APPENDIX 8-D

Addendums for Materials Management and Emergency Response Management Plans

June 2016
Report No. 1541520

AGNICO EAGLE

Golder Associates

8-D.4: Hazardous Materials Management Plan

ADDENDUM

AGNICO EAGLE

Project Name:	Meadowbank Gold Project	
Plan / Version:	Hazardous Materials Management, Meadowbank Mine Site and Baker Lake Facilities	Version WT; June 2016
NIRB Requirement:	Project Certificate No. 004	**Condition:** 27, 79c,
NWB Requirement:	2AM-MEA-1525	**Condition:** Part B, Item 16

Addendum:		
Section Change	**Specify: Update or New**	**Details**
Appendix F	New	WT Addendum

MEADOWBANK MINE

Hazardous Materials Management
Meadowbank Mine Site
Whale Tail Pit Site
Baker Lake Facilities

In Accordance with Water License 2AM-MEA1525

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Division

Version WT
June 2016

EXECUTIVE SUMMARY

General Information

The Hazardous Materials Management Plan (HMMP) will be executed within the scope of normal operations. The Meadowbank Mine is in the operations phase, and as such, requires that the transportation, storage, handling and use of hydrocarbon products, ammonium nitrate and associated explosive materials, and all other chemicals be conducted in a safe and efficient manner. Agnico Eagle is proposing to extend the Meadowbank operations three to four years through the operations of a satellite pit called Whale Tail Pit, located approximately 50 km northwest of the Meadowbank Mine. Ore and material (including various hazmat products and waste) will be shipped along the proposed Whale Tail Pit Haul Road.

Annual Review

The HMMP will be reviewed annually and updated as required. Completion of the annual review of the HMMP will be documented through signatures of the personnel responsible for reviewing, updating and approving the HMMP.

Record of Changes

A record will document all significant changes that have been incorporated in the HMMP subsequent to the latest annual review.

Distribution List

Agnico Eagle Mines Limited: Meadowbank Division (Agnico Eagle) will maintain a distribution list for the HMMP and distribute updated versions to all parties that receive the plan including mine personnel, departments, and outside agencies.

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-MEA0815, Part B, Item 16, the proposed implementation schedule for this plan is effective immediately upon regulatory approval for the extension of the Meadowbank Mine and subject to any modification proposed by the Nunavut Water Board as a result of the review and approval process.

DISTRIBUTION LIST

Agnico Eagle - Environmental Superintendent

Agnico Eagle – Environmental Coordinator

Agnico Eagle – General Mine Manager

Agnico Eagle – Health and Safety Superintendent

Agnico Eagle – Mill Superintendent

Agnico Eagle – Maintenance Superintendent

Agnico Eagle – Mine Superintendent

Agnico Eagle – Site Services Superintendent

Agnico Eagle – General Services Superintendent

Agnico Eagle – Procurement and Logistics Coordinator

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	2007/08			Comprehensive plan for Meadowbank Mine Site and Baker Lake Facilities
2	2012/3/12			Comprehensive review and update.
3	2013/10			Add Baker Lake Jet-A Information and comprehensive review and update
WT	2016/06/15	All	All	Added the Whale Tail pit development to the Plan. Numerous changes were made throughout the document.

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(Refer to Meadowbank Plan- Hazardous Material Management Plan, Version 3 (Oct. 2013): Appendices will be updated upon approval)

1. INTRODUCTION

1.1 PURPOSE & SCOPE OF THE PLAN

The purpose of this plan is to provide a consolidated source of information on the safe and environmentally sound transportation, storage, and handling of the major hazardous products that are used at the Meadowbank Mine (including the proposed Whale Tail satellite open pit). A hazardous material is one that, as a result of its physical, chemical, or other properties, poses a hazard to human health or the environment when it is improperly handled, used, stored, disposed of, or otherwise managed. In combination with Agnico Eagle's Emergency Response Plan (ERP) and Spill Contingency Plan (SCP), this Hazardous Materials Management Plan (HMMP) provides instruction on the prevention, detection, containment, response, and mitigation of accidents that could result from handling hazardous materials.

The plan is based on the following principles of best practice management for hazardous materials:

- Identify and prepare materials and waste inventories;
- Characterize potential environmental hazards posed by those materials;
- Allocate clear responsibility for managing hazardous materials;
- Describe methods for transport, storage, handling, and use;
- Identify means of long-term storage and disposal;
- Prepare contingency and emergency response plans;
- Ensure training for management, workers, and contractors whose responsibilities include handling hazardous materials; and
- Maintain and review records of hazardous material consumption and incidents in order to anticipate and avoid impacts on personal health and the environment.

All hazardous materials to be used at the Meadowbank and Whale Tail operations will be manufactured, delivered, stored, and handled in compliance with all applicable federal and territorial laws and regulations. Agnico Eagle is committed to preventing, to the greatest extent possible, both inadvertent release of these substances to the environment and accidents resulting from mishandling or mishap. Agnico Eagle has instituted programs for employee training, facility inspection, periodic drills to test systems, and procedural review to address deficiencies, accountability, and continuous improvement objectives.

Agnico Eagle actively works towards minimizing the generation of hazardous wastes by investigating alternatives to the use of hazardous materials, by recycling products and containers wherever feasible, and by treating wastes using state-of-the-art technologies before any release to the environment.

As with all other aspects of health and safety policy at the Meadowbank mine, all employees will be expected to comply with all applicable precautions and handling procedures with regard to hazardous materials. Employees are also expected to report any concerns to their supervisors, the Occupational Health & Safety Committee (OH&SC), or senior site management. All staff are encouraged to bring forward suggestions for improvements that can be incorporated into procedure revisions as appropriate.

1.2 APPLICABLE LEGISLATION

Both federal and territorial legislation regulate the management of hazardous materials in Nunavut. Copies of relevant legal documents are kept on file at the mine site. Agnico Eagle will regularly update the HMMP with respect to applicable legislation, and ensure that current legislation documents are available at the mine site.

Management and safety personnel provide an overview of the applicable regulations to all employees as part of their initiation and ongoing training. The acts, regulations, and guidelines pertinent to the hazardous products that are used at the Meadowbank Gold Project[1] are listed in Appendix A.

The *Transportation of Dangerous Goods Act* classifies hazardous materials into nine (9) main classes according to an internationally recognized system, as follows:

- Class 1 – Explosives;
- Class 2 – Gases;
- Class 3 – Flammable liquids;
- Class 4 – Flammable solids;
- Class 5 – Oxidizing substances and organic products;
- Class 6 – Poisonous (toxic) and infectious substances;
- Class 7 – Nuclear substances, within the meaning of the Nuclear Safety and Control Act, which are radioactive;
- Class 8 – Corrosives; and
- Class 9 – Miscellaneous products or substances.

Fuel products hazard classes and potential impacts are presented in Table 1.

[1] The Meadowbank Gold Project includes the Meadowbank mine site, the Baker Lake facilities All-weather Private Access Road, the Whale Tail open pit and the haul road between Meadowbank and Whale Tail Pit.

2. OVERVIEW OF HAZARDOUS MATERIALS

2.1 HAZARDOUS MATERIALS AND FUEL STORAGE LOCATIONS

The primary storage locations for hazardous materials, hazardous wastes and fuel are shown on Figures 1 to 6. Figure 1 and 2 are respectively a general layout of the Meadowbank mine site and Vault open pit. Figure 3 identifies hazardous material storage areas at the mine site. Figure 4 shows the Diesel Fuel Tank Farm and Figure 5 show the Jet-A Fuel Tank Farm at the Baker Lake Marshalling Area. Figure 6 provides a general layout of camp infrastructure at the Whale Tail pit, including a Hazardous Material Storage Area. Hazardous materials are to be located in all work areas such as the warehouse, mine maintenance shop and bulk fuel storage facility. Comprehensive lists of all hazardous materials and the estimated quantities that are and will be stored at the mine site and the satellite open pit are provided in Appendix B. Hazardous materials used in the process plant will only be located at the Meadowbank site.

Petroleum products, explosives, sodium cyanide and miscellaneous hazardous materials are stored in facilities that contain no open drains, utilize concrete berms, and incorporate lined areas or secure sea-cans. Storage tanks on site are regularly inspected and maintained.

Meadowbank's permanent storage facilities are clearly identified as storage facilities for hazardous materials with proper labelling. These are ventilated in order to prevent the build-up of toxic fumes or dust, which could harm both the personnel present and the environment. The facilities are secured and only authorized personnel have access to the area. The same will hold true for the Whale Tail storage facilities. Additionally, the Whale Tail site includes a hazardous material storage area next to the tank farm where products and wastes will be held until they are either consumed or transported to Meadowbank for treatment or sent south to a certified waste management company for disposal or recycling.

2.2 TYPES OF HAZARDOUS MATERIALS

The Meadowbank Gold Project requires the use of the following types of classified hazardous materials:

- Petroleum products and lubricants – diesel fuel, Jet-A, oils, greases, anti-freeze, and solvents used for equipment operation and maintenance;
- Meadowbank Process plant consumables – sodium cyanide, caustic soda(sodium hyroxide), sulphur prills, carbon sodium metabisulphite, nitric acid , calcine lime, flocculants, calcium chloride, borax, silica, lead nitrate, and anti-scalants used in mineral extraction;
- Water treatment chemicals - silica sand and flocculants polymers;

- Explosives – emulsion, caps, and high explosives used for blasting in the mine; and
- Meadowbank Laboratory chemicals and wastes – various by-products classified as hazardous waste and chemicals such as nitric acid used in the assay laboratory.

Sections 5 and 7 contain general information and safe handling procedures for the first four categories above. Laboratory wastes are generally very limited in quantity and will be handled only by specialist laboratory technicians. These wastes will be pumped to the grinding circuit in the process plant for recycling and eventually become part of the tailings disposal stream. As such, they are not addressed separately in this document.

2.3 GENERAL HAZARDOUS MATERIAL STORAGE GUIDELINES

Agnico Eagle is committed to the safe and appropriate storage of fuels, hazardous materials and hazardous wastes. The following sections outline Agnico Eagle's general guidelines for storing fuels, hazardous materials and hazardous wastes.

2.3.1 General Guidelines for Storage Drums/Containers

Hazardous materials/waste shall be stored in super sacs/drums/sea containers according to the following guidelines:

- In the original containers, where possible, or in containers compatible with the material being stored to prevent corrosion or chemical interaction that could lead to leaks or fires;
- Storage containers shall be in good condition, sealable and not damaged or leaking;
- Drums containing hazardous materials/wastes expected to be in storage for more than six months shall be placed on pallets or on a well-drained storage area to prevent rusting;
- Each container shall be clearly labelled to identify the substance being stored according to the requirements of the *Workplace Hazardous Materials Information System* (WHMIS) and as specified in the MSDS;
- Containers shall be kept closed except when adding or removing product;
- Containers with product shall be kept in the upright position, empty drums can be placed horizontally;
- Containers shall be arranged to prevent damage from falling or dislodging; and
- Containers shall be arranged to allow for easy access and inspections.

2.3.2 General Guidelines for Storage Areas

To assist in the safe and secure storage of fuels, hazardous materials and hazardous wastes, the following general guidelines for storage areas/facilities are followed:

- Design of storage areas are in compliance with the *National Fire Code*, where appropriate;
- Compliance with the Canadian Council of Ministers of the Environment (CCME) publication, *"Environmental Code of Good Practice for Above Ground Storage Tank Systems Containing Petroleum Products"*. This CCME code deals with inventory control, inspections, corrosion protection, records and monitoring. Environment Canada's *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* outline registration and documentation requirements for storage tanks;
- Storage areas are adequately signed indicating that hazardous materials/wastes are stored therein;
- Storage locations are clearly defined and marked to prevent damage of storage drums and containers in the event they are covered by snow;
- Incompatible materials are segregated by chemical compatibility within the storage area to prevent contact between materials in the event of a release;
- Storage areas are located at least 30 metres from surface water and on a low-permeability area;
- Storage areas are readily accessible for firefighting and other emergency procedures;
- Storage areas are adequately ventilated to prevent the build-up of noxious or toxic vapours;
- Where necessary secondary containment is installed to allow for the containment of at least 110% of the largest container or tank volume within the contained area;
- Storage areas are constructed, or provided with barriers, to protect containers from physical damage;
- Adequate spill and emergency response equipment has been installed at large volume storage areas – i.e.; bulk fuel tank facilities (i.e. spill control, fire protection, etc.). A list of spill control equipment is provided in the Spill Contingency Plan.

3. HAZARDOUS MATERIALS LIFE CYCLE MANAGEMENT

3.1 LIFE CYCLE MANAGEMENT

"Life cycle management" implies the assessment of a particular product over its entire life — from the time where a material need is identified to the time the product is fully consumed or disposed of as waste. It covers product supply, transportation, storage, handling, recycling, and waste disposal. Agnico Eagle is committed to ensuring proper life cycle management of all products used at the Meadowbank and Whale Tail sites, including hazardous materials. Agnico Eagle and its contractors will deal only with reputable, certified suppliers, transporters, and expediters.

3.1.1 Delivery

All hazardous materials are delivered to site by commercial carriers in accordance with the requirements of the *Canadian Transportation of Dangerous Goods Act* (TDGA). Carriers are licensed and inspected as required by the Department of Transportation. All required permits, licences, and certificates of compliance are the responsibility of the carrier. All shipments are properly identified and labelled. Shipping papers must be accessible and include information describing the substance, immediate health hazards, fire and explosion risks, immediate precautions, firefighting information, procedures for handling leaks or spills, first aid measures, and emergency response telephone numbers.

Each transportation company is required to develop a spill prevention, control, and countermeasures plan to address the materials they are importing. In the event of a release during transport, the commercial transportation company is responsible for first response and cleanup. Agnico Eagle intends to periodically verify the qualifications of transport companies, their personnel and the existence of their spill prevention, control and countermeasures plan.

3.1.2 On-Site Handling

Once dangerous goods are received at the workplace, additional regulations apply. The federal *Workplace Hazardous Materials Information System* (WHMIS) calls for the proper labelling of products, the availability of product information in the form of MSDS, and employee education on how to identify and handle hazardous products. Agnico Eagle has established procedures for obtaining MSDS with new product deliveries; maintaining MSDS current (i.e. no older than three years), and maintaining a system of hardcopy or electronic MSDS that are readily accessible by all employees. A chemical tracking system is also established and all news hazardous material used on site are reviewed by Health and Safety and Environmental Department before the first use.

All hazardous materials are stored in secured areas to prevent access by unauthorized personnel or any tampering. All tanks used for the storage of diesel and aviation fuel have been installed in secondary containment areas sized to hold at least 110% of the volume of the largest tank or in double walled storage tanks. Tanks and vessels in the process plant are installed on concrete surfaces sloping to interior sumps that will route spilled solutions to lined collection areas. Additional guidelines for the storage of hazardous materials are provided in Section 2.3.2.

In support of pollution prevention, Agnico Eagle has established procedures for the regular inspection of storage containers and facilities. If deficient conditions are identified, appropriate corrective actions are taken and documented. Additional details for inspection of storage areas are provided in Section 9.

Emergency response procedures for spilled chemical substances are provided in the Spill Contingency Plan (SCP) (see also the Emergency Response Plan (ERP). These procedures outline the response to accidental spills or releases of hazardous materials to minimize health risks and environmental effects. Included are procedures for evacuating personnel, maintaining safety, cleanup and neutralization activities, emergency contacts, internal and external notifications to regulatory authorities, and incident documentation.

3.1.3 Wastes

On becoming wastes, materials are stored and/or disposed of in accordance with specific government regulations and guidelines. Agnico Eagle stores most waste materials on the Meadowbank site in secure facilities until they can be transported to a provincial jurisdiction for recycling or disposal. Wastes materials originating from the Whale Tail site are to be sorted at Whale Tail Pit, packaged at the source and delivered to Meadowbank for management, shipment to Baker Lake and ultimately sent on the barge. The waste will be stored in a seacan on a lined pad. The length of time the wastes will be stored at Whale Tail Pit will depend on the product and the time it takes to fill a seacan for safe shipment along the Haul Road.

Process plant tailings pass through a treatment plant for cyanide destruction using the standard Inco SO_2/air process or through chemical destruction with Sodium Metabisulphite before being disposed of in the tailings pond. The cyanide content of the tailings material is reduced to 15 ppm (parts per million). Cyanide further degrades naturally with exposure to air and sunlight (UV) in the Tailings Storage Facility. The current regulatory requirement for cyanide content in liquids released to the environment is 1 mg/L for a single grab sample or no greater than 0.5 mg/L average for the month (Nunavut Water Board Water License).

The Nunavut Department of Environment and Environment Protection Service (EPS) monitor the movement of hazardous waste from the generator to final disposal, through use of a tracking document known as a Waste Manifest. Accordingly, a Waste Manifest accompanies movements of hazardous wastes for the Meadowbank Project. Agnico Eagle is registered with the EPS as a waste generator, and employs only registered waste carriers to transport waste to registered/approved waste receivers. A copy of the completed manifest will be maintained for a period of two years after the hazardous waste is received by the authorized waste disposal facility.

3.1.4 Empty Product Containers

Many empty chemical containers are not safe to dispose of directly and require handling precautions identical to those for full containers. Chemical users must be familiar with safe waste handling and storage procedures supplied by manufacturers in MSDS. The containers are backhauled to the Baker Lake Marshalling Area for disposal at an approved facility. These containers are stored and hauled south via sealift.

4. SODIUM CYANIDE

4.1 INTRODUCTION

Large quantities of sodium cyanide are used at the Meadowbank Gold Project to optimize gold recovery from the ore. Due to transportation restrictions, normally a full year's supply of sodium cyanide will be transported and stored on site. This product will be transported, stored, handled, transferred and used in compliance with appropriate legislation and applicable Best Management Practices. Agnico Eagle became a signatory to the International Cyanide Management Code in 2011.

4.1.1 Physical Properties

Cyanide is one of only a few chemical reagents that will dissolve in water. Gold mining operations use very dilute solutions of sodium cyanide, typically in the range of 0.01% to 0.05% cyanide (100 to 500 ppm). Unlike many synthetic chemicals, cyanide oxidizes and decomposes when exposed to air or other oxidants (UV sunlight rays), and does not persist in the environment. As such, it does not give rise to chronic health or environmental problems when present in low concentrations.

4.1.2 Cyanide Production

Cyanide production and handling are highly regulated. Both the manufacturer and Agnico Eagle employ stringent risk management systems to prevent injury or damage from the use of cyanide.

Sodium cyanide for the Meadowbank project is in briquette form, and packaged in water-resistant super sac and 4mm bags inside an intermediate bulk container (IBC). The IBC holds 1,000 kg of cyanide, and have the following approximate dimensions: 44" x 44" x 44". For shipment, there are normally 20 IBCs in a sea can container.

4.1.3 Cyanide Transport

Cyanide producers audit purchasers and transportation systems. They design special packaging for the transport of cyanide and inventory all shipments against delivery records to ensure proper surveillance at all times. All shipments are accompanied by MSDS that provide the chemistry and toxicity of sodium cyanide, instructions in case of accidents, and emergency telephone numbers for assistance.

Truck, rail, and barge transporters screen their employees, carefully inventory shipments and, establish and maintain systems for loading and unloading cyanide products. Product handling and transportation are in accordance with protocols set by the industries and in compliance with national and international regulations.

For the Meadowbank Project, the IBCs are properly stacked in sea containers and transported by ship from Becancour, QC to Baker Lake, NU. At Baker Lake, the containers are transferred from barge to truck for transport to the Meadowbank mine site. At no point during transport the sea container or IBCs will be opened. From the point of cyanide packaging and onwards, the bags will only be opened on site, when and at the location (mill) where the use of cyanide is required.

This method of cyanide transport provides three levels of containment. The cyanide is contained within plastic bags. In the event one of the bags ruptures, the cyanide is contained within the IBC. In the event the IBC container breaks, the cyanide is contained within the sea container, which provides a tertiary precautionary measure for minimizing the impact of the spilled material.

4.1.4 On-Site Storage & Handling

The cyanide is stored on site in a dark, cool, dry, location. Cyanide is stored in sealed sea cans until the time it is needed for processing. Only as much as needed is removed from storage at any one time. The cyanide storage area is located close to the processing plant. Only authorized personnel have access to the cyanide storage.

When cyanide is required, only the quantity required for immediate use will be removed from storage. The cyanide bag will be lifted by its straps (the straps are provided by the manufacturer as part of packaging; see Appendix C for an illustration) using a forklift, and then using an overhead crane to lower onto a specially designed knife slitter that cuts the bag. The contents of the bag will drop into a mixing tank. At no time does the cyanide need to be physically handled by Meadowbank personnel.

The IBC materials are properly decontaminated and disposed of according to all applicable regulations to prevent environmental impact. Before disposal, the bags are visually inspected to ensure they are empty, and triple rinsed and drained to dissolve any residual cyanide left in the bag. Rinse water from the flushing process is recovered and reused in the cyanide mix tank and used in the gold recovery plant.

All personnel potentially exposed to cyanide, including contractors and visitors, receive appropriate training (see Section 10).

4.1.5 Spills

In the event a spill occurs, the cyanide will be promptly cleaned up to minimize its exposure to humans and the environment. A dry spill will be swept up and disposed of in a drum or other suitable container. In the event of a wet spill, the spill procedures will be carried out to prevent environmental contamination and the appropriate authorities will be contacted. For more information on spills handling and containment, see the SCP and ERP.

After cleaning up as much cyanide as possible, the area will be decontaminated using a small amount of caustic solution (i.e., 1 oz. /5 gal hypochlorite solution). This will help keep the pH in the 10 to 11 range and suppress the formation of lethal HCN gas.

4.1.6 International Cyanide Management Code

Agnico Eagle is a signatory to the International Cyanide Management Code (the Code) for the manufacture, transport and use of cyanide in the production of gold. The Code is administered by a non-profit institute consisting of participants from the gold mining industry, governments, non-governmental organizations, labour, cyanide producers, and other interested parties.

The Code represents a voluntary commitment on the part of all signatories to identify and follow basic principles and guidelines for safe cyanide use at gold mining operations. This is the first such generic international code in the history of the mining industry. Under the Code, gold mines are required to

manage their cyanide from source to site, thus assuming “cradle to grave” responsibility for all cyanide used at their operation.

5. PETROLEUM PRODUCTS

5.1 PRODUCT DESCRIPTION

The Meadowbank and Whale Tail open pit operations use large amounts of fuel and lubricants (petroleum products). These products are transported, stored, handled, transferred and used in compliance with the appropriate legislation and Best Management Practices.

5.2 DELIVERY TO SITE

With the exception of diesel and aviation fuel, most petroleum fuel and lubricant products are delivered to the two sites and stored in the original packing container from the manufacturer. These types of containers include a variety of sealed drums, pails, 1 tonne super sac, bulk cubes, cans, and tubes.

Due to transportation restrictions, i.e. climate, a full year’s supply of fuel and lubricants is transported and stored on-site, in order to meet the demand of the upcoming year. During the summer months, diesel and aviation fuel are shipped from Becancour, QC to Baker Lake, NU where it is transferred into storage tanks. From the Baker Lake storage tanks, fuel is transported daily on the AWAR to Meadowbank and in the near future on the Whale Tail haul road to Whale Tail Pit bulk fuel storage sites via contracted tanker trucks.

Diesel fuel coming from the Baker Lake Tank Farm is stored onsite at the Meadowbank site in a single 5.6 million litre tank within secondary containment, and the aviation fuel into two (2) – 50,000L double walled tanks at the airstrip. Similarly for the Whale Tail site, diesel fuel originating from the Baker Lake Tank Farm will be stored in 2 - 250,000 litre tanks within secondary containment. From there, the diesel at both sites is delivered directly to the power plants by above ground pipes or redistributed into different storage tanks by an on-site tanker. Table 2 provides the varieties and volumes of petroleum products stored on site and their storage locations at Meadowbank.

Petroleum products will be stored at the Whale Tail site as well. In a manner similar to Meadowbank, the mechanical shop will store products that are used in maintaining equipment at the site in the same type of containers. Diesel will be stored in 2 – 250,000 tanks in the tank farm. Exploration will have up to 37 envirotanks of diesel for use in their underground and regional exploration programs.

The Baker Lake fuel farm consists of six (6), ten (10) million litre (L) tanks for diesel fuel and twenty (20), 100,000L double walled tanks, within secondary containment, for aviation fuel. The diesel fuel tanks are single-walled and constructed of welded steel. The aviation fuel tanks are double-walled and constructed of steel. Both Baker Lake Fuel Farm and storage locations have been designed and constructed to meet the CCME guidelines for *Aboveground Storage Tank Systems Containing Petroleum and Allied Petroleum Products*. The fuel unloading facility in each area includes a sloped lined pad to prevent contamination of the receiving environment. A continuous 60 mm high-density,

polyethylene liner sheet is installed under the tanks and the internal sides of the berm. The containment area is sized to hold 110% of the volume of the largest tank.

All fuel transfer and storage facilities have been designed in accordance with the Canadian Council of Ministers for the Environment (CCME, 1994) *Environmental Code of Practice for Above Ground Storage Tank Systems Containing Petroleum Products*, and the *National Fire Code*.

Appropriate measures are in place to minimize impacts to surface water, groundwater and soils from potential vehicle accidents when transporting petroleum products to the site. Details of petroleum product safe handling procedures and proper PPE can be found in Tables 3 and 4. Details of spill response measures are presented in the SCP. The following general precautions will be taken:

- A maximum speed on the All-Weather Private Access Road and the Whale Tail haul road for loaded and empty vehicles has been established based on the road design which considers safety and the protection of wildlife. This speed limit is 50 km/hr;
- All trucks will carry a spill kit;
- Trucks are equipped with a reliable radio and/or satellite phone; and
- Agnico Eagle commits to being prepared to respond to spills resulting from vehicle accidents on both roads in a timely and efficient manner. Refer to the Spill Contingency Plan.

5.3 FUEL TRUCK TRANSFER PROCEDURES

A contract supplier fills the storage tanks in the main tank farms at both sites. General procedures to be followed are listed below. Similar procedures would be followed for fuelling remote station tanks.

Before fuel transfer, verify that:

- All fuel transfer hoses are connected properly and couplings are tight;
- Transfer hoses are not obviously damaged;
- Fuel transfer personnel are familiar with procedures;
- Personnel are located at both the fuel delivery truck and fuel transfer tank(s) and can manually shut off the flow of fuel;
- If a high liquid level shutoff device is installed at the delivery tank, verify that the shutoff is operating correctly each time it is used; and
- Fuel transfer will then proceed per the established procedures of the contract supplier.

Any accidents or spills must be reported immediately to the Environmental Department representatives at the Meadowbank or Whale Tail sites. Notification and response procedures are detailed in the Spill Contingency Plan.

5.4 CONTAMINATED SOILS AND SPILLS

All contaminated spill pads, and booms resulting from the storage and handling of fuels and lubricants will be salvaged at the time such impacts are identified, and put into Quatrex bags, labelled and shipped off-site to an approved disposal facility or incinerated (small quantities) on site. All the petroleum hydrocarbon contaminated soil from the Meadowbank and Whale Tail sites is placed into the Meadowbank landfarm for treatment. At this time, a landfarm will not be established at the Whale Tail Pit site. Refer to the *Landfarm Design and Management Plan* for more details regarding the Meadowbank landfarm.

5.5 USED PETROLEUM PRODUCTS

Used oil that is no longer suitable for its intended use is classified as a liquid waste. The discharge of used oil into the environment, including but not limited to landfills, sewers and water bodies, is prohibited.

Used oil is used as auxiliary fuel at the secondary chamber at the Meadowbank incinerator or in designated on site waste oil heaters. This used oil burner at the incinerator has the capacity to handle approximately 200,000 litres of used oil per year. Refer to the *Incinerator Waste Management Plan* for more information. Similarly, at the Whale Tail site, waste oil will be used in the incinerator or waste oil heaters. Failing this, the waste oil will be sent to Meadowbank where it will be consumed or shipped to an accredited recycling facility.

All used oil products that are not burned in the incinerators or waste oil heaters are collected in tanks or drums marked “Waste Oil” and disposed of at an approved facility in the south. Empty petroleum containers are stored on site in a designated area and returned to the supplier on backhauls or disposed at approved facilities in the south. Oil filters are punctured and/or crushed and drained of their contents for 24 hours prior to disposal.

A random sample of used oil incinerated at both sites will continue to be analysed each month to ensure that it does not contain unacceptable levels of impurities, including cadmium, chromium, lead, total organic halogens (such as chlorine compounds), polychlorinated biphenyls (PCB) and ash content. Samples will be sent to an accredited laboratory (Multi-lab) for analysis. Concentrations of parameters listed above will be compared to the criteria set out in Schedule A of the *Used Oil and Waste Fuel Management Regulations*. Alternate arrangements will be made for the off-site disposal, treatment or recycling of used oil that does not meet this criteria.

The following information is recorded in association with the incineration of used oil:

- Volume of used oil generated at each site;
- Volume of used oil incinerated at each site;
- Name and address of the person in charge, management or control of the used oil, and the place where the used oil was produced;
- Analysis of any representative sample of used oil;
- Summary of maintenance performed on the incinerators or processing equipment;

- Volume and nature of the products produced from the used oil; and
- Destination of the used oil products shipped from the Meadowbank Mine (including Whale Tail Pit facilities).

Table 1 - Fuel Products – Hazardous Classes & Potential Impacts

Material	TDGA Class[a]	Potential Environmental Impact
Diesel	3	Water & soil contamination
Motor oil	Not regulated	Water & soil contamination
Aviation fuel	3	Water & soil contamination
Hydraulic fluid	Not regulated	Low risk to water & soil with proper handling
Varsol	3	Water & Soil contamination
Automotive grease	Not regulated	Low risk to water & soil with proper handling
Ethylene glycol	Not regulated	Toxic by ingestion, could potentially be consumed by wildlife.

Table 2 - Fuel Products – Meadowbank Mine Site Storage Locations

Product	Total Quantity On-Site	Storage Location	Container	Presently used
Diesel	6.1 ML (potentially 66.1 ML including Baker Lake)	Fuel farm	1 x 5.6 ML tank in bermed area	Yes
		Powerhouse	2 x 25,000 L tank	Yes
		Exploration camp	1 x 10,000 L tank	Not in use but contains diesel
			1 x 75,000 L tank	Not in use but contains diesel
		Emulsion Plan	1 x 25,000 L tank	Yes
		Camp Emergency Genset	2 x 55,000 L tank	Yes
		Incinerator	1 x 2,200 L tank	Yes
		Fueling station	1 x 50,000 L tank	No
		Vault	4 x 50,000 L tank	Yes
			1 x 25,000 L tank	Yes
			1 x 10,000 L tank	Yes
		AWAR	1 x 10,000 L tank at KM 73	Yes
			1 x 10,000 L tank at KM 23	Yes
		Baker Lake	6 x 10 ML tank in bermed area	Yes
Gasoline	60,000 L	Fueling Station	1 x 50,000 L tank	Yes
			1 x 10,000 L tank	Yes
Waste oil	50,000 L	Incinerator	1 x 50,000 L tank	Yes
Motor oils	*refer to Appendix B	Mechanical shop	Cubes or Barrels	Yes
		Powerhouse	Cubes or Barrels	Yes
		Exploration camp	Cubes or Barrels	No
Aviation fuel	100,000 L (potentially 2.1ML including Baker Lake)	Airstrip	2 x 50,000 L tank	Yes
		Exploration Camp	1 x 75,000 L tank	Not in use but contain aviation fuel
		Baker Lake	20 x 100,000 L tank in bermed area	Yes
Hydraulic fluid	*refer to Appendix B	Mechanical shop	Cubes or Barrels	Yes
		Powerhouse	Cubes or Barrels	Yes
		Plant	Cubes or Barrels	Yes
Ethylene glycol	*refer to Appendix B	Mechanical shop	Cubes	Yes

Note: L = litre; ML = Mega-litre ($1X10^6$ litres).

Table 3 - Fuel Products – Safe Handling Procedures

Product	Handling Procedures
Diesel	Do not get in eyes, on skin, or on clothing. Avoid breathing vapours, mist, fume, or dust. Do not swallow. May be aspirated into lungs. Wear PPE and/or garments if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use with adequate ventilation. Keep away from heat, sparks, and flames. Store in a well-ventilated area. Store in a closed container. Bond and ground during transfer.
Motor oil	Wear protective clothing and impervious gloves when working with used motor oils. To be handled generally consistent with other petroleum hydrocarbons.
Aviation fuel	See diesel procedures above.
Hydraulic fluid	Keep container closed until ready for use.
Ethylene glycol	Ensure adequate ventilation. Wear protective gloves and chemical safety goggles. Keep in tightly closed container, stored in a cool, dry, ventilated area. Separate from acids and oxidizing materials. Empty containers of this product retain product residues and may be hazardous.

Table 4 - Fuel Products – Personal Protective Equipment

Product	Personal Protective Equipment		
	Eyes	Skin	Respiration
Diesel	Chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required
Motor oil	Chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required
Aviation fuel	Chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Hydraulic fluid	Chemical goggles	None usually required	None usually required
Ethylene glycol	Chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation

6. EXPLOSIVES

6.1 PRODUCT DESCRIPTION

Explosives are required for blasting waste rock and ore in the mine. Transportation, storage, use, and handling of blasting materials are strictly regulated by the Federal *Explosives Act* and *Transportation of Dangerous Goods Act* (Class 1 – Explosives), as well as the following territorial Acts:

- Explosives Use Act and Regulations; and
- Mine Health and Safety Act and Regulations.

6.2 EXPLOSIVES STORAGE

Manufacturing, handling, and storage of explosives are carried out by QAAQTUQ – Dyno Nobel Canada Inc. However, a small amount of explosive materials are shipped to Meadowbank in the form of blasting caps. These are handled by Agnico Eagle. The bulk of the explosives used at site are Emulsion (XL-1000), which is a mixture of nitrites and emulsifier. Emulsion is mixed by Dyno Nobel in an on-site plant (Emulsion Plant shown on Figure 1), located near the Meadowbank Mine site.

The estimated annual explosives requirement for the Whale Tail satellite open pit is expected to vary from 6,000 to 11,000 tonnes per year, this being the same as presently used at Meadowbank. The use of explosives at Portage Pit, Goose Pit, Vault Pit, Phaser Pit and BB Phaser Pit, located on or near the Meadowbank Mine site, will cease upon completion of mining.

The existing emulsion plant at Meadowbank Mine will continue to operate with deliveries on an as needed basis to Whale Tail. The haul road will be used to truck explosives between Meadowbank and the Whale Tail sites, with a minimum amount of explosives to be stored at the Whale Tail Pit site in the remote emulsion storage located adjacent to the Whale Tail Pit operations. Explosives truck(s) will be based at the Emulsion Plant at the Meadowbank Mine.

The Whale Tail site will primarily use emulsion based explosives during construction and operations. Presplit explosives will also be used to control the final pit walls, where required.

Sea cans of emulsion and nitrite prill are stored on the Meadowbank Emulsion Plant site. They are stored within sea cans in quantities of approximately 20,000 kg's per sea can. These items are stored in separate locations so as to prevent the mixing of the two products. These products are also stored away from any other products, >40m away from the emulsion plant, and >25m from the fuel tanks.

The high explosive detonators and blasting caps are stored in an enclosed magazines located near the Meadowbank emulsion plant and will be stored at a safe location and distance from the Whale Tail Pit operations. It is estimated that approximately twelve magazines will be required on site, each being approximately 4 m x 14 m (i.e., not much bigger than a sea can).

The explosive mixing plant, product storage, and magazines are safely located away from vulnerable facilities, as stipulated by the federal and territorial *Explosives Use Act* and Regulations. The mixing plant is also used for the washing and minor repair of trucks and equipment used to handle the explosives.

6.3 USE OF EXPLOSIVES

The primary blasthole drills are diesel-powered rigs capable of drilling 152.4 mm diameter holes. Drilling requirements were calculated for ore and waste. A pre-shear and buffer blasting followed by mechanical wall cleanup is used for the final wall. Blasting operations are affected by several factors, including wall control and weather. A number of modified operating procedures will be implemented during the winter season. These may include minimizing the sleep time for loaded holes; ensuring that cuttings are mounded around the hole collars after loading to prevent snow drifting into the holes, and utilizing blasthole covers.

The responsibility for blasting is split between appropriately trained mine personnel and the explosives supplier, Dyno Nobel. Dyno Nobel is responsible for supplying and delivering blasting agents to the site, manufacturing the blasting product on site, delivering blasting agents to the blastholes and filling the holes. Agnico Eagle Blasters are responsible for charging the holes, placing the detonators and boosters, and tying-in the patterns. The AN and emulsion components are loaded on barges and transported to the Baker Lake Marshalling Area for temporary storage, if necessary, prior to transport to site. Dyno Nobel provide mixing and delivery trucks. Agnico Eagle provides diesel fuel and accommodations.

Blasting will be approximately daily and will average, in size, the daily production requirement of 50-90,000 tonnes per blast. Blasting will likely be by electric initiation and will feature current technology with down-the-hole delays to minimize the energy per delay to single hole loads. This will minimize backbreak, fly rock, vibration levels and will optimize fragmentation and minimize digging problems.

Blasting is carried out by certified blasters following blasting regulations and safe practices. All pit activities are under the supervision of certified mine supervisors, knowledgeable in mine operating regulations and best practices.

The manufacture and distribution of explosives is carried out by suppliers under Federal license to conduct such work. They provide and operate the explosives manufacturing plant under such license and authority.

Details on explosives inventory and inspections are provided in Section 9.2. Information on Explosives Handlers is available in Section 10.3.

6.4 DISPOSAL

Disposal of regular waste will follow the *Agnico Eagle Meadowbank Mine Waste Management Plan*.

Wash water that is created at the Emulsion plant is sucked out via vacuum truck and taken to the tailings storage facility for disposal.

Any unusable Emulsion waste is taken to the mines blast pattern for disposal down the bore holes.

7. PROCESS PLANT & WATER TREATMENT REAGENTS & CONSUMABLES

7.1 PRODUCT DESCRIPTION

The Process Plant (mill) uses a number of chemicals and reagents to treat the ore, recover entrained gold and to destroy cyanide. The Water Treatment Plant also uses a number of chemicals and reagents to treat water for TSS removal. Water Treatment chemicals would be used over a 3 to 4 month period during frost-free months only for dewatering and the discharge of the attenuation pond water to Third Portage Lake, Wally Lake and Mammoth Lake. The range in annual quantities used would reflect the different dosages that may be used during different mining stages (early operations, late operations, closure treatment of tailings water and polishing of pit lake water quality on a contingency basis). Material categories, site handling and storage requirements, and PPE recommended by manufacturers are summarized in Tables 5 to 8.

Table 5 - Process Plant & Water Treatment Reagents – Use, Consumption & Storage

Reagent	Use	Approximate Consumption		Phase	Normal Delivery Format	On-Site Storage
		Daily	Annual			
Acetylene	Welding	1-2	600	gas	gas cylinders	secured upright
Activated carbon (granular)	Gold recovery	340 kg	140 t	solid	500 kg bags	Pallet
Anti-scalant	Water treatment	25 kg	10 t	liquid	650 kg tote tank	Pallet drums
Borax	Refinery	60 kg	22 t	solid	40 kg bags	Pallet
Silica	Refinery	30 kg	11 t	solid	22.7 kg bags	Pallet
Calcium oxide (Quicklime) (CaO)	pH control	7,814 kg	3150 t	solid	1 t supersacs	Pallet
Calcium peroxide (alternative to hydrogen peroxide)	Potential use: Water treatment	minimal*	minimal*	solid	45 kg drum	Pallet drums
Copper sulphate ($CuSO_4$)	Cyanide destruction	1450 kg	585 t	solid	1 t supersacs	Pallet
Flocculant (Magnafloc 338 or Magnafloc 10)	Settling aid	300 kg	120 t	solid	25 kg bags	Pallet
Hydrochloric acid (HCl)	Refining/stripping	200 kg	75 t	liquid	20 gal drums	Pallet drums
Hydrofluoric acid	Laboratory	5 gallons	1 825 gallons	liquid	20 gal drums	Pallet drums
Hydrogen peroxide (alternative to calcium hydroxide)	Potential use: Water treatment	minimal*	minimal*	liquid	1 m^3 HDPE tote	Pallet
Lead acid batteries	Vehicles	-	24	liquid	-	Pallet
Nitric acid	Stripping	50 kg	18 t	liquid	34 kg bottle	Pallet

Paints	Maintenance	-	100 gallons	liquid	gallon	Pallet
Sodium cyanide (NaCN)	Leaching	3825 kg	1 540 t	solid	1 t box bags	Pallet
Sodium hydroxide (caustic soda) (NaOH)	Refining/stripping	20 kg	8 t	solid	25 kg bags	Pallet
	Refining/stripping	786 kg	320 t	solid	1000 kg	Pallet
Sodium metabisulphite ($Na_2S_2O_5$)	Cyanide destruction	7710 kg	3100 t	solid	1 t supersacs	Pallet
Sodium nitrate	Refinery	40 kg	15 t	solid	50 kg bags	Pallet
Sulphur	Cyanide destruction	745 kg	300 t	solid	1 t bags	Pallet

Note: kg = kilogram; t = ton; gal = gallon; m^3 = cubic metre.

Table 6 - Process Plant & Water Treatment Reagents – Hazard Classes & Potential Environmental Impacts

Material	Class	Potential Impact
Acetylene	2.1	Generally not hazardous for water.
Activated carbon	4.2	No information available.
Anti-scalant	Not regulated	Negligible with proper handling
Borax	Not regulated	Presents no health hazards.
Calcium oxide	Not regulated	No information available.
Calcium peroxide	5.1	Releases oxygen into environment when dissolved in water.
Copper sulphate	9	Harmful to aquatic life.
Flocculant	Not regulated	Acute fish, invertebrate, algae and bacteria toxicity.
Hydrochloric acid	8	Extremely toxic to aquatic life by lowering the pH below 5.5. When released into the soil, this material may leach into groundwater.
Hydrofluoric acid	8.6.1	No information available.
Hydrogen peroxide	5.1	Aquatic Toxicity 96-hour LC50.
Lead acid batteries	8	No information available.
Nitric acid	8	No information available.
Paints	Not regulated	No information available.
Silica	Not regulated	Generally not hazardous for water.
Sodium cyanide	6.1	Expected to be very toxic to aquatic life and to terrestrial life.
Sodium hydroxide	8	No information available.
Sodium metabisulphite	Not regulated	No information available.

Sodium nitrate	5.1	Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise. The products of degradation are less toxic than the product itself.
Sulphur	9	No info available (insoluble in water).

Table 7 - Process Plant & Water Treatment Reagents – Safe Handling Procedures

Product	Handling Procedure
Acetylene	Do not mix with air or oxygen above atmospheric pressure. Store away from oxidizing agents. Open and handle cylinder with care. Keep ignition sources away - Do not smoke. Protect from heat. Protect against electrostatic charges. Pressurized container: protect from sunlight, store in a cool location and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Prevent impact and friction. Store in accordance with local fire code and/or building code or any pertaining regulations.
Activated carbon	Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Activated Carbon, especially when wet, can deplete oxygen from air in enclosed spaces, and dangerously low levels of oxygen may result. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.
Anti-scalant	Used in extremely small quantities. Can cause mild to moderate irritation of eyes, skin, and upper respiratory tract. Wash thoroughly after handling. Use sensible industrial hygiene and housekeeping products. Not flammable. Keep containers tightly closed
Borax	No special steps required.
Calcium oxide	Store in closed containers in a controlled drainage area under cover. Use in a well-ventilated area. Empty containers retain product residues and may be hazardous.
Calcium peroxide	Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Store in a cool, dry, well-ventilated place. Keep container tightly closed and away from

Product	Handling Procedure
	incompatible materials and sources of heat.
Copper sulphate	Avoid contact with skin and eyes. DO NOT breathe dust. Always wash hands thoroughly after contact. Store and use only in dry, well-ventilated areas. Keep container tightly closed.
Flocculant	Dust generated in handling of this product can be explosive if sufficient quantities are mixed in air, in which case ignition sources should be avoided. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust/or static electricity. Handle in accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. Remove contaminated clothing; launder or dry-clean before reuse. Wash thoroughly with soap and water after using. For industrial use only. Slip hazard when wet. Material is slippery when wet. Store in the original container, securely closed, in a cool and dry location. Avoid extremes of temperature and ignition sources.
Hydrochloric acid	Do not get in eyes, on skin, or on clothing. Wear protective clothing. Avoid breathing vapours or fumes. Store in cool, dry, ventilated area with acid-resistant floors. Keep container closed, out of direct sunlight, and away from heat, water, and incompatible materials. When diluting, add acid slowly to water and in small amounts. Never use hot water and never add water to acid. When opening metal drum, use non-sparking tools because hydrogen gas may be present. Do not wash out container and use for other purposes. Empty containers retain product residues and may be hazardous.
Hydrofluoric acid	Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Use with adequate ventilation. Do not get on skin, in eyes or on clothing. Do not ingest or inhale. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not store in metal or glass containers. Do not store in direct sunlight. Keep tightly closed. Empty container may contain hazardous residue. Do not add any other material to the container. Do not wash down the drain. Do not allow smoking or food consumption while handling. Store in approved containers only. Do not add water to acids.
Hydrogen peroxide	Use extreme care when attempting any reactions because of fire and explosion potential (immediate or delayed). Conduct all initial experiments on a small scale and protect personnel with adequate shielding as the reactions are unpredictable, and may be delayed, and may be affected by impurities, contaminants, temperature, etc. Do not get in eyes. Avoid contact with skin and clothing. Wash thoroughly after handling. Avoid contact with flammable or combustible materials. Avoid contamination from any

Product	Handling Procedure
	source including metals, dust, and organic materials. In the event of an accident where large volumes of hydrogen peroxide might come into contact with external fires or with incompatible chemicals, a one-half mile area from the incident should be evacuated. Store in a properly vented container or in approved bulk storage facilities. Do not block vent. Do not store on wooden pallets. Do not store where contact with incompatible materials could occur, even with a spill (see "Hazardous Reactivity" on MSDS). Have water source available for diluting. Do not add any other product to container. Never return used or unused peroxide to container, instead dilute with plenty of water and discard. Rinse empty containers thoroughly with clean water before discarding. (See "Waste Disposal" on MSDS).
Lead Acid Batteries	Store batteries in a well-ventilated cool area. Handle carefully to avoid damaging or turning batteries over.
Nitric acid	Class 8 products are not to be loaded with class 1, 4.3, 5, 6, 7 or foodstuffs or foodstuff empties. Store in a well-ventilated area and out of direct sunlight. Keep containers closed at all times. Store away from oxidisable, caustic and combustible materials. Vapours heavier than air; prevent concentration in sumps and hollows. DO NOT enter confined spaces where vapour may have collected. Strong oxidising agent; can lead to fire or explosion with organic and/or combustible materials.
Paints	No special steps required.
Silica	Prevent formation of dust. This product is not flammable. When pouring into a container of flammable liquid, ground both containers electrically to prevent static electric spark. Keep containers tightly sealed.
Sodium cyanide	Highly toxic, corrosive to eyes, skin, and respiratory tract. Can be fatal if swallowed, inhaled, or absorbed through skin. Keep cyanide antidote kit available in any cyanide work area. Wear personal protective clothing at all times. Keep in tightly closed container in cool, dry, ventilated area. Protect against physical damage to containers. Do not store under sprinkler systems. Do not wash out container and use for other purposes. Empty containers retain product residues and may be hazardous.
Sodium hydroxide (caustic soda)	Can cause severe injury to eyes, skin, and respiratory tract. Use PPE at all times and DO NOT contact product directly. Wash thoroughly after handling. Store in dry, well-ventilated area. Keep in original container, tightly closed. Empty containers retain product residues and may be hazardous.
Sodium	May cause irritation to eyes, skin, and respiratory tract with prolonged exposure.

Product	Handling Procedure
metabisulphite	Sulphite-sensitive individuals may experience severe allergic reaction to dust. Releases sulphur dioxide gas when mixed with water. Wear PPE and wash thoroughly after handling. Store in dry, well-ventilated area away from heat, acids, and oxidizers. Keep container tightly closed. Use vacuum to clean up dust.
Sodium nitrate	Keep away from heat. Keep away from sources of ignition. Keep away from combustible materials. Empty containers pose a fire risk; evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, acids. Keep container dry. Keep in a cool place. Keep container tightly closed. Keep in a cool and well-ventilated area. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.
Sulphur	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. May form flammable dust-air mixtures. Avoid contact with skin, eyes and clothing. Empty containers contain product residue, (liquid and/or vapour), and can be dangerous. Keep containers tightly closed. Avoid contact with heat, sparks, and flame. Use with adequate ventilation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat spark, or open flames. Store away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances (oxidizing agents).

Table 8 - Process Plant & Water Treatment Reagents – Personal Protective Equipment

Product	Personal Eyes	Protective Skin	Equipment Respiration
Acetylene	Tightly sealed goggles	Protective gloves	Use atmosphere-supplying respirators (e.g. supplied-air:

Product	Personal Eyes	Protective Skin	Equipment Respiration
			demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator in case of insufficient ventilation).
Activated carbon	None required	None required	None required
Anti-scalant	For splash protection use chemical goggles or full face shield	Rubber or neoprene gloves; impervious apron or coveralls and boots	Not normally needed
Borax	Avoid eye contact	None required	None required
Calcium oxide	For splash protection use chemical goggles or full face shield.	Rubber, neoprene, or nitrile gloves; impervious apron or coveralls and boots.	NIOSH/MSHA approved respirator, if required.
Calcium peroxide	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.	Impervious gloves of chemically resistant material (rubber or neoprene) should be worn at all times. Wash contaminated gloves and dry thoroughly before reuse. Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse. Impervious boots of chemically resistant material should be worn.	NIOSH-approved respirator for dust should be worn if needed.

Product	Personal Eyes	Protective Skin	Equipment Respiration
Copper sulphate	Chemical goggles or full face shield.	Rubber or neoprene gloves; impervious apron or coveralls and boots.	Dust mask; NIOSH/MSHA approved respirator, if required.
Flocculant	For splash protection use chemical goggles or full face shield	Rubber or neoprene gloves; impervious apron or coveralls and boots	Dust mask
Hydrochloric acid	For splash protection use chemical goggles or full face shield	Rubber or neoprene gloves; impervious apron or coveralls and boots	NIOSH/MSHA approved respirator
Hydrofluoric acid	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Wear face shield.	Wear appropriate protective neoprene gloves to prevent skin exposure. Wear acid-resistant jacket, trousers and boots sufficient to protect skin.	Wear appropriate OSHA/MSHA approved chemical cartridge respirator regulations found in 29CFR 1910.134. If more than TLV, do not breathe vapour. Wear self-contained breathing apparatus. Always use an NIOSH-approved respirator when necessary.
Hydrogen peroxide	Wear coverall chemical splash goggles. In addition, where the possibility exists for eye or faces contact due to splashing or spraying of material, wear chemical splash goggles/full-length face shield combination.	Where there is potential for skin contact, have available and wear as appropriate: impervious gloves, apron, pants, jacket, hood, and boots; or totally encapsulating chemical suit with breathing air supply. Permeation data supplied by vendors indicate that impervious materials such as natural rubber, natural rubber plus neoprene, nitrile, or polyvinylchloride afford adequate protection. Do not wear leather	Where there is potential for airborne exposure in excess of applicable limits, wear NIOSH approved respiratory protection.

Product	Personal Eyes	Protective Skin	Equipment Respiration
		gloves or leather shoes (uppers or soles) because they can ignite following contact with peroxide. Cotton clothing can also ignite. This effect may be within minutes, or delayed. Clothing fires and skin damage occur less quickly with 50% or lower hydrogen peroxide than with 70% material, but adequate personal protection is essential for all industrial concentrations. Protective skin creams offer no protection from hydrogen peroxide and should not be used.	
Lead Acid Batteries	Safety glasses must be worn when moving, connecting, disconnecting, or maintaining batteries, or cleaning up acid spills; as well as, when brushing battery posts or handling solids from inside a battery.	When moving, connecting, disconnecting or maintaining batteries, or cleaning up acid spills acid resistant gloves and full coverage acid resistant clothing must be worn. When brushing battery posts or handling solids from inside a battery gloves and apron must be worn.	When brushing battery posts or handling solids from inside a battery, dust masks must be worn.
Nitric acid	Chemical safety goggles. A face shield may also be necessary.	Impervious gloves, coveralls, boots, and/or other resistant protective clothing. An impervious full-body encapsulating suit and respiratory protection may be required in some operations.	NIOSH/MSHA approved respirator, if required
Paints	None required.	None required.	None required.

Product	Personal Eyes	Protective Skin	Equipment Respiration
Silica	Safety goggles	Wear impervious gloves, shoes and protective clothing to prevent skin contact.	NIOSH/MSHA approved respirator, if required
Sodium cyanide	For dust and splash protection use chemical goggles or full face shield	Rubber or neoprene gloves; impervious lab coat, apron, or coveralls and boots	NIOSH/MSHA approved respirator, if required
Sodium hydroxide (caustic soda)	Tight-fitting goggles if dust is generated. For splash protection use chemical goggles or full face shield	Gauntlet type rubber or neoprene gloves; impervious apron or coveralls and boots	NIOSH/MSHA approved respirator
Sodium metabisulphite	Chemical safety goggles	Cotton gloves adequate for handling dry product. For solutions, use rubber or neoprene gloves; impervious apron or overalls and boots	NIOSH/MSHA approved respirator
Sodium nitrate	Contact lenses should not be worn; they may contribute to severe eye injury.	Impervious gloves of chemically resistant material (rubber or PVC), body suits, aprons, and/or coveralls of chemical resistant material and impervious boots of chemically resistant material should be worn at all times	For dusty or misty conditions, wear NIOSH-approved dust or mist respirator. In case of spill or leak resulting in unknown concentration, use NIOSH approved supplied air respirator.
Sulphur	Chemical safety goggles	Wear impervious gloves, shoes and protective clothing to prevent skin contact.	NIOSH/MSHA approved respirator, if required

8. MISCELLANEOUS HAZARDOUS/TOXIC MATERIALS

8.1 PRODUCT DESCRIPTION

Acids such as nitric acid, as well as emulsifiers and ammonium nitrate are used at the mine site. Gases such as propane, oxygen, acetylene; solvents; water/effluent treatment chemicals and various additives are also utilized.

The release or spillage of any of these substances would possibly result in environmental impacts and pose a potentially hazardous situation for those personnel exposed to some of these materials. It is essential that materials deemed to be potentially hazardous be dealt with in a cautious manner, in strict adherence to laws and regulations outlined in the legislation, whether the substance is provided in large or smaller quantities as this will prevent serious repercussions should an accidental release of material happen.

8.2 STORAGE FACILITIES OF HAZARDOUS/TOXIC CHEMICALS

All explosive related chemicals will be stored as discussed in Section 6 of this Plan.

All other chemicals and gases will be stored in appropriate locations.

These storage facilities ensure that chemicals that could interact and cause a serious incident will be kept segregated.

9. INVENTORY, INSPECTION & RECORDS

A contract expediting company, Arctic Fuels, arranges all deliveries from the Baker Lake Marshalling Area to the Meadowbank and Whale Tail sites. This includes the hazardous materials discussed in this plan. The General Mine Manager has ultimate responsibility for supervising the receipt, inspection, and recording of all material inventories at site. The division managers reconcile total amounts received against amounts ordered.

9.1 PETROLEUM PRODUCTS

9.1.1 Inventory Management

Diesel fuel use is metered automatically when it is pumped from the Meadowbank and Whale Tail bulk tanks. The metered volumes are summarized weekly and reconciled against tank levels determined manually with a dipstick from the top of the tanks. Diesel fuel consumption for the power generators is recorded weekly at Meadowbank and will be recorded weekly at Whale Tail.

Aviation fuel is dispensed as required under the supervision of aircraft personnel and site services. Helicopters may be stationed at the Whale Tail site for Amaruq exploration activities with periodic use of a fixed wing aircraft at the Amaruq Exploration site. Fixed wing aircrafts and helicopters will continue to use the Meadowbank airstrip. Consumption and on-site volumes are reconciled monthly at both locations. Lubricants and other petroleum products are inventoried monthly.

9.1.2 Inspection

The Environmental Department performs regularly scheduled inspections of all fuel and lubricant storage areas at both sites. The inspection schedule and procedures to be followed are summarized in Table 9. All inspections are logged with the date and time of inspection, facility inspected, and name of the person making the inspection. See Appendix D for the inspection report of any hazardous material storage area.

The condition of hazardous materials storage areas, containers, tanks, connectors and associated plumbing will be checked on a regular basis. Observations on their condition will be logged, dated and kept near the corresponding storage area. Drums/containers will be inspected for the presence and legibility of symbols, words or other marks identifying the contents, signs of deterioration or damage such as corrosion, rust, leaks at seams or signs that the drum/container is under pressure such as bulging and swelling, spillage or discoloration on the top or sides of the drum/container. If leaks or deterioration is encountered it will be noted and addressed in a timely manner.

The hazardous materials area's secondary containment will be inspected and the condition of the secondary containment will be noted. Arrangements will be made for repairs if necessary.

Table 9 - Inspection of Petroleum Storage Sites

Fuel Tanks	*Schedule* – Daily by Site Services Supervisor, Weekly by Environmental Technician, Quarterly by Environmental Coordinator. *Procedure* – Repair leaks and report promptly. Inspections will be reported annually and filed with the General Mine Manager or Site Services Superintendent and Environmental Superintendent.
Electrical Generating Plant (diesel)	*Schedule* – Daily by powerhouse operator, weekly by Environmental Technician as part of internal environmental inspections. *Procedure* – Inspections will be reported annually and filed as above.
Other Fuelling Stations	*Schedule* – Daily by Site Services Supervisor, Weekly by Environmental Technician as part of regular inspections. *Procedure* – Inspections will be reported annually and filed as above.
Spill Kits	*Schedule* – Monthly by Environmental Technician, Quarterly by Environmental Coordinator. *Procedure* – Inspections will be reported annually and filed as above.
Other Hazardous Material Storage	*Schedule* – Daily by Site Services Supervisor, Mill Supervisor, Weekly by Environmental Technician when materials are on site. *Procedure* – Inspections will be reported annually and filed as above.

Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. The extent of damage will be reported in writing to the General Mine Manager and Environmental Superintendent. The report will note any remedial repairs that may be made, the date of any repairs, and the need for any follow-up inspection.

9.1.3 Records

Records pertaining to storage, use, and loss of fuels and lubricants are required by CCME and the Fire Marshal (under the *National Fire Code).* The following records are prepared by the Procurement and Logistics and Site Services departments:

- Reconciliation of bulk inventory from resupply logs;
- Weekly use summaries;
- Weekly reconciliation for each storage tank;
- Overfill alarm tests;
- Pressure tests (if applicable);
- Inspections and maintenance checks of the storage tank, piping, and delivery systems;
- Any alteration to the systems;
- Reports of leaks or losses;

- Reports of spill responses; and
- Records of training.

9.2 EXPLOSIVES

9.2.1 Inventory Management

See Figure 1 for location of the Meadowbank Explosives Mixing Plant or Emulsion Plant. Once mining ends at Meadowbank, the emulsion manufactured on-site will continue to be stored in a tank located at the Emulsion Plant and delivered via the haul road to the Whale Tail site on an as needed basis. Refer to the Ammonia Management Plan for more details on emulsion storage. Agnico Eagle's explosive contractor, Dyno Nobel Inc., performs daily and weekly inspections on the Emulsion Plant to ensure that inventory used is documented. Agnico Eagle conducts daily inspections of the sea can's storing the boosters, delays and detonator cords and provides an inventory to the Mine Manager.

9.2.2 Inspection

Access to and use of explosives will be under the exclusive control of Agnico Eagle. Agnico Eagle will be responsible for inspection of all explosives equipment and facilities, including the ammonium nitrate storage areas and the magazines for high explosive detonators and blasting caps. The explosives manufacturing plant is inspected by Dyno Nobel Inc. and reports this to Agnico Eagle Management.

9.2.3 Records

The *Federal Explosives Act* requires that the following records be kept with regard to explosives products:

- Quantity and strength of each explosive manufactured; and
- Quantity of each explosive issued to the mine site from the factory, including the dates of shipments and quantity of each explosive on site.

Agnico Eagle staff will provide weekly reports to the General Mine Manager that will include:

- Staffing;
- Safety concerns or incidents;
- Total explosives consumption;
- Amount of ammonium nitrate remaining on site; and
- Inventory of other explosives and accessories to be audited for fiscal month-end balances.

9.3 MISCELLANEOUS HAZARDOUS/TOXIC MATERIALS

9.3.1 Inventory Management

Adequate quantities of all hazardous chemicals are reconciled against orders on receipt. The appropriate department responsible for the miscellaneous chemicals at each site is responsible for reconciling the resupply inventory.

9.3.2 Inspection

During operations, the appropriate department responsible for storage and handling of the miscellaneous chemicals are to regularly inspect all areas where such hazardous materials are used and stored. Any problems will be noted and reported to the Department Manager. The Department Manager is responsible for weekly or monthly inspections of miscellaneous hazardous materials and storage areas.

9.3.3 Records

The quantity of hazardous materials received, used, and in possession of personnel are recorded by appropriate Departments. The departments are to comply with the environmental regulations.

10. TRAINING

10.1 GENERAL

All staff and contractors at the Meadowbank and Whale Tail sites will receive the following training:

- WHMIS;
- Emergency and spill response (see also the SCP and ERP);
- Operations overview; and
- Mine Standard Operating Procedures.

Mine employees will receive additional training in mine safety as specified by the *Mine Health and Safety Act* and regulations. Agnico Eagle will ensure compliance with the training requirements specified in the Act and regulations.

Process plant employees will receive additional training specific to their area of work and duties, including safe operating practices, safe handling and storage of chemicals, and use of PPE. Other training includes cyanide and chemical awareness, specific chemical training for specific tasks, and a mill induction training. This training will be the responsibility of Agnico Eagle.

A record of training received will be maintained for each employee and also from contractors.

In Appendix E you will find a procedure poster that is placed at the applicable hazardous material storage location. This poster will also be used during toolbox meetings with all departments to ensure that hazardous material is being segregated and placed in the appropriate containers for storage.

10.2 PETROLEUM PRODUCTS HANDLERS

Personnel who handle petroleum products will be expected to be conversant with relevant MSDS information. As well, these personnel will be given training in the following:

- Transportation of dangerous goods (TDG);
- Agnico Eagle's fuel handling procedures (outlined in Section 5);
- Spill response and cleanup procedures for petroleum (see the SCP); and
- Emergency response, especially firefighting procedures (see the ERP).

10.3 EXPLOSIVES HANDLERS

Only trained and certified persons will work with explosives. The explosives personnel will undertake formal training and on-the-job training to ensure compliance with legislation. The Mine Inspector will check the adequacy of training. Training requirements will include (but not necessarily be limited to):

- Specific fire procedures as per the *Federal Explosives Act*;
- First aid;
- Transportation of dangerous goods (TDG); and
- WCB Blasting Certificate.

10.4 PLANT EMPLOYEES

Process plant operators may receive TDG training, if appropriate. All plant employees will be trained in spill and emergency response procedures. Emergency response procedures for spilled chemical substances are provided in the SCP.

10.5 THIRD PARTY CONTRACTORS

It is expected that third party contractors receive adequate and comprehensive training to conduct their work tasks from their employer. Agnico Eagle intends to review the general qualifications of third party contractors prior to having them work at the site. In addition, the contractor companies may also be requested to confirm the qualifications of specific individuals that they may have working at the site.

Third party contractors working on the site are required to participate in, and complete a site specific health and safety training session. The training session is envisioned to be valid for a period of 3 years, after which time the contractor may be required to complete the training again, or attend a refresher. The training session will outline site specific hazardous and response procedures that they should be aware of in the course of conducting their work on site. The training session will cover hazardous materials management.

11. PLAN EVALUATION, AUDIT & IMPROVEMENT

As part of Agnico Eagle's commitment under the International Cyanide Management Code, it will sponsor regular (every three years) audits by Institute-approved, third-party professionals to verify its compliance with the Code's principles and standards of practice with regard to cyanide handling

12. FIGURES

Figure 1 - Meadowbank Mine Site General Layout

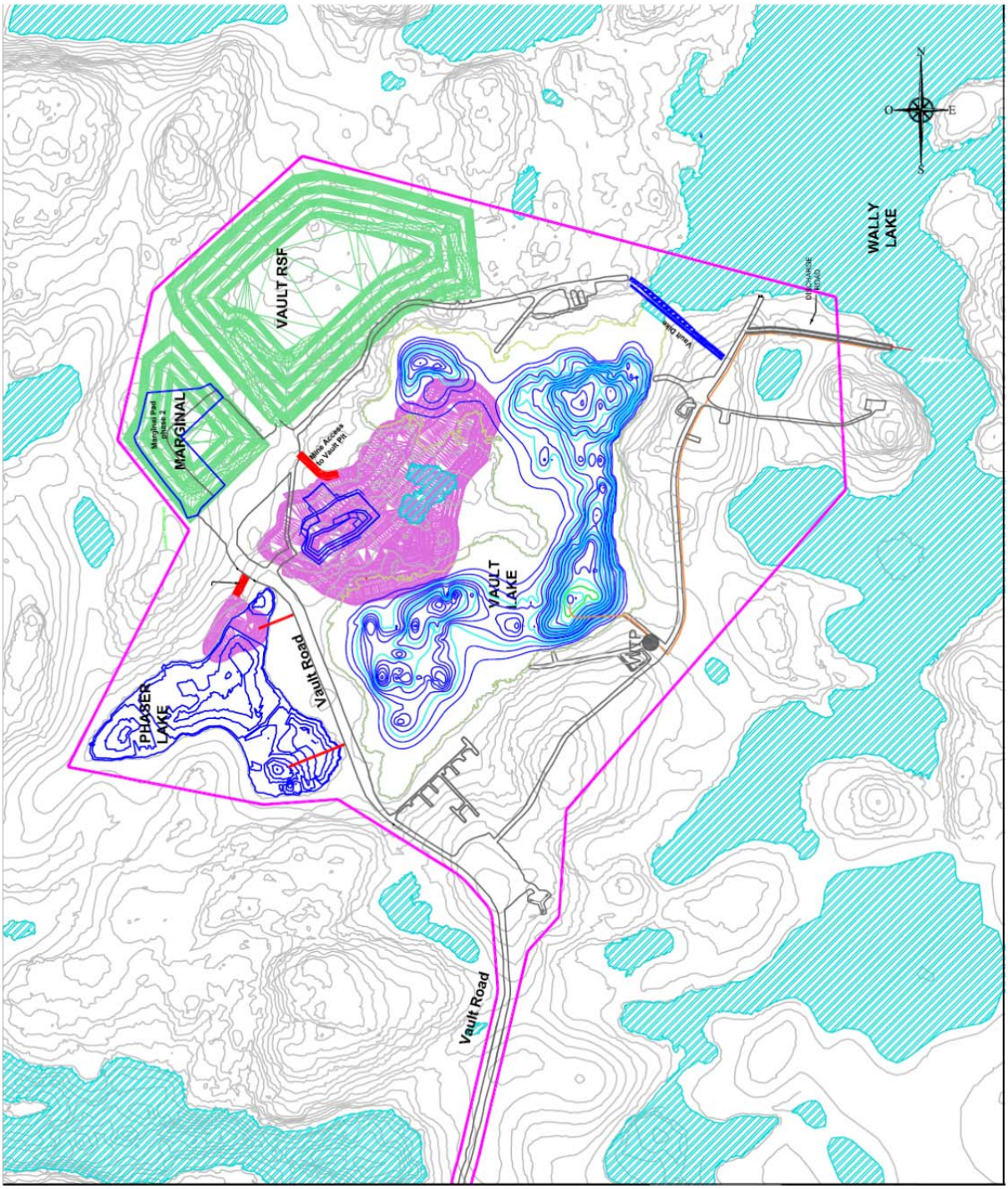


Figure 2 - Vault General Layout

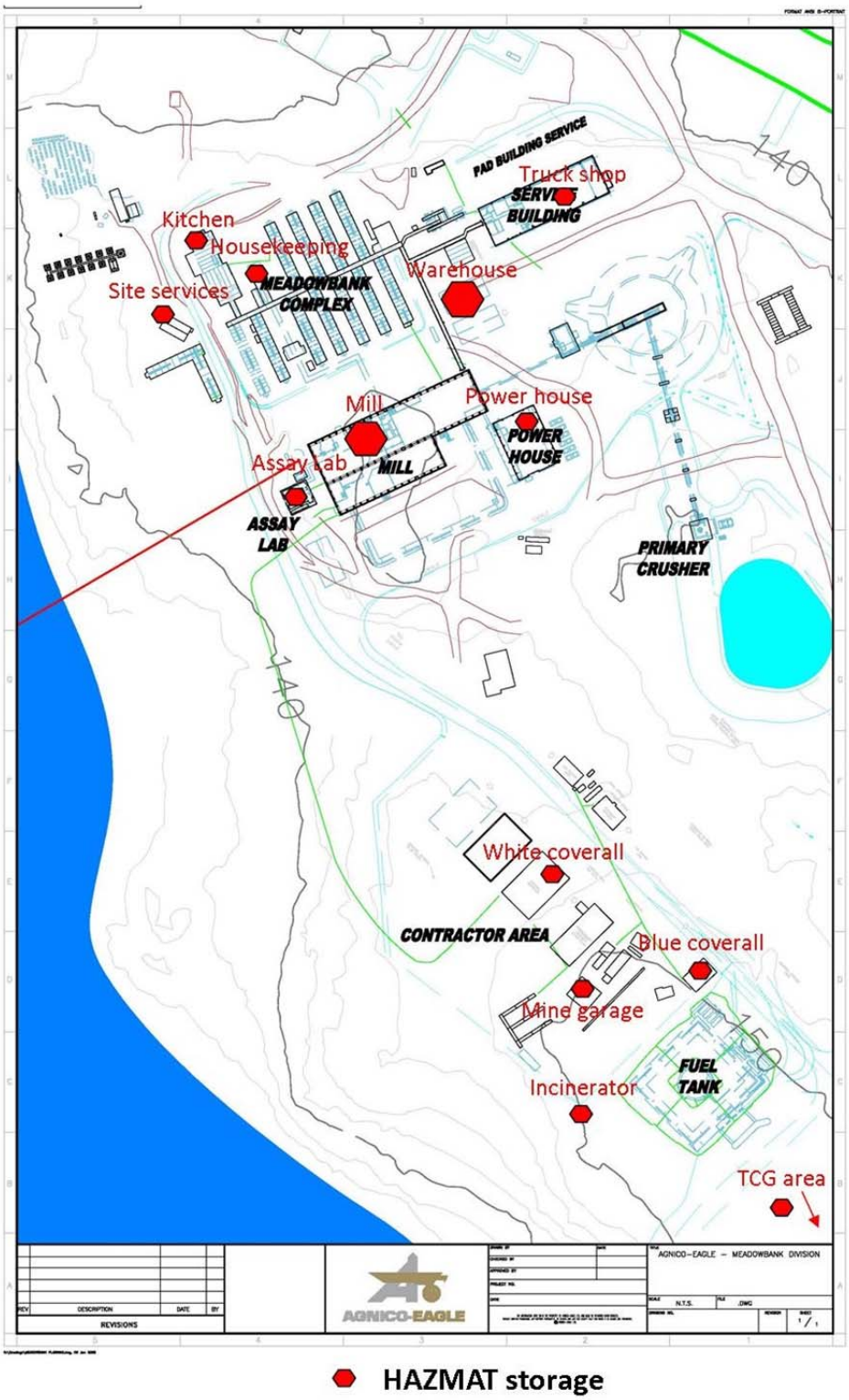


Figure 3 - Meadowbank Mine Site: Hazardous Material Storage Locations

Figure 4 - Baker Lake Marshalling Area Layout: Diesel Fuel Storage Facility

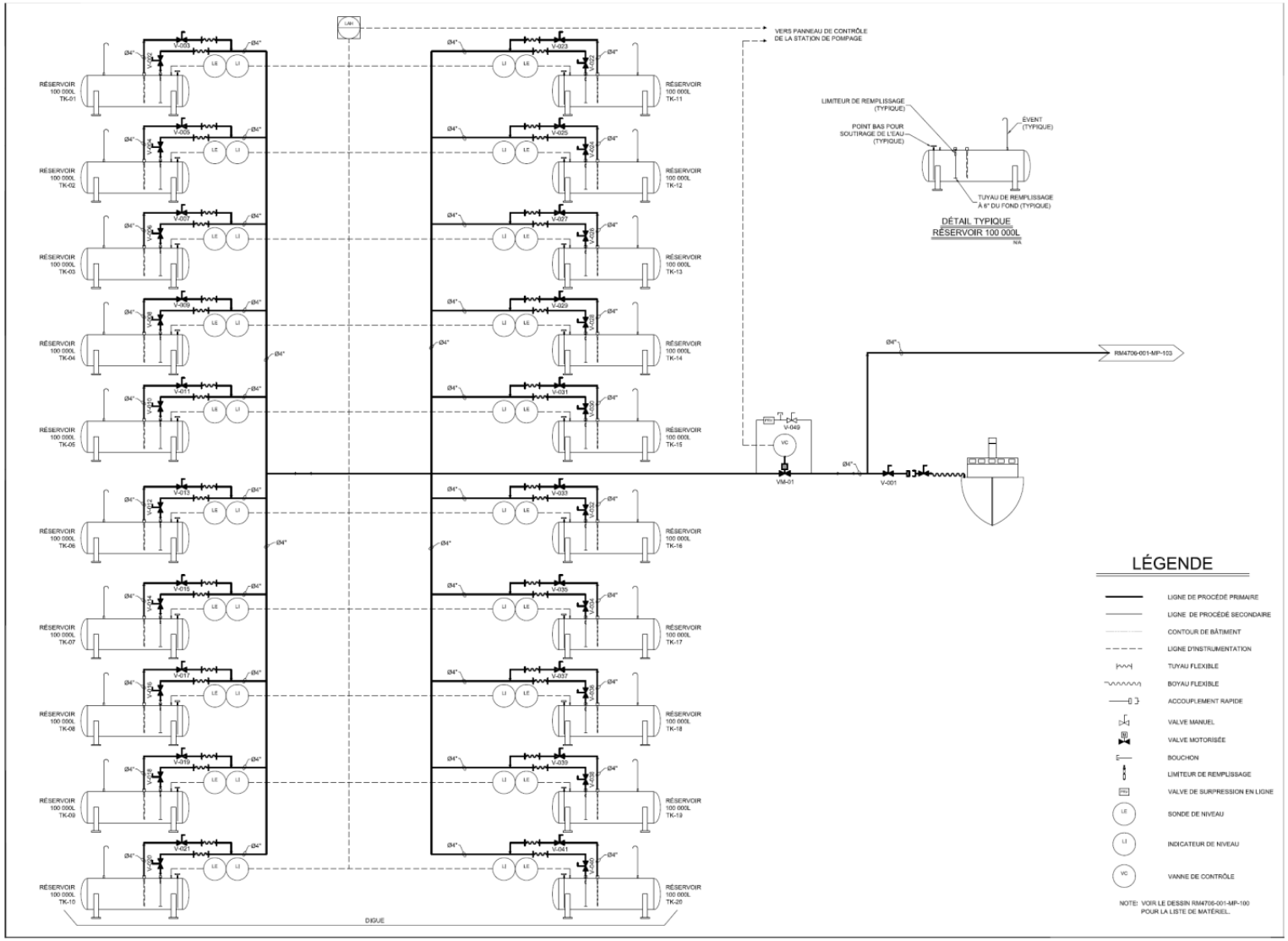
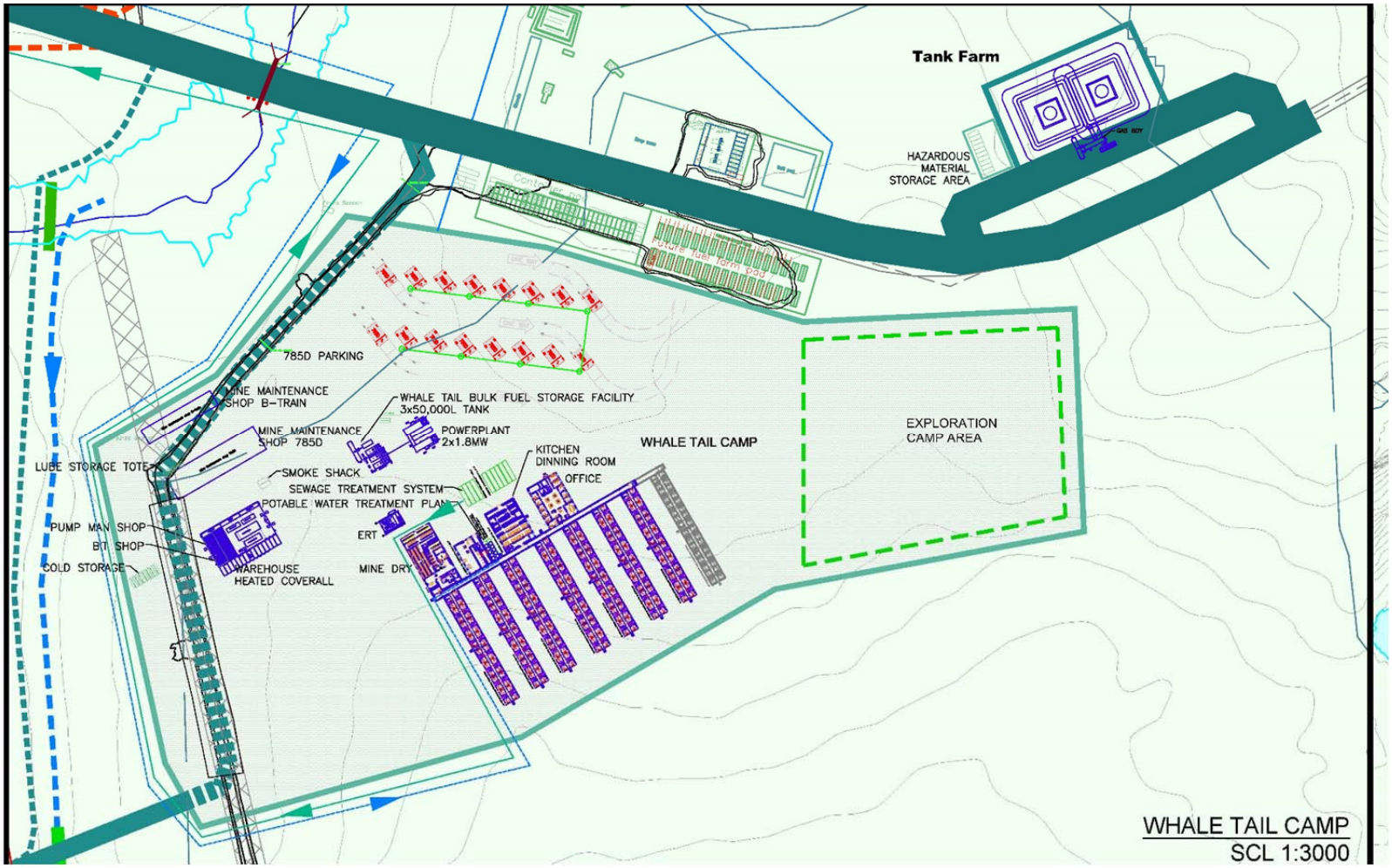


Figure 5 – Baker Lake Marshalling Area Layout: Jet-A Fuel Storage Facility

Figure 6 Whale Tail Camp



13. LIST OF ACRONYMS

Agnico Eagle	Agnico-Eagle Mines Ltd.
AN	Ammonium Nitrate
ANSI	American National Standards Institute
ANFO	Ammonium Nitrate Fuel Oil
CCME	Canadian Council of Ministers of the Environment
EPS	Environmental Protection Service
ERD	Explosives Regulatory Division, Natural Resources Canada
ERP	Emergency Response Plan
ERT	Emergency Response Team
FS	Fuel Storage Area
HAZCOM	Hazard Communication
HCN	Hydrogen Cyanide
HM	Hazardous Materials Storage Area
HMMP	Hazardous Materials Management Plan
HR	Human Resources
HSC	Occupational Health & Safety Committee
HW	Hazardous Waste Storage Area
IBC	Intermediate Bulk Container
ISO	International Organization for Standardization
MSDS	Materials Safety Data Sheets
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
OHSA	Occupational Health and Safety Administration

OHSP	Occupational Health & Safety Plan
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
SCP	Spill Contingency Plan
TDG	Transportation of Dangerous Goods
TDGA	Transportation of Dangerous Goods Act
WCB	Workers' Compensation Board
WHMIS	Workplace Hazardous Materials Information System

Appendix A

List of Applicable Legislation

The following is a list of federal and territorial legislation and guidelines that regulate the management of hazardous materials in Nunavut, and which are considered potentially applicable to the Meadowbank Gold Mine. As part of Meadowbank Mining Corp's overall environmental management system for the mine site, this list is updated at least annually to ensure it represents current and relevant information.

Federal Legislation

- **CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 S.C. 1999, c. 33**

  Code of Practice for the Reduction of Chlorofluorocarbon Emissions from Refrigeration and Air Conditioning Systems.

  Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems.

  Environmental Code of Practice on Halons Code of Practice EPS 1/RA/3E.

  Environmental Emergency Regulations SOR/2003-307.

  Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks, CCME-EPC-87-E, as amended.

  Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations SOR/2005-149.

  Federal Halocarbon Regulations, 2003 SOR/2003-289.

  Interprovincial Movement of Hazardous Waste Regulations SOR/2002-301.

  Ozone-Depleting Substances Regulations, 1998 SOR/99-7.

- **EXPLOSIVES ACT R.S.C 1985, c. E-17**

  Ammonium Nitrate and Fuel Oil Order C.R.C. 1978, c. 598.

  Explosives Regulations C.R.C. 1978, c. 599.

- **TRANSPORTATION OF DANGEROUS GOODS ACT, 1992 S.C. 1992, c. 34**

  Transportation of Dangerous Goods Regulations SOR/2001-286.

  Transportation of Dangerous Goods Regulations - Schedules SOR/2001-286.

Federal Codes and Other Guidance Documents

- National Fire Code.
- Indian and Northern Affairs Canada. 2005. DEW Line Cleanup Barrel Protocol.
- Canadian Council of Ministers for the Environment (CCME) - Environmental Code of Practice for Above-Ground and Underground Storage Tanks Systems containing Petroleum Products and Allied Petroleum Products (2003).
- CCME - Canadian Wide Standards for Petroleum Hydrocarbons in Soil.
- CCME - Canadian Environmental Quality Guidelines.
- Environment Canada (Tilden & Westerman). 1990. Guidelines for the Preparation of Hazardous Material Spill Contingency Plans.
- Department of Fisheries and Oceans. 1998. Guidelines for the Use of Explosives in or Near Canadian Fisheries Water.

Territorial Legislation

- **ENVIRONMENTAL PROTECTION ACT R.S.N.W.T. 1988, c. E-7**

  A Guide to the Spill Contingency Planning and Reporting Regulations January 2002.

  Environmental Guideline for Contaminated Site Remediation November 2003.

  Environmental Guideline for Waste Lead and Lead Paint.

  Guideline for Ozone Depleting Substances.

  Guideline for the General Management of Hazardous Waste in the NWT.

  Guideline for the Management of Waste Antifreeze.

  Guideline for the Management of Waste Batteries.

  Guideline for the Management of Waste Paint.

  Guideline for the Management of Waste Solvents.

  Guideline for Dust Suppression, February 1998.

  Spill Contingency Planning and Reporting Regulations R-068-93.

  Used Oil and Waste Fuel Management Regulations R-064-2003.

  Plain Language Guide to the Used Oil and Waste Fuel Management Regulations.

- **TRANSPORTATION OF DANGEROUS GOODS ACT, 1990 S.N.W.T. 1990, c. 36**

  Transportation of Dangerous Goods Regulations R-049-2002.

- **EXPLOSIVES USE ACT R.S.N.W.T. 1988, c. E-10**

  Explosives Regulations R.R.N.W.T. 1990, c. E-27.

Appendix B

Hazardous Materials Stored on the Meadowbank Site

Refer to the Approved Meadowbank Plan- Hazardous Material Management Plan, Version 3 (Oct. 2013)

Appendix C

Cyanide

C.1: Cyanide – Properties, Uses, Storage & Handling (Dupont)

C.2: Material Safety Data Sheets – Sodium Cyanide

Refer to the Approved Meadowbank Plan- Hazardous Material Management Plan, Version 3 (Oct. 2013)

C.1 Cyanide – Properties, Uses, Storage & Handling (Dupont)

C.2 Material Safety Data Sheets – Sodium Cyanide

Appendix D

Hazardous Material Storage Area Inspection Report

Refer to the Approved Meadowbank Plan- Hazardous Material Management Plan, Version 3 (Oct. 2013)

Appendix E

Procedure Poster Hazardous Material Storage

Refer to the Approved Meadowbank Plan- Hazardous Material Management Plan, Version 3 (Oct. 2013)