Baffinland Iron Mines Corporation

HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT PLAN

BAF-PH1-830-P16-0011

Rev 4

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TRACK CHANGES TABLE

A review and update of the Hazardous Materials and Hazardous Waste Management Plan has been undertaken, the following revisions have been completed.

Index of Major Changes/Modifications in Revision 3

Item No.	Description of Change	Relevant Section
1	Removed Abbreviations	N/A
2	Updated introduction section to consider the 2016 Work Plan	Section 1.1
3	Updated Health Safety and Environment Policy	Section 2.1
4	Updated Sustainable Development Policy	Section 2.2
5	Removed Section 1.6: Baffinland's Commitments	Section 1.6
6	Removed Section 1.7: Update of This Management Plan	Section 1.7
7	Removed Section 3.0: Targeted Valued Ecosystem Components	Section 3.0
8	Added Section 3.1.1: Ammonium Nitrate Storage and Handling	Section 3.1.1
9	Added Section 3.1.2: Emulsion Storage and Handling	Section 3.1.2
10	Added Table 3-2: Quantities of Explosives Stored On-site	Section 3.1.2
11	Updated Table 4-3: 2016 Projected Hazardous Waste Quantities	Section 4.6.2
12	Updated Figure 5-1: Mary River Project Organization Chart	Section 5.0
13	Updated to include the 2016 Work Plan	Appendix A
14	Added: Baffin Island Inc. has prepared an Emergency Response Assistance Plan	Appendix E

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

As required by Baffinland Iron Mines Corporation's (Baffinland) Type A Water Licence No. 2AM-MRY1325 Amendment No. 1 (Type A Water Licence) and Type B Water Licence No. 2BE-MRY1421 (Type B Water Licence) for the Mary River Project (Project), a review of Project Environmental Management and Monitoring Plans (EEMPs) was completed. This Hazardous Materials and Hazardous Waste Management Plan (Plan) was updated to meet the requirements of the Type A and B water licences. Further and continual modifications and revisions to this Plan shall be completed based on future work scope modifications, waste management procedures, and associated approvals. Updates to this Plan shall be completed in accordance to the terms and conditions of Baffinland's Water Licences, QIA Commercial Lease – Q13C301, issued September 6, 2013, the amended Project Certificate No. 005 issued by the Nunavut Impact Review Board (NIRB) and any subsequent requirements which may be issued. The purpose of this Plan is to identify Baffinland's framework for effective hazardous materials and hazardous waste management by providing instruction for the prevention, detection, containment, response, and mitigation of accidents that could result from handling hazardous materials. It also identifies the roles and responsibilities of its employees and contractors and as well as procedures for handling, storing and disposing of hazardous materials and hazardous waste generated at Project sites to ensure that it is conducted in a safe, efficient and environmentally compliant manner that minimizes the potential for adverse impacts to the environment. Tables of concordance with applicable Licences and Authorizations are provided in Appendix A.

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.

The plan is based on the following best practice management practices established for the management of hazardous materials and hazardous waste generated at Project sites:

- Identify and prepare hazardous materials and hazardous waste inventories;
- Characterize potential environmental hazards associated with hazardous materials;
- Assign oversight and responsibility accountabilities for the management of hazardous materials;
- Identify methods for the transportation, storage, handling and use of hazardous materials;
- Identify safe and effective long-term storage and disposal mechanisms;
- Prepare, assess and review contingency and emergency response plans;

- Facilitate and ascertain effective training programs for management, workers, and contractors whose responsibilities include handling hazardous materials;
- Maintain and review records of hazardous material consumption and incidents in order to anticipate and avoid impacts on personal health and the environment.

Hazardous materials used at the Mary River Project will be manufactured, delivered, stored, and handled in compliance with applicable federal and territorial regulation. Baffinland is committed to preventing, inadvertent release of hazardous materials and hazardous wastes to the environment and accidents resulting from non-conformances. Baffinland has developed and implemented programs for employee training, facility inspection, drills and exercises to evaluate these systems, and procedural review to address deficiencies, accountability, and allow for continual improvement.

Baffinland's framework for the management of inert and non-hazardous solid wastes, construction debris, and domestic waste is provided in the Waste Management Plan (BAF-PH1-830-P16-0028). The Fresh Water, Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010) provides Baffinland's framework for the management of sewage effluent and sludge generated at Project sites.

1.1.1 2016 Work Plan Update

To support the activities identified in the 2016 Work Plan (refer to Appendix B), Baffinland is committed to completing hazardous materials and hazardous waste management activities as described within this Plan.

1.2 Definitions

Project	The necessary tasks and work executed during the lifespan of the Project at the Project Site, including the construction, operation, closure and reclamation phases, of the Project.
Site	The areas occupied by the Project facilities (permanent or temporary) during the construction, operation, closure and reclamation phases of the Project.
Contractor	A person or business which provides goods, material, equipment, personnel, and/or services to Baffinland Iron Mines Corporation under terms specified in a contract.
Waste	The residual waste material (hazardous, non-hazardous or Putrescible) generated during the construction, operation, closure and reclamation phases of the Project.
Hazardous Waste	The wastes generated during the lifespan of the Project that present a threat to the human health or the environment because they exhibit one or more of the following characteristics: corrosive, reactive, explosive, toxic,

	inflammable, or biologically infectious.
Non-Hazardous Waste	The wastes generated during the lifespan of the Project that do not present a threat to human health or the environment.
Putrescible Wastes	The wastes generated during the lifespan of the Project that degrade very rapidly, i.e., plants, food scraps or animal remains.
Incinerator Wastes	Waste identified as suitable for incineration based on incineration technology used on-site, applicable regulations and project approvals. Includes: food waste, domestic waste, packaging waste, wood waste, absorbents, and some types of filters (e.g., air filters)

1.3 Hazardous Materials Regulatory Requirements

Both federal and territorial legislation regulates the management of hazardous materials in Nunavut.

The following Acts and Regulations provide specific requirements for the management of the different types of hazardous materials at the Mary River Project:

1.3.1 Federal

- Transportation of Dangerous Goods Act and Regulations (TDGA and TDGR).
- Explosives Act.
- National Fire Code.
- Canadian Council of Ministers for the Environment (CCME) Guidelines for Above-Ground Storage Tanks.

1.3.2 Territorial

- Transportation of Dangerous Goods Act (RSNWT 1988) and Regulations.
- Explosives Use Act and Regulations.
- Fire Prevention Act and Regulations.
- Mine Health and Safety Act and Regulations.
- Work Site Hazardous Materials Information System Regulations (WHMIS).

The TDGA classifies hazardous materials into the following nine primary classes:

- Class 1 – Explosives
- Class 1 – Gases
- Class 3 – Flammable liquids

- Class 4 – Flammable solids
- Class 5 – Oxidizing substances and organic products
- Class 6 – Poisonous (toxic) and infectious substances
- Class 8 – Corrosives
- Class 9 – Miscellaneous products or substances

1.4 Relationship to Other Management Plans

Development of this Plan was based on the concepts and principles identified in Baffinland's EHS Management System Framework Standard (BAF-PH1-830-STD-0001) and Baffinland's Hazard Identification and Risk Assessment Standard (BAF-PH1-830-PRO-0001). This Plan is intended for use in conjunction with the following Plans:

- Air Quality and Noise Abatement Management Plan (BAF-PH1-830-P16-0002)
- Emergency Response Plan (BAF-PH1-830-P16-0007)
- Environmental Protection Plan (BAF-PH1-830-P16-0008)
- Explosives Management Plan (BAF-PH1-830-P16-0009)
- Fresh Water, Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010)
- Interim Mine Closure and Reclamation Plan (BAF-PH1-830-P16-0012)
- Surface Water, Aquatic Ecosystems, Fish and Fish Habitat Management Plan (BAF-PH1-830-P16-0026)
- Terrestrial Environmental Management and Monitoring Plan (BAF-PH1-830-P16-0027)
- Waste Management Plan (BAF-PH1-830-P16-0028)
- Spill Contingency Plan (BAF-PH1-830-P16-0036)

2 BAFFINLAND POLICIES

2.1 HEALTH SAFETY AND ENVIRONMENT POLICY

This Baffinland Iron Mines Corporation Policy on Health, Safety and Environment is a statement of our commitment to achieving a safe, healthy and environmentally responsible workplace. We will not compromise this policy for the achievement of any other organizational goals.

We implement this Policy through the following commitments:

- Continual improvement of safety, occupational health and environmental performance
- Meeting or exceeding the requirements of regulations and company policies
- Integrating sustainable development principles into our decision-making processes
- Maintaining an effective Health, Safety and Environmental Management System
- Sharing and adopting improved technologies and best practices to prevent injuries, occupational illnesses and environmental impacts
- Engaging stakeholders through open and transparent communication.
- Efficiently using resources, and practicing responsible minimization, reuse, recycling and disposal of waste.
- Reclamation of lands to a condition acceptable to stakeholders.

Our commitment to provide the leadership and action necessary to accomplish this policy is exemplified by the following principles:

- As evidenced by our motto “Safety First, Always” and our actions Health and safety of personnel and protection of the environment are values not priorities.
- All injuries, occupational illnesses and environmental impacts can be prevented.
- Employee involvement and active contribution through courageous leadership is essential for preventing injuries, occupational illnesses and environmental impacts.
- Working in a manner that is healthy, safe and environmentally sound is a condition of employment.
- All operating exposures can be safeguarded.
- Training employees to work in a manner that is healthy, safe and environmentally sound is essential.
- Prevention of personal injuries, occupational illnesses and environmental impacts is good business.
- Respect for the communities in which we operate is the basis for productive relationships.

We have a responsibility to provide a safe workplace and utilize systems of work to meet this goal. All employees must be clear in understanding the personal responsibilities and accountabilities in relation to the tasks we undertake.

The health and safety of all people working at our operation and responsible management of the environment are core values to Baffinland. In ensuring our overall profitability and business success every Baffinland and business partner employee working at our work sites is required to adhere to this Policy.

Brian Penney
Chief Executive Officer
March 2016

2.2 SUSTAINABLE DEVELOPMENT POLICY

At Baffinland Iron Mines Corporation (Baffinland), we are committed to conducting all aspects of our business in accordance with the principles of sustainable development & corporate responsibility and always with the needs of future generations in mind. Baffinland conducts its business in accordance with the Universal Declaration of Human Rights and ArcelorMittal's Human Rights Policy which applies to all employees and affiliates globally.

Everything we do is underpinned by our responsibility to protect the environment, to operate safely and fiscally responsibly and with utmost respect for the cultural values and legal rights of Inuit. We expect each and every employee, contractor, and visitor to demonstrate courageous leadership in personally committing to this policy through their actions. The Sustainable Development and Human Rights Policy is communicated to the public, all employees and contractors and it will be reviewed and revised as necessary on a regular basis. These four pillars form the foundation of our corporate responsibility strategy:

1. Health and Safety
2. Environment
3. Upholding Human Rights of Stakeholders
4. Transparent Governance

1.0 HEALTH AND SAFETY

- We strive to achieve the safest workplace for our employees and contractors; free from occupational injury and illness, where everyone goes home safe everyday of their working life. Why? Because our people are our greatest asset. Nothing is as important as their health and safety. Our motto is "Safety First, Always".
- We report, manage and learn from injuries, illnesses and high potential incidents to foster a workplace culture focused on safety and the prevention of incidents.
- We foster and maintain a positive culture of shared responsibility based on participation, behaviour, awareness and promoting active courageous leadership. We allow our employees and contractors the right to stop any work if and when they see something that is not safe.

2.0 ENVIRONMENT

- Baffinland employs a balance of the best scientific and traditional Inuit knowledge to safeguard the environment.
- Baffinland applies the principles of pollution prevention, waste reduction and continuous improvement to minimize ecosystem impacts, and facilitate biodiversity conservation.
- We continuously seek to use energy, raw materials and natural resources more efficiently and effectively. We strive to develop more sustainable practices.
- Baffinland ensures that an effective closure strategy is in place at all stages of project development to ensure reclamation objectives are met.

3.0 UPHOLDING HUMAN RIGHTS OF STAKEHOLDERS

- We respect human rights, the dignity of others and the diversity in our workforce. Baffinland honours and respects the unique cultural values and traditions of Inuit.
- Baffinland does not tolerate discrimination against individuals on the basis of race, colour, gender, religion, political opinion, nationality or social origin, or harassment of individuals freely employed.
- Baffinland contributes to the social, cultural and economic development of sustainable communities in the North Baffin Region.
- We honour our commitments by being sensitive to local needs and priorities through engagement with local communities, governments, employees and the public. We work in active partnership to create a shared understanding of relevant social, economic and environmental issues, and take their views into consideration when making decisions.
- We expect our employees and contractors, as well as community members, to bring human rights concerns to our attention through our external grievance mechanism and internal human resources channels. Baffinland is committed to engaging with our communities of interest on our human rights impacts and to reporting on our performance.

4.0 TRANSPARENT GOVERNANCE

- Baffinland will take steps to understand, evaluate and manage risks on a continuing basis, including those that may impact the environment, employees, contractors, local communities, customers and shareholders.
- Baffinland endeavours to ensure that adequate resources are available and that systems are in place to implement risk-based management systems, including defined standards and objectives for continuous improvement.
- We measure and review performance with respect to our safety, health, environmental, socio-economic commitments and set annual targets and objectives.
- Baffinland conducts all activities in compliance with the highest applicable legal & regulatory requirements and internal standards.
- We strive to employ our shareholder's capital effectively and efficiently and demonstrate honesty and integrity by applying the highest standards of ethical conduct.

4.1 FURTHER INFORMATION

Please refer to the following policies and documents for more information on Baffinland's commitment to operating in an environmentally and socially responsible manner:

Health, Safety and Environment Policy
Workplace Conduct Policy
Inuktitut in the Workplace Policy
Site Access Policy
Hunting and Fishing (Harvesting) Policy
Annual Report to Nunavut Impact Review Board
ArcelorMittal Canada Sustainability and Corporate Responsibility Report

If you have questions about Baffinland's commitment to upholding human rights, please direct them to contact@baffinland.com.

Brian Penney
Chief Executive Officer
March 2016

3 PROJECT HAZARDOUS MATERIALS

3.1 AMMONIUM NITRATE AND EXPLOSIVE MATERIALS

Ammonium nitrate (AN) is manufactured and used primarily as a fertilizer for agricultural purposes in many parts of the world. It is also used in the manufacture of commercial blasting explosives, and is an important raw material in the manufacture of other products such as nitro-glycerine, water gels/slurries, and other types of blasting emulsions.

AN is a stable, inorganic, solid compound. It is completely soluble in water and must be kept dry to remain effective for its intended purpose. AN when in solution can be highly toxic to fish and can enhance the potential for eutrophication in the aquatic receiving environment (Guideline for the Release of Ammonia Dissolved in Water Found in Wastewater Effluents, Environmental Canada, 2013).

While AN is classified as a hazardous product, its storage and handling at Project sites do not represent significant risk when proper precautions are taken. At Project sites, qualified explosives contractors manage AN and other explosives-related materials. AN storage containers (1,000 kg tote bags) are stored in a safe area away from water bodies and from the explosives storage magazine. AN bags are handled individually when required for the preparation of explosives. AN spills will be swept-up and placed in suitable containers for use or disposal. Empty AN bags non-hazardous inert waste, and are burned in Project site incinerators. Site personnel exposed to AN area are required to wear appropriate personal protective equipment (PPE).

In Canada, the production, storage, and use of AN and explosive materials are subject to strict precautionary measures under the Explosives Act and Regulations, and the Canada Transportation Act, Ammonium Nitrate Storage Facilities Regulations. The Explosives Act is administered by the Explosives Regulatory Division (ERD) of Natural Resources Canada. Storage, use and handling of blasting materials are strictly regulated in Nunavut. All explosives handling, use and storage are completed on-site by licenced in accordance with the Mary River Project: Explosives Management Plan and are completed by Dyno Nobel Baffin Island Inc.

Table 3-1: Explosives - Hazard Classes and Potential Impacts

Material	Class	Potential Impact
Ammonium nitrate	5.1	Water contamination
High explosive detonators	1	Negligible with proper handling
Blasting caps	1	Negligible with proper handling

Table 3-2 provides 2016 explosives quantities on-site (as of December 2015). For additional information pertaining to material information, onsite storage locations and handling procedures of AN, Dyno Nobel Baffin Island Inc. has prepared an Emergency Response Assistance Plan which has been provided in Appendix C.

3.1.1 Ammonium Nitrate Storage and Handling

A is stored on -site in containers in two locations; the KM 97 laydown and smaller quantities at the Mine Site Dyno Nobel emulsion plant. The AN prill is stored in 1,000 kg tote bags, 20 of which are stored double-stacked in each of the 20' containers. AN (in any amount) shall not be stored outside at any time and shall only be withdrawn from the containers when required by plant production. AN is loaded directly into the AN Handling Module of the plant to minimize any exposure of the product to the environment.

3.1.2 Emulsion Storage and Handling

Emulsion is stored in a single, 36,000 kg capacity tank within the emulsion loading garage at the Dyno Nobel Emulsion Plant located at the Mine Site. Smaller quantities may be stored in the two bulk emulsion trucks (10,000 kg capacity each) which are parked in the garage when not in use.

Smaller quantities of AN emulsion pre-packaged explosives will be used to begin development of the quarry sites. Pre-packaged AN emulsions pose minimal risk to the environment given the hydrophobic nature of the emulsion explosives.

Table 3-2: Quantities of Explosives Stored On-site (December 2015)

Material	Purpose	Total Quantities 2015	Storage Type	Max. Quantity at Site at any time
Pre-Packaged Explosives	Explosive agent	716,519 kg	Magazines and Seacans	800,000 kg
Ammonium Nitrate	Polymer	1,874,000kg	20,000 kg per seacan	2,000,000 kg

3.2 Sewage Sludge

Sewage sludge generated at Project sites is treated and disposed of in a safe and effective manner. Appropriate PPE is required for workers likely to have exposure to treated sewage sludge and includes goggles, face shields, respirators, liquid-repellent coveralls and gloves. Hand-washing stations with clean water and sanitizing soap are readily available where contact with sewage sludge occurs.

Training on the following standard hygiene practices is required for site Personnel required to work with sewage sludge:

- Frequent and routine hand washing;
- The proper use of appropriate PPE;
- The removal of contaminated PPE and the use of available on-site showers, lockers, and laundry services;
- Proper storage, cleaning, or disposal of contaminated PPE;

- Instructions that work clothes and boots should not be worn home or outside the immediate work environment;
- Prohibition of eating, drinking, or smoking while working in or around treated sewage sludge; and
- Procedures for controlling exposures to chemical agents that may be in sewage sludge.

3.3 FUELS AND LUBRICANTS

Hydrocarbon products and chemicals such as combustible diesel fuels, toxic anti-freeze, compressed gases, lubricants, and cutting oils are widely used at Project sites for power generation, heating, and vehicle operation. The transportation, storage, and handling of diesel products are regulated by both federal and territorial legislation. Regular inspections of storage and distribution facilities are completed at Project sites to verify mechanical soundness and to prevent leaks and the uncontained release of diesel fuel.

Material categories, site handling and storage requirements recommended by manufacturers in material safety data sheets (MSDS) are summarized in 3-3 and 3-4.

Table 3-3: Fuel Products – Hazard Classes, Potential Impacts and Storage Locations

Material	Class	Total Amount – Container	Potential Impact
Diesel	3	Refer to Appendix B	Water and soil contamination
Aviation fuel	3		Water and soil contamination
Motor oil	NR	TBD – Barrels and/or pails	Soil contamination
Hydraulic fluid	NR	TBD – Barrels and/or pails	Soil contamination
Varsol	3	TBD – Barrels and/or pails	Soil contamination
Vehicle grease	NR	TBD – Barrels and/or pails	Negligible risk with proper handling
Ethylene glycol	NR	TBD – Barrels and/or pails	Negligible risk with proper handling

NR: Not Regulated

Table 3-4: Fuel Products - Safe Handling Procedures

Material	Handling Procedure
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 protective equipment 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.
Aviation fuel	See diesel procedures above.
Motor oil	Wear protective clothing and impervious gloves when working with used motor oils.

Material	Handling Procedure
Hydraulic fluid	Keep container closed until ready for use.
Varsol	Avoid eye contact. Use with adequate ventilation. Wash thoroughly after handling. Empty container retains residue. Follow label instructions. Avoid repeated skin contact. Store in cool, ventilated area, away from ignition sources and incompatibles. Keep container tightly closed.
Vehicle grease	Minimize breathing vapor, mist, or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean before re-use; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Code. Keep containers closed when not in use. Do not store near heat, sparks, flame, or strong oxidants.
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.

Only contract suppliers or trained site Personnel are permitted to complete fuel activities of storage tanks located at Bulk Fuel Storage Facilities at Project sites (Milne Port and Mary River Bulk Fuel Storage Facilities). The following activities are required for bulk fuel transfer:

Before fuel transfer, verification that:

- All fuel transfer hoses have been connected properly and couplings are tight;
- Transfer hoses are not obviously damaged;
- Fuel transfer personnel are familiar with procedures; and
- Personnel are located at both the fuel delivery truck and fuel transfer tank(s) and can manually:
  - Shut-off fuel flow;
  - If a high liquid level shut-off device is installed at the delivery tank, verify that the shut-off is operating correctly each time it is used;
  - Fuel transfer will then proceed per the established procedures of the contract supplier; and
  - Any accidents or spills must be reported immediately to the Environmental Manager.

Upon closure of the mine and facilities, some storage capacity will be left in place at site for diesel fuel for the use of personnel involved in close-out and reclamation activities. Small amounts of other petroleum products will also continue to be available. For additional information, refer to Baffinland's Interim Mine Closure and Reclamation Plan (BAF-PH1-830-P16-0012).

3.4 HYDROCARBON CONTAMINATED SOILS

Soils contaminated by hydrocarbons from spills and Project decommissioning activities are salvaged and deposited at the Landfarm Facility located at Milne Port for bioremediation.

The Landfarm Facility consists of two geomembrane lined containment cells. The larger (3,383 m^3) west cell (landfarm) was constructed for the containment and biotreatment of hydrocarbon contaminated soils. Treated soils that meet prescribed criteria will be used as landfill cover material or for other purposes upon receipt of approval from appropriate regulatory agencies.

Contaminated soils are placed and spread during summer months for remediation through natural microbiological and evaporative processes. Soil that has reached acceptable levels of hydrocarbon biodegradation and meets remediation criteria provided in the Environmental Guideline for Contaminated Site Remediation (Department of Environment, Government of Nunavut, March 2009) can then be removed and transferred to the landfill or other appropriate use. The Landfarm Facility is operated in accordance with Nunavut government guidelines and Baffinland's Landfarm Operation Maintenance and Monitoring Manual (refer to Appendix D). As part of Landfarm operations, soil is turned regularly to provide aeration and promote the remediation process. Periodic inspections and sampling will be conducted to assess the efficiency of the biodegradation process.

The smaller (929 m^3) east cell was constructed for the containment of hydrocarbon contaminated snow generated during the winter months and the treatment of the contaminated water during the summer months using on-site oily-water separators. During treatment, monitoring will be completed at several stages of the treatment process to ensure discharges to the environment are in compliance with the water quality discharge criteria outlined in Baffinland's Type A Water Licence.

4 HAZARDOUS MATERIALS AND WASTE LIFECYCLE APPROACH

The intent of this Plan is to implement a sound hazardous materials minimization program that focuses on the principles of Lifecycle Management, with the goal of managing hazardous material from their procurement, to their delivery to Project site, throughout their use, and to their disposal. The Hazardous Materials and Hazardous Waste Management Approach is intended to be used in conjunction with Baffinland's Hazard Identification and Risk Assessment Standard (BAF-PH1-830-PRO-0001) to identify supply, transportation, storage, and handling, recycle, and waste disposal of hazardous materials. Baffinland is committed to ensuring proper lifecycle management of all hazardous materials used at Project sites.

4.1 TYPES OF HAZARDOUS MATERIALS/WASTES

Project activities require the use of the following types of classified hazardous materials:

- Waste hydrocarbons and hydrocarbon products – fuel, lubricants, and solvents used for equipment operation and maintenance;
- Explosives – ammonium nitrate and high explosives used for blasting in the mine;
- Laboratory chemical wastes – various by-products classified as hazardous waste and chemicals used in the assay laboratory;
- Liquid chemical waste – battery acid, paint, etc.;
- Solid chemical waste – dry batteries, fluorescent lights, etc.;
- Electronic waste (e-waste);
- Biomedical waste;
- Ozone depleting substances – refrigerants, fire suppressants, etc.; and
- Compressed gas cylinders.

4.2 APPROVAL

Controlled or non-controlled products with external MSDS are reviewed and authorized prior to use at Project sites. Requisitions completed for new materials require a product approval form which is required to be reviewed and approved by the Health and Safety, and Environment Departments. The product approval process involves consideration for more suitable alternative products, high potential for permit violation, and storage requirements. The MSDS Approval and Management Procedure is provided in Appendix D.

4.3 DELIVERY

Hazardous materials are delivered to the Project via 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 placarded. Shipping papers are required to be accessible and include information describing the substance, immediate health hazards, fire and explosion risks, immediate precautions, fire-fighting information, procedures for handling leaks or spills, first aid measures, and emergency response telephone numbers.

Transportation companies are required to develop a spill prevention, control, and countermeasures plan to address the materials they are transporting. In the event of a release during transport, the commercial transportation company is responsible for first response and clean-up.

4.4 HAZARDOUS MATERIALS IDENTIFICATION AND HANDLING

When hazardous materials arrive at Project sites, additional regulations apply. The federal WHMIS requires proper labelling of products, the availability of product information in the form of MSDSs. In addition, awareness training for site Personnel on how to identify and handle hazardous products is completed as necessary.

In compliance with Environment Canada requirements, bulk fuel storage tanks at Project sites are installed in secondary containment areas constructed to hold at least 110% of the volume of the largest tank or are certified double walled vessels.

Emergency response procedures developed for the release of chemical substances at Project sites are provided in Baffinland's Spill Contingency Plan (SPC) (BAF-PH1-830-P16-0036). The SPC provides appropriate response procedures for accidental spills or releases of hazardous materials to minimize immediate risks to human health and the environment.

4.5 HAZARDOUS WASTE GENERATION AND HANDLING

Once consumed, residual hazardous materials become hazardous waste. Hazardous wastes include liquids or solids designated as hazardous wastes under federal or provincial regulations (e.g., hydrocarbon liquids, used batteries, various chemicals used during concrete operations, coating materials and a wide variety of other materials including any containers, containing residual amounts of hazardous materials). Unidentified chemicals and/or materials generated at Project sites are considered to be hazardous waste (unless otherwise identified) and are disposed of accordingly.

Hazardous waste generated at Project sites is handled by trained workers according to relevant standard operating procedures, job hazard assessments, and other documents (e.g., the EPP and environmental permits).

As required by the Qikiqtani Inuit Association (QIA), quarterly hazardous waste inventories for hazardous wastes stored in Hazardous Waste Storage Berms (HWBs) at Project sites are submitted.

Hazardous waste is required to be clearly labelled, and at no time shall hazardous waste be combined with other solid non-hazardous waste. Spill kits are located inside the hazardous waste storage areas (refer to the Spill Contingency Plan, BAF-PH1-830-P16-0036). Should the spill of a hazardous waste occur, Baffinland or its assigned representative will oversee its clean-up, removal of contaminated material, temporary storage, transportation and disposal of the hazardous waste contaminated material at an approved off-site hazardous waste disposal or treatment facility.

Hazardous wastes identified in Section 4.1 are prevented from entering any water body. As required, Project hazardous waste storage areas are located at a minimum of thirty-one (31) metres from the ordinary High Water Mark of any water body.

Smoking within 10 meters of hazardous waste storage locations is prohibited.

Biological hazardous wastes are generated at the medical clinic and first aid stations. While quantities are small, biological hazardous wastes are packaged, labelled and transported for disposal at an approved off-site disposal facility

Waste oil generated from Project activities is handled, stored and disposed of according to Used Oil Control Regulations (82/02) and the Government of Nunavut, Department of Environment, Environmental Guideline for Used Oil and Waste Fuel (June 2012).

Material categories, site handling and storage requirements, and personal protective equipment for hazardous waste are identified in 4-1.

Table 4-1: Hazardous Waste Handling Requirements

Material	Handling Procedure
Liquid chemical waste (glycols, solvents, paint, brake fluid, hydraulic fluids, etc.)	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 protective equipment 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.
Solid chemical waste (batteries, fluorescent lights, aerosol cans, etc.)	Avoid breathing vapours mist fumes and ensure they are stored in well-ventilated area. Store in an area away from direct sunlight and ensure containers are sealed at all times. Ensure no visible leaks or damage to containers holding the waste. Keep away from heat, sparks and flames. Use self-closing and flame resistant containers where possible.
Electronic waste (TVs, computer CRTs (screens) and computer hard drives	Where possible Environmental Protection Act (EPA) encourages reuse and recycling of end-of life electronic waste. Dismantling and providing reuse possibilities, enables intact natural resources to be conserved and air and water pollution caused by hazardous disposal avoided. Sanitize before disposal and return to manufacturer where possible.
Laboratory chemical	Avoid contact with eyes skin clothing. Do not breathe dust or other vapours. Wash

Material	Handling Procedure
waste	thoroughly after handling. Maintain general industrial hygiene practices when using this product. Store between 10° and 25°C. Keep away from: acids/ acid fumes. Oxidizers - Protect from heat moisture and ensure container lids are tightly closed at all times
Biomedical waste	Avoid eye contact. Use with adequate ventilation. Wash thoroughly after handling. Ensure waste is stored in areas away from general traffic and accessible only to authorized person. Follow label instructions. Avoid repeated skin contact. Store in cool, ventilated area. Keep container tightly closed. Waste cannot be stored for long periods and shall be transported in leak proof containers.
Ozone depleting substances (ODS) (i.e. refrigerants, etc.)	Required to be permanently labelled with the quantity and type of ozone depleting substance contained within that equipment. Compressor rooms housing stationary refrigeration and air conditioning systems should have refrigerant detectors and alarms installed to detect refrigerant leaks and emissions. Ensure trained licensed personal.
Compressed gas cylinders	Smoking prohibited when handling or transporting these cylinders. Store cylinders in the upright position and secure with an insulated chain or non-conductive belt. Ensure that protective caps are in place and that the area is well ventilated. Protect cylinders from contact with ground, ice, snow, water, salt, corrosion and high temperatures. Storage areas for compressed gas cylinders must not contain any unnecessary combustible materials or uncontrolled ignition sources. Be aware that environmental conditions, such as heat exposure, may cause the temperature of the cylinder to rise to excessive levels that could lead to a release of product even if the ambient temperature is relatively low.

4.6 Temporary Storage of Hazardous Waste

Hazardous wastes generated from temporary and permanent shelters along the Tote Road are temporarily stored in containers at the shelter until it is transported for temporary storage at designated on-site hazardous waste storage locations (e.g. HWBs).

4.6.1 Hazardous Waste Containers

The following general waste storage requirements apply to most hazardous waste generate by Project activities:

- Store in original container when possible or in containers manufactured to store hazardous waste;
- Sound, sealable, undamaged containers;
- Store in 16 gauge (or lower) metal or plastic drums, or other appropriate container;
- Label according to WHMIS and TDG guidelines;
- Keep containers closed or sealed at all times unless in use;
- Protect containers from damage and weather;
- Store in secure area with controlled access;

- Train personnel in appropriate practices;
- Store in manner to prevent spills to environment; and
- Never store with food or in food containers.

4.6.2 Hazardous Waste Storage Areas

Hazardous waste storage areas at Project sites meet the following criteria:

- Storage areas for hazardous wastes are located at a minimum of thirty-one (31) metres from the ordinary high water mark of any water body;
- Storage areas for hazardous waste are in lined and bermed facilities (HWBs) constructed to contain spills and prevent discharge to the surrounding environment;
- Site drainage is managed such that spills and contaminated run-off are prevented from flowing off-Project areas and surrounding run-off onto Project areas is minimized;
- Incompatible wastes are segregated by chemical compatibility to ensure the safety of Site Personnel and the environment;
- Only Site Personnel trained in waste handling procedures are authorized to enter Project hazardous waste storage areas.
- Regular inspections are completed and documented. Containers are placed so that each container can be inspected for signs of leaks or damage. Leaking or damaged containers will be removed and their content transferred to a sound container;
- The type and quantity of waste in the storage is documented;
- Storage sites have emergency response equipment appropriate for the hazardous waste stored at that location; and
- Storage sites are registered as required by regulations.

To comply with the conditions in Baffinland's Type A Water Licence Baffinland will provide notification to the Inspector and the Board of any contaminated soils, water or waste that is generated at Project sites in the submission of their Annual Report.

Table 4-2 provides hazardous waste management method by waste material. Table 4-3 identifies the estimated hazardous waste quantities projected for 2016.

Table 4-2: Hazardous Waste Management Methods

Waste Material	Waste Type	Classification	General Management Method	Final Disposal

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Absorbents – and other similar spill response material	Petroleum	Hazardous if used for a spill clean-up. Not TDG regulated.	Collect in white Quatrex bags. Store full bags in the hazardous waste storage areas until final disposal.	Offsite disposal
Activated Carbon	Petroleum	Hazardous. Not TDG regulated	Collect in white Quatrex bags. Store in the hazardous waste storage areasuntil final disposal.	Offsite disposal
Aerosol Cans	HHW	Hazardous. TDG regulated as "Aerosol, Flammable, Class 2.1, UN 1950"	Disposal bins located at various locations inside the main facilities, and at the waste management building. Store full drums in the hazardous waste storage areas in open top drums.	Offsite disposal
Appliances	Inert/ Chemical	May be hazardous.	Appliances may contain ozone depleting substances (refrigerator) or electronic boards. Manage accordingly. Store in contained location until approval by environment office to dispose in landfill.	Landfill
Batteries, wet (lead - acid)	Chemical	Hazardous. TDG regulated as "Batteries, wet, filled with acid, class 8, UN 2794"	Collect in black Quatrex bags in workplace sorting areas. Store full bags in the hazardous waste storage areas until final disposal.	Offsite disposal
Batteries, rechargeable (NiCad, Mercury, Lithium, Silver-Oxide)	HHW	Hazardous. Small household-type batteries are generally not TDG regulated.	Disposal bins (same as for alkaline batteries) are located at various locations inside the main facilities. Segregate per type and transfer to different 20L pails. Transfer to 20L pail, then in open top drums. Store in the waste berm. Computer batteries should be brought to the Environment Office.	Offsite disposal
Batteries, dry (alkaline)	HHW	Hazardous. Not TDG regulated.	Disposal bins (same as for rechargeable batteries) are located at various locations inside the main facilities. Transfer to 20L pail, then in open top drums. Store in the hazardous waste storage areas.	Offsite disposal
Biomedical Waste – Sharps, human anatomical, blood, and body fluids	Biomedical	Biomedical hazard.	Contain and store in suitable biohazard container at the medical office until disposal.	Offsite disposal
Calcium Chloride	Chemical	Hazardous. Not TDG regulated.	Collect and store in white Quatrex bags.	Offsite disposal or use as dust suppressant on roads (as authorized)
Chemicals – spent lab reagents	Chemical	Hazardous. Shipping TDG instructions should follow MSDS recommendations.	Management method should follow MSDS recommendations.	Offsite disposal

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Cigarette butts	Chemical	Hazardous. Not TDG regulated.	Collect in cigarette butts receptacles outside each main entrance.	Offsite disposal/ Incineration
Compressed gas cylinders	Chemical	Hazardous. TDG regulation varies depending on gas.	Safely empty cylinders of all gases. Store away from sources of heat and ignition. Return containers to manufacturer for reuse following TDG procedures. When not shipped offsite, remove valves and purge cylinder with compressed air or inert gas. Dispose of as metal.	Offsite reuse /Landfill
Contaminated Soils	Petroleum	Hazardous. Not TDG regulated	Store and decontaminate on site in landfarms	Onsite treatment
Contaminated snow, ice	Petroleum	Hazardous. Not TDG regulated	Store in contaminated snow dump adjacent to landfarm. Treatment in oil/water separator.	Onsite treatment
Contaminated water	Petroleum	Hazardous. Not TDG regulated	Collect in trays, drums, or pumped via pipeline. Store in closed top drums or bladders in the waste berm until treatment in oil/water separator.	Onsite treatment
Diesel fuel	Petroleum	Hazardous. TDG regulated as “Diesel, Class 3, UN 1202, FP 39°C”	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel. Diesel not suitable as mobile fuel can be used for heating values.	Offsite disposal/ onsite recovery
Drums – empty	Petroleum	Hazardous. Not TDG regulated	Empty drums frequently contain residuals. Drain content of drum in adequate container. Crush and package drums on pallets.	Offsite disposal
Drums – residuals	Petroleum	Hazardous. Considered the same hazard as original product.	Drum residuals are to be collected in different containers for reuse (diesel, jet A, oil) or disposal (antifreeze or other product). Reuse diesel and oil for heating and other uses.	Onsite recovery/ Offsite disposal
Electronic Equipment	HHW	Hazardous. Not TDG regulated. May contain heavy metals.	Typical electronic wastes consist of used computers, cell phones, cameras, TVs and monitor screens, media players, switches, and testing equipment. Electronic wastes shall be brought to the Environment Office. They are stored in contained location until offsite shipment for recycling. Batteries shall be removed of equipment and managed accordingly.	Offsite recycling

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Fluorescent Lamps – bulbs and tubes	HHW	Hazardous in large quantities (trace amount of mercury). Not TDG regulated.	Bulbs disposal bins are located at various locations inside the main facilities. Repack in original or reused boxes. Store tubes in recycling container. Store in designated location until offsite shipment for recycling.	Offsite disposal
Filters – Lube oil	Petroleum	Hazardous. Not TDG regulated.	Drain and crush filters. Collect in open top drums and store in the hazardous waste storage areas.	Offsite disposal
Gasoline	Petroleum	Hazardous. TDG regulated as "Gasoline, Class 3, UN 1203, FP -39°C"	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel.	
Glycol	Chemical	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in closed top drums or 1000L tote tanks / cubes in the hazardous waste storage areas until final disposal.	Offsite disposal
Grease	Petroleum	Non-hazardous	Store in open top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Human Waste	Domestic	Hazardous. Not TDG regulated	Store in open top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Hydraulic fluid	Petroleum	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Incinerator Ash	Inert/ Chemical	Usually inert, if non-hazardous.	Composition of incinerator ash will depend on the wastes that were incinerated. Disposal in open top drums. Suitable for disposal in the landfill.	Landfill
Jet A Fuel	Petroleum	Hazardous. TDG regulated as "Aviation gas, UN 1863, FP 39°C"	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel. Jet A not suitable as aviation fuel can be used for heating values.	Onsite recovery/ Offsite disposal
Kitchen Grease/Oil	Domestic	Non-hazardous.	Collect in closed-top drums or 20L pails in a sea container outside the kitchen. Suitable for incineration or transport to PSC a week before backhaul for final disposal.	Incineration/Offsite disposal

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Lube Oil	Petroleum	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in 1000L tote tanks / cubes in the hazardous waste storage areas until final disposal. Possible reuse as heating oil or other uses in approved furnaces.	Offsite disposal/ Onsite reuse
Metal	Inert	Non-hazardous, inert waste	Collect and store in landfill bins.	Landfill
Methanol	Chemical	Hazardous. TDG regulated as "Methanol, Class 3, UN 1230, P.G. II"	Collect in UN certified container. Store in the hazardous waste storage areas.	Offsite disposal
Oily rags and similar debris	Petroleum	Not hazardous if used for cleaning. Classified as Absorbent if used to clean-up spills	Suitable for incineration. Collect in drums at workplace sorting areas. Bring to incinerator and disperse between waste loads.	Incineration
Ozone Depleting Substances (ODS, i.e. air conditioning and refrigerant gases)	Chemical	Hazardous.	ODS must be removed by certified technician before disposal of unit. ODS must be stored as per instructions from certified technician.	Offsite disposal
Paint	Petroleum	May be hazardous if oil based.	Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Plastics – oil/ hydrocarbon containers, contaminated berm liner	Petroleum	Hazardous. Not TDG regulated.	Drain fluid in appropriate cube or drum. Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Unusual waste	To be determined	To be determined	Bring to the Environment Office, if size permits. Proper management and disposal will be determined on a case-by-case basis.	To be determined

Table 4-3: 2016 Projected Hazardous Waste Quantities

Waste Category	Waste Description	Disposal Method	2016 Est. Generation (kg/person/day)	Person Days On-Site	Est. Total Annual Production (tonnes)
Batteries	Misc.	Shipped off-Site	0.125	215,350	27
Hydro Carbon Contaminated Material	Sludge, Absorbents, Oil Filters, etc.	Incinerated/ Shipped off-Site	0.288		62
Waste Oil	Maintenance	On-site reuse/ Shipped off-Site	1.732		373
Waste Fuels	Maintenance	On-site reuse/ Shipped off-Site	0.129		28

Waste Grease	Domestic/ Maintenance	On-site reuse/ Shipped off-Site	0.046		10
Waste Hazardous Liquids	Other, Paint, Oily Water	Shipped off-Site	0.561		121
Waste Aerosol Canisters	Misc.	Shipped off-Site	0.004		1
Contaminated Containers/ Solids	Various	Shipped off-Site	0.447		96
Misc. Hazardous Materials	Misc.	Shipped off-Site	0.350		75
TOTAL					**793**

Note: Projected quantities obtained from the 2016 Work Plan (refer to Appendix B)

4.7 Hazardous Waste Transportation Off-Site

Hazardous waste generated at Project sites is shipped off-site to approve hazardous waste disposal and recycling facilities. Hazardous waste will not be transported to community hamlets. Storage and shipping containers will have appropriate containment measures. Manifests will be prepared for materials shipped off-site and the receivers are required to maintain chain-of-custody records. Shipping will be undertaken only by those trained in the Transportation of Dangerous Goods (TDG). Hazardous waste storage and handling areas are routinely inspected for leaks, spills, and the implementation of appropriate containment measures.

Baffinland maintains records of waste backhauled from the Mary River Project and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut, Department of Environment. These records will be made available upon request, to an Inspector or the Board.

4.8 Relevant Operational Environmental Standards

Environmental Protection Plan (EPP) (BAF-PH1-830-P16-0008) Operational Environmental Standard (OES) that are relevant to this Plan are identified in Table 4.4. As required, where there is a modification to a relevant OES, This Plan will be revised to reflect that change.

Table 4-4: Relevant Operational Environmental Standards

Section	Title/Description
2.5	Geotechnical Drilling Operations
2.6	Equipment Operations
2.7	Fuel Storage and Handling
2.14	Solid Waste Management
2.15	Sewage Treatment
2.16	Hazardous Waste Management
2.17	Road Construction and Borrow Development
2.19	Road Traffic Management
2.21	Exploration Drilling Operations
3.7	Off-Site Waste Disposal Log

5 ROLES AND RESPONSIBILITIES

5.1 ENVIRONMENTAL RESPONSIBILITIES

Baffinland's Environment Department is structured into two components; on- site personnel and off–site personnel. The Project's organisational structure is provided in Figure 5-1.

Baffinland's Project Environmental Department provides direction and oversight for environmental activities on-site. Project departmental accountabilities and responsibilities are identified in Table 5-1.

Table 5-1: Baffinland Project Environmental Department

Baffinland Iron Mines Corporation On-Site Environmental Team	
Position	**Responsibilities and Accountabilities**
Environmental Manager	• Reports directly to VP Sustainable Development, Health, Safety and Environment and Indirect reporting and coordination with Operations VP and Director Environment • Overall accountability for environmental staff and performance at site • Coordinates implementation and monitors the performance of the Environmental Management System at site • Liaises with the senior management, regulators and stakeholders • Ensures effective monitoring and auditing of environmental performance of departments and contractors on site and identifies opportunities for improvement • Monitors compliance with permits, licenses and authorizations • Ensures all regulatory environmental monitoring and reporting requirements (monthly, annual) are met • Leads and coordinates site permitting requirements. • Initiates and oversees environmental studies • Oversees investigations and reporting of environmental incidents to regulatory bodies, stakeholders and senior management • Reviews and updates environmental management plans
Environmental Superintendent	• Reports to Environmental Manager • Specific accountabilities for environmental monitoring and reporting • Leads investigations and reporting of environmental incidents onsite • Serves as the liaison for regulators during onsite inspections and visits • Provides ongoing environmental education and environmental awareness training to all employees and contract workers • Oversees environmental database management • Prepares updates for management plans
Environmental Coordinator	• Reports to the Environmental Superintendent and Manager • Specific accountabilities for environmental monitoring and reporting • Provides day to day direction to Environmental staff onsite • Serves as a liaison for regulators during onsite inspections and visits. • Provides ongoing environmental education and environmental awareness training to all employees and contract workers • Assists with environmental database management
Environmental Monitor and	• Reports to the Environmental Superintendent or designate

Baffinland Iron Mines Corporation On-Site Environmental Team	
Position	**Responsibilities and Accountabilities**
Technician	• Assists with environmental database management • Assists with monitoring and sampling activities as per the Project's management plans
QIA Monitor	• Works alongside the Baffinland Environment Department to ensure the proper implementation of all environmental management and monitoring plans • Acts as the QIA liaison for onsite environmental matters
Environnemental Support Groups (Consultants, etc.)	• Assists with sampling, monitoring and reporting activities as required by permits, licenses and environmental management plans • Provides technical expertise to various environmental studies

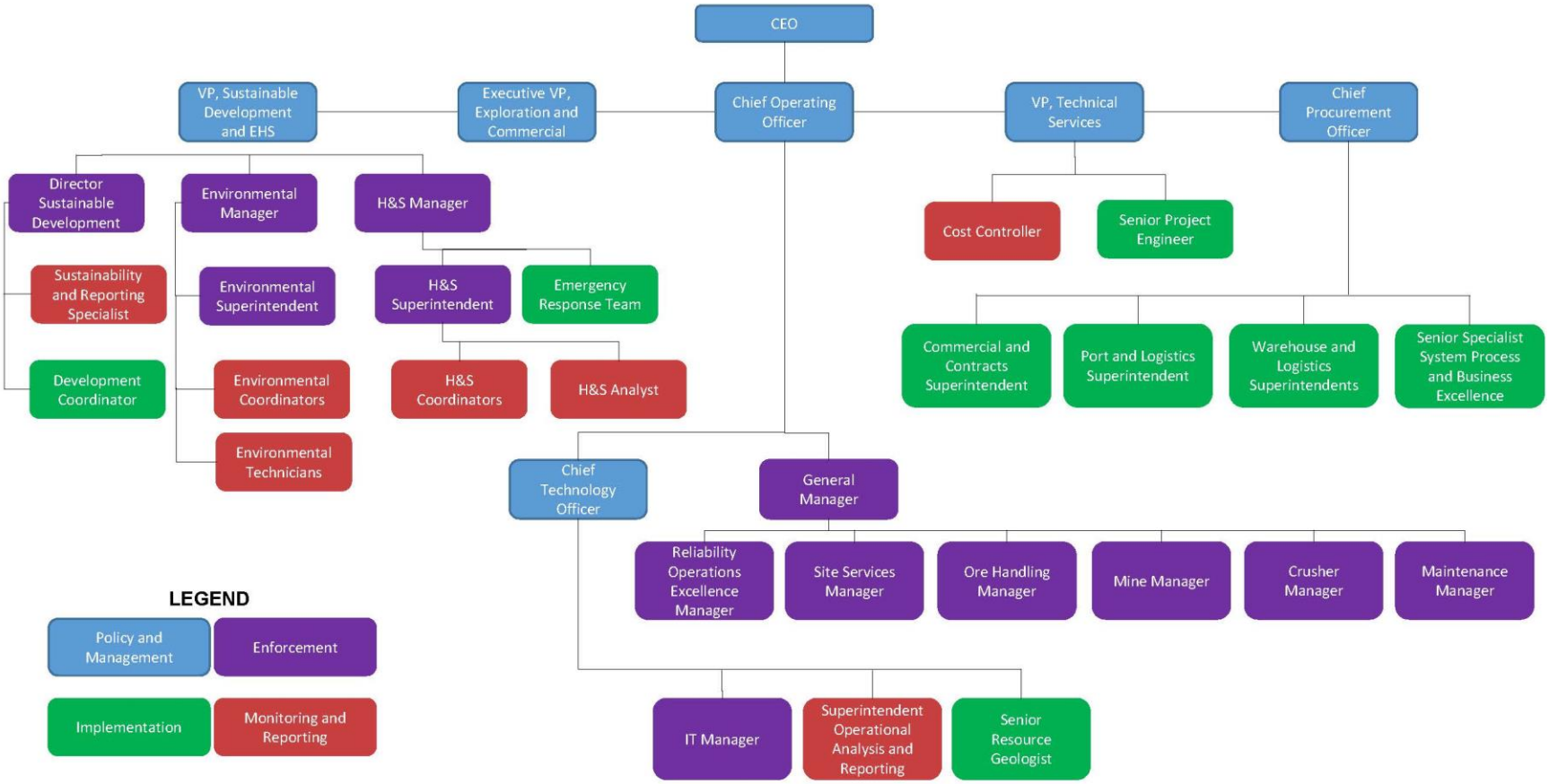

FIGURE 5-1: Mary River Project Organization Chart

5.2 Training and Awareness

Site personnel (including contractors) are required to obtain a general level of environmental awareness understanding of their obligations regarding compliance with Baffinland's regulatory requirements, commitments and best practices upon arrival at Project sites. Site personnel receive prescribed environmental training as part of Baffinland's Mary River Project Site Orientation.

Additional hazardous materials management and hazardous waste training is provided to individuals and groups of workers assuming a specific authority or responsibility for environmental or hazardous materials and hazardous waste management duties.

With respect to hazardous materials management, Baffinland has developed and implemented a training and awareness plan which identifies:

- The differing level of risks and potential consequences associated with different types of hazardous materials;
- The different responsibilities, abilities, and literacy of employees;
- The culture of the employees;
- Contractors involved and their relevant experience/expertise;
- Documentation of training and evaluation of training programs;
- The trainers, training methods, and settings; and
- Training frequency.

Review and modifications to training and awareness initiatives/programs are completed based on training needs and regulatory requirements.

5.3 Communication

Communication methods for the exchange of information within Baffinland's Environment Department include:

- Formal written correspondence and meetings with stakeholders;
- Site visits by community representatives;
- Design, construction and planning meetings;
- Field inspections and monitoring reports disseminated by the Environmental Manager;
- Electronic communications;
- Tailgate/toolbox meetings;

- Formal written correspondence and meetings with government regulatory bodies; and
- Formal environmental awareness training.

As required, communicated information is recorded and filed for future reference. Where appropriate, copies of communications will be forwarded to the Operations Manager(s), and Environmental Manager.

5.4 External Communications

Effective forms of communication include the proactive notification to external stakeholders of Project activity. Project activity updates will be provided to the communities of North Baffin through various means including regular meetings, public notices and radio announcements as appropriate. Baffinland has facilitated and maintains Baffinland Community Liaison Offices (BCLO) to assist in this regard.

6 MONITORING AND REPORTING REQUIREMENTS

6.1 Hazardous Materials and Hazardous Wastes Monitoring

Hazardous materials and hazardous wastes monitoring includes the visual inspection of three main components of the hazardous materials and hazardous wastes management system and the measurement and recording of these materials transported off-site. Baffinland reports the following information annually:

- The quantities hazardous materials and hazardous wastes transported off-site for disposal;
- The location and name of the disposal facility for each hazardous materials and hazardous wastes type;
- The date hazardous wastes were transported off-site for disposal;
- Project non-hazardous inert solid wastes disposed of at the Landfill Facility; and
- Quantities of hydrocarbon contaminated soils and water processed at treatment facilities.

Regular visual inspection of hazardous materials and hazardous wastes treatment facilities are conducted by the Environmental Manager, or designate, to ensure that they are being operated in accordance with this Plan and that adequate environmental/health and safety controls are in place and are effective.

Regular hazardous materials audits are completed where waste is generated to ensure hazardous waste streams are properly segregated.

Landfarm Facility management and monitoring activities are completed in accordance with Baffinland's Landfill Maintenance and Operations Manual (refer to Appendix D).

6.2 Operations Monitoring

In addition to specific monitoring and reporting requirements under Baffinland's regulatory approvals and authorizations, as well as monitoring of Project environmental effects, the Environmental Manager will facilitate inspections of various aspects of the operations when necessary to confirm conformance with the requirements of this Plan.

Compliance Monitoring Forms are used to document inspection findings and corrective actions as determined. These reports are generated as internal operational management tools to promote continuous improvement in Project environmental performance and stewardship initiatives.

6.3 Data Management

The Environmental Manager is responsible for data management and reporting related to hazardous materials and hazardous waste management. The data management system includes conducting routine inspections, monitoring, and delivery of findings to appropriate parties as required.

6.4 Stakeholder Reporting

Project hazardous materials and hazardous materials activities including quantities of contaminated soils, water or waste that is generated at Project sites are included in Baffinland's submission of the NWB and NIRB annual reports.

In addition, concerning stakeholders and the public may request detailed information as part of the Stakeholder Involvement Plan (BAF-PH1-830-P16-0025).

7 ADAPTIVE STRATEGIES

Baffinland is committed to continual improvement in its work activities with the aim of reducing risks to the environment and improving operational effectiveness. Strategies employed at Baffinland include ongoing monitoring supported by operational change and the implementation of evolving mitigation measures where practical.

Housekeeping and operational measures have been implemented. As part of the EPP (BAF-PH1-830-P16-0008), work procedures are revised and adapted accordingly to reduce the use of hazardous materials and hazardous waste generated at Project sites. Completion of scheduled inspections of hazardous materials and hazardous waste storage facilities, promote continual improvement through implementing hazardous materials management strategies throughout the lifecycle of the Project.

As per Baffinland`s EHS Management Framework, regular management reviews of this Plan and supporting documentation will be undertaken to provide a formal mechanism to assess management's

effectiveness in achieving the objectives identified in this Plan and establishing the need for continual improvement.

8 QA/QC

As per Baffinland's EHS Framework Standard (BAF-PH1-830-STD-0001), regular audits are completed to ensure compliance with this Plan and that best management practices are implemented for the management of hazardous materials and hazardous waste management at Project sites. The findings from these audits form the basis for the annual written statement of assurance by management on the effectiveness of this Plan.

9 REFERENCES

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APPENDIX A
Tables of Concordance with Applicable Permits and Licences

Table A- 1: cONCORDANCE tABLE WITH tYPE a wATER lICENCE (2am-mRY1325) cONDITIONS

Part	Number	Condition	Section
D	20	The Licensee shall prevent any chemicals, fuel or wastes associated with the undertaking from entering any Water body.	Section 3.5
F	5	The Board has approved with the issuance of the licence, the Plan entitled "Baffinland Iron Mines Corporation Mary River Project Hazardous Materials and Hazardous Waste Management Plan", dated April 22, 2013.	N/A
F	6	The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty-one (31) meters from the ordinary High Water Mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.	Section 4 Section 4.6.2
F	11	The Licensee shall submit to the Board and the Inspector, thirty (30) days prior to the removal and transfer of waste, a declaration of authorization from any community receiving waste from the project, which clearly states that authorization has been granted for the deposit by the Licensee at the Hamlet's appropriately licensed facilities.	Section 4.7
F	14	The Licensee shall remove any waste generated from temporary and permanent shelters along the tote road and along the railway corridor for treatment at appropriately licenced Waste Management Facilities.	Section 4.6
F	29	The Licensee shall remove from the project site, all hazardous wastes generated through the course of the Construction and Operations Phases, for disposal at an approved Waste Disposal Facility.	Section 4.5 Section 4.7
F	30	The Licensee shall maintain records of all Waste backhauled from the Mary River Project and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut, Department of Environment. These records shall be made available upon request, to an Inspector or the Board.	Section 4.7

TABLE A- 2: CONCORDANCE TABLE WITH TYPE B WATER LICENCE (2BE-MRY1421) CONDITIONS

Part	Number	Condition	Section

D	6	The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of operation at a licensed waste disposal facility.	Section 4.5 Section 4.7
D	6	The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector or the Board upon request.	Section 4.7

TABLE A- 3: CONCORDANCE TABLE WITH TYPE B WATER LICENCE (8BC-MRY1416) CONDITIONS

Part	Number	Condition	Section
D	7	The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of the operation at a licensed waste disposal site.	Section 4.5 Section 4.7
D	8	The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector upon request.	Section 4.7
D	9	The Licensee shall notify the Inspector and the Board of any contaminated soils, water or waste that is generated under this Licence and stored at any facility constructed under this Licence or by means that is regulated under Licence 2AM-MRY1325 for future disposal. This information shall be reported within the annual report required by Part B, Item 4.	Section 4.6.2 Section 6.4

APPENDIX B

2016 Work Plan and Site Layout Drawings

APPENDIX C

Dyno Nobel Emergency Response Assistance Plan

APPENDIX D

Landfarm Operation Maintenance and Monitoring Manual

APPENDIX E

MSDS Approval and Management Procedure