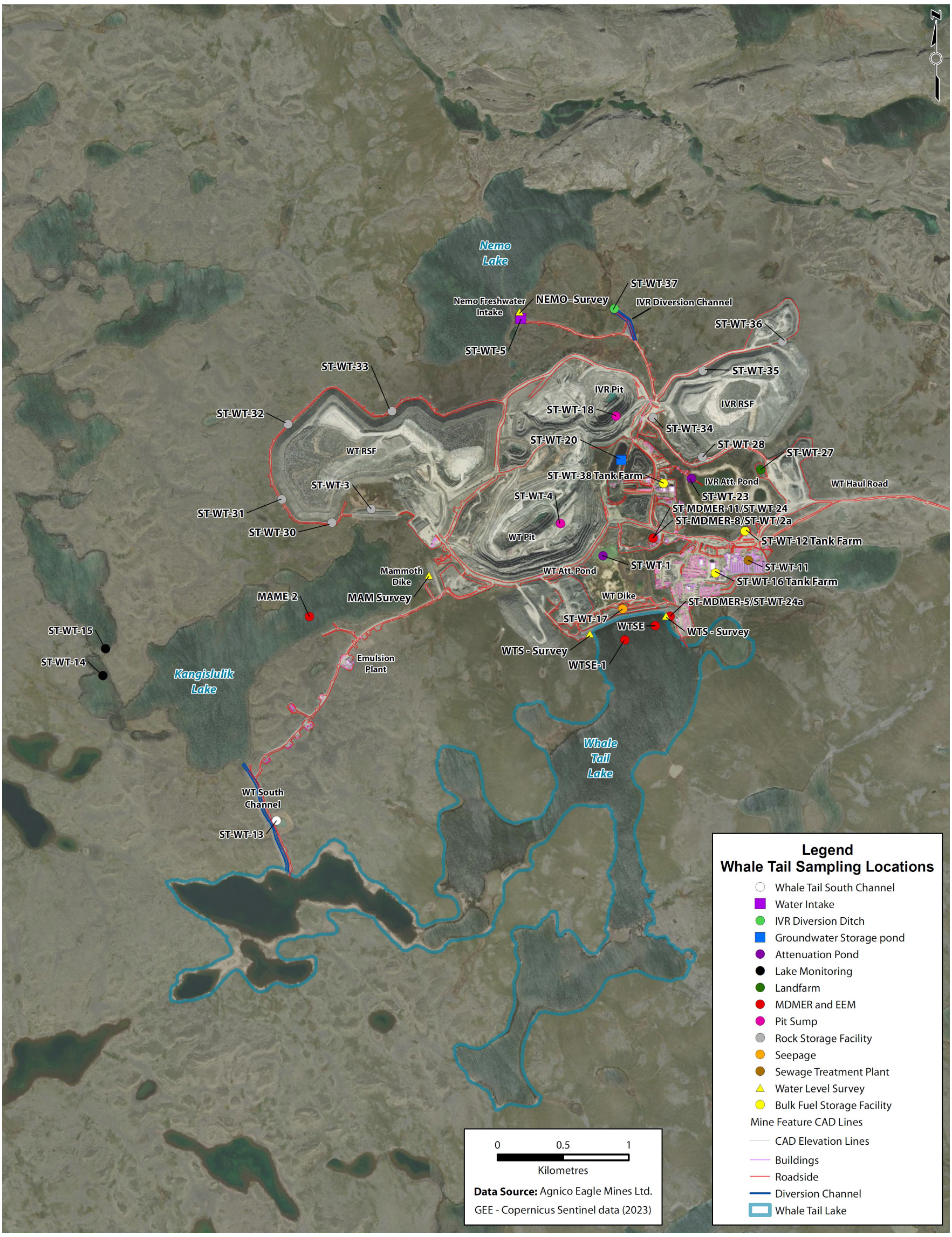
Figure 2 Continued: Layout Meadowbank Mine Site

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

Figure 4: Baker Lake Diesel and Jet-A Fuel Tank Farm location versus Baker Lake Community

Red dot represents the Baker Lake freshwater intake

Figure 5. 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.

As per the Environmental Emergency Regulations (E2) an environmental emergency (spill of E2 regulated substance) is defined as;

Means an uncontrolled, unplanned or accidental release of an E2 substance into the environment (or the reasonable likelihood of such a release) that:

a) Has or may have an immediate or long-term harmful effect on the environment;

b) Constitutes or may constitute a danger to the environment on which human life depends; or

c) Constitutes or may constitute a danger in Canada to human life or health.

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 maintains 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 reported to the NT-NU 24-HOUR SPILL REPORT LINE within 24 hours of the spill occurrence.

As per the E2 regulations, any regulated substances listed in Schedule 1 of the regulation that is deemed an environmental emergency, as defined above in Section 3.1, is to be reported to ECCC. An E2 emergency must be reported verbally using the NT-NU 24-HOUR SPILL REPORT LINE (at 867.920.8130 and online at spills@gov.nt.ca). A written report of the environmental emergency must be reported in the form of a Schedule 8 and submitted electronically on the Single Window Information Management (SWIM) System. The written report must describe the nature of the event, the name and quantity of the substance involved, the state of the container system (if applicable), the impact of the release, and measures taken to prevent a recurrence. Refer to Figure 8 for when to report an Environmental Emergency as per the E2 regulations.

As a signatory to the International Cyanide Management Code (ICMC), Agnico Eagle is committed to

notifying the International Cyanide Code Institute (ICMI) of any cyanide incidents within 24 hours of an occurrence. This should be done through notification of Agnico Eagle's Sustainability and Closure team, however the contact information can also be found in Table 3. Significant cyanide incidents are considered to include any of the following confirmed events:

a) Human exposure that requires an action by an emergency response team, such as decontamination or treatment;

b) An unpermitted release which enters natural surface waters, on or off-site;

c) An unpermitted release that occurs off-site or migrates off-site;

d) An onsite release requiring action by an emergency response team;

e) A transport incident requiring emergency response for cyanide release;

f) An event of multiple wildlife fatalities where cyanide is known or credibly believed to be the cause of death; and

g) Theft of cyanide.

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
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
6.2	Infectious substances (including sewage and wastewater unless otherwise authorized)	Any amount

Transportation Class	Type of Substance	Compulsory Reporting Amount*
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
**Compulsory reporting amount in compliance with the Nunavut Environmental Protection Act – Consolidation of Spill Contingency Planning and Reporting Regulations, R-068-93*
***If MDMER authorized limit parameters are exceeded.*

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.

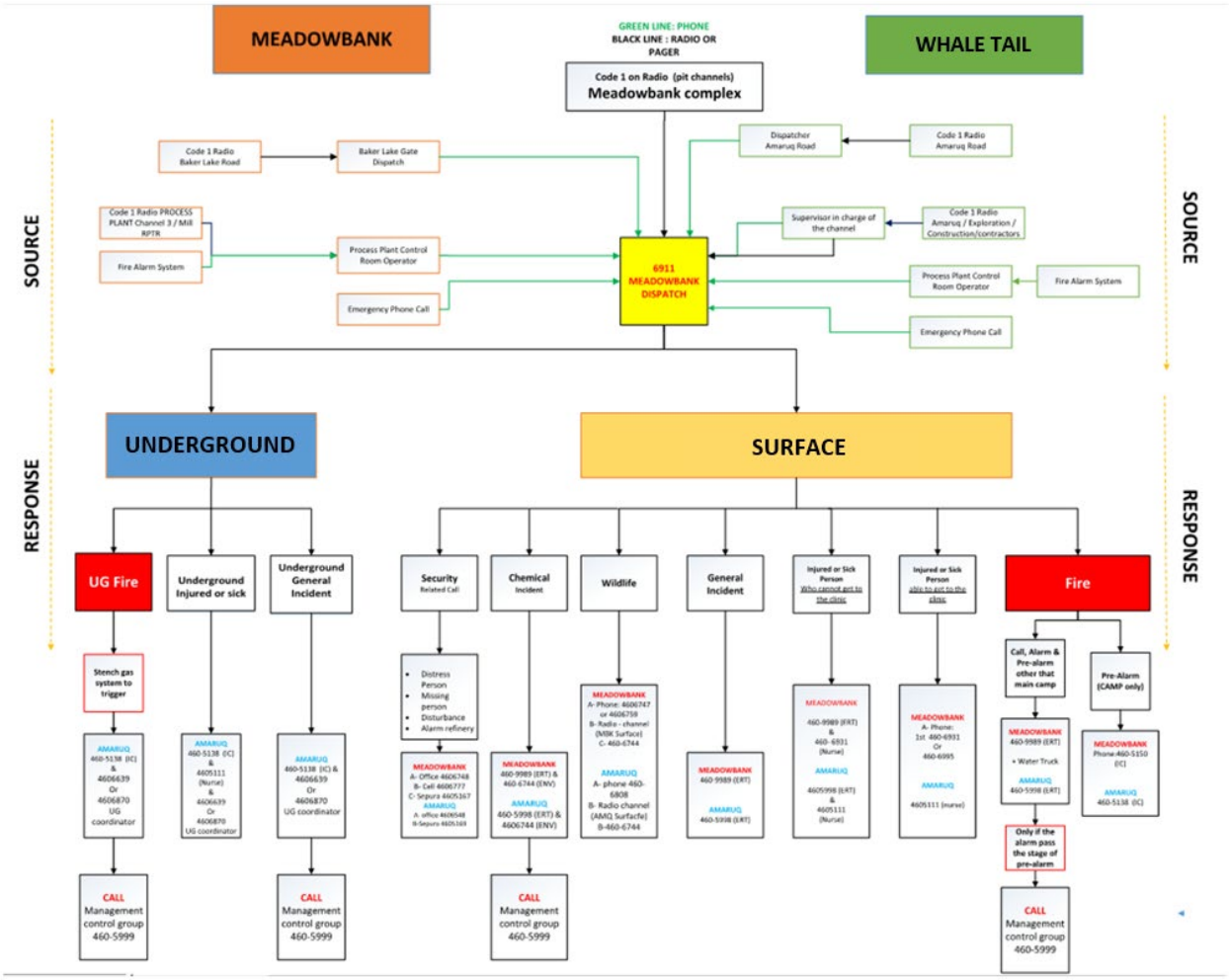
3. Upon notification of the ***Code One,*** the "dispatch" is the only person who will communicate with the person who initiated the Code One.

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 6. Emergency Procedure



The Incident Commander will contact the Environmental and Critical Infrastructures 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 and Critical Infrastructures Superintendent or alternate will submit a spill report or call if an E2 Emergency 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 and/or Baker Lake. Please refer to the Oil Pollution

Emergency Plan / Oil Pollution Prevention Plan for more details.

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 7: Spill/incident reporting procedure

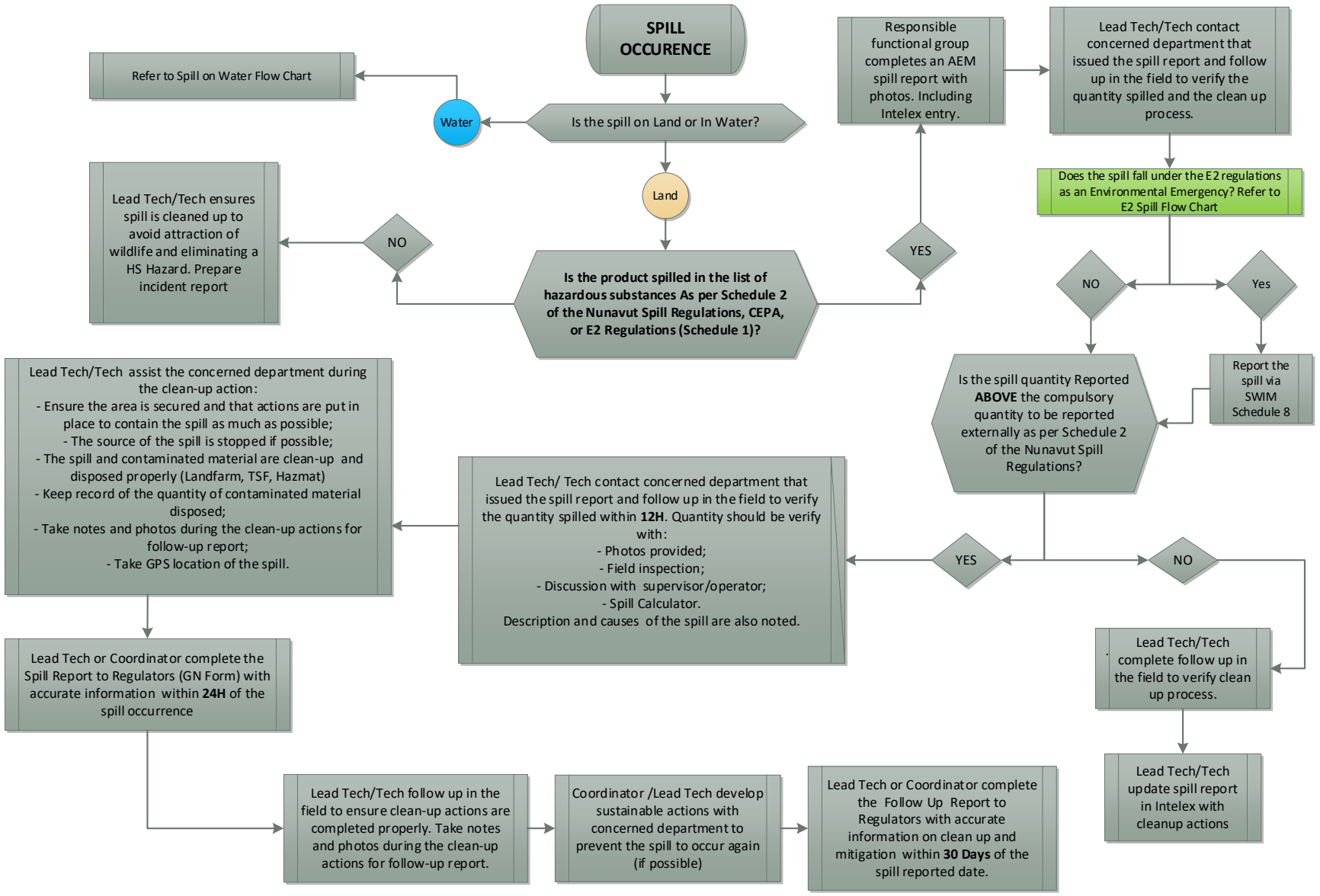


Figure 8: Spill/incident on Water Reporting Procedure

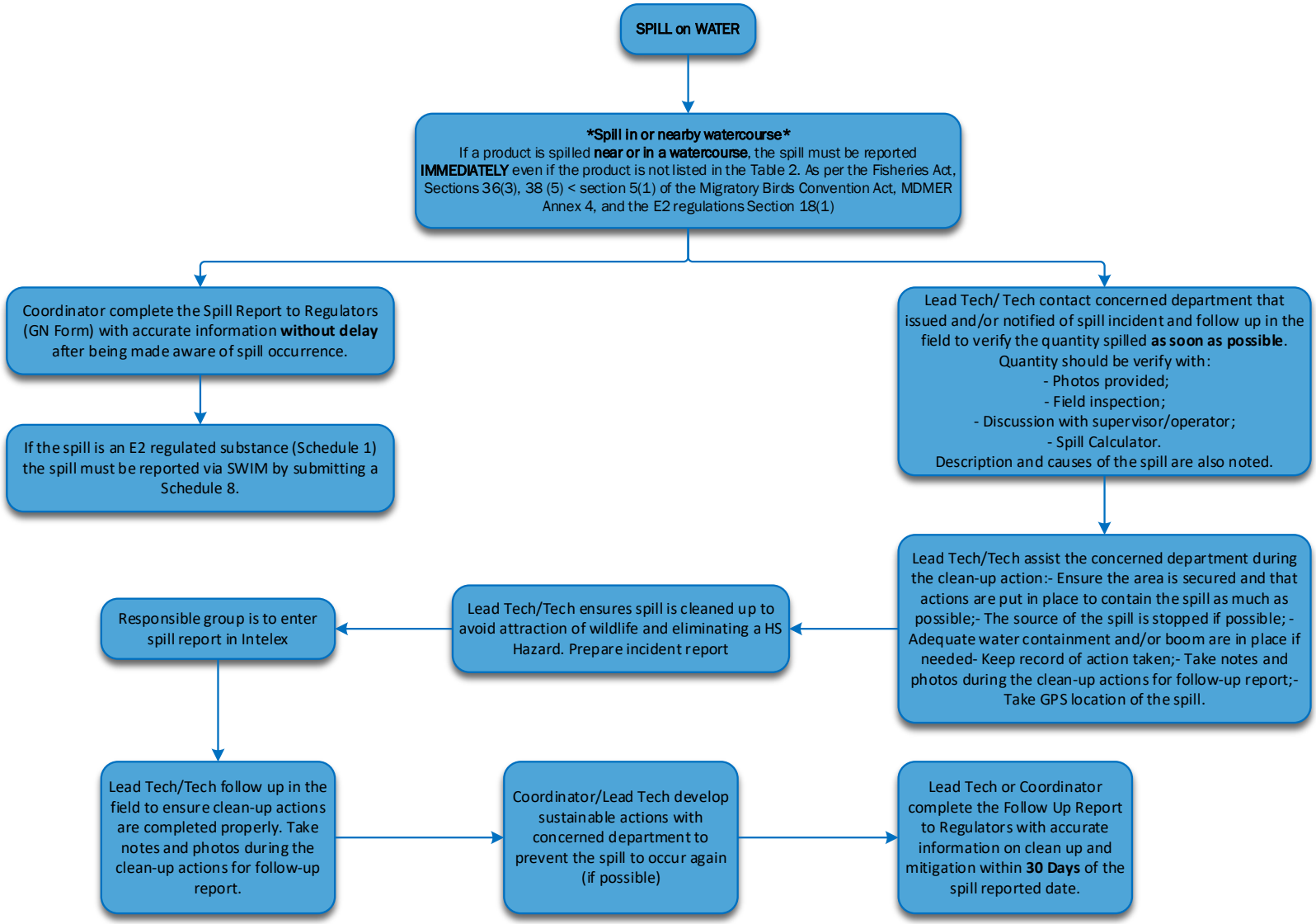
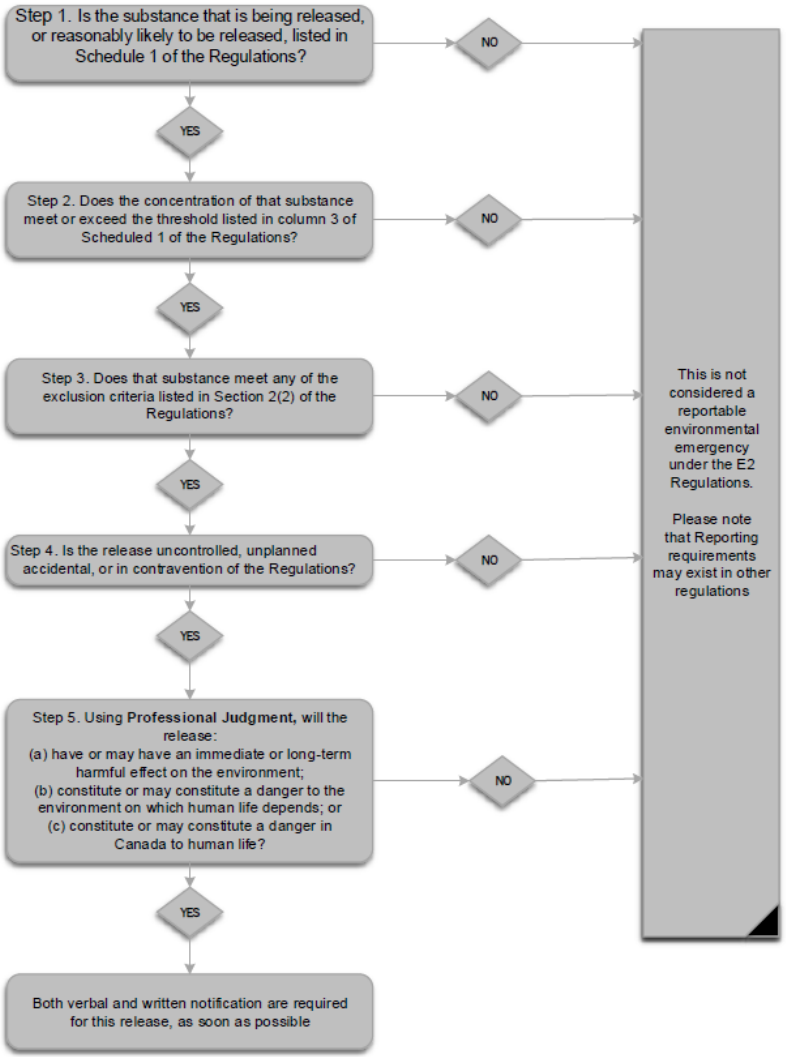


Figure 9: Quick Reference Diagram for Reportable E2 releases (Schedule 1 substance)



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 Environment and Critical Infrastructures 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 Environment and Critical Infrastructures 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. Environmental and Critical Infrastructures Superintendent or Designate

The Environmental and Critical Infrastructures Superintendent or designate is responsible for implementing and maintaining the SCP. In addition, the Environment and Critical Infrastructures 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;
- For an environmental emergency, a written report of the environmental emergency must be reported in the form of a Schedule 8 and submitted electronically on the Single Window Information Management (SWIM) System. The Environmental and Critical Infrastructures Superintendent is responsible for verbal notification via the Spill Hotline;
- Contact the Vice President of Environment and Critical Infrastructure & Sustainable Development 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 or Designate

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 Eagle 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.
EVP, Operational Excellence, Environment & Sustainable Development	Carol Plummer	416.644.2056
Vice President of Environment and Critical Infrastructures	Michel Julien	416.947.1212 ext. 4013738 Cell: 514.244.5876
Vice President, Health, Safety, Social Affairs & People	Jason Allaire	819.759.3555 ext. 460800 Cell: 819.355.2608
Corporate Director, Environment and Operational Risks	Jessica Huza	Cell 438.830.6797
Meadowbank General Mine Manager	Alexandre Cauchon	819.759.3555 ext. 4606896 Cell: 819.651.2216 Radio: 460-5269
Health &Safety Superintendent	Patrick Goldfinch	819.759.3555 ext.4606720 Radio: 460-5172
Emergency Response Coordinator	Philippe Beaudoin	819.759.3555 ext.4606809 Cell.450.847.4214 Radio: 460-5128
Emergency Measures Counselor	Fanny Laporte	819.759.3555 ext.4606809 Cell: 450.847.4214
Environment and Critical Infrastructures Superintendent	Eric Haley	819-759-3555 ext. 4606491 Cell: 819-651-1010
General Supervisor Environment	Robin Allard	819-759-3555 ext.4605218 Cell:819.860.1414
Environmental Coordinator	Tom Thomson/Samuel Tapp/Rowan Woodall	819.759.3555 ext. 4606744 Radio: 460-5120
Environmental Department	Environmental Technicians	819.759.3555 ext.4606747/4606759 Radio: 460-5120
On-site Medics	On-site Nurses	819.759.3555 ext.4606734/4606751
Site Security	On-site Security	867.793.4610 ext. 4606748

Table 3 - Contractor Contacts

Title	Contact in Emergency for:	Telephone No.
Nolinor Aviation Services	Flight services for additional crew, or additional supplies	Regular Number 450.476.0018 888.505.7025
First Air	Flight services for additional crew, or additional supplies	Regular Number 1.800.267.1247 867.669.6694
Calm Air	Flight services for additional crew, or additional supplies	1.800.839.2256 Emergency 204.677.5013 204.677.5019
Dyno Nobel Explosives Ltd.	Heavy Equipment, Workforce, Emergency Blasting	819.825.5441
Woodward Group of Companies – Craig Farrell	Fuel Hauler	Craig Farrell 709.541.0789 Company 709.535-6944:
Baker Lake Contracting & Supplies	Workforce, equipment, trades personnel i.e. pipefitter, plumber, electrical	867.793.2831 867.793.1766
Peter's Expediting	Equipment, Workforce, Ground transportation services	867.793.2703 Cell 867.793.1615
Arctic Fuel Services	Fuel hauling, trucking, Workforce.	867.793.2311 Office 867.793.2301 Supervisor

Table 4 - External Contacts

Organization/Authority	Telephone Number
NT-NU 24-Hour Spill Report Line / E2 Emergency Reporting 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 867.645.2810 (reporting line)
Nunavut Water Board	867.360.6338
CIRNAC Inspector	Kyle Amsel 867.222.6795 or 867.645.2089
Fisheries and Ocean Canada (DFO) – Nunavut Regional Office	867.979.8000
Government of Nunavut – Department of Environment	867.975.7700

Kivalliq Health Services – Baker Lake	867.793.2816 or 867.793.2817 *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 – Tech services Stephen Sherburne Philip Levesque Ryan Oleschak	780.495.6325 204.984.5786 Cell: 204.801.6951 Cell: 431.338.6742

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)	Meliadine (819) 759-3555 ext. 4603175 Environment Superintendent Hope Bay 819.759.3555 ext. 4600102 Environment Superintendent
De Beers Canada	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

Below is a list of spill events that have the potential to occur at the Meadowbank Complex. Risk assessments have been completed on each of the spill events listed below that involve diesel (E2 regulated substance).

Spill events that may occur:

- Tanks, drums or containers may develop leaks or rupture (for example, corrosion or weld failure);
- Failure of equipment such as valves, piping or containment structures;
- Fuel Tank failure;
- Vessel overfilling and release, or over pressurizing and venting through relief valve or rupture disk;
- Overfilling;
- Release occurring during the loading/unloading from transportation vessels;
- Improper storage;
- Spills during transfer of fuel, chemicals or waste products;
- Spills resulting from accidents during transportation;
- Process Vessel/pump releases due to equipment failure (i.e. cracks, seal failure, etc.);
- Transfer hose releases;
- Release of inhalation toxicants of short duration;
- Vehicle collision with a tank resulting in rupture;
- Fire (at facility, equipment itself, ignition of leaking substance);
- An explosion;
- Extreme weather; (for example, permafrost degradation, extreme cold, extreme warm temperature);
- Natural disasters (earthquake, fire on tundra);
- Vandalizing;
- 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.

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 SDS 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 J
- 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 Eagle 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 Eagle 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's Enforcement Officer and the KivIA 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.

- For spills relating to E2 substances (E2 regulation Schedule 1), professional judgement must be used to determine if the spill is considered an environmental emergency as per Section 18 (1) of the Environmental Emergency Regulation (Figure 8). If the spill is considered to be an environmental emergency, the spill must be reported electronically using SWIM by submitting a Schedule 8 and verbally through the E2 Emergency Reporting Line (Table 4).

Procedures will vary depending on the season and materials spilled. The SDS 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 dikes 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) and if the spill is an E2 regulated substance (Schedule 1) the spill

must be reported via SWIM, as well as verbally to ECCC when feasible;

- 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 absorbent 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.

Appropriate Actions	**Resources**
1. Drawn appropriate PPE and stop the spill, if it's safe to do. 2. Make sure that the environment is safe for the facility personnel, the facility and Baker Lake community. 3. Make sure that risk of fire or explosion are minimize. 4. Call Code One on radio. 5. Make the community of Baker Lake aware of the Spill to ensure measures can be taken to ensure safety of the community (contact mayor, hamlet counsel, fire department, RCMP).	a. Agnico employees aware of the procedure for spill. b. Emergency Response Team trained for spill response. c. Shore-based boat to position booms and spread absorbent material. d. Spill response equipment and supplies maintained in Agnico's sea can locate at Agnico's Marshalling area. e. Additional booms to place outside the containment boom. f. Additional boats can be transported from the Meadowbank site as well local boats can be rented from local contracting companies. g. Heavy equipment such as excavators, back

6. Request for supplemental spill response material as detailed and ERT support 7. Minimize the oil pollution incident by containing the spilled fuel to spreading within the marine environment, if it's safe to do. 8. Notify CCG, Transport Canada, local and regulatory authorities, and request for assistance if needed. 9. Containment boom is manned to prevent the escape of fuel outside the boom. 10. If necessary, place a diversion boom outside the containment boom to stop the diesel from getting onto the beach. 11. Spread absorbent material on the spill to capture it. 12. For larger amounts of spilled materials on water, use absorbent booms to collect the spilled fuel. 13. Monitor any fuel that could not be recovered and collect water samples near the spill site and in the access passage for analysis. Repeat as necessary. 14. If diesel reaches the beach, excavate the contaminated beach material and take it to the Landfarm area at the Meadowbank site.	hoes, vacuum trucks, and dump trucks for waste materials. h. In the case of larger spills an Incident Command System will be set up at the Meadowbank site as laid out in the Meadowbank Emergency Response Plan.

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 berms 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 absorbent 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. E2 Spill Scenarios – Baker Lake OHF

5.5.1. Worst-Case Scenario

The worst-case scenario, (release of the maximum quantity that could be contained in the largest container system), for Baker Lake is the complete release of up to 10,000,000 L of diesel fuel from one of the diesel tanks. The secondary containment for these diesel tanks is designed to contain 110% of the entire contents of the tank. Spilled fuel is expected to be contained inside the secondary containment and if fuel escapes the containment, fuel may reach Baker Lake and it is expected that the longest impact outside the boundaries of the facility will be around 85 Km. Harm to the environment would include contamination of water, potential to kill fish and fish habitat, as well as contamination of the communities' drinking water. There would be harm to the environment or human life/health.

In the case that the communities of Baker Lake should need to be evacuated on short notice, the Emergency Response Team will immediately assist in the evacuation of the community. The General Mine Manager will immediately contact the Mayor of the Hamlet to inform regarding the situation. In addition, if safe to do so, a radio notification should be immediately broadcast on the Baker Lake Radio station.

Spill response supplies at the OHF (including all responses equipment and resources from Meadowbank, emergency trailer, emergency sea can along the AWAR) will need to be used to control and cleaned up. Tankers delivering fuel also have on board equipment that can be share with Agnico in case of extreme spill. However, at this point Agnico Eagle could require external assistance with the clean-up.

The materials onsite can be deployed within one hour to contain a spill unless deployment within one hour will be unsafe. Generally, for spill greater than $1m^3$, the Emergency Response Plan (ERP) will be activated and the Emergency Response Team (ERT) located at Meadowbank mine site will come in Baker Lake to help. Realistically, the ERT can be on site within 125 minutes (or less) ready to help for the clean-up activity. Helicopter support will be made available to quickly mobilize the initial response team. Material from the Meadowbank Mine site, if required, will be brought to the Baker Lake OHF within 125 minutes to finalize the containment (if not complete) and recovered of the oil pollution incident.

5.5.2. Alternate Worst-Case Scenario

The alternate worst-case scenario (scenario that is most realistic to happen with the longest impact distance outside the boundary of the facility) is a major failure between the ship and the flange of the OHF, the floating pipeline, resulting in a spill greater than 1,000 L but smaller than 10,000L of diesel or Jet-A fuel. The furthest impact distance outside the boundary of the facility can be up to 3.4 Km.

In the case of an alternate-worst case scenario, Agnico Eagle will follow the below actions listed to complete the best containment and clean up possible. Spill response supplies at the OHF (including all responses equipment and resources from Meadowbank, emergency trailer, emergency sea can along the AWAR) will need to be used to control and cleaned up. Tankers delivering fuel also have on board equipment that can be shared with Agnico in case of extreme spill. For spill during fuel transfer from ship to shore, refer to the Oil Pollution Emergency Plan / Oil Pollution Prevention Plan.

The materials onsite can be deployed within one hour to contain a spill unless deployment within one hour

will be unsafe. Generally, for spill greater than $1m^3$, the Emergency Response Plan (ERP) will be activated and the Emergency Response Team (ERT) located at Meadowbank mine site will come in Baker Lake to help. Realistically, the ERT can be on site within 125 minutes (or less) ready to help for the clean-up activity. Helicopter support will be made available to quickly mobilize the initial response team. Material from the Meadowbank Mine site, if required, will be brought to the Baker Lake OHF within 125 minutes to finalize the containment (if not complete) and recovered of the oil pollution incident.

5.5.3. Alternate Scenarios

Is it expected, as per the Product Transfer Area Assessment – Baker Lake Oil Handling Facility in Appendix L, 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. There would be no significant harm to the environment or human life/health.

At the Baker Lake OHF, the spill that is most 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.

Appendix Q includes a Risk Assessment that has been completed on the Baker Lake OHF to determine other possible scenarios that could occur.

5.6. E2 Spill Scenarios – Meadowbank Tank Farm

5.6.1.Worst-Case Scenario

For the Meadowbank tank farm, the worst-case scenario is the complete release of the largest tank at the facility, a 5.6 M liter diesel fuel tank. Spilled fuel is expected to be contained inside the secondary containment, designed to contain 110% of the entire contents of the tank, and if fuel escapes the containment, it will remain inside the facility boundaries due to topography in this area. Harm to the environment would be minimal with soil contamination localized to the area. Remediation required would be to remove contaminated soil.

5.6.2. Alternate Worst-Case Scenario

The alternate-worst case scenario for Meadowbank is a fuel tanker overturning on the All-Weather Access Road releasing diesel fuel in quantities of up to 40,000 L to the surrounding tundra. Thus, impacting an area of up to 1 Km outside of the facility boundary. This scenario would result in soil contamination and potential harmful effects on wildlife and groundwater. Remediation work would be required to remove contaminated soil and on-going monitoring would need to be conducted to determine long-term effects.

5.6.3.Alternate Scenario

At Meadowbank, the spill that is most 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. Harm to the environment would be minimal with soil contamination localized to the area.

Appendix Q includes a Risk Assessment that has been completed on the Meadowbank Tank Farm to determine other possible scenarios that could occur.

5.7. 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 or Whale Tail landfarm for treatment, this includes contaminated soil from the Baker Lake. 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 or placed into the Tailings Storage Facility (TSF). 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 snowmelt, the contaminated water could be pumped through the site's oil-water separator (carbon filter) to remove petroleum hydrocarbon residue. At Meadowbank, the water will be discharged to the Stormwater Management Pond. At Whale Tail, the treated water will be sampled per Part F, Item 8 of the Water License 2AM-WTP1830, and discharged to the tundra if water quality meets Water License criteria. If criteria are not met, water will be treated as hazardous material and shipped south or placed into the Tailings Storage Facility (TSF). 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.

5.8. 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.

5.9. 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).

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.

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 Environment and Critical Infrastructures 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 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 Mine. 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.

Safety Data Sheets (SDS) 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 O provides the SDS for Diesel and Jet-A. All SDS for chemicals on site can be found on Paratox hazardous management software.

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 Laydown
Activated Carbon	350 t	10 t per sea can	Inventory Laydown and Process Plant lay down
Ammonium Nitrate	12,000 t	20 t per sea can as 1 t bags	Meadowbank Emulsion plant
Ammonium Nitrate	3,040 t	20 t per sea can as 1 t bags	Whale Tail
Ammonium Nitrate Fuel Oil (ANFO)	Manufactured on demand – 500,000 kg	20,000 kg per truck	Emulsion plant and Esker 6
Motor Oil	Estimated at 800,000 L	20,800 L per sea can	Inventory Laydown, garage
Trojan Boosters (Blasting Systems)	34,000 kg	15 t per sea can	Emulsion plant

Material	Maximum Anticipated on -site	Maximum Amount transported per unit	Storage Location
Borax, Anhydrous	9,200 kg	3,375 kg per sea can	Inventory Laydown and Process Plant Laydown
Calcium Chloride	910,000 kg	10,000 kg per sea can	Inventory Laydown
Copper Sulphate	27.5 t	20 t per sea can	Inventory Laydown and Process Plant Laydown
Diesel Fuel	9.2 million Liters	40,000 L per tanker	Meadowbank Tank farm + small tanks on site
Diesel Fuel	2.6 million Liters	40,000 L per tanker	Whale Tail Tank farm + small tanks on site
Diesel Fuel	80 million Liters	NA	Baker Lake Tank farm
Diesel Fuel	1,915 Liters	NA	Whale Tail Haul Road Km 132
Dyno Split (Detagel)	135,000 kg	15 Mt per sea can	Meadowbank/Whale Tail Emulsion plant
Nonel EZTL	1,400 kg	15 Mt per sea can	Meadowbank/Whale Tail Emulsion plant
Nonel MS	1,800 kg	15 Mt per sea can	Meadowbank/Whale Tail Emulsion plant
Ethylene Glycol	60,000 L	10,000 L per sea can	Inventory Laydown
Jet A Fuel	100,000 L	11,000 L Tanker	Meadowbank Tank, tarmac
Jet A Fuel	2,000,000 L	Vessel Tanker	Baker Lake Tank Farm
Lead Acid Batteries	500 L	500 L per sea can	Warehouse
Magnafloc 10 (Flocculant)	300 Mt	15 Mt per sea can	Inventory Laydown
Nitric Acid	130,000 L	8,000 L per sea can	Inventory Laydown
Propane	16 t	3,028 L tank	Inventory Laydown + small tanks on site
Cement	1,500 t	20 t per sea can	Dike and Construction Laydown
Sodium Cyanide	3,700 t	19 t per sea can	Inventory Laydown and Process Plant Laydown
Sodium Nitrate	3 t	5 t per sea can	Inventory Laydown
Sulfur	1,100 t	20 t per sea can	Inventory Laydown

Material	Maximum Anticipated on -site	Maximum Amount transported per unit	Storage Location
			Process Plant Laydown
Unleaded Gasoline	10,000 L	40,000 L tanker	Meadowbank
Unleaded Gasoline	15,000 L	NA	Baker Lake
Unleaded Gasoline	19,000 L	40,000 L tanker	Whale Tail
Varsol	4,000 L	2,000 L per sea can	Inventory Laydown

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°18'36" N and longitude 95°58'04" W. The Baker Lake OHF consists of a container system comprised of eight (8), ten (10) million liter tanks for diesel fuel, within secondary containment (Figure 2). The steel fuel tanks have been field-erected and built to API-650 standards with each bermed area holding two tanks that are connected via a piping system. The piping system contains automatic/remote valves for each tank that is controlled from the HMI (Human Machine Interface), as well as manual valves. Each secondary containment has been designed to meet the requirements of the National Fire Code of Canada, which must have a volumetric capacity of not less than the sum of:

A) The capacity of the largest storage tank located in the contained space, and;

B) 10% of the greater of:

i) The capacity specified in Clause (A), or;

ii) The aggregate capacity of all other storage Tanks located in the contained space.

The above clauses require at minimum a containment capacity of 110% of the largest storage tank in the contained space, however, each secondary containment has been designed to hold 20 million liters of fuel. The volume occupied by the Tank foundation is considered in the total secondary containment capacity and berms of the secondary containment are constructed of granular material and are made impervious with a geomembrane.

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 3). 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 3 above for the exact location. The most likely cause of a spill is 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 confine and limit the progression of the spill into the water;

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

4) 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 from the Meadowbank Mine Site to Baker Lake via the All-Weather Access Road until the freshwater is safe to drink[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.

Should a spill occur to land or on snow and ice, the response criteria outlined in sections 5.2 and 5.4 will be followed in order to reduce the release of contaminants into the environment.

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 and one (1) above ground storage tank with approximately 3.3 million liters capacity within the same lined secondary containment able of containing more than 110% of the volume of the largest storage tank. The piping system contains automatic/remote valves for each tank that is controlled from the HMI (Human Machine Interface), as well as manual valves. The facility is located at latitude 65°01'52" N and longitude 96°04'22" W.

[1] The 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 >200m³ of water a day and the current usage for the mine site is ~110m³. 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

6.2.1.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 waste management area to the south. The surface water drainage at the bulk fuel storage facility is towards the stormwater management pond to the north.

6.2.2.Geology

The fuel storage sites have a thin, discontinuous cover of topsoil 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.

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 stormwater management pond to the north and the risk of affecting surrounding area is 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. Spills to the environment are prevented through ensuring that the secondary containment is in good condition and adhering to proper fuel transfer procedures. 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; and

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

6.3. Whale Tail Haul Road KM 132 Surrounding Environment

The double wall diesel tank at KM 132 is located in the tundra on a gravel pad near the WTHR. There are no water bodies 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.

6.4. 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 O.

The Spill Contingency Plan is approved by the Nunavut Water Board during the permitting phases of the Mine. This is a public document that is available to the public and is reviewed by other regulatory bodies for comment.

The possibility that an environmental emergency could occur, and the potential effects of an environmental emergency to the environment and to human life or health, as well as the measures that will be taken to protect the environment and human life or health will be communicated 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 Mine, 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 absorbent 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 dikes, 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. It is the responsibility of the Environment Department and Emergency Response Teams to ensure that the present and condition of this equipment is adequate.

Mobile Equipment within the Meadowbank Complex that is 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, computers, telephones, 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 and Whale Tail 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.

Environmental Emergency Trailers, which are easily accessible and mobile, are located on site at Meadowbank and Whale Tail Mines. Each trailer 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 nine (9) environmental emergency sea cans (Figure 9). Currently, there are five (5) environmental emergency sea cans installed along the Whale Tail Haul Road, between the Whale Tail Mine and Meadowbank sites. 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 contain 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

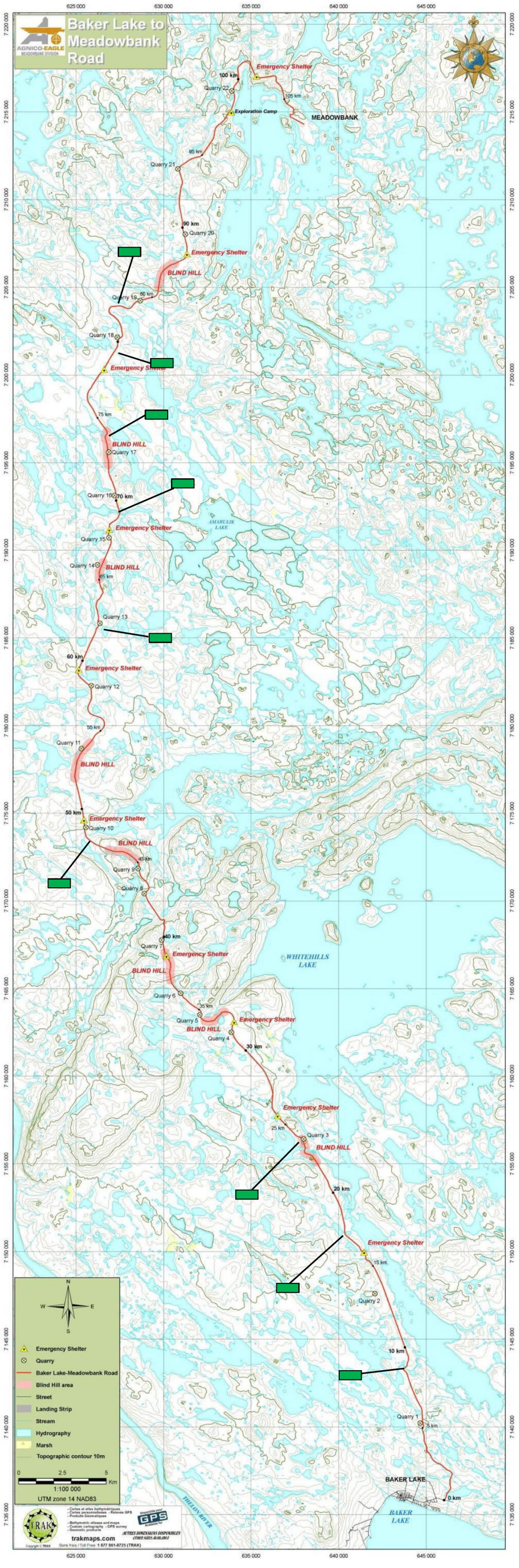
- Chisel point crow bar 16 lbs 57"
- Ice braker chisel
- Sledge hammer 12 lbs 36"
- Rod bar (4')

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)

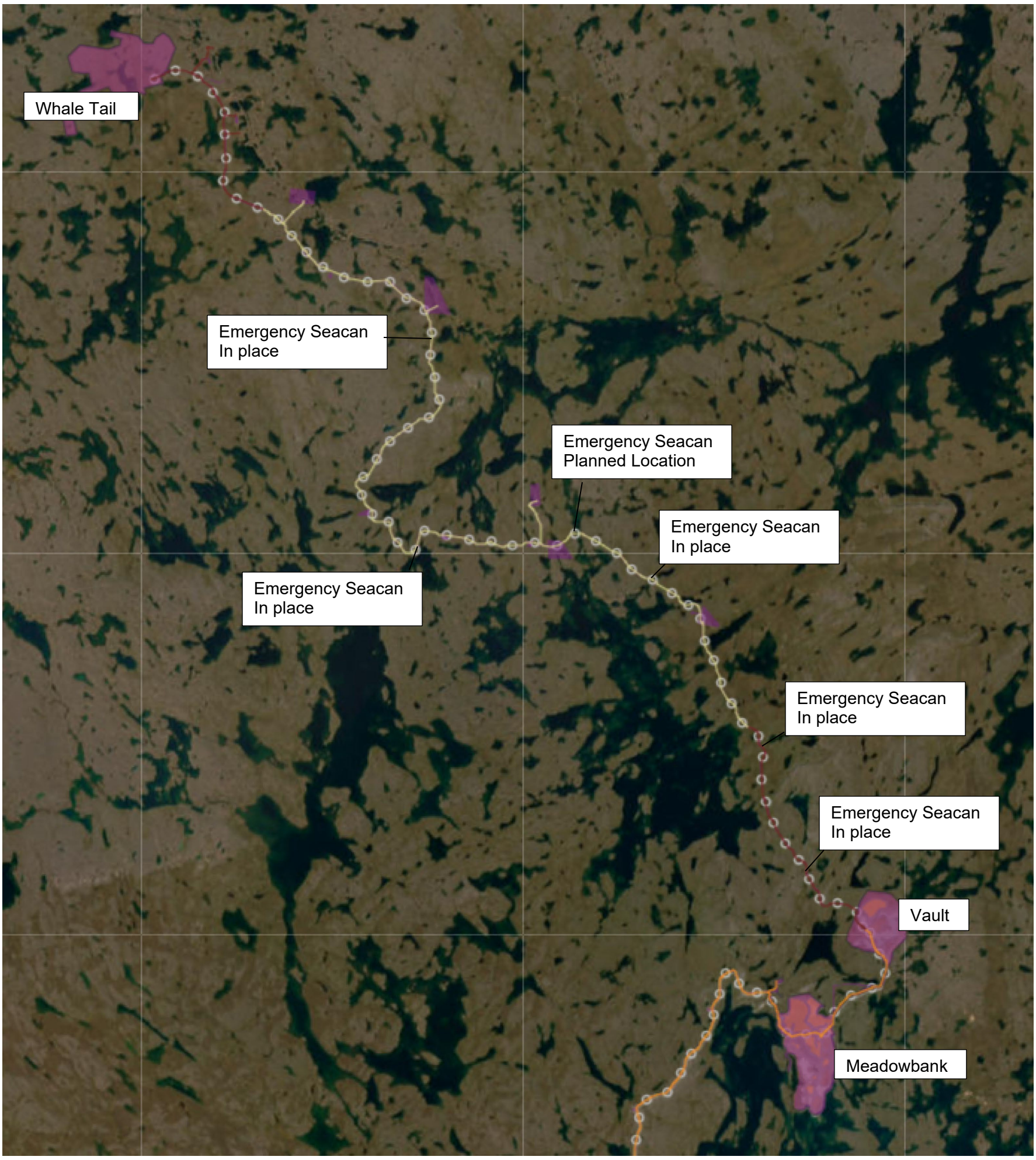
If required, external resources are available in the Hamlet of Baker Lake and those contacts are found in Table 3.

Figure 10: Map of AWAR Including Locations of Environmental Emergency Sea cans



Environmental Emergency Sea cans

Figure 11: 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 and contractor at Agnico Eagle receives spill and waste management training during their e-learning. This e-learning training program has been 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 is mandatory for all personnel. Spill preparedness and response toolboxes are also presented throughout the year by the Environment department to all other departments. ERT members receive more extensive HAZMAT training and learn how to respond while wearing personal protective equipment (PPE).

In February 2020, two employees from the Environmental Department followed the Marine Spill Response Operation Course (MSROC) given by the Canadian Coast Guard (CCG). In 2022, a Spill Response Training was given by SWAT Consulting Inc. to the Environment Department and Emergency Response Team. The training took place at Whale Tail Mine and allowed the participants to gain experience on spill intervention and awareness of spill management gear.

The road crews between Baker Lake and Meadowbank, and Meadowbank and Whale Tail also receive spill response and prevention training through toolboxes. Agnico also performed each year a Mock Spill Scenario in Baker Lake. You can find the details of the 2023 Mock Spill in Appendix K. As per the Environment Emergency Regulation, a yearly simulation exercise will be conducted, that focuses on diesel fuel (hazard category F). The goal of the annual simulation is to cycle through one of the worst-case, alternate worst-case, and alternate scenarios each year. The mock spill scenario referred to above represents the annual simulation exercise for Baker Lake, however the 2023 annual simulation exercise for Meadowbank has been included in Appendix K as well. After five years, a full-scale exercise will occur for both the Meadowbank site and the Baker Lake Oil Handling facility separately as they are considered separate facilities under the E2 regulations. 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 L. 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 nine parameters: six metals (arsenic, copper, cyanide, lead, nickel and zinc), unionized ammonia, 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/daphnia, even if it is determined that the nine 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, a 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 License 2AM-MEA1530 and 2AM-WTP1830, Agnico Eagle also has to notify CIRNAC before starting the discharge.

This Spill Contingency Plan contains emergency response information in accordance with Part 3, Section 30 of the Metal and Diamond Mining Effluent Regulations. Appendix M includes a cross-reference table addressing subsections 30 (1) to 30(4) of the regulations. Should non-compliant effluent be discharged to the receiving environment, the environment department will work alongside the operation to mitigate and document the potential adverse effects. If analysis indicates an MDMER or Water Licence limit is exceeded or a field measurement indicates a trend towards non-compliance, discharge is to be 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.

10.1. Seepage Locations

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 Meadowbank 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 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 Freshet Action Plan (see Appendix D of the 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 Complex informed regulators via email on August 25, 2019 that during an inspection held on August 24, 2019 of the Whale Tail Waste Rock Storage Facility (WRSF) Dike, a water flow was observed at the toe of the dike entering Kangislulik 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.

   The WRSF pond was considered to be essentially empty by September 1, 2019 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, 2019 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, 2019. 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 series of measures were implemented to minimize the risk of a similar occurrence in the future:

- The water level in the WRSF pond was 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 and will continue for the following years;
- Permafrost penetration was 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 was designed and constructed; and
    - Thermistors monitoring will continue.
- In addition, the following environmental monitoring was conducted:
    - A monthly limnology profile of Mammoth Lake was completed over the winter and open water conditions;
    - A core receiving environment monitoring program was carried out, including Mammoth lake; and
- A sediment sampling campaign was executed in the summer at Mammoth Lake.

No more seepage occurred from WRSF Dike. The mitigation measures implemented in 2020 were successful in ensuring the proper performance of this infrastructure.

10.2. Final Discharge Points - Meadowbank

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.

10.2.1. ST-MMER-1

Agnico Eagle Meadowbank Mine 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 discharged 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 permanently 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.

10.2.2. ST-MMER-2

The Vault final discharge 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. FDP still active on the MERS system. Refer to Figure 1 above for the FDP location.

10.2.3. ST-MMER-3

The East Dike Seepage Discharge became subject to the MMER on January 6, 2014. Water was pumped 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

10.3. Final Discharge Points – Whale Tail

10.3.1. ST-MDMER-4

At the Whale Tail Mine, during the in-water portion of the Whale Tail Dike Construction, Agnico Eagle had an effluent discharge from the construction dewatering activities. The Whale Tail Mine 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 permanently dismantled on May 1, 2019 to ECCC and no more reporting is required on MERS system.

10.3.2. ST-MDMER-5

During the dewatering of the Whale Tail North Basin, an FDP was created in 2019 - ST-MDMER-5 WT North Basin Dewatering Phase 1. The dewatering of Whale Tail North was completed on May 20, 2020. This FDP was subject to MDMER on March 5th, 2019. In 2020, depending on the water quality, ST-MDMER-5 was pumped and discharged to Whale Tail Lake South Basin with or without water treatment to be compliant with Section 4 (1) of the MDMER. The effluent was discharged via a submerged diffuser to control erosion and disturbance to bottom sediments. The final discharge point (FDP) is located near the shore of Whale Tail South Basin. Refer to Figure 11 below for the FDP location and Photo 2 below. This discharge is still active on MERS system.

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

10.3.3. ST-MDMER-6

During the Whale Tail North Basin dewatering, when the water 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. No water was discharged since October 26, 2019. This FDP was permanently dismantled on July 18, 2023 to ECCC and no more reporting is required on MERS system.

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

10.3.4. ST-MDMER-7

Quarry 1 water was discharged to Mammoth Lake via a submerged diffuser to control erosion and disturbance to bottom sediments – ST MDMER-7. 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 Plant. Since the Whale Tail Attenuation Pond was not yet operational due to ongoing dewatering, Agnico Eagle sent a notification of modification to ECCC on September 19, 2019, 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. On March 20, 2020, Agnico Eagle sent a notification to ECCC to modify this FDP and move the intake to the Attenuation Pond and the FDP on the shore of Mammoth Lake. On May 15, 2023, Agnico Eagle sent a 60 days notification of modification to merge FDP ST-MDMER-7, ST-MDMER-8, and ST-MDMER-9 into one single FDP. The merge FDP name is ST-MDMER-8, see below. This FDP was permanently dismantled on July 18, 2023 to ECCC and no more reporting is required on MERS system.

Photo 4. ST-MDMER-7 FDP before dismantling

10.3.5. ST-MDMER-8

Agnico Eagle 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 Eagle sent a notice of modification to ECCC regarding the FDP sampling location. The sampling location was moved from after the WTP to a sampling valve installed on the HDPE discharge pipe near the shore of Mammoth Lake. On May 15, 2023, Agnico Eagle sent a 60 days notification of modification to merge FDP ST-MDMER-7, ST-MDMER-8, and ST-MDMER-9 into one single FDP. The sampling location is now at the header after the AsWTP. This discharge is still active on MERS system. Refer to Figure 11 below for the FDP location and Photo 5 below.

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

10.3.6. ST-MDMER-9

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. 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 Eagle sent a notice of modification to ECCC to move the water intake from after the WTP to a sampling valve installed on the HDPE discharge pipe near the shore of Mammoth Lake. On May 15, 2023, Agnico Eagle sent a 60 days notification of modification to merge FDP ST-MDMER-7, ST-MDMER-8, and ST-MDMER-9 into one single FDP. The merge FDP name is ST-MDMER-8, see above. This FDP was permanently dismantled on July 18, 2023 to ECCC and no more reporting is required on MERS system. No water has ever been discharged from this FDP.

10.3.7. ST-MDMER-10

During September 23, 2019 ECCC's MDMER inspection at Whale Tail Mine, the Enforcement Officer 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 was a man-made structure use for the water management on the Whale Tail site. Water collected by this pond was mainly non-contact water but can receive contact water from the underground operation or other location around site, if needed. Water from this pond was 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 was required for the discharge as the water quality was 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 was located at the water intake pump. FDP discharge only for a couple of days in 2019. This FDP was permanently dismantled on July 18, 2023, to ECCC and no more reporting is required on MERS system.

10.3.8. ST-MDMER-11

Agnico Eagle submitted an application, as per the MDMER regulation Section 10 (1), to ECCC on May 8, 2019 regarding the creation of the ST-MDMER-11 discharge. Discharge began on November 6, 2020 and was subject to the MDMER regulations. The water intake for this FDP is the Whale Tail and or IVR Attenuation pond where water is treated in the WTP before being discharged into Whale Tail South via a diffuser. The FDP sampling location is at the header after the AsWTP. Refer to Figure 11 below for the FDP location and Photo 6 below.

Photo 6. **ST-MDMER-11 FDP**

Figure 12 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: _____

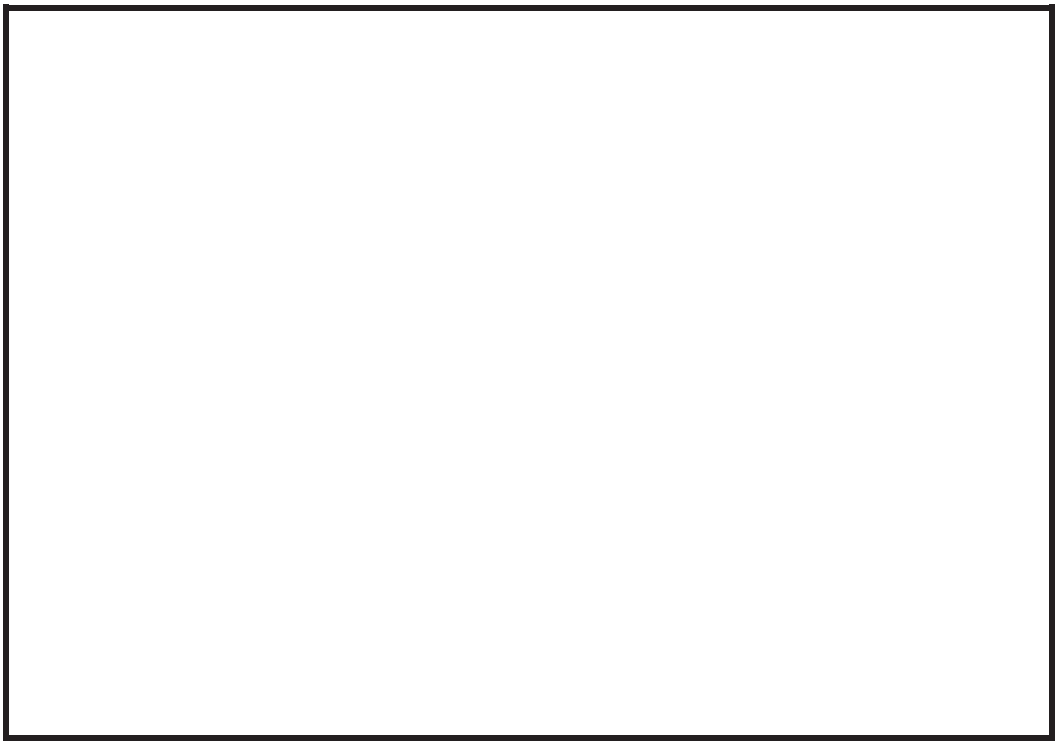
Signature: _____

Actions Corrected:
_____
_____
_____
_____

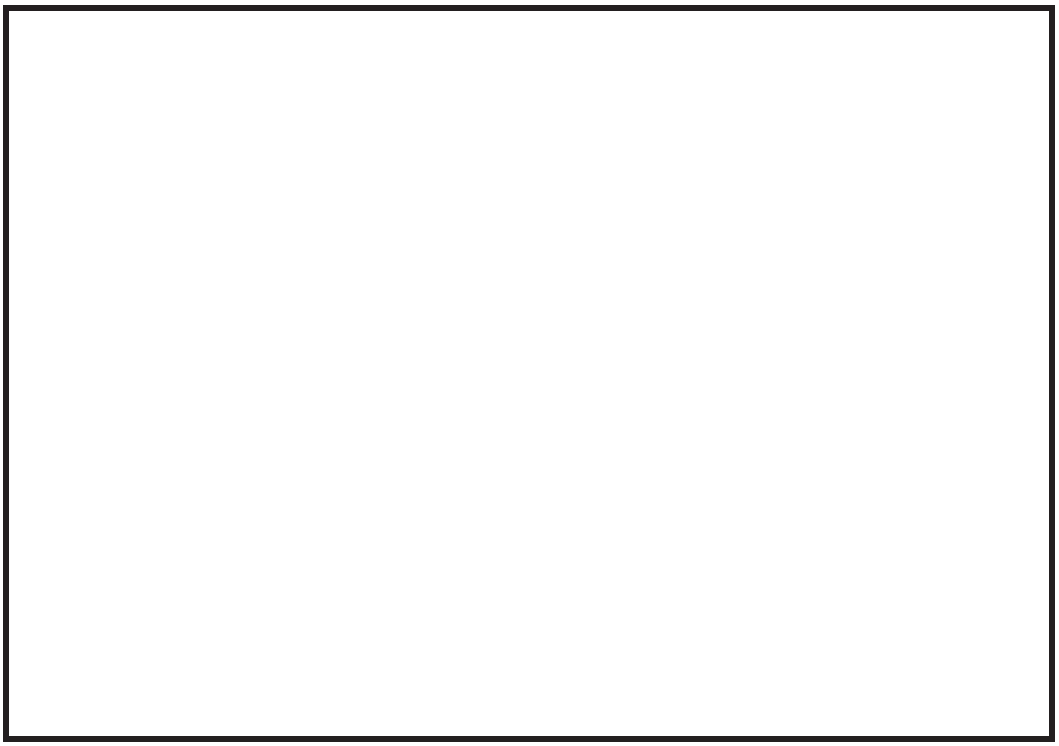
Site Service Supervisor Name: _____

Signature: _____

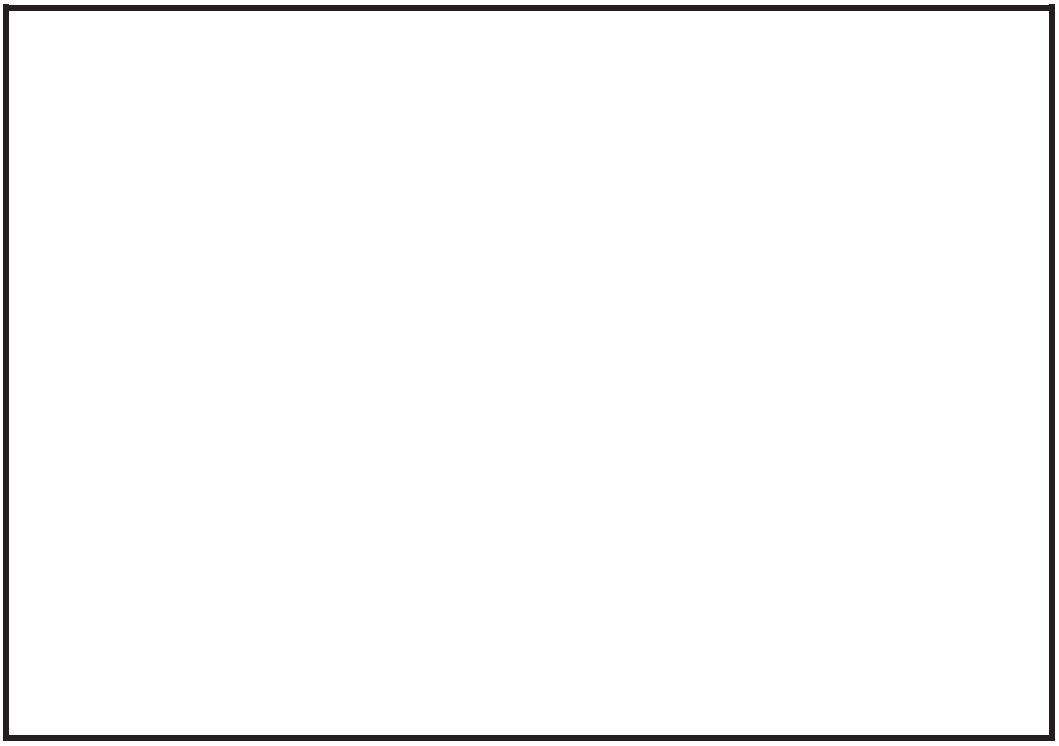
Picture 1: Description



Picture 2: Description



Picture 3: Description



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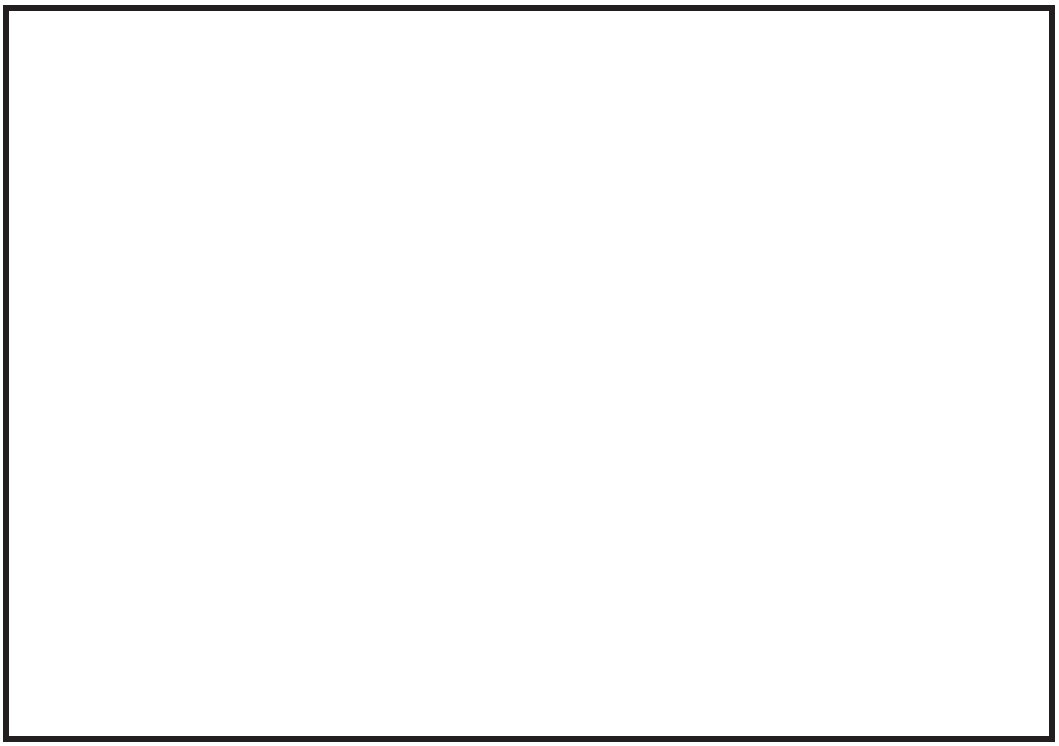

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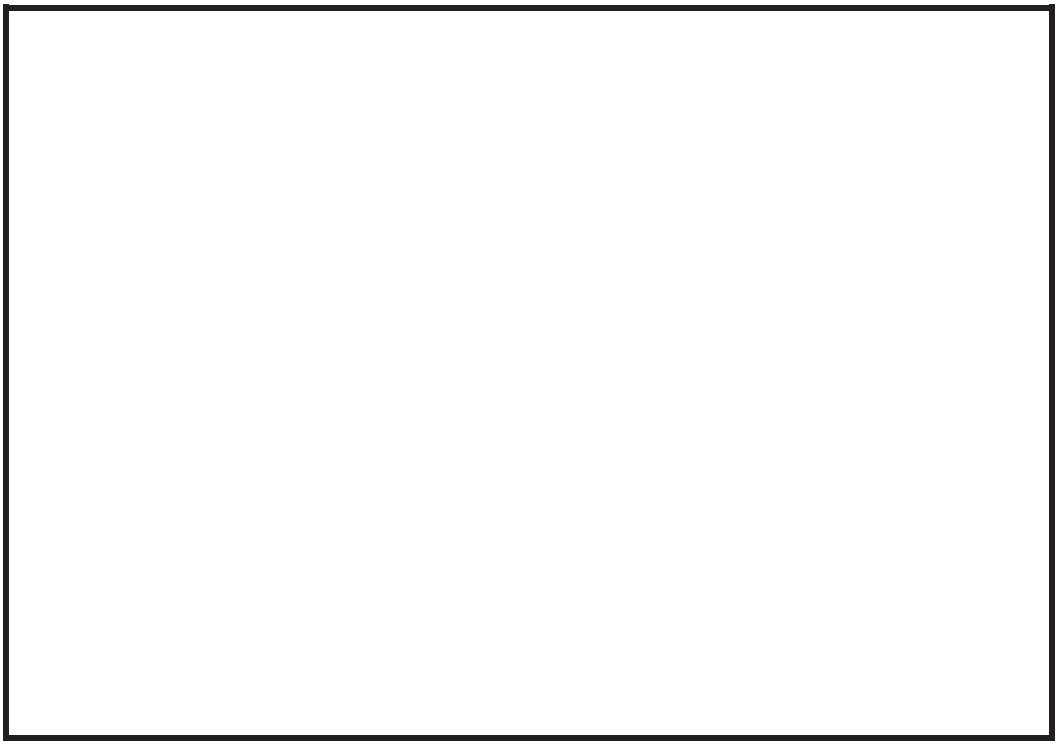


Picture 6: Description

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 :

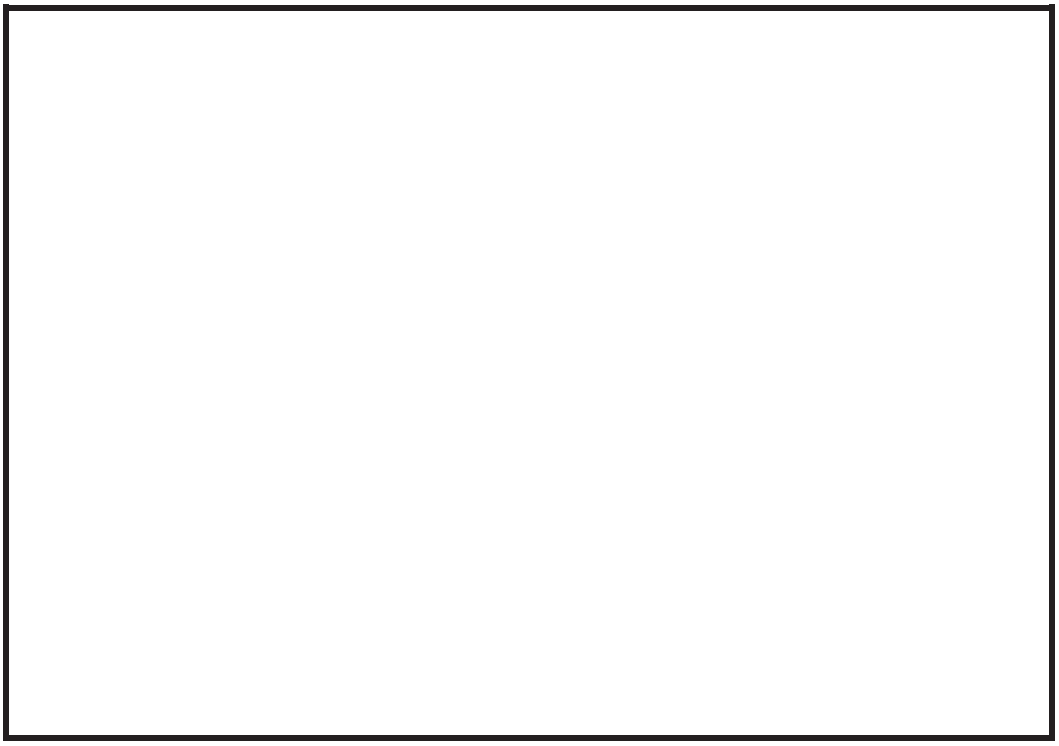
Environmental Personnel Name :

Signature: _____

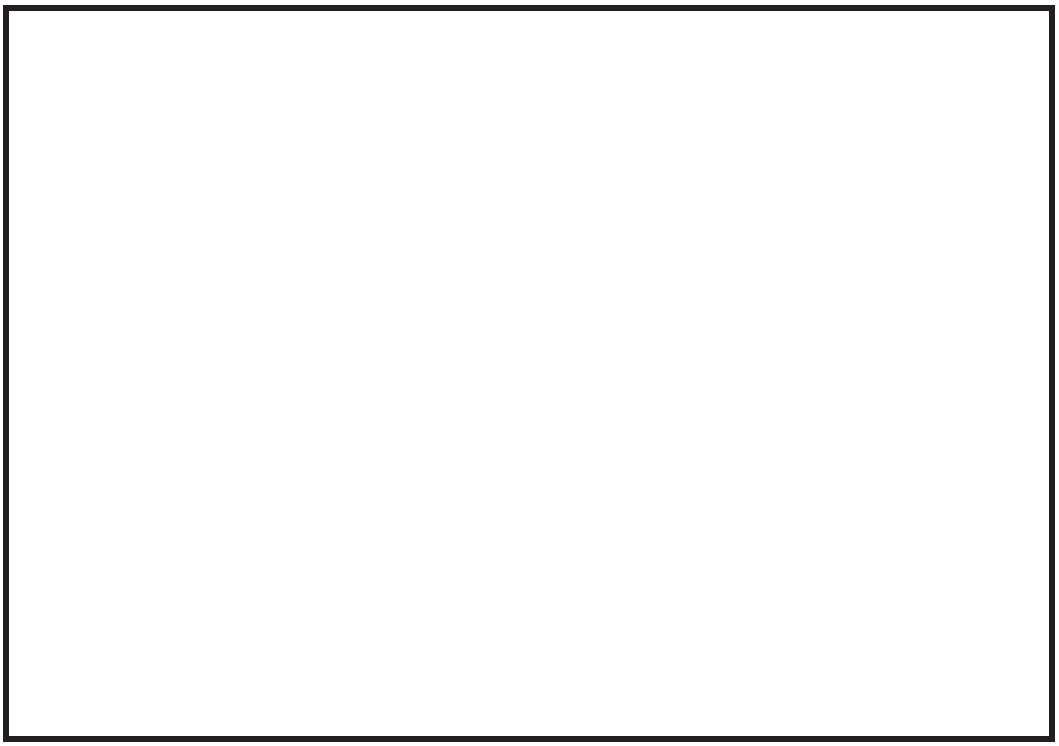
Actions Corrected:
_____
_____
_____
_____

Site Service Supervisor Name: _____

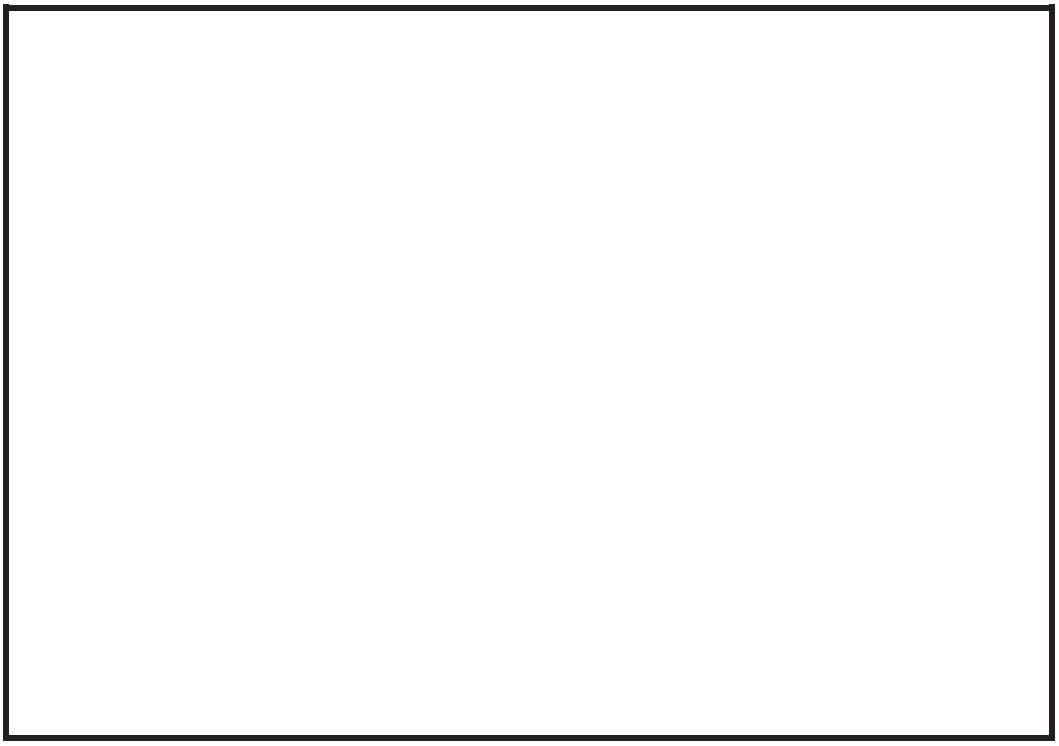
Signature: _____



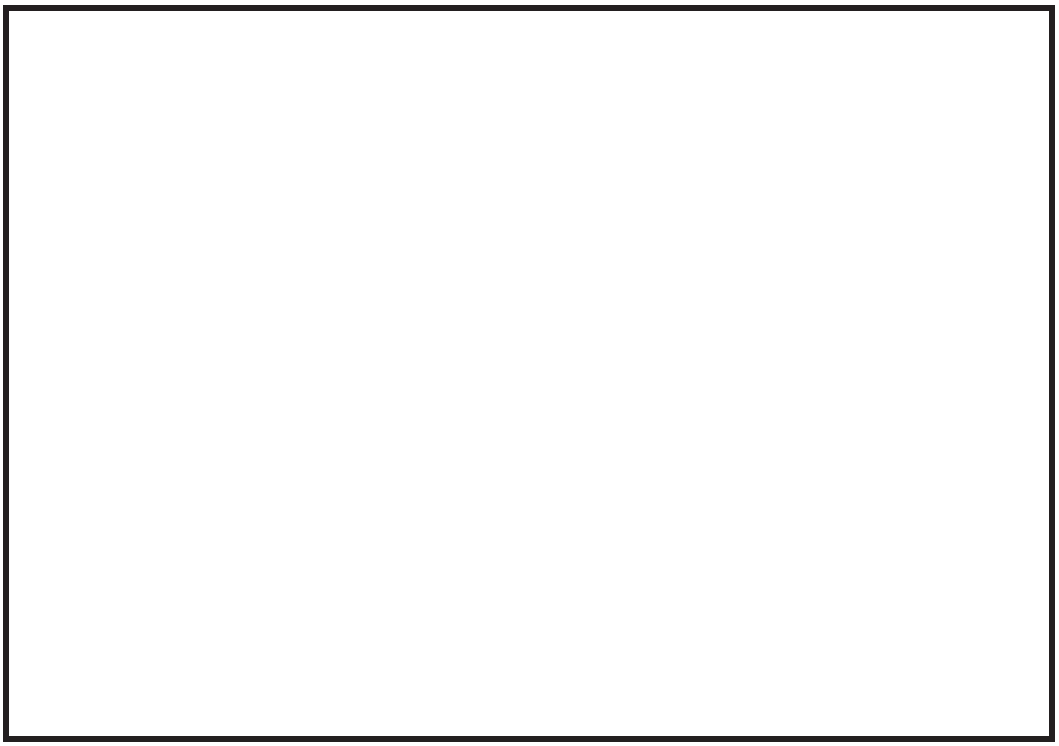
Picture 1: Description



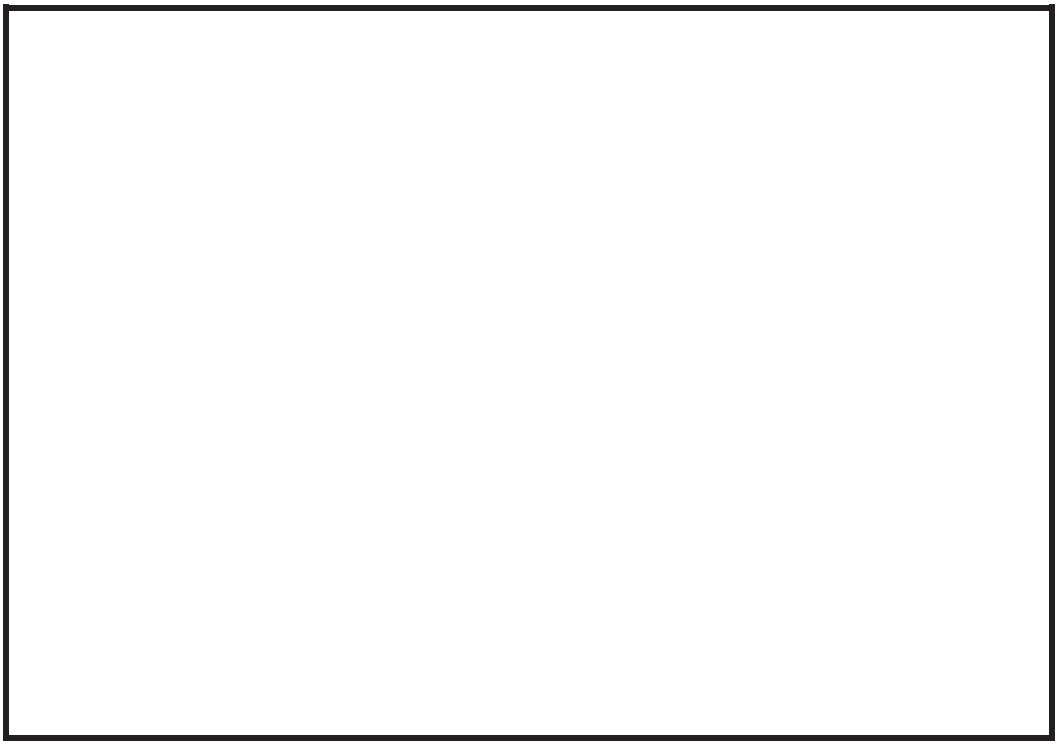
Picture 2: Description



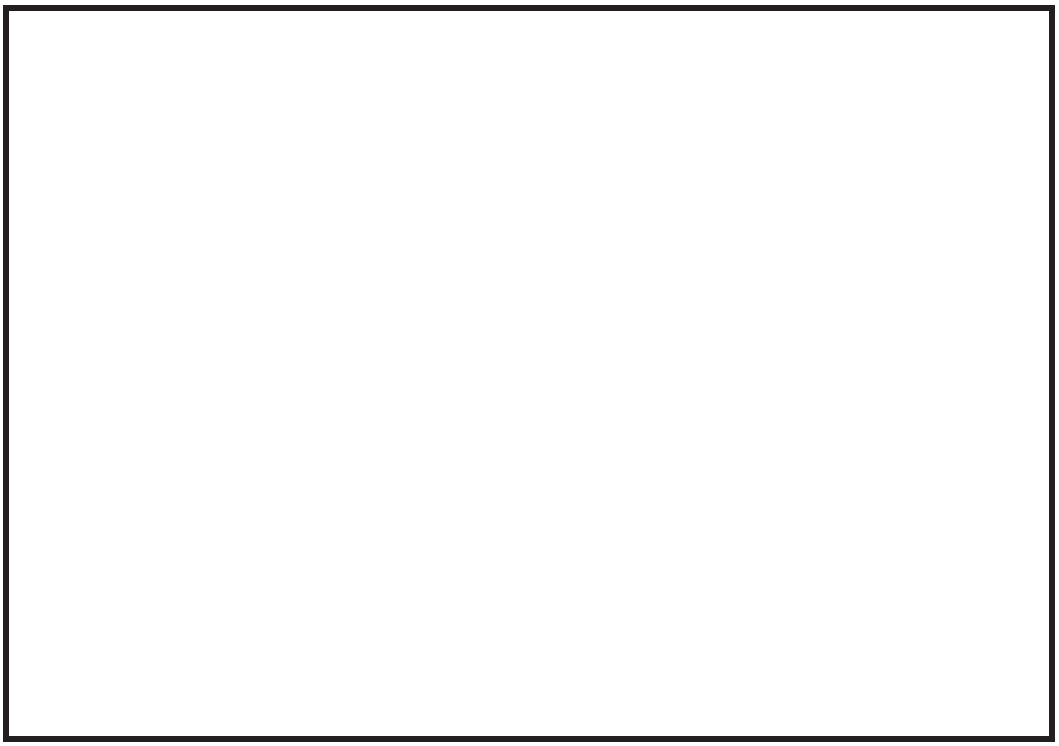
Picture 3: Description



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:

_____

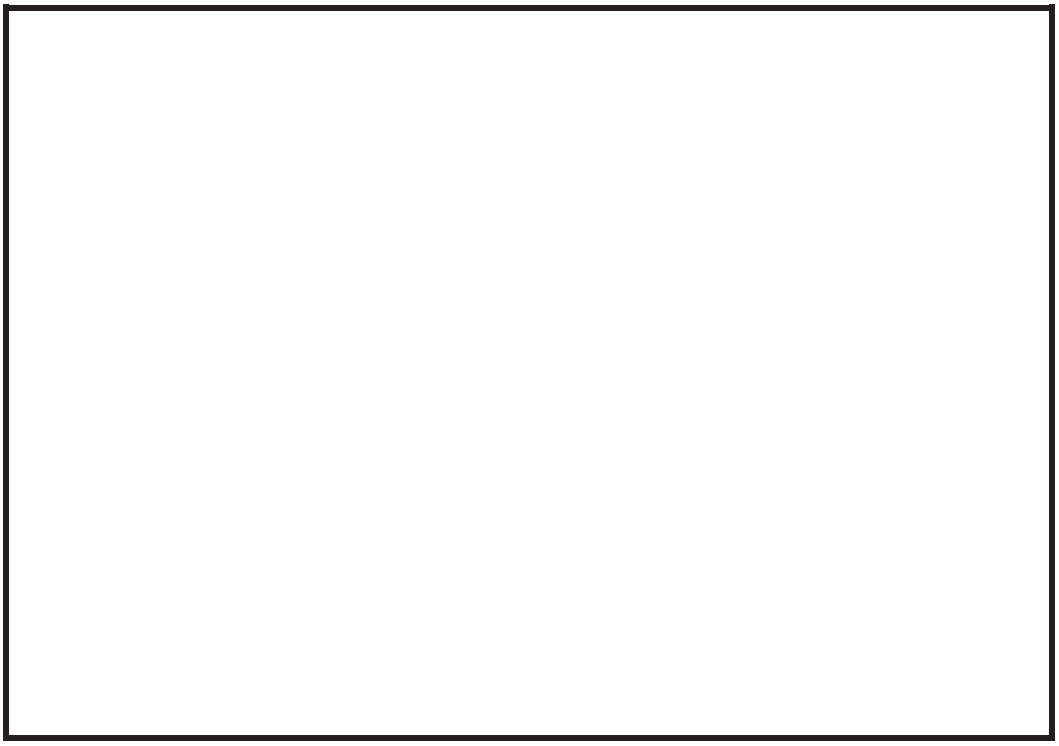
_____

_____

_____

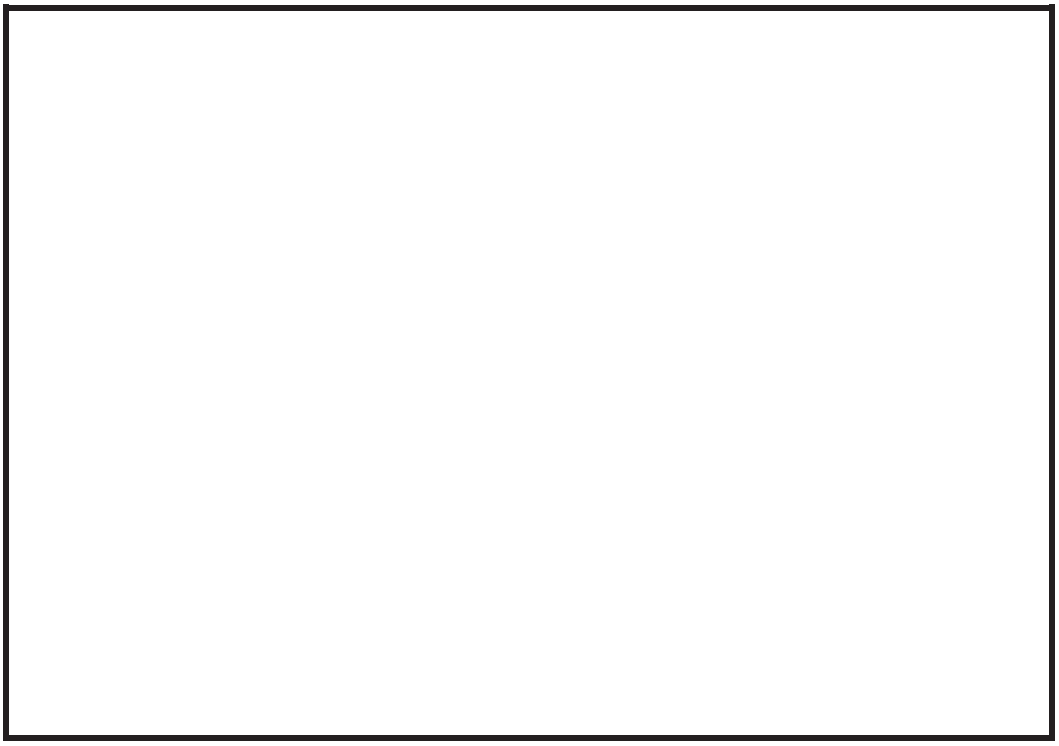
Site Service Supervisor Name: _____

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 SDS 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 SDS** 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 SDS or glove manufacturer;**
    b. Protective eyeglasses or chemical safety goggles or face shield **as recommended by the SDS;**
    c. Lab coat, coveralls or TyvekTM coveralls **as recommended by the SDS; and**
    d. Half mask air-purifying respirator with cartridges and/filters **as recommended by the SDS 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. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;

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 Complex. 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 SDS 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 SDS** 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 SDS or glove manufacturer**;
    b) Protective eyeglasses or chemical safety goggles or face shield **as recommended by the SDS;**
    c) Lab coat, coveralls or TyvekTM coveralls **as recommended by the SDS;**
    d) Shoe covers or rubber boots;
    e) Half mask air-purifying respirator with cartridges and/filters **as recommended by the SDS 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 Complex.

The following is a general spill response procedure for compressed gases. Consult the SDS 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 SDS** 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 Complex. The following is a general spill response procedure for flammable or combustible liquids, particularly petroleum hydrocarbon products. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 Environment and Critical Infrastructures 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 Complex. The following is a general spill response procedure for liquid oxidizer compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS**; and
    e) Half mask air-purifying respirator with cartridges and/or filters **as recommended by the SDS 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 SDS**.*
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 SDS**. 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 and Critical Infrastructures 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 Complex.

The following is a general spill response procedure for solid oxidizer compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 SDS**, 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 Complex. 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 SDS** 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 SDS 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 SDS** (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 Complex.

The following is a general spill response procedure for liquid acid compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 SDS;**

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

*spill area with water unless the **SDS** 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 **SDS-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 SDS** 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 Environment and Critical Infrastructures 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 Complex.

The following is a general spill response procedure for solid acid compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 SDS;**
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 SDS** (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 Complex.

The following is a general spill response procedure for liquid alkali or base compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 SDS;**

    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 SDS-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 SDS**, 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 Environment and Critical Infrastructures 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 Complex.

The following is a general spill response procedure for solid alkali or base compounds. Consult the SDS 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 SDS** 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 SDS 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 SDS 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 SDS**;

    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

Dyno Nobel Emergency Response Plan

DYNO NOBEL CANADA

EMERGENCY RESPONSE PLAN

AMARUQ NUNAVUT

REVISION STATUS

Revision #	Date	Revision Description	By	Checked by	Approved by	Revision Due
1.0	July 31, 2019	New Standard	P.St-Georges	D. Wall; P. Piprell	T. Medak	
1.1	October 26, 2020	Site Manager change		P.Piprell a& Shanno Ryan	T.Medak	
1.2	October 26, 2021	Review ERP	PSt-G.			October 2022
1.3	October 26, 2022	Review ERP Mod. In Blue*	P.St-G.			October 2023
1.4	October 17, 2023	Review ERP Mod. In Blue*	P.St-G.			October 2024

* Modification done in the site ERP are in blue

Approved for release by:

Signature: Patrick Piprell _____ Date: October 17, 2023
Title: Site Supervisor

CONTENTS

External Reports

All incident involving the manufacturing, importation, exportation, sales or storage of explosives and restricted components, and the use of fireworks, must be reported to the Chief Inspector of Explosives as soon as circumstances permit. For accident involving fatality, serious injuries or major property damage, call 1-855-912-0012 as soon as possible. All other accident/incidents must be reported to 1-613-948-5200. The completed Explosive Incident Report form F07-01 should be sent by email to ERDmms@nrcan.gc.ca or by fax to 613-948-5195. The inspector of explosives responsible for your area should also be contacted.

1.0 SITE INFORMATION

The entrance to the site is south of AMARUQ mine site at the Explosive Manufacturing Road (EMR).
Latitude (North): 65° 23'43.45"N
Longitude (West): 96° 44'1.00"W
Office: +1 819 759-3555 ext 4606808

2.0 PURPOSE

The purpose of the 'Emergency Response Plan' is to provide guidelines for the protection of all employees and company property in the event of an emergency occurring on company premises. It outlines the setting up of emergency control within the site and the emergency procedures in place to ensure the safety and protection of people, property and the environment.

- Notifying all on-site personnel of emergencies.
- Organizing the site based emergency response, where applicable.
- Facilitating communications with Emergency Services.
- The plan provides procedures for:

  - Training of site personnel in emergency response.
  - Reviewing and updating emergency procedures.
  - Facilitating recovery operations.

To provide a management system for Dyno Nobel Canada and stakeholders, to deal with emergencies to protect people, property and the environment.

Objectives:

- To minimize adverse effects on people, property and the environment
- To control or limit the effects of an emergency
- To facilitate an emergency response and to provide appropriate assistance to the emergency services
- To communicate vital information to all relevant persons as soon as possible
- To provide for competency-based training so that a high level of preparedness can be continually maintained
- To provide a basis for updating and reviewing emergency procedures
- To provide a system to manage an emergency
- To link current site plans with the corporate plan
- To identify and utilize an effective communication system

3.0 SCOPE

This plan has been prepared for Dyno Nobel Canada Inc. The plan covers the emergency response requirements for Dyno Nobel's AMARUQ Operations.

SCOPE OF OPERATION

Bulk Explosives Factory Site includes;

Emulsion Manufacturing site
storage of emulsion, Ammonium Nitrate 182,500 NEQ
- 50,000 liters of diesel;

4.0 REFERENCES

- Site Emergency Response Plan (Template)
- Emergency Risk Assessment Worksheet
- IPL HSE MS Element 9.1, Emergency Response Planning
- CSA-Z731-03 Standard – Emergency Procedures
- Regulatory Agencies, Groups, Industry and Community
- Environmental Emergency Regulation – Environment Canada

The regulatory agencies administering explosives are:

- Transportation of Dangerous Goods (TDG)
- Natural Resource Canada (NRC)
- Explosives Regulatory Division (ERD)
- Environment Canada (EC)

5.0 EMERGENCIES COVERED UNDER THE PLAN

Based on a risk assessment conducted the following natural or man made disasters could impact our business:

On-site Emergencies

- White outs
- High Winds
- Explosion – equipment (boiler/fuel or other)
- Fire in plant
- Injury or illness
- Wildlife interaction (wolverine; bear; caribou; other)
- Environmental contamination
- Spills
- Severe weather
- Product shortage
- Raw ingredient shortage
- Critical replacement parts unavailable
- NOX gas release possible.

Off-site Emergencies (including transportation)

- Transportation incident rollover or collision
- Blast pattern incident with drill
- Blast pattern incident near highwall
- Blast patten incident – lightning
- Fire –threat to vehicle
- Fire – toxic fumes
- Explosion – product detonation
- Security
- Injury or illness
- Wildlife interaction (wolverine; bear; caribou; other)
- Spills
- Severe weather
- NOX gas release possible.

6.0 HAZARDOUS OPERATIONS

The following zones, activities and equipment are hazardous and may require an emergency response:
The following is a prioritized list of hazardous operations and storage areas.

	Operation	Comments / Instructions
1.	Manufacture Emulsion	Plant and emulsion storage with chemicals. Emulsion storage in ISO tank.
2.	Operating loader	Yard; site access road
3.	Fuel storage area (bulk)	Bulk tank in yard
4.	Product delivery to blast pattern	Plant; Site yard; Mine road; pit
5.	Driving on a pattern	Pit
6.	Transferring chemicals	Plant; Process vehicles
7.	PTW activities	Confined Space Entry; Working at Height; Hot Work; Loading and unloading (Emulsion, Traces, Fuel); Lockout/Tagout; Critical Lifts

7.0 HAZARD CHEMICALS AND MATERIALS

The following is a prioritized list of or hazardous chemicals, materials and intermediates of significant quanities on site or transported by site:

	Chemical / Material	Quanties	Location
1.	Fuel oil	50,000L	Outside plant
2.	Trace 1 (citric acid)	284 L	
3.	Trace 2 (sodium nitrite)	284 L	
4.	ANP	120,000 kg	Outside

8.0 EMERGENCY CONTACT INFORMATION

Dial 6-9-1-1 in an emergency or call CODE 1 – CODE 1 – CODE 1

Non-Emergency Police / Fire

- Baker Lake RCMP (867) 93-1111

Regulatory Contacts: (NRCan via H&S or Regulatory Compliance Manager)

- H&S: Seamus Kilcommons Cell: 403 815-4066
- Reg: Pierre St-Georges Cell: 613 677-1051

DN Title	Name	Cell Phone	Work Phone	Home Phone
Manager of the Site	Patrick Piprell & Shannon Ryan	NA	819 759-3555 EXT 4606608	
Operations Manager	Krisnar Cruz	587-839-0654	587-839-0654	
General Manager	Jim O'Brien	913-940-5170	913-940-5170	
HSEC Manager	Seamus Kilcommons	403-837-2685	403-723-7547	
Emergency Supervisor (ES)	Shannon Ryan Patrick Piprell		819-759-3555 EXT: 4606808	

Local Emergency Services may be required to take control of the emergency situation. Dyno Nobel personnel will assist the Local Emergency Services with information and advice and will ensure that the Emergency Services are briefed with all appropriate information when attempting to take control of the situation.

9.0 EMERGENCY FUNCTIONS AND RESPONSIBILITIES

The following people will participate in emergency planning and crisis management.

Name	Role / Responsibitlies
	Responsible for updating emergency response plan
Patrick Piprell & Shannon Ryan	Site Supervisors will be the EMERGENCY MANAGER, or in his/her absence the next most senior manager on site will assume this role. Responsibilities are to ensure ERP is site specific: Lead drills twice a year
Jim O'Brien	General Manager: Overall reviewer and sign off. General Manager; Media Liaison.
Krisnar Cruz	Operations Manager: responsible to review and ensure adequate: review of drills conducted; Bulk Site Operations Advisor
Seamus Kilcommons	HSEC Manager: responsible to review and ensure adequate: review of drills conducted; Liaison with regulatory authorities

Benoit Choquette	Environment Manager; Liaison with relevant regulatory authorities
Pierre St Georges	Regulatory Compliance Manager; Liaison with all relevant regulatory authorities

Emergency response responsibilities for all personnel on site are describe as follows:

Roles	Responsibilities
Emergency Manager (EM)	This position will usually be filled by the Site Supervisor / Acting Site Supervisor and will be responsible for: • Overall responsibility for management of the emergency. • Contact with other external organizations (e.g. Police) • Contact with employees and relatives • Declaration of "All clear" to approve re-entry • Implementation of the DNA Crisis Communication Plan
Emergency Supervisor (ES)	This position will usually be filled by the one of the operators or designate and will be responsible for: • Liaison with the EM. • Arrange the removal of equipment (e.g. truck explosives). • On-site security. • Collect visitors book during evacuation (if safe to do so) • Conducting head count of all personnel on site In the event that there is only 1 person on site then that person will assume responsibilities of both the EM & ES.
Other personnel on site	This position will usually be filled by any other employee on site. • If safe to do so, personnel holding appropriate licenses will attempt to remove all explosive trucks from the vicinity of the fire and shut down all equipment. • Follow the direction by EM to control the situation (e.g. extinguish fire) if directed • Make their way to the nearest designated evacuation point. • Visitors and contractors must proceed directly to the evacuation / muster point: The scale house.

10.0 ALARM COMMUNICATION SYSTEM

- Type of warning/alarm system (including back-up): Alarms tied into AMARUQ mine site Notified system to security / ERT
- The communication system used: Two way radios and phone
- Location of Alarms: Emulsion plant and office – Internal and external alarms

- We will communicate an on-site in an emergency situation to employees by:
- Alarm System Bell. In the event of a disaster we will communicate with employees by: Two way radio
- In case of an emergency the triggered alarm communicate with the bitshop, crusher pad, magazines pads. The employees will gather at the muster point where a head count will be performed.
- In event no one is on site, the alarm system will activate by: Automatic alarm: sensored for smoke and heat??
- We will test the warning system and record results at least __1___ time per year. Results are recorded by the mine. Mine owns the Dyno Nobel building

11.0 EMERGENCY RESPONSE EQUIPMENT

The following emergency response equipment is located on site:

Location	Equipment
Emulsion plant	**Spill Kits; Fire extinguishers; First Aid Kits**
Process Vehicles	**Spill Kits; Fire extinguishers; First Aid Kits**
Pickup trucks	**Fire extinguishers; First Aid Kits**

EMERGENCY RESPONSE KITS & MATERIAL

All DNCI worksites will maintain the following emergency response equipment, that is appropriately packaged, stored and easily loaded onto a pick-up truck and / or aircraft for immediate transfer to an accident scene:

VERIFY WHAT IS READILY AVAILABLE IN SPILL KITS AS PER LIST BELOW

I - Spill Recovery Material
1000 ft. of 3 inch fluorescent yellow security tape
3 explosion-proof lanterns / flashlights
1 roll (200 ft.) of 10 mil. clear plastic for ground or product cover
3 "explosives" signs plus assorted 1.1 / 1.5 "placards and labels"
4 polyethylene / non-ferrous 45 gal. drums with removable lids
1 doz. large heavy duty garbage bags (to line drums and for trash)
3 non-ferrous shovels
1 spill kit containing 1 - 25 lb. bag of granular absorbent material
30 ft. of 5 in. sorbent booms
10 ft of 3 in. sorbent socks

1 case of sorbent pads
1 - 3 ft. x 3 ft. neoprene sheet (drain seal)
6 heavy-duty cardboard boxes for repackaging broken boxes
2 rolls of 3″ duct tape
2 rolls of 3″ packing tape
1 push broom
6 blank (TDG) shipping documents

II – Personal Protective Equipment
6 reflective safety vests
6 safety "goggles"
6 particulate respirators (dust masks)
1 doz. disposable ear plugs
6 pr. nitrile gloves
6 pr. cotton gloves
Industrial First Aid Kit

(Note: all DNCI Emergency Responders must wear CSA approved protective footwear and Type II (lateral protection) hard hats when on the job. As well, a camera should be readily available to photograph the scene of an accident and remedial measures for inclusion in the accident investigation report).

An inventory list of the emergency response kit/material will be kept with the cache, which must be inspected quarterly, to ensure the contents are present and in good working order (note: Emergency response kit cache may be witness/lock-wired closed, in which case only an annual verification that the contents are present and in good working order is necessary, so long as the witness/lock-wire is present and unbroken).

12.0 EMERGENCY CONTROL CENTER

The Site Manager or Supervisor will nominate the most appropriate location of the Site Emergency Control Centre when all site personnel, contractors and visitors have mustered at the designed evacuation area. The Site Emergency Control Centre will depend upon type and location of the emergency.

In the event of an emergency that requires all personnel to be evacuated from the site, the Site Emergency Control Center will be located at the main gate.

13.0 EMERGENCY INSTRUCTIONS

- Ring the alarm.
- Evacuation Procedure.
- Evacuation of people includes alarms, designation of staging areas and alternative routes/assembly points, and a system of head counts to determine if all individuals have been evacuated.

- Activating the emergency plan.
- Activating the emergency services.
- Terminating the emergency.
- Health and safety functions, such as roll call and search and rescue.
- To identify those responsible for conducting this work and detail procedure to clean and contain spills.

13.1 EXTREME TEMPERATURES

Working in cold environments can be not only hazardous to your health but also life threatening. It is critical that the body be able to preserve core body temperature steady at + 37°C (+ 98.6°F). This thermal balance must be maintained to preserve normal body functioning as well as provide energy for activity (or work!). The body's mechanisms for generating heat (its metabolism) has to meet the challenge presented by low temperature, wind and wetness - the three major challenges of cold environments.

Uncomfortably cold working conditions can lead to lower work efficiency and higher accident rates. Cold impairs the performance of complex mental tasks. Manual tasks are also impaired because the sensitivity and dexterity of fingers are reduced in the cold. At even lower temperatures, the cold affects the deeper muscles resulting in reduced muscular strength and stiffened joints. Mental alertness is reduced due to cold-related discomfort. For all these reasons accidents are more likely to occur in very cold working conditions.

Protective clothing is needed for work at or below 4°C. Clothing should be selected to suit the temperature, weather conditions (e.g., wind speed, rain), the level and duration of activity, and job design. These factors are important to consider so that you can regulate the amount of heat and perspiration you generate while working. If the work pace is too fast or if the type and amount of clothing are not properly selected, excessive sweating may occur. The clothing next to body will become wet and the insulation value of the clothing will decrease dramatically. This increases the risk for cold injuries.

13.2 INJURY/ILLNESS

Medical emergencies may arise due to serious injury caused by machinery, entrapment, heart stoke. Limited first aid is available on site and casualties would likely be transferred by ambulance to nearess Hospital for treatment. A transport vehicle is always readily available on site for transportation needs. The site is accesible to local emergency services at all time.

A means of communication is mandatory for all employees working on site at all time. For emergencies requiring immediate medical attention, quickly assess the scene then call for assistance. Qualified Site First Aiders will assess the casualty, and if required, **call 6911** or CODE 1 – CODE 1 – CODE 1 on Two Way radio

The site has several trained first aid attendants and these people will be the first to assist in an emergency.

FIRST AID ATTENDANTS	EXPIRY DATE
Chris Paul	
Patrick Piprell	
Shannon Ryan	
Aubrey Chaulk	
Billy Harrison	

*** Report incident details in SHAERS database when the Emergency is over.**

13.3 EXPLOSION / FIRE CONTROL PROCEDURE

EXPLOSION

All site personnel should be evacuated as soon as possible. In the event of an explosion the Emergency Services should be contacted immediately and the evacuated personnel assembled at the Muster area. No personnel should enter the site until at least one hour after the explosion or until the resultant fire has burnt out.

Dyno Nobel personnel should restrict access to the plant and nearby area until the Police and emergency services arrive at which time all access roads should be blocked off at a suitable distance. Emergency services should be advised not to enter the site but if they choose to do so they should be fully briefed before entering.

The Dyno Nobel Compliance Manager shall be notified of any explosion immediately so as to inform Government authorities of any incident that has occurred. There should be no attempt made at clean up or repair of the site until authorisation from the appropriate authorities has been received.

13.3 EXPLOSION / FIRE CONTROL PROCEDURE (Continued)

FIRE CONTROL PROCEDURES

Fires will vary in location and the materials involved. Each kind of fire shall have inherent risks associated with them. In general the following guidelines should be adhered to:

- Do not fight a fire that has become established which involves explosives or precursors used in the manufacture of explosives;
- Proceed with extreme caution when fighting fires involving Oxidizing agents as toxic fumes may be evolved;
- Never fight a fire unless you are comfortable to do so and have the correct equipment;
- Always leave an escape route when approaching or fighting a fire; and
- Always fight a fire from upwind.

IF YOU ARE UNABLE TO CONTAIN THE FIRE WITH A FIRE EXTINGUISHER THEN YOU MUST EVACUATE THE AREA.

13.4 SECURITY

The Site can be secured by a locked gate at the main entrance (main emergency exit and gathering point) of the site. Due to 24 hour operation the gate is not locked to allow access for DYNO personell and mine blasters. A sign in, sign out book is located at the main entrance for visitor and employee manlimits as per the site ERD Factory License. Only Dyno Employee's have keys to the locked gate.

'A' & 'B'. Sign includes ; Danger - Explosives, No Trespassing, Penalty-Section 18, Canada Explosives Act, $ 5,000.00 fine. Man Limit. No smoking. A match/lighter box. PPE requirements, and a 24 hour Emergency Contact Number.

13.5 BOMB THREAT

In the event of a "Bomb" threat the telephone operator or other person receiving the call should obtain as much information as possible. Where practicable the person receiving the call should have access to the "Bomb Threat Checklist".

Action if bomb or other explosive device is found:
If object or parcel, suspected of being a "bomb" or other type of explosive device is found by anyone, the following action should be taken:

- Do not touch, tilt or otherwise tamper with the object, whether it is a bomb, improvised explosive device (IED) or other suspect object.
- Immediately evacuate the area surrounding the object.

13.5 BOMB THREAT (Continued)

- Consider the consequential damage and effect - both on site and off site -if process equipment, storages or pipelines are involved.

Use the following guidelines:

- Evacuate the area concerned.
- The possibility of shrapnel must be considered.
- Evacuate all persons to the emergency evacuation area. Safety perimeters must be maintained until the device is rendered safe.
- Quick detailed observations should be taken of a suspected IED. Time spent near an IED must be kept to absolute minimum.

Observations should include:

- Exact location and proximity to hazards such as dangerous chemicals or substances.
- Size, shape and colour of object.
- Any writings or labels appended to the device.
- Any other peculiarities.
- Notify Police simultaneously with the commencement of evacuation.
- approach police upon their arrival to supply all details of information.
- Police will, upon their arrival, coordinate and control all necessary procedures.

13.6 CHEMICAL SPILL/RELEASE

Spills of materials on site are most likely to originate from damaged containers and drums whilst unloading raw materials. The action taken to deal with a spill is dependent on the type of material spilt and the associated hazards with that material.

Environmental considerations should be taken into account when cleaning up a spill. To ensure that the appropriate action is taken to clean up a spill the MSDS (Material Safety Data Sheet) should always be consulted before any clean up attempt is made.

Care should also be taken that the spill does not mix with other raw materials as violent reactions or the generation of toxic fumes may be possible. In the case of reactions or fume generation the emergency services should be called and the area evacuated.

The Ministry of Environment is to be notified. Contact Dyno Nobel Canada Environmental Manager.

13.7 TRESPASSING/VANDALISM

If there has been a breech of security or obvious signs of trespassers, notify the police. Do not disturb scene.

Determine if there has been any damage or theft. Follow instructions of the mine security or police. If there has been a theft of explosive materials proceed to the appropriate section of this Plan.

Take temporary actions to prevent recurrence until permanent actions can be implemented.

13.8 LOSS/THEFT OF EXPLOSIVES

LOSS

Determine the nature of the loss. **Implement** the appropriate sections of the Notification Plan. **Retrace** all routes of travel. **Verify** security and inventory level with personnel at the place of origin and destination. **If material cannot** be accounted for, the HSE Advisor and Site Manager shall notify ERD & the RCMP.

THEFT OF EXPLOSIVES

Immediately call the police. **Implement** the Emergency Notification Plan.

The Site Manager, HSE Advisor or Regional Operations Manager will call, as soon as possible and within 24 hours, the RCMP & ERD. **Determine** exactly what product, how much and code date(s) was stolen from the magazine(s). **Be careful** not to disturb the magazine or its contents so as not to destroy evidence such as fingerprints, shoe marks, etc. **Do not** handle tools or equipment that may have been used to break in. **Allow** Police personnel access but protect the scene from others that may disturb the evidence.

Do not permit news media personnel or any other non-company personnel (excluding Police) to enter the site. **Do not** make any statements to the media or non-company personnel. Refer the media to the Company Spokesperson. **The** Site Manager shall be the direct liaison between the company and the police and regulatory agencies. **Keep a log,** (documentation), of all activities regarding the break-in investigation for the company record. **The** Regional Operations Manager, HSE Advisor, and Site Manager will review all information and determine prevention measures to be taken to deter future break-ins.

13.9 PROCESS LOSS/INTERRUPTION

The possibility of a power outage on the site is very thin. The site has a generator.

13.11 TRANSPORTATION VEHICLE ACCIDENT

Ensure the accident scene is safe. Check if there are injuries. Whether the victim is conscious. Ask someone to call emergency assistance. Provide First aid and take control of the scene of an accident. Take care of the victims until help arrives.

13.12 TRANSPORTATION VEHICLE BREAKDOWN

Call **911** and contact
Regulatory Manager Pierre St-Georges at (613) 677-1051.
Environment manager Benoit Choquette at (514) 249-6285

13.13 BLAST SITE INCIDENT

If the emergency involves a blasting incident, the crew at the blast site shall follow the emergency instructions outlined in the Blasting Guidelines and Procedures. This site shall implement the appropriate sections of the Notification Plan as directed. The site shall support the blasting crew with personnel and equipment as needed.

13.14 TRANSPORTATION CHEMICAL SPILL

Initiate the ERAP by calling 1-800-367-4629 and call 911. The Emergency Response Advisor will contact the authorities.

Determine what material(s) has spilled or leaked and secure the area. Do not walk through the spilled material. **Put** on appropriate Personal Protective Equipment.

Protect the area from ignition sources. If a vehicle is involved, engage the battery disconnect switch. **Keep** unauthorized persons away.

Make every effort to confine and contain the spill, using spill kit and all available resources. **Determine** the source of the spill, and stop the leak if possible. **Make** every attempt to see that the material does not reach any waterway. **Prevent** rain or water from coming in contact with the product. Diking may be possible with gravel, soil or any ground material. **Use** what resources you have to begin cleaning up the product, outside equipment may be required. **Return** uncontaminated product to the original containers.

If the material has spilled into a waterway, an outside clean-up contractor will be called to assist with the clean-up operation. Call the main office as soon as possible. Seek corporate counsel as soon as the situation is stable.

13.15 TRANSPORTATION FIRE/EXPLOSION INCIDENT

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 of an explosion. Help organize perimeter guards to prevent people from entering the evacuation zone. The minimal distance to evacuate for a 20,000 kg tanker is 1.2 km or 4000 feet.

14.0 AMMONIUM NITRATE (E2 REGULATION)

14.1 Physical and chemical properties

Ammonium nitrate in solid form (prill) is of a light or off-light color and is commercially available in small beads of various sizes. It gives off a light ammonia smell. It is considered an oxidizer (risk class 5.1). Its density varies between 0.72 and 1.0 g/cc. Its solubility in water is high at 192 g/100 ml at 20°C. Its boiling point (decomposition) varies between 177 and 210 °C and its fusion point is 170°C.

Ammonium nitrate is stable in normal conditions. However, when involved in a fire, it will give off toxic compounds of nitrogen oxides and may emit ammonia vapors in the air. When confined or exposed at high temperatures, it can explode. It becomes more sensitive to explosion when contaminated by organic matters or other combustible materials.

14.2 Potential environmental impact

Ammonium nitrate is a fertilizer composed of nitrate ion (NO_3^-) and ammonium nitrogen ion (NH_4^+). Nitrate is essential to life. Most crop requires a large quantity of nitrates to support growth. In moderate quantities, nitrate is a harmless component of food and water. The nitrate ions are very soluble in water. They are easily solubilized and transported by surface and groundwater. Ammonium nitrogen is a reduced form of nitrogen which has the potential in water to release ammonia gas and be toxic to aquatic life. This ion is not very mobile in soils. This ion normally stays attached to clay or humus soil particles. Ammonium nitrogen will normally be converted in nitrates by soil bacteria in a few weeks.

A high level of nutrients (nitrates) combined with the presence of phosphorus in water support the rapid growth of algae and aquatic plants in water. It may reduce dissolved oxygen level in water. Insufficient oxygen levels may create dead zones where fish species requiring cold and well oxygenated water could no longer live in. Nitrates can therefore contribute to the eutrophication phenomena of lakes and rivers. The closest water bodies that can be impacted by a spill are located within a kilometer of the plant site and testing is completed by Meadowbank environment regularly. No potable water wells are present at the site.

14.3 What to do in case of a spill

In case of a spill, the product must be recovered rapidly to avoid exposure to water. Protect it with tarp and build berms around it if necessary to avoid exposure to surface water and rain. Avoid any contact with a flame. The product can be recovered manually using plastic shovels or brooms and put into plastic bags or containers. A HEPA filter can also be used if desired. In case of a very large spill, the product can be recovered using a mechanical shovel or loader and put in a sealed steel (20 cubic yards) bin equipped with a cover. The bin must be clean and not contaminated by any organic material.

In low concentrations in water, nitrates will be absorbed by surrounding vegetation and will support their growth. If there are water wells nearby, there is a potential to contaminate the potable water. The drinking water standards for nitrates is 10 mg/l (as N). Therefore, prevent contaminated water to enter sanitary and surface water drains. Recovered product can be re-used if clean, recycled as a fertilizer or disposed off-site as an oxidizer to an approved waste disposal company. Do not fight fires involving ammonium nitrate because of the risks of explosion.

14.4 Maximum quantity planned during the year:

10,000,000 kg.

14.5 Location of the subtance :

In seacans at plant site (EMR)

14.6 Training required for emergency responders

- First aid
- Transportation of Dangerous Goods
- WHMIS
- Emergency Response Plan (this plan)

Emergency Response equipment

- Danger tape
- Tote bags with internal plastic liner
- Plastic shovels
- Drain cover
- Brooms
- Polyethylene tarps

Note: equipment must be readily available at the Quaatuq location.

14.7 Personnel Protective Equipment

- Reflective vests
- Safety Glasses
- Dust masks
- Plastic gloves
- Safety boots
- First aid kit

Note: equipment must be readily available at the Quaatuq site location.

15.0 TRAFFIC CONTROL

In the event of an emergency it is essential that the traffic movements to the site be limited to essential vehicles only. The control of traffic will be achieved by posting sentries at the evacuation point. The sentry shall use the company vehicles onsite so that they can stay in contact via cell phone with the Emergency Manager or Emergency Services Coordinator.

During an emergency the only vehicles that will be allowed to enter the site will be:

- Emergency Services;
- Any equipment providers which have been requested to attend to the emergency; and
- Dyno Nobel personnel that are directly involved in the response effort.

Any other entry to site will require the permission of the Emergency Manager after consultation with the Emergency Services Coordinator.

If an employee or visitor is injured and can safely be transported to the mine without incurring additional harm to the employee/worker, or posing any additional risk to the safety of the person, Dyno vehilces can be used to transport.
Where specific stabilization of an injured person is required, or where moving an injured person may result more serious injury or life threatening concerns, the injured person is to be stabilized as per first aid training and AMARUQ emergency services dispatched to site.

In the event that there is a chance of an explosion or release of toxic fumes roadblocks should be at least **1200m** from the scene.

The Mine security or local Police are the only personnel authorised to close any public roads, as a result, the need to close the road should be established early. The road would need to be closed at a distance of no less than **1200m** from the facility in order to prevent damage to vehicles or people outside the site.

16.0 PROTECTION OF VITAL ASSETS / EMERGENCY SHUTDOWN

Under no circumstance are lives to be put at unacceptable risk in order to preserve material assets or intellectual property.

To avoid knock on effects of an emergency such as escalated destruction or business disruption, consideration should be given to preserve critical company assets by shutdown or removal of equipment such as:

- Mobile Processing Units (MPU's)
- Raw Materials/Handling equipment

Materials handling equipment and energy sources should be shutdown or isolated by activating emergency stop buttons or closing valves on the following systems:

- Electrical

Isolation are clearly identified by color coded labeling. All personnel must know location and operation of these devices.

- Switches

The decision to isolate energy sources or remove assets may be made at the time of evacuation notification or post evacuation by the Emergency Manager or Supervisor. Either way, this action must not be made if it is considered that it will not delay the evacuation process or put personnel at an unacceptable level of risk in terms personal injury or health.

Energy Source / Equipment	Type of Isolation	Location
Electrical Systems & Equipment	Switch	

17.0 SEARCH AND RESCUE

Search and rescue shall be the responsibility of emergency services only as Dyno Nobel are not equipped to carry out search and rescue operations in a safe manner.

Search and rescue operations should only be conducted if it is safe to do so and if there is no potential of an explosion occurring. Very careful consideration should be made to limiting casualties.

Before attempting search and rescue, personnel must be knowledgeable of the following:

- Site layout;
- Hazardous effects from hazardous substances;
- Fumes/poisoning;
- Explosion;
- Burns;
- Use of proper PPE;
- Breathing apparatus;
- Fire extinguishers;
- Recovery gear;
- Practiced search and rescue techniques; and
- Possible casualties.

18.0 RECOVERY PLAN

The Emergency Manager has the responsibility to declare the emergency over after consultation and agreement with Local Emergency Services:

- When the damage is localised to the extent that normal operations could resume in unaffected areas;
- Work in unaffected areas will not contaminate the emergency scene and destroy causal evidence;
- Affected areas are secure with actual or potential energy sources neutralized and controlled; and
- The all clear / re-entry approval should be communicated to all personnel in consideration of any special conditions.

19.0 CLEAN UP

Environmental aspects and impacts need to be considered when dealing with chemical waste and approval for disposal of chemicals must be obtained before disposal.

20.0 RESUMPTION OF BUSINESS

The EM will carry out the following:

- Arrange for appropriate personnel to complete a risk assessment of the area and assess the impact of the emergency; and
- Provide DNA appropriate personnel with an update as soon as practicable.

In conjunction with Dyno Nobel's VP of HSEQ and VP of Operations, the Emergency Manager shall develop an action plan to ensure that:

- The site is secure and safe for all personnel;
- Pollution due to leaking storages and firewater run-off is minimised;
- Production facilities are re-established; and
- Supply contingencies are activated.

Senior Management shall be informed of any loss and they will ensure that the underwriters are informed. It is essential that all costs of recovery and increased costs due to the incident be identified.

21.0 CRISIS COMMUNICATION PLAN

The Site Media plan is only activated if the media has arrived at your site and is asking questions.

If the media is contacting you by phone, fax or email, refer them to Diana Roising, Crisis Media Advisor in Salt Lake City, cell: 801- 321 5338 or office: 801 328 6536

IF THE MEDIA HAS ARRIVED AT YOUR SITE

The First Critical Statement may be made by a trained spokesperson (generally the Manager on Site) who has received permission from a member of the DNA Crisis Management Team. ***In most cases Media contact will be referred to the General Manager, Mike Soter, or his designate.***

If permission is granted, the Supervisor of the Site should fill in the information in the First Critical Statement template

After the statement is presented to the media on site, it is important not to attempt to answer additional questions. All other information will be done at the direction of the DNA Crisis Management Team, unless otherwise directed.

If additional personnel are available, have an assistant to this spokesperson remain behind to gather business cards and write down questions while the spokesperson leaves. This person must NOT answer any questions

Fax/email a copy of the Statement to DNA Crisis Management Team member and wait for further instructions

When the Media Arrives at Your Site Say ONLY the following:

Site Media Statement

At approximately _____ am/pm on _____ we experienced

_____

_____

(Only obvious facts - No explanation - No elaboration)

This is all I can confirm at the present time. I am sure you understand that we are assessing the situation so we can provide the most accurate information.

Our company spokesperson will be in touch with you and other media representatives as soon as possible to provide more information. In the interim, we ask for your patience as we conduct our investigation.

(You are now free to turn and walk away.

(If you are asked additional questions, make the following statement:)

22.0 TRAINING

All Dyno Nobel employees will be trained to cope with an outbreak of fire in the site and MPU operation, at minimum all DNCI employees should be fully trained in the use of fire extinguishers.

All employees shall be trained in the roles they are expected to play during an emergency and/or an evacuation.

Regular evacuation and emergency drills shall be conducted in order to evaluate the effectiveness of the overall strategy and identify any deficiencies in the procedures. Emergency drills should be conducted every six months for DNCI internal drills with at least one of these involving local Emergency Service teams. Local Emergency Service providers shall be briefed on potential site emergencies by the Site Management team.

After conducting drills has a meeting shall be conducted to identify the gaps found during the emergency drill.

Training shall include:

- Fire extinguisher training;
- WHMIS;
- Transportation of Dangerous Goods,
- Emergency Response Training.

23.0 INFORMATION

Emergency procedures are posted on the Safety board. A copy of the Emergency Response Plan was provided to all employees during the Training.

Information on this Emergency Response Plan is recorded electronically on NEXUS.

APPENDIX I – BOMB THREAT

INITIAL INFORMATION:
Date :
Person receiving call:
Exact time of call:
Time of the call end:
Exact words of caller :

QUESTIONS TO ASK	
Where is the bomb?	
When is bomb going to explode?	
What does it look like?	
Did you place the bomb?	
Why?	
Where are you calling from?	
Are you an employee?	
Caller Gender : F / M	Age :

CALLER'S VOICE (circle)				
Calm	Fast	Distinct	Joker	Throat clearing
Angry	Soft	Lisp	Disguised	Deep breathing
Excited	Mocking	Nasal	Loud	Stuttering
Slow	Crying	Irregular	Deep	Mumble

LANGUAGE OF THE CALLER				
Articulate	Educated	Coarse	Irrational	Incoherent
Recorded	Message read by the author of the threat			

BACKGROUND NOISES					
Traffic	Telephone booth	House sound	Music	Motor	Dishes
Soft	Long Distance/Local call	Machinery	Static	None	Animal
Others :					

APPENDIX II – EMPLOYEE ACKNOWLEDGEMENT, REVIEW & TRAINING CERTIFICATION RECORD

Signature indicates that person has been given an opportunity to review and make comments regarding this safe work instruction and revisions. Signature indicates that person has received training about and understands the information contained in this document, related operating procedures, and requirements imposed by this program.

PRINT NAME	SIGNATURE	DATE

Appendix J

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
	2021-03-31	MBK-ENV-PRO-Spill reporting	Casandra DeForge

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 Whale Tail Haul 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. Using Professional Judgement, the Supervisor will determine if the spill is considered to be an Environmental Emergency as defined in the E2 regulations (Schedule 1 substances) (see Figure 8 in Spill Contingency Plan). If the spill is considered to be an Environmental Emergency it must be reported to ECCC and a written report is to be submitted electronically (Schedule 8) via SWIM.

8. 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.
9. Spills on water must be reported **immediately** to the Environmental Department.

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

10. 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 K

2023 Mock Spill in Baker Lake and Annual E2 Simulation in Meadowbank

AGNICO EAGLE
MEADOWBANK COMPLEX

Mock Spill – Post Exercise Report
Baker Lake Fuel Farm Facility

July 2023

Table of Contents

SECTION 1 • PURPOSE

The annual mock spill is directed at operations where there is potential for either land-based or marine based spills to occur. The mock spill attempts to demonstrate using verbal instruction and a practical effective exercise which can be taken to prevent spills and/or reduce the damage that results from a potential spill. The mock spill also emphasizes the need to avoid situations that are a potential danger to human health and safety.

The mock spill attempts to capture the scenarios likely encountered by front line staff. Emphasis is placed on diesel and Jet-A as these products are transferred at Baker Lake. The 2023 mock spill exercise selected diesel as the product spilled during the simulation, but the response would have been the same if Jet-A was the selected product. A total of six (6) individuals participated, including two (2) Agnico Eagle Environment team members, two (2) Agnico Eagle Logistics team members, and two (2) representatives from Intertek on July 14, 2023.

SECTION 2 • SPILL MANAGEMENT

2.1 MOCK SPILL SCENARIO

On July 14, 2023, while inspecting the diesel pipeline at the Baker Lake Marshalling facility, an Intertek employee noticed a leak coming from the main flange on shore. Moments later, the Intertek employee is informed that a piece of equipment has reported contacting the fuel line near the lake resulting in another leak. This scenario simulates a spill with a high potential environmental impact to a water body, as well as a fire hazard. As the two spills will be discovered at the same time, the team will have to manage their resources and workforce to contain both leaks.

For the purpose of this scenario, two water totes of ~1000 L will be placed at different areas of the pipe acting as the diesel spill.

A representative of the environment department will take photos and document the spill scenario as well as act as the "Control Room" responder and the Baker Lake dispatch.

The Intertek employee(s) will be requested to:

- Assemble two orange curtains together on shore and deploy the curtains in the water along the shoreline;
- Manage both locations safely and efficiently with the resources available;
- Control and clean up the spill with available response equipment; and
- Ensure fire hazard control measures are put in place (identify any potential fire hazards and move them out of the line of fire).

2.2 ROLE AND RESPONSIBILITY

- Agnico Eagle Environmental department: Felix Quessy-Savard
  - Role and responsibility: Act as the dispatcher and control room team during the scenario. Provide recommendations to improve the process if deemed necessary.

- Agnico Eagle Environmental department: Thomas Dahm
  - Role and responsibility: Monitored and documented the actions executed by the on-scene workers during the event in order to ensure protocols are followed and to give recommendations to improve the process if deemed necessary.

- Agnico Eagle Logistics department: Vincent Gravel and Frederic Marcotte
  - Role and responsibility: Aid the Intertek crews upon their request to respond to the environmental emergency. Act as the loader operator that stuck and damaged the fuel line causing the major spill.

- Intertek: Derbin Tan and Nacceur Arroah
    - Role and responsibility: Inspecting and monitoring the fuel transfer from the manifold through the permanent pipe up to the fuel farm. Respond to any environmental emergency.

2.3 RESPONSE

- **14:25** A leak coming out of the main flange was spotted by the Intertek team.
    1. Intertek personnel immediately contacted the vessel for them to stop the fuel discharge.
    2. Code 1 was called on the radio by Intertek personnel.
    3. Vincent Gravel (Agnico Eagle) was contacted by Intertek personnel for support.
    4. Confirmation given from fuel ship that the pumps were stopped. The three (3) check valves are closed on the line to prevent back flow from Agnico Eagle's tanks.

- **14:30** Vincent and Frederic (Agnico Eagle) arrived on scene and observed that the leak was under control. As they arrive, Intertek receives another call saying that a truck has damaged the fuel line near the shore.
    1. They immediately asked the operator to move his equipment and shut it down.
    2. Intertek asked Vincent and Frederic to assist in containing the spill.
    3. Code 1 was called to Baker Lake Dispatch by Intertek personnel.

- **14:32** Intertek representatives arrive at the spill scene with absorbent pads, absorbent boom, shovels, and PPE. One Intertek employee utilizes a shovel and the loose sand to build a berm to slow the flow of the diesel towards Baker Lake.
    1. Vincent was asked to deploy absorbent pads downstream of the contaminated area.
    2. One Intertek employee calls for Environment on the radio looking for support.

- **14:40** Control room has assembled and is asking for an update on the spill situation from the Intertek employees.
    1. One Intertek representative advises the control room that diesel fuel is heading towards the lake.
    2. Control room advises Intertek to deploy marine barriers in the water to contain any fuel that may make it to the lake and to have an emergency boat in the water on standby. The boats already in the water from the ship are ready and waiting to help deploy booms in water as needed until emergency boat is ready.

- **14:42** Both Intertek employees along with loader operator remove marine barriers and deploy them along the shore.

- **14:47** One Intertek employee heads to their truck to attach the boat and proceeds to back the boat in the water with the other employee acting as the spotter.

- **14:50** Boat was deployed and started.

- **14:52** Confirmation is given to the control room that no contamination has reached a water body. Photos are sent out via cell phone.

- **14:54** Spill matting pickup and requested the loader operator assist with collecting contaminated soil.

- **14:55** Mock spill is ended as the situation is under control.

2.4 DEBRIEFING

After the mock spill, Agnico Eagle and Intertek representatives conducted a debriefing about the mock spill and discussed ways to improve spill response. Overall, the participant's actions and response to the spill are deemed satisfactory.

- Quick reaction and response from Intertek representatives;
- Organization of Environmental emergency seacans was adequate and Intertek representatives were easily able to gather the response material;
- Suggestion from Intertek crew to have the vessel involved and test the response and awareness of their crew;
- Suggestion to include more of the Agnico Eagle logistics team as well as third party contractor Arctic Fuel to increase their knowledge regarding spill response;and
- Agnico Eagle advised Intertek and Logistics that any contaminated material from a spill at the Baker Lake Marshalling facility will need to be transported back to the MBK landfarm.

SECTION 3 • MOCK SPILL PHOTOS

Retrieving Spill Response material from the Emergency Seacan

Utilizing shovel to construct a berm, collecting, and slowing the flow of diesel.

Assembly of marine barriers

Deploying barriers from Emergency Seacan

Barrier ready to be deployed on the lake.

3.1 PRE-DISCHARGE AND MOCK SPILL ATTENDANCE SHEET

AGNICO EAGLE
MEADOWBANK

Pre Discharge

Meeting attendance sheet

Topic: Pre-Discharge Presentation, Mock spill
Date:
Department:

Name (Print)	Signature
Feliy Quessy (AEM)	
Vincent Gravel	
Frédéric Marcotte	
DERGIN TAN (INTERTEK)	
NACEUR ALBOSTA (Intertek)	
THOMAS DAVIN (AEM)	

Annual E2 Simulation Exercise – Meadowbank
Tabletop Exercise – Alternate Case Scenario
August 16, 2023 @ 10:000AM – 11:00AM CST

Participants: Tom Thomson, Marie-Pier Marcil, Samuel Tapp, Felix Quessy-Savard

The Alternate Scenario (most probable scenario) for Meadowbank involving E2 regulated substance diesel fuel has been identified as a spill during the refueling of a tanker truck at the Meadowbank tank farm and releasing diesel fuel to a localized area.

Probable consequences were identified as:

- Pool fire hazard if ignition source is nearby
- Contamination of waterbody – possibility for harm to aquatic life
- Contamination of soil and groundwater

Overfill of a fuel tanker has occurred three (3) times at the Meadowbank tank farm between 2011 and 2023. The spills have been limited to 250L or less but the potential for a larger release exists.

Referencing incident that occurred March 28, 2022, at the Meadowbank tankfarm – A tanker was refueling, and fuel overflowed out of the top fuel compartment.

Remediation actions included:

- Spill pads and absorbents were immediately placed on the ground.
- Any pooling fuel will be collected by the vacuum trucks.
- Contaminated material disposed at the Meadowbank landfarm.
- Contaminated snow placed at the stormwater management pond.
- Contaminated area was delineated, to ensure remediation work will cover the entire potential contamination zone.

What would have been the course of action should this incident result in a larger spill due to the delayed response of operator and failure of the fuel sensor on the scully system?

Photo from March 2023 spill at the Meadowbank Tankfarm

Photos of March 2023 spill at the Meadowbank Tankfarm

Assumptions: Human Error while refueling and failure of fuel sensor

- Driver remained in his cab during the refueling process
- Fuel level sensor failed during the refueling process causing overfill off tanker
- Loading is 3.5" pipe with approximate flow rate of 715L/min
- Secondary containments are placed under connection points
- Emergency stop button is working
- Driver is aware of Code 1/Spill Response procedures
- Spill is greater than 1000L
- Spill exceeds the lined area
- Distance to closest water body is 400m
- Spill occurred during Freshet

Preventative Measures:

- Refueling SOP
- Emergency stop button at refueling station
- Fuel farm is designed so that topography is sloped away from any water body
- Radio communication - dispatch
- Pre-operational inspections of vehicles.
- Routine maintenance on refueling station
- Scully system
- Emergency Response Plan
- Class 1 driver's license required, TDG required.
- Fit to work is required, mandated by the company (FLRA)
- Preventative maintenance is done regularly on vehicles

Reporting:

- As soon as all details have been established a Spill Report must be submitted to the Nunavut Spill Reporting Hotline (24hrs).
- Spill report for E2 not required.
- Regular communication with CIRNAC Inspector (and any others that may be involved – ECCC KivIA) – updates, follow-up etc.
- Follow-up report must be submitted within 30-days of initial report.

Spill Response Timeline
00:00 Driver observes the spill and exits the cab of truck
00:02 Driver hits the emergency stop button and calls a code 1 on the radio
00:04 Driver uses refueling station spill kit on spill area
00:05 ERT receives the notification of a spill at the MBK Tankfarm
00:15 E&I, ERT, Environment arrive at the scene

00:18 ERT/ENV begin to deploy additional spill pads/absorbents on spill area
00:20 E&I equipment operator to place material/berm to prevent spill from entering the transit laydown area
01:00 Spill pads absorbents removed and placed into hazmat. Loader and excavator begin to scrap contaminated material from the ground.
01:30 Vacuum truck is used to collect any large areas of fuel that has pooled
02:00 Roll off bin for contaminated material is brought to the spill area and contaminated material is collected
03:00 Contaminated material is brought to the Meadowbank landfarm. Contaminated water is brought to the Storm Water Management pond.

Recommendations:

- Tracking spill (delineation when the spill is occurring) – first responder/Environment/E&I to keep track of how the incident is developing. Focus on where the spill is going not just the source-documentation for remediation.
- Complete investigation to determine root causes.
- Validate driver training for Spill Response and Job Task Observation of Refueling procedure/check list.
- Validate the maintenance program on refueling station and refueling station components.
- Present E2 Simulation Exercise to ERT, E&I Supervisors, LHT Supervisors and Environment Team.

Additional Comments:

- Install a camera at the Meadowbank Fuel Farm - Video footage would capture the incident in real time and assist in the investigation process.

Appendix L

Product Transfer Area Assessment - Baker Lake Oil Handling Facility

AGNICO EAGLE

Meadowbank Complex

Product Transfer Area Assessment – Baker Lake Oil Handling Facility

March, 2023

Prepared for:

Environment and Climate Changes Canada

Prepared by:

Agnico Eagle Mines Limited – Meadowbank Complex

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	
3	April 2022	EC# 00025772 and 00026142	2 Figure 1	Updated information to include the eighth fuel tank at Baker Lake Updated figure 1 to include the eighth diesel fuel tank	Alexandra Ozaruk, Compliance Counselor
4	March 2023	EC# 00025772 and 00026142	2.1 Figure 1 App. A	Updated information on Jet-A tanks Updated figure Maximum transfer rates updated	Alexandra Ozaruk, Compliance Counselor

Prepared by: Environmental Department

Approved By:

Eric Haley

Environnent & Critical Infrastructures Superintendant

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 eight (8), 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 200% of the volume of one ten (10) million liter tanks storage tank.

The OHF also consists of twenty (20), 100,000L double walled tanks, within secondary containment, for aviation fuel (Jet-A) (Figure 1). Two (2), of these 100,000L double walled tanks were added back into the secondary containment in summer 2022, however they were not reconnected to the existing piping system. The steel fuel tanks have been field-erected and built to API-650 standards with the bermed area having the capacity to hold twenty 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 firms.

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’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 ~8,270L of diesel and ~5,120L 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 ~8,270L of diesel and ~5,120L 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 ~8.270L of diesel and ~5,120L 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 transfer impacted by public protest			Low	High	No Action Required	Community awareness conducted by Agnico Boat traffic monitored by Desgagnes and Intertek

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
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 station-hose connection.	Broken piping/hose releases ~121L of fuel to adjacent gravel area.			Moderate	Moderate	No Action Required	Shut off button, drainage to low point on roadside Emergency Response Plan and Spill Contingency Plan

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
							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 5,833 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 777.8 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 8,270 L of diesel spilled.

Ship to shore: a Jet-A maximum delivery rate of 4,167 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 555.6 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 4,569 L, for a total 5,124 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 / Oil Pollution Prevention 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 / Oil Pollution Prevention Plan (OPEP/OPPP) 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/OPPP 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 / Oil Pollution Prevention 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 department 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 = 350 m^3/hr (5,833 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)

5,833L/60s = 97.22 L/s
8s = time it takes for operator to turn off the pump should the tank start to overflow

Volume = 97.22/s * 8s
= **777.8 L**

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 = 250 m^3/h (4,167 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)

4,167L/60s = 69.45 L/s
8s = time it takes for operator to turn off the pump should the tank start to overflow

Volume = 69.45L/s * 8s
= **555.6 L**

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 **5,124.3 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 M

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 K – 2023 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 K – 2023 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 N

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 O - 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 K Mock Spill 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 4.6
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 L 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/OPPP 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 L – 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 L – PTA Assessment Section 2 - OPEP/OPPP 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 L – 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/OPPP 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/OPPP: 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 K Mock scenario- OPEP/OPPP - Spill Contingency Plan Section 9 Training and Emergency Spill/Exercise - OPEP/OPPP 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 4.6 - OPEP/OPPP 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/OPPP 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/OPPP and Spill Contingency Plan

Appendix O

SDS Diesel and Jet -A

DIESEL

Section 1. Identification

Common name: DIESEL
Product Code: 0210
Synonym: Ultra low sulfur Diesel (ULSD) A, Ultra low sulfur Diesel (ULSD) B, Colonial 62/67
Material uses: Fuel, Heating Oil

Supplier / Manufacturer:
Énergie Valero Inc.
1801 McGill College, 13e étage
Montréal
Québec, Canada, H3A 2N4
Phone: 800-295-0391

In case of emergency:
CANUTEC: (613) 996-6666
Quebec Poison Control Center: 800-463-5060
Ontario Regional Poison Information Center (Toronto): 416-813-5900
Ontario Regional Poison Information Center (toll-free): 800-268-9017
Newfoundland Poison Information Center: 709-722-1110
Nova Scotia / PEI Poison Control Center: 800-565-8161
Or call your local Emergency Health Services Center.

Section 2. Hazards identifications

Classification:

Flammable liquid, Category 3
Skin irritation, Category 2
Eye irritation, Category 2A
Carcinogenicity, Category 2
Reproductive toxicity, Category 2
Specific target organ toxicity - Single exposure, Category 1
Specific target organ toxicity - Repeated exposure, Category 2
Aspiration hazard, Category 1

Signal word: Danger

Hazard statements:
H226: Flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H351: Suspected of causing cancer.
H361: Suspected of damaging fertility or the unborn child.
H370: Causes damage to organs.
H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe dust/fumes/gas/mist/vapors/spray.
P264: Wash exposed and/or contaminated area thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or a doctor.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P308+P313: If exposed: Call a POISON CENTER or doctor/physician.
P314: Get medical advice/attention if you feel unwell.
P321: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
P331: Do NOT induce vomiting.
P337+P313: If eye irritation persists get medical advice/attention.
P370+P378: In case of fire: See section 5 for extinguishing media.
P403+P235: Store in a well ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents / container by a local waste disposal company according to regional regulations.

Section 3. Composition and information on ingredients

Name	CAS	Concentration %
Fuels, diesel	68334-30-5	0 - 100
Fuels, diesel, C9-18-alkane branched and linear	1159170-26-9	0 - 30
Nonane	111-84-2	0 - 3
Octane	111-65-9	0 - 2
Toluene	108-88-3	0 - 1
Xylene	1330-20-7	0 - 1
Ethylbenzene	100-41-4	0 - 1

Note:

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4. First aid measures

Description of first aid if required:

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Eye contact:
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention if irritation develops and persists.

Skin contact:
Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Seek medical advice/attention. Wash contaminated clothing before reuse.

Inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

Ingestion:
Call a physician or poison control centre immediately. Rinse mouth. DO NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Indication of immediate medical attention and special treatment needed, if necessary:
Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Most important acute symptoms and effects:
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness, pain and jaundice. Prolonged exposure may cause chronic effects.

Most important delayed symptoms and effects:
Aspiration may cause pulmonary oedema and pneumonitis.

Section 5. Firefighting measures

Flammability of the product:
Flammable liquid and vapor.

Flash point:
40°C / 104°F

Auto-ignition temperature:
> 220 °C / > 428 °F

Products of combustion:
Data not available

Special protective actions for firefighters:
Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Move away immediately if the whistling sound from the safety devices increases or the discoloration of the tanks caused by a fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gasses to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed. In the event of fire and/or explosion do not breathe fumes.

Suitable extinguishing media:
Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2). Do not use a solid water stream as it may scatter and spread fire.

Specific hazard arising from the chemical:
Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and cause flashback. Sensitive to static discharge.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
For non emergency personnel: Evacuate the area.
For emergency personnel: Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 for personal protective equipment. Local authorities should be advised according to applicable regulatory requirements.

Environmental precautions:
Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up:
Eliminate all sources of ignition (no cigarettes, torches, sparks or flames in the immediate area). Keep combustible materials (wood, paper, oil, etc.) away from the spilled product. Take precautionary measures against electrostatic discharge. Use tools that do not produce sparks. Prevent entry into waterways, sewers, basements or confined areas.

For large spills: Stop flow of substance if it can be done without risk. Dike spilled material, where possible. Use a non-combustible material such as vermiculite, sand or earth to absorb the product and place it in a container for later disposal. After collecting the product, rinse the area with water.

For small spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (eg, cloth, woolen). Clean the surface thoroughly to remove residual contamination.

Never put the spilled product back into its original container for reuse. Place the material in suitable, covered and labeled containers. For waste disposal, see section 13 of the safety data sheet.

Section 7. Handling and storage

Precautions in Handling:

Obtain instructions before use. Do not handle until you have read and understood all the safety precautions. Do not handle, store or open near an open flame, source of heat or other sources of ignition. Protect the product from direct sunlight. Do not smoke during use. Use local and general explosion-proof exhaust ventilation. Take precautionary measures against electrostatic discharge. All equipment used in handling this product must be earthed. Use non-sparking tools and explosion-proof equipment. Do not breathe mists or vapors. Avoid contact with eyes, skin and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only outdoors or in a well ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release into the environment. Observe good industrial hygiene practices.

Precautions in Storage:
Storage of flammable liquids. Do not handle or store near an open flame, heat source or other sources of ignition. This product can accumulate static charges which can cause sparks and become a source of ignition. Pressure in sealed containers may increase under the influence of heat. Keep the container in a cool, well-ventilated place. Keep away from food, drink and animal feed. Keep out of the reach of children.

Section 8. Exposure Controls, Personal Protections

Control parameters:

Component	CAS	Value	Control parameters	Basis
Toluene	108-88-3	TWA	20 ppm	USA - ACGIH
		TWA	50 ppm	Canada - Alberta
		TWA	188 mg/m^3	Canada - Alberta
		TWA	20 ppm	Canada - British Columbia
		TWA	20 ppm	Canada - Manitoba
		TWA	20 ppm	Canada - Ontario
		TWA	188 mg/m^3	Canada - Québec
		TWA	50 ppm	Canada - Québec
		TWA	375 mg/m^3	USA - NIOSH
		TWA	100 ppm	USA - NIOSH

Control parameters (continued) :

Component	CAS	Value	Control parameters	Basis
Xylene	1330-20-7	STEL	150 ppm	USA - ACGIH
		TWA	100 ppm	USA - ACGIH
		STEL	651 mg/m^3	Canada - Alberta
		STEL	150 ppm	Canada - Alberta
		TWA	434 mg/m^3	Canada - Alberta
		TWA	100 ppm	Canada - Alberta
		STEL	150 ppm	Canada - British Columbia
		TWA	100 ppm	Canada - British Columbia
		STEL	150 ppm	Canada - Manitoba
		TWA	100 ppm	Canada - Manitoba
		STEL	150 ppm	Canada - Ontario
		TWA	100 ppm	Canada - Ontario
		STEL	651 mg/m^3	Canada - Québec
		STEL	150 ppm	Canada - Québec
		TWA	434 mg/m^3	Canada - Québec
		TWA	100 ppm	Canada - Québec
Octane	111-65-9	TWA	300 ppm	USA - ACGIH
		TWA	1400 mg/m^3	Canada - Alberta
		TWA	300 ppm	Canada - Alberta
		TWA	300 ppm	Canada - British Columbia
		TWA	300 ppm	Canada - Manitoba
		TWA	300 ppm	Canada - Ontario
		STEL	1750 mg/m^3	Canada - Québec
		STEL	375 ppm	Canada - Québec
		TWA	1400 mg/m^3	Canada - Québec
		TWA	300 ppm	Canada - Québec
Ethylbenzene	100-41-4	STEL	543 mg/m^3	Canada - Alberta
		STEL	125 ppm	Canada - Alberta
		TWA	434 mg/m^3	Canada - Alberta
		TWA	100 ppm	Canada - Alberta
		TWA	20 ppm	Canada - British Columbia
		TWA	20 ppm	Canada - Manitoba
		TWA	20 ppm	Canada - Ontario
		STEL	543 mg/m^3	Canada - Québec
		STEL	125 ppm	Canada - Québec
		TWA	434 mg/m^3	Canada - Québec
		TWA	100 ppm	Canada - Québec
		TWA	20 ppm	USA - ACGIH

Control parameters (continued) :

Component	CAS	Value	Control parameters	Basis
Nonane	111-84-2	TWA	200 ppm	Canada - Québec
		TWA	1050 mg/m^3	Canada - Québec
		TWA	200 ppm	Canada - Alberta
		TWA	1050 mg/m^3	Canada - Alberta
		TWA	200 ppm	Canada - British Columbia
		TWA	200 ppm	Canada - Manitoba
		TWA	200 ppm	Canada - Ontario
		TWA	200 ppm	USA - ACGIH
Fuels, diesel	68334-30-5	TWA	100 mg/m^3 (inhalable fraction)	USA - ACGIH
		TWA	100 mg/m^3	Canada - Alberta
		TWA	100 mg/m^3	Canada - British Columbia
		TWA	100 mg/m^3	Canada - Manitoba
		TWA	100 mg/m^3	Canada - Ontario

Engineering controls:
Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Personal protective equipment:

Eyes: Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin/body: Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended. Wear appropriate thermal protective clothing, when necessary.

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. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Hands: Avoid exposure - obtain special instructions before use. Wear protective gloves.

Other: Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

Section 9. Physical and chemical properties

Physical state: Liquid

Color: Clear, yellow

Odour: Not available

Melting point/Freezing point: Data not available

Boiling point: From 145°C / 293°F to 375°C / 707°F

Appearance: Liquid

Lower explosion limit: 0.7 %

Upper explosion limit: 5 %

Flash point: 40°C / 104°F
Auto-ignition temperature: 220°C / 428°F
pH: Data not available
Kinematic viscosity: 1.3 - 4.1 cSt (40 °C)
Solubility: Data not available
Vapor pressure: 0.27 kPa (15 °C)
Density: Data not available
Relative vapor density: 0.78 - 0.88 g/ml
Evaporation rate: 0.2 BuAc

Section 10. Stability and reactivity

Chemical reactivity: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability: Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions: Hazardous polymerisation does not occur.
Conditions to avoid: Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials: Strong oxidising agents.
Hazardous decomposition products: No hazardous decomposition products are known.

Section 11. Toxicological information

Acute toxicity:

Component	CAS	Value
Nonane	111-84-2	CL_{50} Inhalation: Rat = 3200 ppm - 4h
Toluene	108-88-3	DL_{50} Oral: Rat = 636 mg/kg DL_{50} Cutaneous: Rat = 12200 mg/kg CL_{50} Inhalation: Rat = 28.1 mg/L - 4h
Xylene	1330-20-7	DL_{50} Oral: Rat = 3523 mg/kg DL_{50} Cutaneous: Rabbit = 5000 mg/kg CL_{50} Inhalation: Rat = 27.6 mg/L - 4h
Ethylbenzene	100-41-4	DL_{50} Oral: Rat = 3500 mg/kg DL_{50} Cutaneous: Rabbit > 15400 mg/kg CL_{50} Inhalation: Rat = 17.4 mg/L - 4h

Skin corrosion/irritation:
Fuels, diesel, C9-18-alkane branched and linear: Causes skin irritation.
Nonane: Causes skin irritation.
Octane: Causes skin irritation.
Toluene: Causes skin irritation.
Xylene: Causes skin irritation.
Ethylbenzene: Causes skin irritation

Serious eye damage/irritation:
Fuels, diesel, C9-18-alkane branched and linear: Causes serious eye irritation.

Respiratory or skin sensitisation:
Not applicable

Germ cell mutagenicity:
Not applicable

Carcinogenicity:
Fuels, diesel, C9-18-alkane branched and linear: Suspected of causing cancer.
Ethylbenzene: Suspected of causing cancer.

Reproductive toxicity:
Toluene: Suspected of damaging fertility or the unborn child.
Xylene: Suspected of damaging fertility or the unborn child.

STOT- Single exposure:
Fuels, diesel, C9-18-alkane branched and linear: Causes damage to organs.
Octane: May cause drowsiness or dizziness.
Toluene: May cause drowsiness or dizziness.
Xylene: May cause irritation to respiratory tract and may cause drowsiness or dizziness.

STOT- repeated exposure:
Toluene: May cause damage to organs through prolonged or repeated exposure cause the hazard.
Xylene: May cause damage to organs through prolonged or repeated exposure cause the hazard.

Aspiration hazard:
Fuels, diesel, C9-18-alkane branched and linear: May be fatal if swallowed and enters airways.
Nonane: May be fatal if swallowed and enters airways.
Octane: May be fatal if swallowed and enters airways.
Toluene: May be fatal if swallowed and enters airways.
Xylene: May be fatal if swallowed and enters airways.
Ethylbenzene: May be fatal if swallowed and enters airways.

Information on likely route of exposure:
Not applicable

Section 12. Ecological information

Ecological data for aquatic environments:

Component	CAS	Value
Octane	111-65-9	CL_{50} - Fish 0.42 mg/L - 96h CE_{50} - Daphnia magna 0.38 mg/L - 48h
Toluene	108-88-3	CL_{50} - Oncorhynchus kisutch 5.5 mg/L - 96h CE_{50} - Daphnia magna 11.5 mg/L - 48h
Ethylbenzene	100-41-4	CE_{50} - Menidia menidia (atlantic silverside) 5.1 mg/L - 96h CL_{50} - Daphnia magna 1.8 mg/L - 48h CE_{50} - Skeletonema costatum 4.9 mg/L - 72h

Persistence and degradability:
Ethylbenzene: Easily biodegradable.

Bioaccumulative potential:
Data not available

Mobility in soil:
Data not available

Other adverse effects:
Data not available

Section 13. Disposal considerations

Waste disposal:
Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations. Waste codes should be assigned by the user based on the application for which the product was used. Dispose of in accordance with local regulations. Offer rinsed packaging material to local recycling facilities.

Section 14. Transportation information

TDG		
UN #: UN1202	**Proper shipping name:** DIESEL FUEL	
Class: 3	**Packing group:** III	

DOT		
UN #: UN1202	**Proper shipping name:** DIESEL FUEL	
Class: 3	**Packing group:** III	

IMDG			
UN #: UN1202	**Proper shipping name:** DIESEL FUEL		
Class: 3	**Packing group:** III	**EMS-No:**	

IATA		
UN #: UN1202	**Proper shipping name:** DIESEL FUEL	
Class: 3	**Packing group:** III	

Section 15. Regulatory information

NFPA Classification:

Health ◆: 1
Flammable ◆: 2
Stability ◆: 0
Special hazards ◇: 0

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

General product information:
Canada: This product has been classified in accordance with the hazard criteria of the hazard product regulations and the safety data sheet contains all the information required by the hazard product regulations.

Section 16. Additional information

Date of issue:
2021-09-15

Version:
1.00

Elaborated by:
Toxyscan Inc.

Notice to reader:
To the best of our knowledge, the information contained in this document is accurate. However, neither Toxyscan Inc., nor the supplier, nor any of their affiliates can assume any responsibility for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although some hazards are described herein, we cannot guarantee that there are no other hazards. Valero Energy Inc. can not anticipate all conditions of use of this information and its product, or products of other manufacturers associated with its product. It is the responsibility of the user to ensure safe handling, storage and disposal of the product. The user is liable for any loss, injury, damage or expense caused by improper use.

SAFETY DATA SHEET

1. Identification

Product identifier	**Jet Fuels**
Other means of identification	
SDS number	104-GHS
Synonyms	Jet Fuel, Jet Fuel Stock, Jet A, Aviation Jet Fuel A, JP-5, JP-8, DERD See section 16 for complete information.
Recommended use	Refinery feedstock.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer/Supplier	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000
General Assistance	210-345-4593
E-Mail	CorpHSE@valero.com
Contact Person	Industrial Hygienist
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable Liquids	Category 3
Health Hazards	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 2
	Specific Target Organ Toxicity, Single Exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Flammable liquid and vapor. Causes skin irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames and hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Response	If exposed or concerned: Get medical advice/attention. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use for extinction. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you fell unwell. If swallowed: Immediately call a poison center/doctor.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Kerosene	8008-20-6	0 - 100
Naphthalene	91-20-3	0 - 3
Xylene (o,m,p isomers)	1330-20-7	0 - 2
Benzene	71-43-2	0 - 1
Ethylbenzene	100-41-4	0 - 1
Toluene	108-88-3	0 - 1

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.

5. Fire-fighting measures

Suitable extinguishing media	Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
Specific methods	Use water spray to cool unopened containers.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Use non-sparking tools and explosion-proof equipment. Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment. Clean up in accordance with all applicable regulations.
Environmental precautions	If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

7. Handling and storage

Precautions for safe handling	Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm
Xylene (o,m,p isomers) (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 ppm
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Kerosene (CAS 8008-20-6)	TWA	200 mg/m3	Non-aerosol.
Naphthalene (CAS 91-20-3)	TWA	10 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	
Xylene (o,m,p isomers) (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Kerosene (CAS 8008-20-6)	TWA	100 mg/m3
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm
Xylene (o,m,p isomers) (CAS 1330-20-7)	STEL	655 mg/m3
		150 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
	TWA	435 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Xylene (o,m,p isomers) (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3)	Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Kerosene (CAS 8008-20-6)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin protection

Hand protection Avoid exposure - obtain special instructions before use. Wear protective gloves. Protective gloves.

Other Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

Respiratory protection 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. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance Liquid (may be dyed red).

Physical state Liquid.

Form Liquid.

Color Clear. Straw.

Odor	Kerosene (strong).
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	320 - 579.9 °F (160 - 304.39 °C)
Flash point	> 100.0 °F (> 37.8 °C) Closed Cup
Evaporation rate	< 0.1 (butyl acetate = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	>= 0.7
Flammability limit - upper (%)	<= 7
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 2.7 kPa (<20mmHg) (at 20 °C)
Vapor density	3 (Air=1)
Relative density	79 - 0.84 (Water=1)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	399.9 °F (204.39 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	Negligible.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	In high concentrations, mists/vapors may irritate throat and respiratory system and cause coughing. May cause drowsiness or dizziness.
Skin contact	Causes skin irritation. Prolonged contact may cause dryness of the skin.
Eye contact	May cause eye irritation.
Ingestion	May be fatal if swallowed and enters airways.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways.

Components	Species	Test Results
Benzene (CAS 71-43-2)		
Acute		
Dermal		
LD50	Guinea pig; Rabbit	> 9.4 ml/kg, 24 Hours
Inhalation		
LC50	Mouse	9980 ppm
		9980 ppm, 7 Hours
	Rat	43767 mg/m3, 4 Hours
		13700 ppm, 4 Hours
		10000 ppm, 7 Hours
Oral		
LD50	Rat	5970 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
		17.8 ml/kg, 24 Hours
Inhalation		
LC50	Mouse	> 8000 ppm, 20 Minutes
	Rat	4000 ppm
Oral		
LD50	Rat	5.46 g/kg
Other		
LD50	Mouse	17.81 mm/kg
Kerosene (CAS 8008-20-6)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 4.3 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	490 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	14.1 ml/kg
Inhalation		
LC50	Rat	49000 mg/m³, 4 Hours
Oral		
LD50	Rat	636 mg/kg
Xylene (o,m,p isomers) (CAS 1330-20-7)		
Acute		
Dermal		
LD50	Rabbit	12126 mg/kg, 24 Hours

Components	Species	Test Results
		> 5000 ml/kg, 4 Hours
Inhalation		
LC50	Mouse	5300 ppm, 6 Hours
	Rat	5922 ppm, 4 Hours
Oral		
LD50	Mouse	5251 mg/kg
	Rat	3523 mg/kg
		10 ml/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization Based on available data, the classification criteria are not met.

Skin sensitization Based on available data, the classification criteria are not met.
This substance may have a potential for sensitization which may provoke an allergic reaction among sensitive individuals.

Germ cell mutagenicity May cause genetic defects.
In in-vitro experiments, neither benzene, toluene nor xylene changed the number of sister-chromatid exchanges (SCEs) or the number of chromosomal aberrations in human lymphocytes. However, toluene and xylene caused a significant cell growth inhibition which was not observed with benzene in the same concentrations. In in-vivo experiments, toluene changed the number of sister-chromatid exchanges (SCEs) in human lymphocytes. Toluene may cause heritable genetic damage.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (o,m,p isomers) (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.
Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Benzene (CAS 71-43-2)	Cancer

Reproductive toxicity Suspected of damaging fertility or the unborn child.
Benzene, xylene and toluene have demonstrated animal effects of reproductive toxicity. Animal studies of benzene have shown testicular effects, alterations in reproductive cycles, chromosomal aberrations and embryo/fetotoxicity. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Avoid exposure to women during early pregnancy. Avoid contact during pregnancy/while nursing.

Specific target organ toxicity - single exposure May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Cancer hazard. Can cause cancer. Contains a substance which may have a mutagenic effect. Suspected of damaging fertility or the unborn child. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Further information Symptoms may be delayed.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Benzene (CAS 71-43-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.3 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1 - 4 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	0.95 - 1.62 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.89 - 7.81 mg/l, 96 hours
Xylene (o,m,p isomers) (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8 mg/l, 96 Hours

Persistence and degradability None known.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Benzene (CAS 71-43-2)	2.13
Ethylbenzene (CAS 100-41-4)	3.15
Toluene (CAS 108-88-3)	2.73
Xylene (o,m,p isomers) (CAS 1330-20-7)	3.2

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F
D018: Waste Benzene

US RCRA Hazardous Waste U List: Reference

Benzene (CAS 71-43-2)	U019
Naphthalene (CAS 91-20-3)	U165
Toluene (CAS 108-88-3)	U220
Xylene (o,m,p isomers) (CAS 1330-20-7)	U239

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

UN number UN1863

UN proper shipping name Fuel, aviation, turbine engine

Transport hazard class(es)	
Class	- Combustible Liquid
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, B1, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1863
UN proper shipping name	Fuel, aviation, turbine engine
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1863
UN proper shipping name	FUEL, AVIATION, TURBINE ENGINE
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Benzene (CAS 71-43-2)	Cancer Central nervous system Blood Aspiration Skin Eye respiratory tract irritation Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	LISTED
Ethylbenzene (CAS 100-41-4)	LISTED
Naphthalene (CAS 91-20-3)	LISTED
Toluene (CAS 108-88-3)	LISTED
Xylene (o,m,p isomers) (CAS 1330-20-7)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Naphthalene	91-20-3	0 - 3
Xylene (o,m,p isomers)	1330-20-7	0 - 2
Benzene	71-43-2	0 - 1
Ethylbenzene	100-41-4	0 - 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (o,m,p isomers) (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Toluene (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Toluene (CAS 108-88-3) 594

US state regulations WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Kerosene (CAS 8008-20-6)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (o,m,p isomers) (CAS 1330-20-7)

US. New Jersey Worker and Community Right-to-Know Act

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Kerosene (CAS 8008-20-6)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (o,m,p isomers) (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Kerosene (CAS 8008-20-6)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (o,m,p isomers) (CAS 1330-20-7)

US. Rhode Island RTK

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)

Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (o,m,p isomers) (CAS 1330-20-7)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 27-June-2013

Revision date 03-September-2014

Version # 03

NFPA ratings

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.

Appendix P

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 Substance property – Spill Contingency Plan Section 6 and Appendix O 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 L - Product Transfer Area Assessment – Baker Lake Oil Handling Facility
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 L - Product Transfer Area Assessment – Baker Lake Oil Handling Facility
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 O – 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

Appendix Q

Risk Assessments – Environmental Emergency Regulations Designated Substance - Diesel

RISK ASSESSMENT BAKER LAKE OHF
Date: November 19, 2022
Facilitator: Alexandra Ozaruk
Participants: Tom Thomson, Louis Dubois, Kathleen Newberry, Eric Leonard, Alexandre Arcand, Shawn Valliquette
Reviewed by: Marie-Pier Marcil, Eric Haley

			Environmental Impacts before Mitigation			Environmental Impacts after Mitigation			Harm		Mitigation During Incident		Prevention / Control Measures
Scenario	Hazard / Release Identification	Probable Consequences	Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	Environmental	Human Health	Active	Passive	
	Complete release of 10 ML Diesel Fuel Tank into secondary containment (designed to hold 110% of the entire contents of the tank)	Presents a fire hazard if ignition source is nearby.	1	1	1	1	1	1	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)		secondary containment	Regular tank inspections Liner maintenance Emergency Response Plan
WCS	Complete release of 10 ML Diesel Fuel Tank into secondary containment. Release to the environment due to overflow or breach of secondary containment (liner damage).	Diesel fuel may reach Baker Lake and it is expected that the longest impact outside the boundaries of the facility will be around 85 Km	5	1	5	4	1	4	potential for fire, contamination of water, potential to kill fish and fish habitat	contamination of the communities' drinking water; fire-related injuries (burns, inhalation, etc.)		secondary containment and liner will slow the release of fuel to the environment	Regular tank inspections Liner maintenance Emptying standing water from secondary containment Annual geotechnical inspection of containment facilities Emergency Response Plan
AWCS	Major failure between the ship and the flange of the OHF, resulting in a spill greater than 1,000 L but smaller than 10,000L of diesel or Jet-A fuel	Release into Baker Lake. The furthest impact distance outside the boundary of the facility can be up to 3.4 Km	5	3	15	3	2	6	potential for fire, contamination of water, potential to kill fish and fish habitat	contamination of the communities' drinking water; fire-related injuries (burns, inhalation, etc.)	automatic valves absorbent booms (spill response equipment), ship to shore booms deployed during transfer		Pre-discharge inspection Intertek/Woodward personnel overseeing discharge OPEP/OPPP Bathymetry in Baker Lake Training Mock Spill Exercise Emergency Response Plan
	Partial failure of tank - puncture, leak due to corrosion. Release contained to secondary containment	Presents a fire hazard if ignition source is nearby.	1	3	3	1	2	2	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Regular tank inspections Liner maintenance Emergency Response Plan
	Partial failure of tank - puncture, leak due to corrosion. Release to environment due to breach of secondary containment.	Release into Baker Lake. The furthest impact distance outside the boundary of the facility can be up to 3.4 Km. Presents a fire hazard if ignition source is nearby. Non-compliance of secondary containment (water in secondary containment).	4	3	12	3	2	6	potential for fire, contamination of water, potential to kill fish and fish habitat	contamination of the communities' drinking water	absorbent pads oil water separator	secondary containment and liner will slow the release of fuel to the environment	Regular tank inspections Liner maintenance Emptying standing water from secondary containment Annual geotechnical inspection of containment facilities Emergency Response Plan
	Overfilling of tanker truck during fueling - contained to the transfer area.	Presents a fire hazard if ignition source is nearby.	2	4	8	1	4	4	minor to none	none	absorbent pads, excavation of contaminated material, automated system (reduction in quantity to be released)	liner in place to prevent contamination of groundwater	Fueling procedures Inspection checklist Scully system Emergency Response Plan
	Erosion of secondary containments	Leak of fuel contaminated water, impacts on groundwater, water flowing to Baker Lake	3	3	9	3	2	6	potential for fire, aquatic contamination harm to fish and animals.	contamination of the communities' drinking water	absorbent pads oil water separator	secondary containment and liner will slow the release of fuel to the environment	Regular tank inspections Annual geotechnical inspection of containment facilities Emergency Response Plan
	Melting permafrost causing instability	Leak of fuel contaminated water, impacts on groundwater, water flowing to Baker Lake	4	2	8	3	2	6	potential for fire, aquatic contamination harm to fish and animals.	contamination of the communities' drinking water	absorbent pads oil water separator	secondary containment and liner will slow the release of fuel to the environment	Regular tank inspections Annual geotechnical inspection of containment facilities Emergency Response Plan
	Mechanical failure at fueling station resulting in explosion	Explosion - potential for domino affects - multiple tanks containing different substances (diesel and Jet-A) could be ruptured	5	2	10	5	1	5	potential for fire, aquatic contamination harm to fish and animals.	fatality, significant injury, burns, inhalation, affects reaching the community (explosion)	engineering controls of the tanks to reduce impact from tank to tank	secondary containments	Preventative maintenance Regular inspections Emergency Response Plan
	Major fire at Baker Lake facility from not project-related source	Fire damage or explosion - potential for domino affects - multiple tanks containing different substances (diesel and Jet-A) could be ruptured	5	2	10	5	1	5	potential for fire, aquatic contamination harm to fish and animals.	fatality, significant injury, burns, inhalation, affects reaching the community (explosion)	engineering controls of the tanks to reduce impact from tank to tank	secondary containments	Emergency Response Plan
	Failure of electronic valves	None - secondary valves in place	1	3	3	1	3	3	none	none	secondary valves as part of existing system as well as manual valves		Regular tank and system inspections Preventative maintenance Emergency Response Plan
	Vehicle interaction with tank - snow removal etc.	Puncture of tank, release of fuel into secondary containment Could present a fire hazard if ignition source nearby	1	3	3	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Motorized vehicles are not authorized to enter secondary containment area Emergency Response Plan
	Vehicle interaction with piping - snow removal etc.	Puncture or damage to piping, release of fuel into secondary containment Could present a fire hazard if ignition source nearby	1	3	3	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Motorized vehicles are not authorized to enter secondary containment area Emergency Response Plan
	Vehicle interaction with piping (ship to shore) - during refueling	Puncture of piping resulting in release of fuel	1	1	1	1	1	1	none	none		protective berm	Risk well managed - pipe is elevated and protected by a berm Emergency Response Plan
	Stray spark from welding work in tank farm area	Potential for fire within secondary containment or on ground (from spill)	1	1	1	1	1	1	none	fire related harm (inhalation, burns etc.)	Engineering controls, tanks are built to reduce the risk of fire	secondary containment	Hot work procedures in place (empty, clean, ventilate tank) Specialized personnel are trained to conduct welding work Emergency Response Plan
	Interaction between fuel and seacans of other chemicals at Baker Lake causing adverse reactions	Potential for fire or explosion	4	2	8	4	1	4					Risk is well managed - these chemicals are stored away from fuel tanks Emergency Response Plan

RISK ASSESSMENT BAKER LAKE OHF
Date: November 19, 2022
Facilitator: Alexandra Ozaruk
Participants: Tom Thomson, Louis Dubois, Kathleen Newberry, Eric Leonard, Alexandre Arcand, Shawn Valliquette
Reviewed by: Marie-Pier Marcil, Eric Haley

			Environmental Impacts before Mitigation			Environmental Impacts after Mitigation			Harm		Mitigation During Incident		Prevention / Control Measures
Scenario	Hazard / Release Identification	Probable Consequences	Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	Environmental	Human Health	Active	Passive	
	Vandalizing of tanks/valves resulting in release of diesel or Jet-A	Presents a fire hazard if ignition source is nearby.	3	1	3	2	1	2	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Operators at powerhouse would be triggered to step in Security system (camera) Emergency Response Plan
	Natural disaster (earthquake)	Compromise of secondary containment and tank structures. Possibility for large scale release. Including flow of diesel fuel and Jet-A to Baker Lake.	5	1	5	5	1	5	potential for fire, contamination of water, potential to kill fish and fish habitat	contamination of the communities' drinking water; fire-related injuries (burns, inhalation, etc.)		secondary containment (if not compromised)	Emergency Response Plan
	Smoking near tanks - not following procedure	Fire, explosion	1	1	1	1	1	1		fire related harm (inhalation, burns etc)	Engineering controls, tanks are built to reduce the risk of fire, signage		Signage in place Emergency Response Plan
	Tank puncture by stray bullet (hunter)	Release of fuel into secondary containment	1	1	1	1	1	1	minor to none	none		secondary containment	Emergency Response Plan
	Tanker truck overturning on road, puncturing tank - large release to environment (on land) >5,000 L	Presents a fire hazard if ignition source is nearby (tundra fire), soil contamination potentially affecting groundwater (residual contamination)	4	4	16	4	3	12	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on AWAR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Tanker overturning on road, puncturing tank, small release to environment (on land) <5,000 L	Presents a fire hazard if ignition source is nearby (tundra fire), soil contamination potentially affecting groundwater (residual contamination)	4	5	20	3	4	12	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on AWAR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Tanker truck overturning on road, puncturing tank - large release to environment (on water) >5,000 L	Release of fuel into water source - possibility for harm to aquatic life. Pool fire hazard on water if ignition source is nearby.	4	3	12	4	2	8	aquatic contamination harm to fish and animals	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on AWAR, maritime booms, oil water separator, skimmers		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Tanker overturning on road, puncturing tank, small release to environment (on water) <5,000 L	Release of fuel into water source - possibility for harm to aquatic life. Pool fire hazard on water if ignition source is nearby.	4	4	16	3	3	9	aquatic contamination harm to fish and animals	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on AWAR, maritime booms, oil water separator, skimmers		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Vehicle collision between tanker and other vehicle not carrying dangerous goods	Fire hazard, soil contamination	4	3	12	3	2	6	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on AWAR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Vehicle collision between tanker and other vehicle carrying dangerous goods (ammonium nitrate, cyanide)	Fire hazard, explosion, soil contamination	4	2	8	3	2	6	contamination of the area, release of dangerous goods (explosion)	human injury, fatality, burns, inhalation	spill response seacans available on AWAR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Cyanide convoy - lowers risk of vehicle interactions Explosive truck placards and beacon light - right of way Emergency Response Plan

RISK ASSESSMENT FOR MEADOWBANK
Date: November 19, 2022
Facilitator: Alexandra Ozaruk
Participants: Tom Thomson, Louis Dubois, Kathleen Newberry, Eric Leonard, Alexandre Arcand, Shawn Valliquette
Reviewed by: Marie-Pier Marcil, Eric Haley

			Environmental Impacts before Mitigation			Environmental Impacts after Mitigation			Harm		Mitigation During Incident		Prevention / Control Measures
Scenario	Hazard / Release Identification	Probable Consequences	Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	Environmental	Human Health	Active	Passive	
	Complete release of 5.6 ML Diesel Fuel Tank into secondary containment (designed to hold 110% of the entire contents of the tank)	Presents a fire hazard if ignition source is nearby.	1	1	1	1	1	1	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)		secondary containment	Regular tank inspections Automatic valves installed on tanks Engineered tanks Liner maintenance Emergency Response Plan
WCS	Complete release of 5.6 ML Diesel Fuel Tank into secondary containment. Release to the facility due to overflow or breach of secondary containment (liner damage).	Presents a fire hazard if ignition source is nearby. Contaminated soil that would need to be remediated. Discharge would flow to stormwater management pond and not lake if containment area failed.	3	1	3	2	1	2	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)		secondary containment and liner will slow the release of fuel	Regular tank inspections Liner maintenance Emptying standing water from secondary containment Annual geotechnical inspection of containment facilities Emergency Response Plan
	Complete release of both 3.3 and 5.5 ML Diesel Fuel Tanks into secondary containment (designed to hold 110% of the entire contents of the largest tank)	Overflow of secondary containment. Presents a fire hazard if ignition source is nearby.	3	1	3	2	1	2	contaminated soil, affect to groundwater	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment and liner will slow the release of fuel	Regular tank inspections Liner maintenance Emptying standing water from secondary containment Annual geotechnical inspection of containment facilities Emergency Response Plan
	Partial failure of >=10,000 L tank puncture, leak due to corrosion. Release contained to secondary containment	Presents a fire hazard if ignition source is nearby.	1	5	5	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Regular tank inspections Liner maintenance Emergency Response Plan
	Partial failure of >=10,000 L tank - puncture, leak due to corrosion. Release to environment due to breach of secondary containment.	Presents a fire hazard if ignition source is nearby. Contaminated soil that would need to be remediated. Discharge would flow to stormwater management pond and not lake if containment area failed. Non-compliance of secondary containment (water in secondary containment).	2	4	8	2	2	4	contaminated soil, affect to groundwater	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment and liner will slow the release of fuel boulders or cement blocks to reduce incident	Regular tank inspections Liner maintenance Emptying standing water from secondary containment Annual geotechnical inspection of containment facilities Emergency Response Plan
	Overfilling of tanker during fueling - contained to the transfer area.	Presents a fire hazard if ignition source is nearby.	1	5	5	1	4	4	contaminated soil	fire-related injuries (burns, inhalation, etc.)	absorbent pads, excavation of contaminated material	liner in place to prevent contamination of groundwater	Fueling procedures Inspection checklist Scully system Emergency Response Plan
	Erosion of secondary containments for miscellaneous tanks	Leak of fuel contaminated water, impacts on groundwater	1	2	2	1	2	2	contaminated soil	fire-related injuries (burns, inhalation, etc.)	absorbent pads, excavation of contaminated material	secondary containment and liner will slow the release of fuel	Regular tank inspections Annual geotechnical inspection of containment facilities Emergency Response Plan
	Melting permafrost causing instability	Leak of fuel contaminated water, impacts on groundwater	2	2	4	2	2	4	contaminated soil	fire-related injuries (burns, inhalation, etc.)	absorbent pads, excavation of contaminated material	secondary containment and liner will slow the release of fuel	Regular tank inspections Annual geotechnical inspection of containment facilities Emergency Response Plan
	Mechanical failure at fueling station resulting in explosion	Explosion - potential for domino affects - multiple tanks containing different substances (diesel and Jet-A) could be ruptured	3	1	3	2	1	2	potential for fire, aquatic contamination harm to fish and animals.	fatality, significant injury, burns, inhalation, affects reaching the community (explosion)	engineering controls of the tanks to reduce impact from tank to tank, sprinkler systems	secondary containments	Preventative maintenance Regular inspections Emergency Response Plan
	Major fire at Meadowbank Complex from not project-related source	Fire damage or explosion - potential for domino affects - multiple tanks containing different substances (diesel and Jet-A) could be ruptured	3	1	3	2	1	2	potential for fire, aquatic contamination harm to fish and animals.	fatality, significant injury, burns, inhalation, affects reaching the community (explosion)	engineering controls of the tanks to reduce impact from tank to tank, sprinkler systems	secondary containments	Emergency Response Plan
	Failure of electronic valves	None - secondary valves in place	1	3	3	1	2	2	none	none	secondary valves as part of existing system as well as manual valves		Regular tank and system inspections Preventative maintenance Emergency Response Plan
	Vehicle interaction with tank - snow removal etc.	Puncture of tank, release of fuel into secondary containment Could present a fire hazard if ignition source nearby	1	3	3	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Motorized vehicles are not authorized to enter secondary containment area Emergency Response Plan
	Vehicle interaction with piping - snow removal etc.	Puncture or damage to piping, release of fuel into secondary containment Could present a fire hazard if ignition source nearby	1	3	3	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire-related injuries (burns, inhalation, etc.)	absorbent pads oil water separator	secondary containment	Motorized vehicles are not authorized to enter secondary containment area Emergency Response Plan
	Stray spark from welding work in tank farm area	Potential for fire within secondary containment or on ground (from spill)	1	1	1	1	1	1	none	fire related harm (inhalation, burns etc.)	Engineering controls, tanks are built to reduce the risk of fire	secondary containment	Hot work procedures in place (empty, clean, ventilate tank) Specialized personnel are trained to conduct welding work Emergency Response Plan
	Interaction between fuel and seacans of other chemicals at Meadowbank causing adverse reactions	Potential for fire or explosion Contamination of soil Fire related harm	4	2	8	4	1	4					Risk is well managed - these chemicals are stored away from fuel tanks Emergency Response Plan

RISK ASSESSMENT FOR MEADOWBANK
Date: November 19, 2022
Facilitator: Alexandra Ozaruk
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			Environmental Impacts before Mitigation			Environmental Impacts after Mitigation			Harm		Mitigation During Incident		Prevention / Control Measures
Scenario	Hazard / Release Identification	Probable Consequences	Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	Environmental	Human Health	Active	Passive	
	Natural disaster (earthquake)	Compromise of secondary containment and tank structures. Possibility for large scale release. Should be contained to site boundary.	4	1	4	4	1	4	potential for fire, contamination of water, potential to kill fish and fish habitat	contamination of the communities' drinking water; fire-related injuries (burns, inhalation, etc.)		secondary containment (if not compromised)	Emergency Response Plan
	Smoking near tanks - not following procedure	Fire, explosion Contamination of soil with hydrocarbons Fire related harm	1	1	1	1	1	1		fire related harm (inhalation, burns etc.)	Engineering controls, tanks are built to reduce the risk of fire, signage		Signage in place Emergency Response Plan
	Failure of smaller fuel tanks <10,000 L around Meadowbank Complex, discharge to secondary containment	Presents a fire hazard if ignition source is nearby.	1	5	5	1	3	3	could affect health of birds and other animals if they interact with secondary containment prior to remediation	fire related harm (inhalation, burns etc.)	absorbent pads	secondary containment	Emergency Response Plan
	Failure of smaller fuel tanks <10,000 L around Meadowbank Complex, discharge from secondary containment due to breach	Presents a fire hazard if ignition source is nearby.	2	4	8	1	2	2	contaminated soil, affect to groundwater	fire related harm (inhalation, burns etc.)	absorbent pads		Emergency Response Plan
AWCS	Tanker truck overturning on road, puncturing tank - large release to environment (on land) >5,000 L up to 40,000 L	Presents a fire hazard if ignition source is nearby (tundra fire), soil contamination potentially affecting groundwater (residual contamination), harm to wildlife	4	4	16	4	3	12	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on WTHR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
AWCS	Tanker overturning on road, puncturing tank, small release to environment (on land) <5,000 L	Presents a fire hazard if ignition source is nearby (tundra fire), soil contamination potentially affecting groundwater (residual contamination), harm to wildlife	4	5	20	3	4	12	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on WTHR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Tanker truck overturning on road, puncturing tank - large release to environment (on water) >5,000 L	Release of fuel into water source - possibility for harm to aquatic life. Pool fire hazard on water if ignition source is nearby.	4	3	12	4	2	8	aquatic contamination harm to fish and animals	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on WTHR, maritime booms, oil water separator, skimmers		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Road is wide enough to allow for adequate flow of traffic Emergency Response Plan
	Tanker overturning on road, puncturing tank, small release to environment (on water) <5,000 L	Release of fuel into water source - possibility for harm to aquatic life. Pool fire hazard on water if ignition source is nearby.	4	4	16	3	3	9	aquatic contamination harm to fish and animals	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on WTHR, maritime booms, oil water separator, skimmers		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Vehicle collision between tanker and other vehicle not carrying dangerous goods	Fire hazard, soil contamination	4	3	12	3	2	6	contamination of area with hydrocarbons, fire causing damage, contamination of groundwater	fire-related injuries (burns, inhalation, etc.)	spill response seacans available on WTHR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Emergency Response Plan
	Vehicle collision between tanker and other vehicle carrying dangerous goods (ammonium nitrate, cyanide)	Fire hazard, explosion, soil contamination	4	2	8	3	2	6	contamination of the area, release of dangerous goods (explosion)	human injury, fatality, burns, inhalation	spill response seacans available on WTHR, dig a trench to contain spill		Road maintenance to ensure safe driving conditions SOP for driving on the road Speed limit enforcement and signage for higher risk areas Road closure protocol for adverse weather conditions Cyanide convoy - lowers risk of vehicle interactions Explosive truck placards and beacon light - right of way Emergency Response Plan

Risk Assessment Matrix

PMO Rating		Probability				
Consequence		Rare or Improbable 1	Unlikely or Remote 2	Possible or Occasionnal 3	Likely or Probable 4	Almost Certain / Expected 5
Critical	5	Medium	Medium	High	Very High	Very High
Major	4	Low	Medium	High	High	Very High
Moderate	3	Low	Medium	Medium	High	High
Minor	2	Low	Low	Medium	Medium	Medium
Insignificant	1	Low	Low	Low	Low	Medium
Opportunity	-1	Low	Low	Medium	High	High

Before Mitigation		Probability				
Consequence		Rare or Improbable 1	Unlikely or Remote 2	Possible or Occasionnal 3	Likely or Probable 4	Almost Certain / Expected 5
Critical	5	0	1	1	0	1
Major	4	1	2	0	1	0
Moderate	3	0	3	0	1	1
Minor	2	0	2	0	1	0
Insignificant	1	0	0	0	0	0
Opportunity	-1	0	0	0	0	0

After Mitigation		Probability				
Consequence		Rare or Improbable 1	Unlikely or Remote 2	Possible or Occasionnal 3	Likely or Probable 4	Almost Certain / Expected 5
Critical	5	0	2	0	0	0
Major	4	1	3	0	0	0
Moderate	3	0	4	0	0	0
Minor	2	0	3	0	2	0
Insignificant	1	0	0	0	0	0
Opportunity	-1	0	0	0	0	0