

**Baffinland Iron Mines Corporation
Mary River Project
Emergency Response and Spill Contingency Plan**



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						Client

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Foreword

The Emergency Response and Spill Contingency Plan (ERP) is a cornerstone of Baffinland's Environmental Management Plans. This current revision is an amalgamation of the Emergency Response and Spill Contingency Plan that was submitted to the Nunavut Water Board (NWB) as part of the Type A Water License Application in February 2012 and Baffinland's current Type B Spill Contingency Plan (Revision 6, dated July 2012). This version of the ERP is intended to support the updated Type B Water License as well as the Type A Water License that Baffinland is anticipating July 2013. As the project evolves, the ERP will undergo updates/revisions annually to reflect the evolving complexities and environmental risks associated with the construction phase, operation phase, and ultimately closure phase of the Mary River Project. This current revision has been updated and expanded to contain potential spill scenarios, emergency response management, and roles and responsibilities applicable to 2013 Work Plan phase of the Project. The next expected revision date is January 2014.

The ERP is supported by the following management plans:

1. Oil Pollution Emergency Plan (OPEP) – Milne Inlet Fuel Storage Facility – currently being updated for the 2013 Work Plan.
2. The Explosives Management Plan – Currently under revision for the 2013 Work Plan.

Shipboard Oil Pollution Emergency Plans (SOPEPs) should also be considered when implementing the ERP. Canadian regulations require every vessel transiting in Canadian water to have Transport Canada approved SOPEP. SOPEPs are proprietary documents specific to each vessel however and therefore are not available for direct incorporation into the ERP.

This Emergency Response and Spill Contingency Plan for the Mary River Project has been implemented and is in effect. For the distribution list of the plan, see Table A. Additional copies of this Plan may be obtained from:

Baffinland Iron Mines Corporation

Suite 1016, 120 Adelaide Street West

Toronto, ON, Canada M5H 1T1

Tel: (416) 364-8820 Fax: (416) 364-0193

Table A: Distribution List for the Emergency Response and Spill Contingency Plan

Department of Environment - Environmental Protection Division PO Box 1000 Station 1300 Iqaluit, NU, Canada X0A 0H0 Tel: (867) 975-7700, 1-866-222-9063 Fax: (867) 975-7742	Department of Fisheries and Oceans - Central and Arctic Region 501 University Crescent Winnipeg, MN, Canada R3T 2N6 Tel: (204) 983-5000 Fax: (204) 984-2401
Qikiqtani Inuit Association PO Box 1340 Iqaluit, NU, Canada X0A 0H0 Tel: (867) 979-5391, 1-800-6672742 (Land Administrator) Fax: (867) 979-3238	AANDC - Nunavut Regional Office Land Administration Division PO Box 2200 Iqaluit, NU, Canada X0A 0H0 Tel: (867) 975-4280 (Land Administration Manager)
AANDC - Nunavut Regional Office Water Resources Division PO Box 2200 Iqaluit, NU, Canada X0A 0H0 Tel: (867) 975-4550 (Water Resources Manager)	Mittimatalik Hunters and Trappers Organization PO Box 189 Pond Inlet, NU, Canada X0A 0S0 Tel: (867) 899-8856 Fax: (867) 899-8095
Nunavut Impact Review Board PO Box 1360 Cambridge Bay, NU, Canada X0B 0C0 Tel: (867) 983-4600, 1-866-233-3033 Fax: (867) 983-2594	Nunavut Water Board PO Box 119 Gjoa Haven, NU, Canada X0B 1J0 Tel: (867) 360-6338 Fax: (867) 360-6369
Hamlet of Pond Inlet PO Box 180 Pond Inlet, NU, Canada X0A 0S0 Tel: (867) 899-8934 Fax: (867) 899-8940	Hamlet of Hall Beach
Hamlet of Cape Dorset	Hamlet of Arctic Bay
Hamlet of Igloolik	Hamlet of Clyde River
Hamlet of Kimmirut	

1. Introduction

1.1 Purpose and Scope

This Emergency Response and Spill Contingency Plan (ERP) ('The Plan') has been developed by Baffinland Iron Mines Corporation (Baffinland) to identify potential emergencies that could arise during the construction phase, and in particular the 2013 Work Plan Phase, of the Mary River Project and to establish the framework for responding to these situations. The Emergency Response and Spill Contingency Plan applies to all aspects of the Mary River Project. All Baffinland Iron Mines employees and contractors are required to comply with the requirements of the ERP.

In accordance with Part B, Item 6 of Baffinland's Type B Water Licence No. 2BB-MRY1114 for the Mary River Project, an annual review of the project environmental management plans developed under the licence needs to be undertaken. The year 2013 is a regulatory transition year that will see the granting of a new Type B Water Licence (likely early May) to allow for the site preparation that includes the construction of limited infrastructure prior to the anticipated receipt of the Type A Water Licence (likely late June or early July). In consideration of this, project environmental management plans have been updated to support the 2013 Work Plan (see Appendix B) which spans the applicability between the existing Type B Water Licence, proposed revised Type B Water Licence, as well as the incorporation of the proposed Type A Water Licence. It is recognized that there may be requirements to further update project environmental management plans based on the specific terms and conditions of approval of the proposed Type A Water Licence and QIA commercial lease once known.

The Emergency Response and Spill Contingency Plan, herein, supersedes the current Spill Contingency Plan (Revision 6, dated July 2012) and is an update to the Emergency Response and Spill Contingency Plan presented in the Final Environmental Impact Statement (FEIS: Appendix 3B, Attachment 5). This Plan supports activities of the 2013 Work Plan under the existing Type B Water Licence, proposed revised Type B and the incorporation the proposed Type A Water Licence.

The Plan, herein, is also intended to address specific terms and conditions under the NIRB Project Certificate. To this end, a concordance table is provided in Appendix A.

1.2 Guiding Principles

Emergency events or situations are characterized by immediate threat to life, health, safety, environment, or property. The emergency response plan is designed to address these characteristics using the following principles:

- Ensure safety and well-being of personnel, the environment, and property.
- Identify evacuation route and muster station locations.
- Ensure effective communication between personnel and the emergency team.

- Ensure that procedures exist to respond, intervene, stop, or limit the emergency situation.
- Initiate response procedure and follow-up programs for emergencies.
- Baffinland is committed to provide insurance coverage as required or as deemed appropriate.
- Ensure when occurrences are investigated, root cause determination and mitigating measures are implemented to prevent re-occurrence.

The information contained in this document has been prepared to act as a guide only and may require some additional responses, depending on the circumstances of the individual emergency situation.

1.3 Regulatory Framework

This Emergency Response and Spill Contingency Plan has been developed and implemented to ensure that Baffinland respects all applicable laws, regulations, and requirements from federal and territorial authorities. Baffinland complies with the permits, approvals, and authorizations required for the operations. The following regulatory and government documents constitute an integral part of the plan:

1.3.1 General

- Environmental Code of Practice for Aboveground and Underground Storage Tanks Systems Containing Petroleum and Allied Petroleum Products, 2003, CCME.
- National Fire Code 2010.
- Territorial Lands Act 1985.
- Territorial Land Use Regulations 1524.
- Canada Oil and Gas Operations Act 1985.
- Canadian Environmental Protection Act 1991.
- Fisheries Act 1986.
- Transportation of Dangerous Goods Act and Regulations.
- Storage Tanks Systems for Petroleum Products and Allied Petroleum Products Regulation 2008.
- TP12402 – Oil Handling Facilities Standards, 1995, Transport Canada.

1.3.2 Shipping

- Canada Shipping Act Response Organizations and Oil Handling Facilities Regulations.
- Arctic Waters Pollution Prevention Act.
- Environmental Protection Act.
- Spill Contingency Planning and Reporting Regulations, 1993.

- Mine Site Reclamation Policy for Nunavut.

1.3.3 Territorial Acts and Regulations

- Nunavut Waters and Nunavut Surface Rights Tribunal Act 2002.
- Nunavut Environmental Protection Act.
- Nunavut Spill Contingency Planning and Reporting Regulations.
- Nunavut Mine Health and Safety Act and Regulations.
- Nunavut Coroners Act.

1.3.4 Site Specific

- Canada National Parks Act 2000.
- Canada Wildlife Act 1985.
- Migratory Birds Convention Act 1994.

For guidelines used to prepare the Emergency Response Plan, see Section 9.

1.4 Organization and Responsibilities

1.4.1 Emergency Response Team

The Operations Manager is responsible for establishing and implementing the Emergency Response Team. The team will comprise site employees who receive special training to assist in an emergency. The Operations Manager, in consultation with the Emergency Response Supervisor at each site, will select qualified candidates in sufficient numbers to facilitate the response programs required by the plan.

The Operations Manager (Emergency Response Coordinator) with the support of Emergency Response Management Team will coordinate response actions internally and externally in an emergency. He/she will coordinate response actions with management, regulatory agencies, local authorities, and the communities, when necessary. Contact information for external agencies and local authorities will be made available when responsible personnel are identified. Emergency Response Team organization is represented in Section 2.1.

Baffinland Emergency Personnel Contact Information is presented in Table 1-1.

1.5 Relationship to Other Plans

Emergency situations are often related to specific activities such as explosive handling, shipping, or aircraft operations. In case of an activity-specific emergency, the response plan for that particular activity will be consulted. Specific action plans developed to support this ERP include:

- Milne Inlet Fuel Storage Facility OPEP- FEIS Appendix 10C-2 currently under revision (ship-to-shore bulk fuel transfers at Milne Port).
- Canadian Coast Guard Regional Response Plan (CCG, 2006).

- Shipboard Oil Pollution Emergency Plan (ship-specific plan) (SOPEP).
- Explosives Management Plan (Appendix 10C-4).
- Mary River Aerodrome Operations Manual.

These and other plans developed in support of the Final Environmental Impact Statement (FEIS) comply with relevant regulatory requirements.

1.6 Link with Baffinland Oil Pollution Emergency Plan (OPEP)

The Canada Shipping Act Response Organizations and Oil Handling Facilities Regulations stipulates that operators of designated Oil Handling Facilities must have an onsite Oil Pollution Emergency Plan (OPEP – standards, TP12402 applies). This Act also applies to fuel storage in barges.

The Milne Inlet Fuel Storage Facility OPEP (currently under revision) and ship specific SOPEPs specifically address marine spills at Milne Port (FEIS Appendix 10C-2). The Fuel Storage Facility OPEPs for Milne Port has been designed to complement this ERP. These OPEPs do not supersede existing contingency plans. They are conceived to address the specifics of the Fuel Handling Facility – the bulk fuel ship to shore transfer of fuel and spill scenarios directly relating to these operations as required by TP12402. The ERT will be trained to adequately handle any emergencies that impact the ocean, land and freshwater. The Milne Inlet Fuel Storage Facility OPEP covers emergency response and spill contingency in marine environments while this ERP covers land and freshwater based emergency response and spill scenarios.

1.7 Baffinland's Commitments

Baffinland provides adequate resources to implement and maintain the EHS Management System, including the necessary human, material, and financial resources. For Baffinland's Sustainable Development Policy, see Section 1.11. For Baffinland's Health, Safety and Environment Policy, see Figure 1-2.

1.8 Update of This Management Plan

The Emergency Response and Spill Contingency Plan will be regularly updated on the basis of management reviews, incident investigations, regulatory changes, or other Project-related changes.

This plan has been updated and revised to reflect activities associated with construction activities as described in the 2013 Work Plan (see Appendix B).

In addition to this Baffinland has committed to participating in regular sessions with the 'Emergency Response and Preparedness Working Group'. Attendees will be made up by members of the Company, various government and regulatory bodies, stakeholder groups, and industry professionals. The purpose of these meetings will be to review, update and improve Baffinland's emergency response and spill contingency policies and procedures. Adequate resources will be allocated to the development and deployment of emergency and spill response capabilities.

1.9 Glossary of Emergency Response and Spill Contingency Plan Terms

BIM Crisis Management Team:	Senior Management team based in Toronto Corporate Office responsible for coordination and support of the site/location response and communication with external stakeholders during a crisis/emergency.
Code 1:	A "Code 1" announcement signifies that an emergency situation exists, requiring activation of the Emergency Response and Spill Contingency Plan
Emergency:	A sudden, urgent, usually unexpected occurrence or occasion requiring immediate action
Emergency Response Command Centre:	ERCC - designated location where the Emergency Response Team members gather and coordinate the response to emergency situations
Emergency Response Coordinator	The Emergency Response Coordinator is the Site Operations Manager or his designate. He/She has the overall responsibility, control and coordination of the emergency response. BIM Operations Manager or designate
Emergency Response Management Team:	Supporting Baffinland Department Heads or designates such as Safety, Environment, Exploration etc.
Incident Commander:	The Incident Commander is the mine rescue/emergency response team supervisor or his designate. He/She is responsible for the management of incident activities at the site of the emergency and is in direct control of response.
Emergency Response Resources:	Personnel from internal disciplines, such as health & safety environment, security, maintenance, and site services
Incident:	An unplanned event that can or does result in ill health, injury, property damage or loss, adverse environmental impact, or business interruption
Muster Station:	A designated gathering area for the purpose of identifying and recording all occupants/evacuees present during an emergency and ensuring their safety until the emergency has ended
Muster Station Coordinator	A designated individual appointed to identify and record all occupants/evacuees present in the Muster Station during an emergency and communicating any discrepancies to the Emergency Response Coordinator

1.10 Acronyms

BIM	Baffinland Iron Mines
BCMT	Baffinland Crisis Management Team
EPCM	Engineering, Procurement, Construction Management
ER	Emergency Response
ERCC	Emergency Response Command Centre
ERC	Emergency Response Coordinator
ERMT	Emergency Response Management Team
ERP	Emergency Response and Spill Contingency Plan
ERT	Emergency Response Team
IC	Incident Commander
OPEP	Oil Pollution Emergency Plan
SAR	Search and Rescue

1.11 Sustainable Development Policy



At Baffinland Iron Mines Corporation, we are committed to conducting all aspects of our business in accordance with the principles of sustainable corporate responsibility and always with the needs of future generations in mind. Everything we do is underpinned by our responsibility to protect the environment, to operate safely and fiscally responsibly and to create authentic relationships. We expect each and every employee, contractor, and visitor to demonstrate a personal commitment to this policy through their actions. We will communicate the Sustainable Corporate Policy to the public, all employees and contractors and it will be reviewed and revised as necessary on an annual basis.

These four pillars form the foundation of our corporate responsibility strategy:

- Health and Safety
- Environment
- Investing in our Communities and People
- 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 from the very earliest of planning stages. Why? Because our people are our greatest asset. Nothing is as important as their health and safety.

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 and awareness. We allow our workers and contractors the right to stop any work if and when they see something that is not safe.

2.0 ENVIRONMENT

We employ a balance of the best scientific and traditional Inuit knowledge to safeguard the environment. We apply the principles of pollution prevention 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 pioneering new processes and more sustainable practices.

We understand the importance of closure planning. We ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.

3.0 INVESTING IN OUR COMMUNITIES AND PEOPLE

We respect human rights and the dignity of others. We honour and respect the unique culture, values and traditions of the Inuit people.

We contribute to the social, cultural and economic development of sustainable communities adjacent to our operations.

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.

4.0 TRANSPARENT GOVERNANCE

We will take steps to understand, evaluate and manage risks on a continuing basis, including those that impact the environment, employees, contractors, local communities, customers and shareholders.

We 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 environmental, safety, health, socio-economic commitments and set annual targets and objectives.

We conduct all activities in compliance with the highest applicable legal requirements and internal standards

We strive to employ our shareholder's capital effectively and efficiently. We demonstrate honesty and integrity by applying the highest standards of ethical conduct.

A handwritten signature in black ink, appearing to read 'Tom Paddon', is written over a horizontal line.

Tom Paddon
President and Chief Executive Officer
September 2011

1.12 HSE Policy

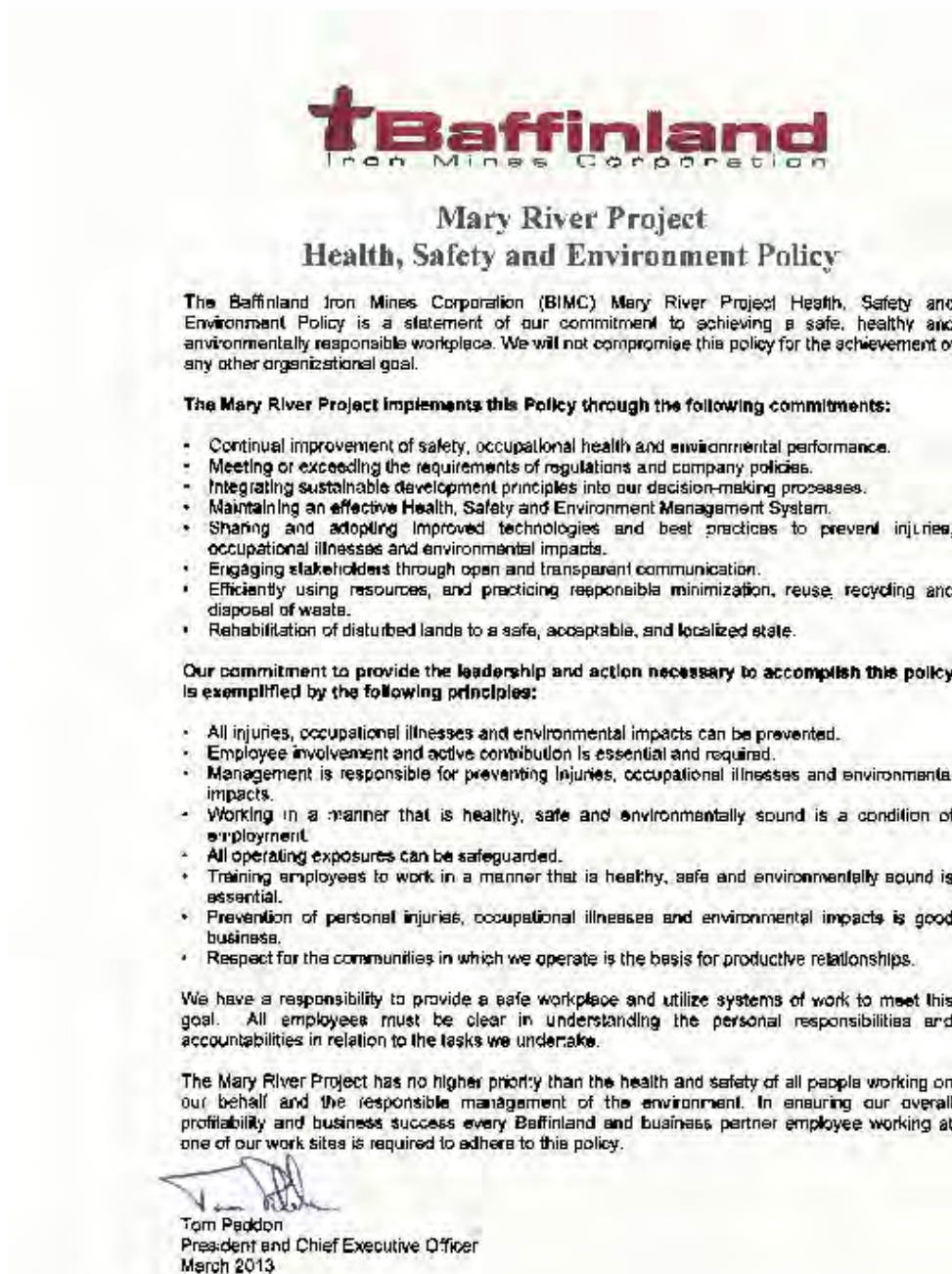


Figure 1-1: Baffinland's Health Safety and Environment Policy

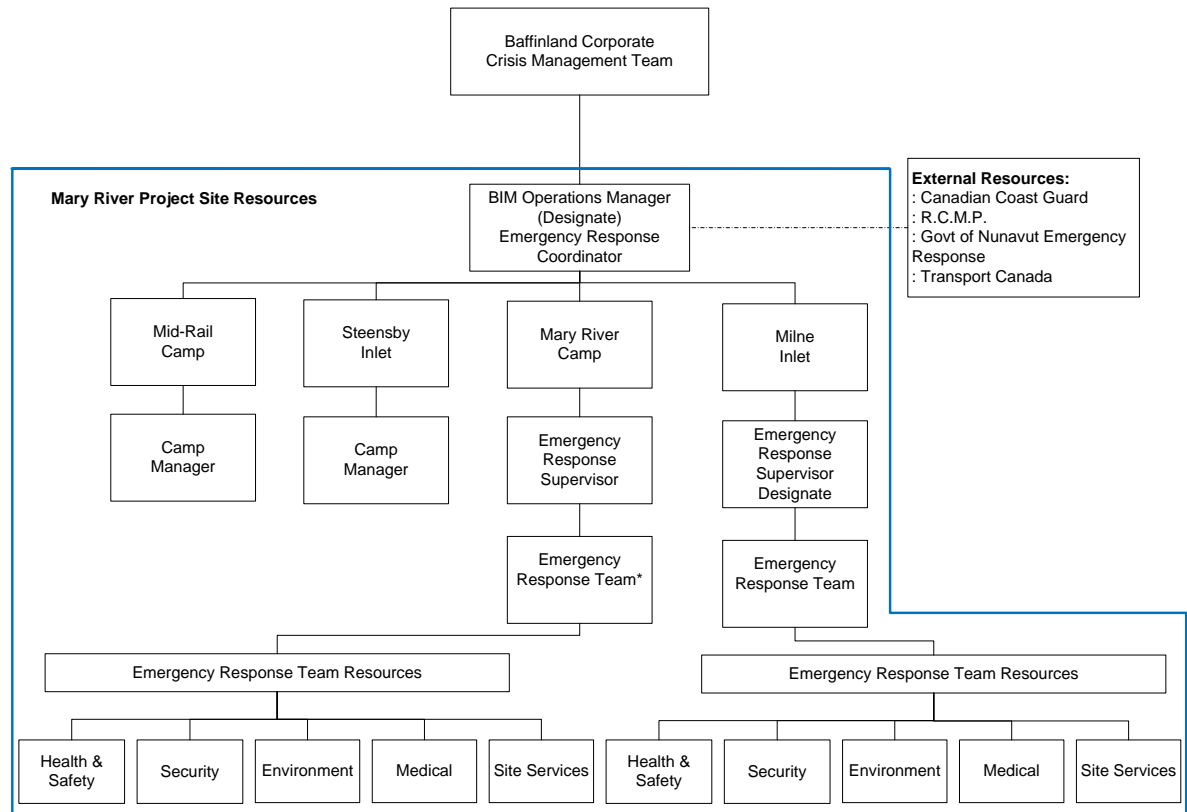
Table 1-1: Baffinland Emergency Personnel Management Team Contact Information

Role	Primary	First Back Up	Secondary Back-Up
Emergency Response Coordinator	Dave McCann	Jeff Bush	Cliff Pilgrim
Primary Phone:	TBD	TBD	TBD
Alternate Phone:	TBD	TBD	TBD
Email:	TBD	TBD	TBD
Incident Commander	Shift Emergency Response Supervisor	Safety Superintendent	
Primary Phone:	TBD	TBD	TBD
Alternate Phone:	TBD	TBD	TBD
Email:	TBD	TBD	TBD
Environmental Superintendent	Jim Millard	Trevor Myers	Allan Knight
Primary Phone:	TBD	TBD	TBD
Alternate Phone:	TBD	TBD	TBD
Email:	TBD	TBD	TBD
Safety Superintendent	Brian Larson	Gerry Courtemanche	
Primary Phone:	TBD	TBD	TBD
Alternate Phone:	TBD	TBD	TBD
Email:	TBD	TBD	TBD

Note: Will update with contact information prior to commencement operations in 2013. Contact information will be provided to all relevant stakeholders.

2. General Response to Emergencies

2.1 Emergency Response Organizational Chart



Note: * Mary River Emergency Response Team Responds Project Wide as Required

Figure 2-1: Mary River Emergency Response Organizational Chart

2.2 Levels of Emergency

In order to effectively manage emergency response, BIM Operations has adopted a classification system that includes three levels of emergencies. Each level of emergency requires varying degrees of response, effort and support. The impact on normal business operations will also differ as will the requirements for investigation and reporting. The three levels are outlined in the following sections. Similarly for spills there are three response levels for spills based on the size and nature of the spill. This is also outlined below. For the flow chart determining which emergency response needs to be activated, see Section 2.2.4 and Appendix I.

2.2.1 Level I (Low):

A Level I incident is defined as an incident where any or all of the following has occurred:

- Minor personal injury.
- Minor accidental release of a deleterious substance with:

- ♦ No threat to public safety; and/or
- ♦ Negligible environmental impact
- No impact on reputation.
- Report to government after the fact.

See spill response level chart (Section 2.2.4)

2.2.2 Level II (Medium):

A Level II emergency is defined as an incident where any or all of the following has occurred:

- Potential modified work or lost time injury
- Major accidental release of a deleterious substance with:
 - ♦ Some threat to public safety; and/or
 - ♦ Moderate environmental impact.
- Minor fire.
- Local impact on reputation.
- Local/regional media interest/coverage.
- Government involvement.
- Activation of ERCC required by Emergency Response Coordinator.

See spill response level chart (Section 2.2.4)

2.2.3 Level III: (High)

A Level III emergency is defined as an incident where any or all of the following has occurred:

- Uncontrolled hazard which:
 - ♦ Jeopardizes project personnel safety; and/or
 - ♦ Jeopardizes public safety; and/or
 - ♦ Significant environmental impacts.
- Major Fire or uncontrolled explosion.
- Negative impact on reputation.
- National/international media.
- Activation of ERCC required by Emergency Response Coordinator.

See spill response level chart (Section 2.2.4).

2.2.4 Spill Response Emergency Level Classification

SPILL RESPONSE LEVELS				
	Level 1	Level 2	Level 3	
Explosives	<10 kg <100 kg	10-100 kg 100-500 kg	>100 kg >500 kg	in water on land
Sewage	<100 L <1,000 L	100-1,000 L 1,000-10,000 L	>1,000 L >10,000 L	in water on land
Hydrocarbons	<1 L	1-100 L	>100 L	in water
Lubricants	<100 L	100 -1,000 L	>1,000 L	on land
Antifreeze	<1,000 L	1,000-10,000 L	>10,000 L	contained area
Hazardous Materials				

2.3 Emergency Response Command Centre

The Emergency Response Command Centre (ERCC) functions to provide a place for the coordination and direction of mitigation response efforts during an emergency. For the purpose of this ERP, the BIM Mary River Office complex will be the primary ERCC. The alternate ERCC shall be located at Mary River aerodrome office and shall have a copy of this plan and associated equipment available for use. As each person enters the ERCC to carry out ER duties, they must sign the attendance form (Appendix D3).

The ERCC will be established for an emergency as deemed necessary by the ER Coordinator. The ERMT personnel will assemble at the ERCC. The primary and alternate ERCC shall be equipped with suitable communications equipment including telephone, radio communication, and teleconferencing.

2.4 ERCC Equipment/Supplies

The ERCC will have all the necessary tools for organizing response to an emergency - dispatching internal/external emergency services, directing strategic deployment of emergency resources and equipment, monitoring response efforts and establishing critical communications with the BIM Corporate Office.

The ERCC shall contain:

- The most current version of the ERP.
- Log book.
- Emergency site maps and plans.
- Site resources equipment list.
- Emergency contact information.
- Communications recording forms.
- ERCC attendance forms.
- 2-way radio communication (base station or handheld).
- Satellite Phone System.
- Backup VOIP phone system.
- Network Connections.

2.5 Emergency Response Team

The Mary River Emergency Response Team will be structured from a worker volunteer base at site. With different work schedules, it will be necessary to have enough team members to maintain sufficient numbers of responders at site at all times.

Recruitment of volunteer ERT members will be a informal process through general solicitation of interest. However, to build an adequate level of team competency, solicitations will indicate a preference for volunteers that have had previous exposure to mine rescue and/or training in some aspect of emergency response.

For emergencies such as lost or missing persons, local aboriginal knowledge of surrounding terrain and traditional travel routes may become valuable. As such, BIM have established a memorandum of understanding with the Government of Nunavut to provide for Search and Rescue support that they may be called upon as a resource in certain Emergency Situations. Likewise, BIM may provide assistance to an emergency situation on Baffin Island, where it is practical and safe to do so. The Operations Manager or designate will consult with the ER Supervisor to determine available response support capabilities.

2.6 Equipment and Personal Protection

Equipment required to prevent or minimize the effects of an emergency are identified during detailed project design and provided at the Project facilities. A list of available Personal

Protective Equipment, cleanup material, medical supply, etc. is also provided when specific project requirements are identified.

To prevent spills and to provide adequate response in case of spill events, Baffinland maintains the appropriate type and quantity of response equipment and materials onsite. The company will also put in place reasonable security measures.

Spill kits are strategically placed primarily in areas of fuel handling to facilitate immediate first response in the event of a hydrocarbon release to land. Appendix C provides a list of the different spill kits and their contents (as purchased) that are available onsite. Appendix H provides indicates their relative locations on site.

Over the course of operations, when materials in spill kits have been utilized, replacement materials may differ from that originally present in kits. Substituted spill kit materials will be of sufficient quality and quantity as appropriate to their locations and potential use.

In addition to the spill response material, a variety of mobile heavy equipment including excavators, front end loaders, bull-dozers, haul trucks, Zodiac boat for in land water use, and marine support boat are available to aid in spill response and recovery efforts.

Along the Tote Road, Baffinland will supply Emergency Shelters at appropriate intervals to provide shelter for and ensure the safety of both Company personnel and local peoples hunting and travelling in the area.

2.7 Communication

Effective communication systems are critical to the success of emergency responses. Personnel involved, from first person on scene to the ER Coordinator rely on the ability to quickly relay accurate information.

Communications available at the project site during an emergency are listed below.

- Hand-held radio communication.
- Telephone.
- Satellite Phone.
- Alarm systems.
- Internet.

2.7.1 Hand-Held Radio Communication

During an emergency, the primary communications link between all emergency response personnel is through radio communication. ERT members will be issued radios. Additionally, other individuals involved in emergency response will also carry hand-held radios as part of their regular work requirement.

During an emergency, radio communications should be kept to a minimum. If radio silence is requested on other channels, Security personnel, upon receiving instruction by the ER Coordinator or Incident Commander, will announce this. This ensures open and free communications among personnel involved in the actual response. For example, if resources have to be requested on any channel other than the designated emergency channel, then this request will be unaffected by other unnecessary conversation.

Additionally, only authorized persons are permitted to release the following information:

- Names of third parties who may have been involved in the incident.
- Identification of fatalities or injured personnel.
- Cause of the incident and liability; and
- Statements that may infer negligence.

Channel 1 and Channel 2 have been designated as Emergency Response Channels. Channel 1 is designed to be used to announce an emergency situation by any employee and is also used by ER Team and other personnel involved in assisting the coordination of the response. Emergency Channel 2 is a private ER Team channel that is accessible only by ERT members, Security and Medical personnel.

During an emergency, other site radio channels may be used to:

- Locate ER personnel.
- Obtain additional internal resources.
- Emergency notification.
- Evacuation of employees from work areas.
- Maintain communications with aircraft/marine vessels.

2.7.2 Telephone Communication

During an emergency, telephone communications will be used to:

- Notify internal personnel and resources.
- Notify external personnel and resources.

To supplement radio communications, the site telephone system may be used to alert site personnel during an emergency response.

Communications links with Corporate BIM Office may also be required during some emergency situations. Constant communications links will be established by telephone where offsite assistance is required (from BIM, or external resources such as medical practitioners or SAR/Coast Guards).

2.8 Communication during Emergency

During emergency, the Emergency Command Centre will be contacted immediately. Information will be transmitted from the Emergency Command Centre to other project facilities. The Emergency Command Centre will be manned 24 hours a day by onsite personnel and will be equipped to handle all radio and telecommunications in the case of an emergency. Project facilities will be equipped with a phone system that will be capable of wide range communication when required. In the event of an emergency, there will be prompt notification of appropriate individuals including the BIM Operations Manager, Baffinland Corporate Crisis Management Center, ER Management Team and the Emergency Response Team.

2.9 Communication with the Public

Only Baffinland Senior Management authorized in the Baffinland Crisis Management Plan shall provide external communication to the public during emergencies.

Local residents, community leaders, other stakeholders, and non-governmental agencies will be contacted as appropriate. The designated officer(s) will coordinate dissemination of information to the media whenever necessary. Provision will also be made to inform family members of those involved in an emergency, if warranted.

2.10 General Evacuation Procedures

All employees will be instructed about emergency evacuation procedures during site orientation. Muster location maps showing evacuation routes will be posted at conspicuous places at the site including working areas, facilities and notice boards. A muster list will be prepared and posted with the muster map (see Appendix D). The list will provide information about emergency signals, instruction for operating emergency alarm systems, and the responsibilities of personnel. The list will be updated periodically to address current emergency response needs.

In an emergency, employees will proceed to the primary muster area for a head count. They will stay at this location, at the discretion of the Muster Station Coordinator, until told to move to a secondary muster, or another location, or be evacuated.

3. Roles and Responsibilities

The initial stage of any emergency is critical. An effective and timely response is essential to prevent an emergency situation from escalating to a higher level. Therefore, all personnel must be fully aware of their individual duties and responsibilities as they are presented in this plan.

Personnel identified as having key roles in effective emergency response include the Emergency Response Supervisor, Emergency Response Team, the Emergency Response Coordinator, Security personnel, ER Management Team and trained medical response professionals.

Specific responsibilities and duties inherent to personnel involved in emergency response are outlined below.

3.1 Incident Commander/Emergency Response Supervisor

The Emergency Response Supervisor (ER Supervisor or Incident Commander) is the site lead administrator for the ERT, responsible for ensuring the necessary emergency response equipment and adequate level of training for ERT members. The ER Supervisor directs the ERT at the scene as ERT Leader. In the absence of the ER Supervisor, a senior team member will be designated as ERT Leader. The following duties are performed by the ER Supervisor/ERT Leader.

3.1.1 *Duties during an emergency*

Upon being notified of an emergency, the Emergency Response Team Supervisor will:

- Immediately report to the Emergency Response Room and brief team members.
- Report to the scene of the emergency.
- Take charge of the scene.
- Evaluate the details of the emergency as presented by the first person on-scene. Assess the immediate situation, confirm the level of emergency and notify the ER Coordinator.
- Maintain contact with the ERCC and provide support in coordination of the response.
- Request internal/external resources as required.
- Advise ERT on aspects of internal/external support as they are received.
- Obtain results of muster station head counts and direct the team accordingly to ensure full evacuation.

3.1.2 *Duties Post Emergency*

Account for all MRT members:

- Announce the 'all clear' to ER Coordinator when the emergency has ended.
- Inform external resources that the emergency has ended (if external resources were mobilized during the emergency).
- Lead the emergency debriefing session.
- Ensure that all ERT equipment is returned to original order and/or replaced to ensure future rapid response.
- Develop a written log of events indicating instructions given, action taken and outcomes achieved.
- Provide assistance with ongoing investigation.
- Prepare a written report on response activities.

3.2 Emergency Response Coordinator – (ERC)

For the purpose of this ERP, the ERC will be the Operations Manager or a designate if absent.

3.2.1 *Duties during an Emergency*

- The Site Emergency Response Coordinator (ERC) will ensure coordination of ERT support systems from the ERCC.
- Upon being notified of a Level II or III emergency by the Incident Commander, the ER Coordinator will initiate activities in the ERCC and assess the situation based on current information from the Incident Commander.
- Activate the ERCC system and escalate according to severity of incident.
- The ER Coordinator will coordinate all activities in the ERCC. In the event the ER Coordinator leaves the ERCC, the ER Coordinator will designate an individual to coordinate the ERCC, notifying the Incident Commander and Security.
- Ensure that the appropriate area manager/s has been notified.
- Provide internal notification as applicable based on the level of emergency.
- Notify the Baffinland crisis management team representative for level two or three emergencies.
- Provide instruction to ensure that appropriate External Resources are notified.
- Receive information from the Incident Commander and ensure appropriate resources are made available.
- Ensure ERP Log Keeper is present in the ERCC at all times to maintain a log of all events, actions and outcomes in ER System.

3.2.2 *Duties Post Emergency*

- Notify Corporate Response Team of the "all clear".
- Ensure the coordination and establishment of an emergency debriefing session.
- Review ERCC incident log and post response incident report.
- Post incident debrief with Incident Commander.
- Provide necessary information to Public Relations for a media statement release if required.
- Complete a report on the events surrounding the incident.
- Coordinate collection of all incident notes, reports, statements and log of events.
- End the event in ER System.

3.3 Security

Security personnel or their designate are key in an emergency response in that they will receive an initial notification of an emergency and provide first communications to essential personnel.

3.3.1 *Duties during an Emergency*

- Receive initial emergency call and document vital information used to plan response.
- All logged information will be given to the ER Coordinator.
- Provide appropriate notification of the ER team members, ER Coordinator and medical response personnel.
- If evacuation is necessary, notify all campsite personnel of emergency evacuation.
- If safe to do so enhance evacuation by sweeping through dorm wings knocking on doors, if smoke, fire or other hazards are identified immediately confirm location to Incident Commander and retreat to safe area.
- For accommodations emergencies, ensure that all evacuated personnel are directed to the muster station.
- Security will report muster and evacuation status to the Incident Commander and await further instruction.
- Provide traffic and crowd control at scene as directed by the Incident Commander.
- Assist in controlling access to the emergency area.
- Maintain open radio communication (via radio or telephone intercom system).
- Keep a written record of events throughout incident.
- Assist in the coordination of support and internal services as directed by the ER Coordinator.
- Document all actions, decisions and communications.

3.3.2 *Duties Post Emergency*

- Relay notification of 'all clear' order when directed by Incident Commander.
- Provide a summary of all documentation to the Incident Commander and ER Coordinator.
- Maintain Security of the scene as directed by the ER Coordinator or Incident Commander.
- Direct all off-site inquiries regarding the emergency to the ER Coordinator or designate.
- Participate in a debriefing session for the emergency response.

3.4 Department Heads – (Emergency Response Management Team)

3.4.1 *Duties during an Emergency*

- For Level II and III emergencies contact the ER Coordinator and report to the ERCC.

- Work closely with the ER Coordinator to determine appropriate response strategy for their respective work area.
- If acting Operations Manager, carry out role of ER Coordinator.
- Provides support for the requirement of additional supplies and resources as requested by the ER Coordinator.
- Contact departmental resources via radio as required during the emergency response.
- Confirm that effective evacuation of the work area occurred.
- Confirm that the shift supervisor has contacted the Incident Commander.

3.4.2 *Duties Post Emergency*

- Participate in an emergency debriefing session.
- Ensure that the incident investigation is entered into the BIM internal incident reporting system.
- Review recommendations from the accident/incident investigation.
- Ensures follow up on remedial action to prevent or mitigate possibility of reoccurrence of emergency.

3.5 Front-Line Supervisors

3.5.1 *Duties during an Emergency*

- Ensure evacuation or stand down of their work area.
- Assist to ensure accountability of evacuees at muster station.
- Pre- investigate alarms if in work structure without harm to self, activate "Code 1" if necessary.
- Report to Incident Commander (Ch. 1) and identify self and location, acting as a direct resource to the Incident Commander.
- Ensure restricted access allowing only authorized personnel.
- Direct the isolation, de-energizing and lock-out of systems if required.

3.5.2 *Duties Post Emergency*

- Confirm that work area is safe to return to after an "all clear" has been called by the Incident Commander.
- Ensure that area of incident is secure until all investigations are completed by SH&E department.
- Participate in an emergency debriefing session.

- Ensure that the incident investigation is completed and entered into BIM internal incident reporting system.

3.6 BIM Environment Superintendent

3.6.1 *Duties during Emergency*

- For Level II and III emergencies contact the ER Coordinator and report to the ERCC.
- At the order of the ER Coordinator, notify the required external agencies.
- Provides support for the requirement of additional supplies and resources as requested by the ER Coordinator.
- Contact departmental resources via radio as required during the emergency response.
- Document all actions and decisions.

3.6.2 *Duties Post-Emergency*

- Participate in post-emergency debriefing.
- Assist in the accident/incident investigation process.
- Complete Government Agencies notification process.
- Ensure that all involved departments complete reporting process.

3.7 BIM Safety Coordinator

3.7.1 *Duties during Emergency*

- For Level II and III emergencies contact the ER Coordinator.
- Respond to the scene and make direct contact with the Incident Commander.
- Establish perimeters around the area of the emergency and direct appropriate resource personnel responsible for traffic flow.
- Assist with identifying and assessment of potential hazards of the ERT response and notify the Incident Commander.
- Ensure appropriate personal protective equipment for involved non ERT personnel.
- Note pertinent information that may be relative to the investigation.

3.7.2 *Duties Post-Emergency*

- Secure the area with red "DANGER" tape and sufficient tags. Post guards if necessary.
- Participate in post-emergency debriefing.
- Assist in the accident/incident investigation and complete report.

3.8 Emergency Medical Personnel

- Respond to all Code 1's as directed by the Incident Commander.

- Responsible for all decisions of medical-related situations on site.
- Act as team leader to the ERT during medical emergencies.
- Responsible for assessing, administering and delegating emergency medical care.
- Advise the Incident Commander of the number and condition of ill/injured personnel.
- Advise the ER Coordinator of off-site resources required and liaise with such agencies.
- Maintain a log of events, actions and outcomes.
- Participate in an emergency debriefing session.

3.9 Environmental Coordinator

In the event of an environmental incident involving accidental release of a hazardous substance, the Environmental Coordinator shall liaise with Incident Commander to direct environmental response efforts once the scene has been assessed by the Incident Commander and all medical and/or fire emergencies are under control.

The Environmental Coordinator will:

- Immediately proceed to the scene of the incident.
- Initiate external environmental emergency response resources as required.
- Coordinate internal resources during spill clean-up.
- Request additional resources through the Incident Commander as necessary.
- Secure the area with red "DANGER" tape and sufficient tags. Post guards if necessary.
- Participate in post-emergency debriefing.
- Maintain contact with regulatory bodies as required.
- Maintain a log of events, actions, and outcomes.

3.10 Muster Captain

During an evacuation of any area that is designated to evacuate BIM Trainer will assume the role of Muster Captain.

The Muster Captain will:

3.10.1 *Duties during Emergency*

- Ensure up to date Muster List is in place daily.
- Coordinate a head count to ensure that all campsite personnel have mustered to the appropriate muster station.
- Direct evacuees to designated areas.
- Distribute crew lists to department supervisors.

- Receive, log then relay missing person's name, room number, or work area to security.
- Log time of events at muster station.
- Communicate with security on channel 3.

3.10.2 Duties Post-Emergency

- Notify evacuees once the "all clear" has been called to return to work or accommodations.
- Return completed muster list to Incident Commander.
- Confirm security replaces muster list.

3.11 Employees

Employees perform an integral part of emergency response because often times they are the first to witness an incident and provide initial reporting that an emergency has occurred.

Any person involved in, or witnessing an incident should follow the emergency notification procedure and immediately initiate a required emergency response.

- As first person on the scene and after notifying that an incident has occurred, attempt to provide as much information as possible to assist in the initial response (e.g. type of incident, number of people injured and location).
- Assess and attempt to control the scene only without causing self harm or harm to others.
- Upon hearing a site fire alarm, proceed to the designated muster area and await instruction from security personnel.
- Cooperate with instruction and assist only when requested.

4. Response Actions to Emergencies

In order for an emergency response to occur, notification has to reach the Emergency Response Team. This initial notification should occur quickly and provide essential information. Most often, the First Person On-Scene is the individual that provides this information.

An individual involved in, or witnessing, as First Person On-Scene, shall make every effort to quickly initiate the emergency "Code 1" notification procedure. Appendix I contains the Emergency Response Plan Activation Flowchart.

Security, upon hearing/receiving the initial call shall record as much information as possible to ensure the proper notification is given to the Emergency Response Team.

4.1 Initial Responses

Project personnel working at a site or at a facility may be the first to encounter an emergency and will be expected to initiate a response action. In such an emergency, a general response will be followed before any other activities. The general procedures include the following:

- Avoid danger to yourself, others, and the environment.
- Communicate with individuals in the vicinity of the emergency to preliminarily assess their condition.
- Assess the size and severity of the emergency (i.e. minor or major emergency).
- Initiate Emergency Response notification in the event of a Level II or Level III incident.
- Prevent further health or environmental effects, loss of material or damage to equipment, if this can be done safely.
- Ensure the safety of personnel and evacuate to a temporary safe location, if necessary.

4.2 Response Action

Response actions are considered briefly for the following potential general emergency situations:

- Necessities of life.
- Personnel Issues.
- Natural environment-related Issues.
- Operational incidents.

A Level I incident could be an emergency that does not interrupt site operations, is not life-threatening, and does not result in minor environmental impact. In the event of a minor incident, onsite resources will be required to remedy the situation. Evacuation or offsite resources will not be necessary, and response can be coordinated by area management. Level 1 incident shall be communication shall be as described in the Incident Reporting Protocol.

A Level II or Level III incident is an emergency that requires an interruption to site operations. The incident may be life-threatening and could involve substantial environmental or property damage. Such an emergency might require offsite resources for effective response. Serious injuries or environmental spills will be assessed by the Emergency Response Coordinator in consultation with the ER Management Team. A decision will be made whether on- or offsite resources will be needed to remedy the situation.

For a summary of actions to determine external requests for search and rescue and emergency services, see Appendix J.

In the event that multiple incidents occur simultaneously at the same location their cumulative effects will be exponentially greater than the effect of any singular incident or emergency. Baffinland will be prepared to handle a number of minor incidents, or a combination of a major and a minor incident; with effective response plans and training in place. All sites will be equipped with adequate spill response equipment and trained teams. In the event of multiple major incidents at the same location severity will be assessed by the ER Coordinator

and if necessary offsite resources will be called in for an effective response. If events occur at different locations there should be little to no cumulative effect, as each site is designed to be self sufficient in the event of an incident.

4.3 End of Emergency

Activation of the ERT occurs when an emergency has been declared through the announcement of a Code 1, as indicated in the emergency response activation procedure. However, declaring a stand-down and denoting the end of an emergency is left to the discretion of the Incident Commander/ER Supervisor, in consultation with the ER Coordinator. In determining when an emergency has ended consideration will be given for the following:

- Stability of the affected area.
- Requirement for further action by the ERT or assisting external resources; and
- Potential risk of further injury or damage to people, property or the environment.

Through detailed assessment of the emergency response efforts, the area affected, and affected people and/or property the ER Coordinator and Incident Commander may determine that there are no existing circumstances that present potential risk for further injury or property damage if the normal course of activities resume.

4.4 Emergency Management Response

The detailed management and response to emergencies and potential critical incidents is identified in Section 4 and response to spill incidents in Section 7. Each of these detailed responses includes the following information:

- The main “threats” associated with the incident.
- How the incident may be notified (aside from emergency telephone/ radio call).
- Alarms or methods to alert persons of an emergency.
- The management response required (i.e. who should be notified, what action should be taken).
- Any special instructions.
- Possible contacts for specialist advice.

These should be used as a guide only and are not “all inclusive”. That is, there may be additional response steps or the steps may be in a different order of execution, depending on the circumstances of the individual emergency situation.

4.5 Personnel Issues

4.5.1 Medical Emergencies

Baffinland is committed having an on-site medical facility staffed by a registered nurse or certified paramedic in order to attend to any injury that workers might experience on-site, and

is further committed to providing medi-vac services as may be required from the Mine Site to Iqaluit.

4.5.1.1 *Serious Injury*

In the event of an incident involving personal injury, the degree of treatment and response will depend on the severity of the occurrence. However, in the event of an emergency involving personal injury, the following general actions will be initiated.

- Assessment of the emergency situation. Ensure personal safety and the safety of people near emergency location.
- Identify yourself to the injured person(s) and attempt first aid only if safe to do so.
- Activate a Code 1, stating your Name, Nature and Location of the incident.
- Obtain names of all witnesses to the incident and any pertinent information required for investigation purposes.
- All material and equipment involved in the incident is to remain untouched until cleared for use by the Incident Commander or Safety Superintendent.

In the event of medical or related emergencies, any person who discovers someone injured will implement initial response (see Section 3.1), and identify back-up assistance, preferably the dedicated onsite medical professionals or the Emergency Response team will respond.

The onsite medical professionals will implement their protocols to address medical emergencies, providing further care, coordinating uninjured personnel to assist in the response, and arrange transfer to other health care facilities in adjacent hamlets or Iqaluit as necessary.

If the victim(s) will require facilities and services beyond that which can be given onsite, the victim(s) could be evacuated from site to receive further medical treatment in adjacent hamlets or Iqaluit as per agreement. A fixed-wing aircraft or rotary-wing aircraft will be available at Mary River camp or area for medical evacuation. The ER Coordinator or designate will make the necessary arrangements as directed by the onsite medical professional. Information required to initiate a medical evacuation include: name, location and contact information of caller and patient; family or relative information, patient's medical information; and, receiving hospital information.

4.5.1.2 *Fatality*

In case of a fatal incident, the following procedures will be carried out:

- Assessment of the emergency situation. Ensure personal safety and the safety of people near emergency location.
- Shut down/turn off any equipment/machinery that may cause additional safety hazard.
- The first person on-scene activate a Code 1, stating your Name, Nature and Location of the incident.

- Once identified as a scene of a fatal accident/incident, the ERT will secure all material and equipment involved at the scene to preserve evidence until required investigations are complete and cleared by all regulatory agencies.
- External services such as the local RCMP detachment and the hospital shall be contacted as required by the ER Coordinator.
- The Occupational Health and Safety branch of the WSCC shall be immediately contacted in the event of a work related fatality incident.
- The ER Coordinator will be responsible for subsequent communication to the BIM Corporate Office.
- Any reporting to the public or media regarding Emergency Response events or actions will be made directly by or on authority of BIM Corporate Office.
- Notification to next-of-kin shall be conducted under the direction of the BIM Corporate Office.
- Only the RCMP is permitted to release the victim's name. This shall be done only after the employee's next-of-kin have been notified.

In the event of a fatality at a work site, Baffinland will exercise discretion for, offer counselling to, and consult with family and/or community members as well as meet all regulatory requirements for notification and scene preservation. Critical incident stress management services will be organized.

4.5.1.3 *Missing Persons*

The remoteness of the project site, and sometimes-unfavourable weather conditions, necessitates that a person's whereabouts should be known at all times while on the project site during their work rotation. However, there may be instances where workers may inadvertently wander from the project area without properly notifying security personnel, fellow workers or supervisors.

If an individual does not report to work on their next scheduled work shift, the supervisor responsible for the worker shall contact Security personnel to conduct a preliminary search of their personal accommodations area, and the area surrounding. A person may be declared missing if they cannot be accounted for by their supervisor or fellow workers, and cannot be located in other areas of the campsite by Security personnel.

Once a person is declared missing, Security personnel will notify the Incident Commander and subsequently the ER Coordinator. The Incident Commander will assess the situation and initiate and assign responsibility for the following actions, where required:

- Mobilize the ERT and security personnel to conduct a property-wide search.
- The Incident Commander shall determine the requirement to conduct a ground search outside of the property footprint.

- The local detachment of the RCMP shall be notified as instructed by the ER Coordinator.
- The ERT shall formulate search patterns and assign priority areas based on information obtained from Security personnel.
- When the ER Coordinator deems that local efforts to locate a missing person are unsuccessful outside assistance will be requested through the RCMP.

To reduce the potential for missing persons, personnel will check-in regularly and execute proper remote work practices as outlined in Baffinland's or contractor's health and safety plan. Resources such as personnel, equipment, land vehicles, and aircraft will be mobilized to aid search and rescue operations. Additional resources and services from local communities will be drawn upon as needed and if available access external SAR.

4.5.1.4 *Missing or Overdue Aircraft or Truck*

Aircraft and truck will remain in contact with dispatch while departing from and en route between sites. In the event that a vehicle does not report, the ER Coordinator or designate will be notified and they will in turn initiate the Emergency Response action. Additional support for rescue operations will be implemented with site personnel and appropriate regulatory authorities as needed.

In the event of an overdue aircraft the actions/procedures outlined in the Mary River Aerodrome Operations Manual shall be followed.

4.5.2 *Natural Environment Related Issues*

4.5.2.1 *Extreme Weather Conditions*

Baffin Island experiences extreme weather conditions nearly year-round and snow is possible during any month of the year. This, by necessity, requires the Project to develop health and safety plans tailored to these conditions. These extreme weather conditions will be considered emergencies when prolonged and affecting the safety of employees, equipment or facilities.

When prolonged extreme weather conditions such as cold or poor visibility presents health and safety concerns, risk will be assessed and activities will be curtailed or modified, as appropriate. If white-out conditions persist, communications with the ER Coordinator or designate might be necessary to decide the course of action and if travel or rescue is necessary. Work activities that are affected by severe winds, such as aircraft departures/arrivals and work at height, will be curtailed as appropriate.

Individuals travelling by vehicles between camps during the months of October and May are required to follow the directives provided in the Tote Road Safety Travel Procedure.

All vehicles are equipped with survival packs in the event of equipment malfunction between camps. Further response will involve moving personnel to other onsite facilities or evacuation to offsite facilities.

4.5.3 Operational Incidents

Note: All incidents, regardless of damage or injury, will be investigated and root cause determined so control measures will be instituted to prevent reoccurrence.

4.5.3.1 Fires

A fire/explosion emergency is "any uncontained fire that requires an on-site response greater than an individual using a hand-held portable extinguisher". All fires in critical areas where compressed gas, fuels, lubricants or explosives are in close proximity are to be classified as an emergency.

In providing initial response to a fire/explosion emergency, the cause of the fire and remedial action necessary must be immediately identified and controlled by on-site personnel to prevent escalation of the hazard level, including the possibility of further injury and/or damage to the environment, structures or equipment.

In the event of a fire or explosion, the emergency response will involve:

- Assessing the situation and determining emergency response needs.
- Directing and ensuring evacuation, and accountability of personnel.
- Identifying the requirement for additional internal resources such as heavy equipment, water truck, and others.
- Securing area to prevent unauthorized access and protecting equipment, facilities and records; and
- Taking other actions as required and controlling the emergency situation.

The accommodations centre at the project is critical support infrastructure and the most frequently occupied building at the project site. It is equipped with a fire alarm system including automatic smoke and heat detectors, fire hoses and manual fire pull stations. The fire alarm system is connected directly to a panel in the weather haven. Security personnel upon activation of a fire alarm shall adhere to the following chronological procedures:

- Activate the full fire alarm for the accommodations complex to activate the evacuation and muster of accommodations personnel.
- Call a Code 1 to alert the Emergency Response Team and medical response personnel via radio channel 1 & 2 that an alarm has sounded.
- Verify from the annunciation panel, the location of the alarm and provide that information to the Emergency Response Team.
- Announce the fire emergency on all radio channels to all personnel.
- Assist with evacuation if necessary.
- Contact the muster station to ensure the roll call is being conducted.

- Inform Incident Commander of persons not accounted for at Muster Station and when all employees have been accounted for.
- Once the "all clear" has been issued by the Incident Commander, relay the message to the muster station.
- Reset the local panel at the scene of the alarm.

Upon receiving the 'Code 1' announcement from Security personnel, the Incident Commander shall:

- Determine the nature of the alarm at the activation location. Identify any signs of smoke or fire.

If there is no sign of fire or smoke:

- Check the smoke detectors and heat detectors to determine which one was activated.
- Activated smoke detectors will be indicated by a red light. Activated heat detectors will be dropped down from the mounting base.
- Report the location of the activated detector to Security personnel.
- Silence the local alarm panel once the area is deemed safe to reoccupy.

If there are signs of fire or smoke:

- Immediately notify Security, who will in turn notify the ER Coordinator.
- Ensure back-up resources are available as required by the Incident Commander.

Any scheduled burning onsite, such as incineration, will follow regulatory requirements and control procedures. Fire extinguishers will be stationed at work areas including shops, fuel farms and dispensing areas, kitchens, incinerators, generators, etc. Personnel will be evacuated from site if a fire cannot be immediately controlled or impacts necessities of life or personnel issues. Trained onsite personnel will respond to fires using onsite equipment and notify regulatory authorities as needed. All on-site personnel will be trained in the use of fire extinguishers.

4.5.3.2 *Ground Instability*

Incidents relating to ground instability could involve pit wall, waste rock or ore stockpile embankment, road embankment, leading to injuries or damage to equipment or facilities. There will be a focus on incorporating geo-technical knowledge, adequate design and quality installation into all project facilities. If a qualified professional feels there is a risk of geotechnical failure proactive preventative measures will be taken to address the problem and ensure geotechnical stability of the area in question. In such emergencies, the ER Coordinator or designate will be notified so that necessary response action can be implemented. A qualified professional will inspect the suspected area of failure and will ensure that the area is properly secured and isolated. The incident will be documented and

appropriate mitigation and preventative programs developed to limit or minimize subsequent incidents and risks. In the event of an incident pre-existing preventative measures will be reevaluated and updated/adjusted to ensure similar.

4.5.3.3 *Vehicle and Equipment Incidents*

Potential for vehicle incidents at the project site exist with activities such as:

- Passenger vehicle movement carrying people and freight throughout the project site.
- Ore haul from the mill site to the port site.
- Ore/waste load-haul-dump operations; and
- Heavy equipment travel and transport on access roads throughout the project site.

The potential risk of vehicle incident varies according to changing conditions. These conditions may include:

- Road conditions (including dust, loose roadbed or unstable road shoulders, ice/snow cover).
- Mechanical failure in vehicle systems; and/or
- Operator error in judgment.

Where vehicle upset presents risk of injury and environmental spill, preservation of life and health will be first priority.

In case of an incident involving vehicle and operator, the following steps will be taken after the emergency notification procedure has been initiated:

- MRT will secure the scene.
- Assess the situation and determine if the vehicle is stable.
- If fuels are apparent (signs of leaks or odor) eliminate any ignition sources by turning off engines.
- If the vehicle is stable determine if personnel can be immediately extricated from the vehicle without injury or immediate first aid requirements.
- If the vehicle is unstable the ERT must secure it with blocking for stability if required.
- If medical condition is unknown or serious, the ERT will extricate the individual under the direction and assistance of site medical personnel.
- Attempt to secure any leak or spill of hazardous substance that may be leaking from the vehicle (internal storage systems or cargo) and contain any spilled substance if possible.
- Once the vehicle has been stabilized (may be under the direction of designated maintenance personnel) and person(s) extricated, begin spill recovery of accidentally released substances.

Incidents involving vehicles and other equipment will be reported to a supervisor as soon as possible to initiate the Emergency Response Plan. If a fuel spill has occurred, the Emergency and Spill Plan (see Section 6) will be initiated.

4.5.3.4 *Ship Grounding/Collision*

Each ship will have a proprietary general emergency plan/checklist according to the International Safety Management Code (ISM Code) for the Safe Operation of Ships and for Pollution Prevention.

4.5.3.5 *Airplane/Helicopter Incidents*

Contracted commercial air carriers will be equipped with standard operating procedures to address specific response actions to be taken in airplane emergency situations. Baffinland has developed emergency response procedures for aircraft incidents occurring on the airstrips.

In the event of an incident the actions/procedures outlined in the Mary River Aerodrome Operations Manual shall be followed.

4.5.4 ***Bomb Threat***

A bomb threat is always considered an emergency situation and cannot be regarded as false until proven otherwise. During operations there will be a requirement to store large amounts of petroleum products, explosives, and hazardous chemicals. Any bomb threat will be considered real until gathered information confirms otherwise. If a bomb threat is received, primary responsibility for further action and investigation will rest with the RCMP. Since the Pond Inlet RCMP detachment is nearest the project site, notification and request for support during the initial stages of the response will be directed there. Until RCMP officers are available to offer on-site support, site personnel will strictly follow the following procedures.

4.5.4.1 *Threat Received*

When receiving a bomb threat, the person in receipt of the initial call or notification should adhere to the following protocol:

- Listen.
- Be calm and courteous.
- Do not interrupt the caller.
- Concentrate on recording the exact wording of the message.
- Obtain as much information as possible.

4.5.4.2 *When Caller Hangs Up*

- Report all details of threat to immediate Supervisor.
- Unless ordered to evacuate immediately, provide as many details as possible that may aid in further determining the origin/realism of the threat.

4.5.4.3 *Roles and Responsibilities*

Responsibilities during receipt of a bomb threat will focus on securing the safety of workers and minimizing potential damage to infrastructure. The conduct of site search and surveillance shall be the responsibility of the RCMP and their supporting resources that have been highly trained in responses of this nature. Prior to site arrival of external resources, the primary action plan for the site would focus on minimizing risk of injury to site workers and damage to existing infrastructure.

- Notify all site personnel to cease activity and report to the muster station. If the location of the bomb threat is known, immediately remove all personnel from the area.
- Secure fuel systems, equipment and other infrastructure that may have the potential to cause additional safety hazards.
- Maintain contact with the RCMP, providing period updates of site status. Ensure all instruction from the RCMP are communicated and followed.

4.5.5 ***Explosives***

An Explosives Management Plan (FEIS, Appendix 10D-4) is developed for the Project to address responses to incidents that may arise from transporting, handling and use, and storage of explosives and explosive components onsite.

4.5.6 ***Fuel and Other Chemical Spills***

A Spill Response Plan is developed specifically to address fuel and other hazardous materials land-based spills, releases or discharges at the Mine Site (refer to Section 6 of this document). Marine fuel spills at the Milne Port are addressed with by the Milne Inlet Fuel Storage Facility OPEP (currently under revision) - FEIS, Appendix 10C-2.

4.6 **Multiple Emergencies**

4.6.1 ***Multiple Emergencies***

Multiple emergencies can occur either by coincidence or by one incident leading to or causing another. In the case of multiple emergencies, the guiding principles (Section 1.2) will provide direction for appropriate response action. The Emergency Response Team will anticipate potential multiple incidents that could occur due to the occurrence of an emergency and be prepared to take actions as may be required. Sufficient resources will be available to address the potential for multiple emergencies. The Emergency Response Coordinator assisted by the ER Management Team will coordinate response actions.

5. Spills Contingency

5.1 Response Management Structure

All spill procedures and response functions are to be implemented through the Emergency Response Management Team (see Section 1.4). Table 1-1 presents the management team responsible for overseeing emergency spill response operations and their contact information.

Once a spill event is reported, the Incident Commander establishes a specific strategy for containing and controlling the spill and to initiate the cleanup activities. Other site personnel may act as technical advisers before and during the intervention. The trained Emergency Response Team will conduct all emergency spill response operations under the direction of the Environment Department. During the cleanup phase of the intervention other site personnel (e.g., heavy equipment operators, labourers) could be involved in the intervention.

The Emergency Response Organizational Chart is provided as Figure 2-1 .

5.1.1 Environment Department Designate

As part of the spill response plan, the Environment Department Designate is responsible for implementing the following procedures:

- Assume authority over the spill scene and personnel involved.
- Activate the Spill Response Plan.
- Evaluate the initial situation and assesses the magnitude of the spill.
- Develop an overall plan of action.
- Collect photographic records of the spill event and cleanup efforts.
- Prepare a root cause analysis and an incident investigation for major spills.
- Report to the ER Coordinator and provide recommendations on resource requirements (additional manpower, equipment, material) to complete the cleanup effort. The responsibility of the Environment Department Designate is to mobilize personnel and equipment to implement the cleanup.

The Environment Department designate will be accessible to the Canadian Coast Guard during the entire incident.

5.1.2 Environment Superintendent or Designate

The responsibilities of the Environment Superintendent include the following:

- Report the spill to NWT 24-hour Spill Report Line at (867) 920-8130, to Qikiqtani Inuit Association (QIA) Lands Administrator at (867) 975-8422, and Aboriginal Affairs and Northern Development Canada (AANDC) Water Inspector at (867) 975-4555.
- Provide liaison with management to keep them informed of cleanup activities.
- Obtain additional required resources not available onsite for spill response and cleanup.

- Act as the spokesperson with government agencies as appropriate.
- Document the cause of the spill and effectiveness of the cleanup effort, and recommend the appropriate measures to prevent a recurrence of the spill.
- Prepare and submit follow-up documentation required by appropriate regulators.
- Ensure that the spill is cleaned up and follow-up communication and reports are filed with the AANDC and QIA Land Administrator. Ensure that the spill reports submitted to QIA include photographic records and an updated map showing Universal Transverse Mercator (UTM) coordinates, date, and amount and nature of the spill.

5.1.3 Corporate Contact

The responsibilities of the Corporate Contact include the following:

- Work with the Environment Department on regulatory follow-up as necessary; and
- Act as the spokesperson with government agencies as well as the public and media on any significant spill events.

5.1.4 Emergency Response Team

All responders are to be trained under the Response Actions to Emergencies outlined in Section 4. The number of responders and their specific tasks is estimated in accordance with the spill scenarios outlined in Section 7 of the Milne Inlet Fuel Storage Facility OPEP, as applicable.

5.1.5 Onsite Medical/Rescue Team

Depending on the scale of the spills/emergency scenario, fire response and medical emergency procedures will be initiated.

5.1.6 Shipping Companies

When shipping hazardous materials to and from the site, transport companies are required to carry out their operations in accordance with federal and international Transport of Dangerous Goods Regulations [i.e., TDGR – Clear Language, International Maritime Dangerous Goods (IMDG), and International Air Transport Association (IATA)].

In the event of a spill of hazardous materials (exceeding the quantities listed in Part 8.1 (1) of the TDGR) during transport, the shipping company will immediately report the incident to the RCMP and the Nunavut Emergency Services at 1-800-693-1666 (as stated in Part 8.1 (5), TDGR). The immediate report must include as much of the information listed in Part 8.2, TDGR, as is known at the time of the report. A follow-up report must be made, in writing, to the Director General within 30 days after the occurrence of the accidental release, the "dangerous goods accident" or the "dangerous goods incident". The follow-up report must include the information listed in Part 8.3, TDGR.

If a spill occurs on water during transport or during the transfer of hazardous materials from ship to land, the shipping company is responsible to implement the appropriate spill response measures in accordance to their spill response plan. If needed, the Baffinland Emergency Response Team can be available to assist the shipping company in their emergency response operations.

5.2 Coordination with Coast Guards and Government Agencies

5.2.1 *Canadian Coast Guard*

The response to a spill at Milne Port will be managed in coordination with the Canadian Coast Guard, lead response agency north of 60°.

The Central and Arctic Regional Response Plan (2006) and the Baffin Region, Nunavut Area Plan outline the Canadian Coast Guard's response capability for the Baffin region. The plans are components of the Canadian Coast Guard National Response Plan, which is the responsibility of the Director of Safety and Environmental Response Systems, Ottawa. It establishes the framework and procedures by which Central and Arctic Region will prepare for, assess, respond to, and document actions in response to pollution incidents in the region. This capability and the information contained in the Coast Guard plans are considered a valuable resource in planning spill response at Milne Port.

5.2.2 *Regional Environmental Emergencies Team (REET)*

The Environment Canada, Regional Environmental Emergencies Team (REET) is a multi-agency, multi-disciplinary group specializing in environmental emergencies. REET is designed to provide consolidated and coordinated environmental advice, information and assistance in the event of an environmental emergency. REET members represent several federal, provincial and municipal government departments, aboriginal communities, private sector agencies, and local individuals.

During emergency response situations a REET operates as a flexible and expandable multi-disciplinary and multi-agency team brought together to obtain and provide comprehensive and coordinated environmental advice, information and assistance to the Emergency Response Team Supervisor.

5.3 Training

5.3.1 *Purpose*

Training programs designed to ensure the continued competence in proper emergency response skills and in the procedures established by this plan are conducted on a continuing basis.

5.3.2 *Responsibility*

Development and implementation of emergency response training is the responsibility of the emergency response supervisor with the assistance and input from all departments.

5.3.3 *Training*

The Emergency Response Team Supervisor will be responsible for coordinating emergency response training onsite. The Emergency Response Team will participate in training and

emergency response exercises to ensure that all members are trained in equipment use and emergency response methods. The Emergency Response Team members will be trained in emergency identification and currently accepted response action techniques. The course content is to be based on identified task requirements and specialised hazards associated with emergency situations. Basic requirements for training individuals for emergency response include the following:

Key Personnel training requirements:

- Emergency chain-of-command.
- Evacuation procedures.
- Worker health and safety during emergency interventions.
- Fire safety and response.
- Hazardous Material Safe-Handling.
- Water based rescue.
- High angle rescue.
- Search and Rescue (SAR).
- Communication methods and signals.
- Emergency equipment and use.
- Offsite support and use.
- First Aid.
- Surface Mine Rescue.
- Spills:
 - ♦ Marine spill response.
 - ♦ Marine shoreline recovery operations.
 - ♦ All season land based spill response.

ERC and Department training requirements:

- Emergency response plan execution training.

Heads of Department training requirements:

- Emergency chain-of –command.

Employees will undergo formal safety and emergency response training. The training will identify site-specific hazards and hazards associated with the project in general. The training will also review standard operating procedures, use of personal protective equipment,

signalling an emergency, evacuation routes and muster locations, reporting and notification protocol, and other general safety procedures.

As part of site orientation and ongoing awareness training, all site personnel are informed that any spill of fuel or other hazardous liquids or solids, whatever the extent, has to be reported to their immediate supervisor.

In addition to this Baffinland is committed, during operations, to conducting regular annual spill response exercises and training in known and effective techniques for responding to spills and invite the relevant communities of the North Baffin Region to participate.

All training and testing is to be documented by the HS&E and Training Department and is to be repeated at a frequency set out by The Emergency Response (ER) Coordinator.

Training content should be reviewed annually by The Emergency Response Coordinator and modified as necessary to ensure that training adequately reflects changes in hazards and conditions, and complies with license and regulatory requirements.

5.4 Drills and Exercises

While drills and exercises can be used for training purposes, their primary function for this plan is to provide the means of testing the adequacy of the plans provisions and the level of readiness of response personnel.

5.4.1 Responsibility

The Emergency Response Supervisor is responsible for coordinating the development of and assisting in conducting drills and exercises. The following types of drills and exercises are to be used:

- Tabletop Exercises involve presenting to key emergency personnel a simulated emergency situation in an informal setting to elicit constructive discussion as the participants examine and resolve problems based on the plan.
- Functional Drills are practical exercises designed to test the capability of personnel to perform a specific function (i.e. communications, first aid, and rescue).
- Full-Scale Exercises are intended to evaluate the operational capability of Baffinland's emergency organisation and the adequacy of this plan.

5.4.2 Frequency

Tabletop exercises are to be conducted after initial implementation of this plan and after any major revisions of this plan or changes to key personnel.

Functional drills for various emergency aspects are to be conducted at least annually with both shift rotations and this includes Emergency Response Team drills (i.e. mine rescue, etc).

Full-Scale Exercises are to be conducted annually with sufficient notice to allow the correct exercise preparation.

5.4.3 Preparations

Preparations for a drill or exercise will vary depending on the type and scope involved, however the planning should include:

- Plan review and identification of possible problem areas.
- Establishing objectives.
- Identifying resources to be involved including personnel.
- Develop exercise scenarios, a major sequence of events list, and expected action checklists .
- Assigning and training controllers and evacuators.

Baffinland has committed to engaging local community representatives, the Government of Nunavut and the Canadian Coast Guard as applicable in training, drills and exercises.

The scenarios used will be realistic and based upon current operating conditions. The primary event (fire, spill, etc) is to be determined based on the objective of the exercise, and in accordance with regulatory requirements.

A sequence of major events list is to be developed to help simulate an actual emergency incident. Generally conditions for exercises should simulate, as closely as possible, actual emergency situations.

5.4.4 Debrief

The correct responses for each major event should be determined to assist with controllers and evaluators in subsequent debriefs and critiques. Results of drills and exercises are to be reviewed by the participants, evaluators and the Emergency Response Coordinator personnel to identify problem areas such as deficiencies in the plan, training, personnel or equipment. Debriefing will commence immediately after the incident has been resolved.

The Emergency Response Coordinator will prepare a report including details of his debrief and submit it to the Managers of Health, Safety & Environment. The Baffinland Safety and/or Environmental Superintendent will compile an overall report which will include the following:

- A summary of the exercise, including a review of the purpose, objectives and scenario used.
- A summary of the major discrepancies/deficiencies.
- Recommendations and corrective measures.

- A proposed schedule for the completion of these corrective measures.

These reports and recommendations will then be evaluated by the Baffinland Corporate Health, Safety, and Environment Managers for a decision on the merits of all recommendations.

5.5 Communication

The types of communications for which members of the team will participate include the following:

- 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 Health Safety and Environment Departments.
- Electronic communications.
- Tailgate/toolbox meetings.
- Formal written correspondence and meetings with government regulatory bodies; and
- Formal environmental awareness training.

Communications will be appropriately recorded and filed for future reference. Where appropriate, the copies of communications will be forwarded to the ER Coordinator and Vice President, Sustainable Development, Health, Safety & Environment

5.6 Facilities, Supplies and Equipment

5.6.1 Purpose

To ensure an effective response to emergency situations, adequate quantities and types of supplies and equipment are to be maintained on site for use by the Emergency Response Coordinator and others.

5.6.2 Responsibility

Responsibility for maintaining project, suppliers and equipment in a ready state and for determining the adequacy of equipment is assigned to the Emergency Response Supervisor.

5.6.3 Procedure

An inspection of specific emergency equipment is performed regularly by the Emergency Response Supervisor in accordance with a designated schedule and the records of these inspections will be kept on file at the Emergency Response Coordinator Center.

Life support equipment (i.e. self-contained breathing apparatus) is to be tested in accordance with the manufacturer's specifications to ensure its reliability, and records of all tests are to be maintained by The Emergency Response Supervisor.

All items with a limited shelf life or items such as sterile first aid supplies should be replaced as required, this would also relate to items expended during an emergency or exercise. Damaged or spoiled items immediately replaced.

A list of vendors capable of providing immediate emergency re-supply of items expended during sustained operations is to be maintained by emergency response supervisor and shall be responsible for stocking the Control Centre with all required equipment, including:

- Stationery.
- Telephone connections.
- Whiteboards.
- PC connections.

5.7 Mutual Aid

5.7.1 Purpose

It is the policies of Baffinland to have its neighbours participate in the response training at the Mary River Project to support the development of emergency response capacity and in potential support to emergencies that may occur in its operations. Baffinland will provide response assistance to the Government of Nunavut, local emergency response agencies authorized by the Government of Nunavut and other organizations. Baffinland's assistance varies depending on the circumstances of each incident but may include technical advice or provision of Baffinland resources authorized by the Emergency Response Coordinator. See Appendix J – Flowchart For External Requests for Search and Rescue and Emergency Services.

Baffinland provides this assistance under written agreement with the Government of Nunavut and assistance is only provided where plant, property and employees could operate in a reasonably safe environment.

6. Spill Response Procedures

A spill is defined as the discharge of a hazardous product out of its containment and into the environment. Potential hazards to humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors including nature of the material, quantity spilled, location and season. Diesel and Jet Fuels are the main products that may be spilled and therefore spill response procedures focus on this hazardous material. Other chemicals that may be spilled include sewage water, calcium chloride flakes, concrete additives, anti-freeze and small quantities of lubricants and oils.

All site personnel are trained on the procedures to be followed to report a spill and initiate spill response. The first person to notice a spill takes the following steps:

1. Immediately warn other personnel working near the spill area.
2. Evacuate the area if the health and safety of personnel is threatened.

3. In the absence of danger, and before the spill response team arrives at the scene, take any safe and reasonable measure to stop, contain and identify the nature of the spill.
4. Notify the Environmental Supervisor, who will initiate the spill response operations.

All spill response interventions carried out by the spill response team follow these general procedures:

Source Control – Reduce or stop the flow of product without endangering anyone. This could involve very simple actions such as turning off a pump, closing a valve, or sealing a puncture hole with almost anything handy (e.g., a rag, piece of wood, tape), raising a leaky or discharging hose to a level higher than the product level inside the tank, or transferring fuel from leaking containers.

Control of Free Product – Prevent or limit the spread of the spilled material. Accumulate/concentrate spilled product in an area to facilitate recovery. Barriers positioned down-gradient of the spill will slow or stop the progression of the spill. Barriers can consist of absorbent booms, dykes, berms, or trenches (dug in the ground or in ice).

Protection – Evaluate the potential dangers of the spill to protect sensitive ecosystems and natural resources. Block or divert the spilled material away from sensitive receptors. This can also be achieved by using various types of barriers.

Clean up the Spill – Recover and containerize as much free product as possible. Recover and containerize/treat contaminated soil, water, and snow. Pressure-wash contaminated bedrock surfaces, shorelines, ice and recover as much as possible oily water for containerization and/or treatment.

Report the Spill – Provide basic information such as date and time of the spill, type and amount of product discharged, photographic records, location and approximate size of the spill, actions already taken to stop and contain the spill, meteorological conditions and any perceived threat to human health or the environment. Reporting requirement forms are presented in Appendix D.

Response procedures specific to spills on land, water, snow and ice are presented in the following sections. Procedures vary depending on the season. Spill response operations, techniques, equipment and materials are further detailed in the spill response training course manual.

6.1 Spills on Land

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

Depending on the volume spilled, the site of the spill as well as available material, a dyke may be built with soil, booms, lumber, snow, etc. A plastic liner should be placed at the foot of

and over the dykes to protect the underlying soil or other material and to facilitate recovery of the spill. Construct dykes in such a way as to accumulate a thick layer of free product in a single area (V-shaped or U-shaped).

Trenches are useful in the presence of permeable soil and when the spilled fuel is migrating below the ground surface. A plastic liner should be placed on the down-gradient edge of the trench to protect the underlying soil. Liners should not be placed at the bottom of the trench to allow water to continue flowing underneath the layer of floating oil (if applicable).

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

6.2 Spills on Water

Responses to spills on water include the general procedures previously detailed. Various containment, diversion and recovery techniques are discussed in the following sections. The following elements must be considered when conducting response operations:

- Type of water body or water course (lake, ocean, stream, river).
- Water depth and surface area.
- Wind speed and direction.
- Presence and range of tides.
- Type of shoreline; and
- Seasonal considerations (open-water, freeze-up, break-up, frozen).

Containment of a diesel fuel slick on the ocean requires the deployment of mobile floating booms to intercept, control, contain and concentrate (i.e., increase thickness) the floating oil. One end of the booms is anchored to shore while the other is towed by a boat and used to circle the diesel fuel slick and return it close to shore for recovery using a skimmer. Reducing the surface area of the slick increases its thickness and thereby improves recovery. Mechanical recovery equipment (i.e., skimmers and oil/water separators) will be mobilized to site if required. Refer to Milne Inlet Fuel Storage Facility OPEP (FEIS Appendix 10C-2) .

If diesel fuel is spilled in a lake it may not be possible to deploy booms using a boat. In this case, measures are taken to protect sensitive and accessible shoreline (spills resulting from traffic incidents). The diesel fuel slick is monitored to determine the direction of migration. In the absence of strong winds the oil will likely flow towards the discharge of the lake. Measures are taken to block and concentrate the oil slick at the lake discharge using booms

where it will subsequently be recovered using a portable skimmer, a vacuum, or sorbent materials.

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

In the case of spills in larger rivers, with fast moving currents, diversion booming is used to direct the oil slick ashore for recovery. Single or multiple booms (i.e., cascading) may be used for diversion. Typically, the booms are anchored across the river at an angle. The angle will depend on the current velocity. Choosing a section of a river that is both wider and shallower makes boom deployment easier. Diversion booming may also be used to direct an oil slick away from a sensitive area to be protected.

6.3 Spills on Snow and Ice

In general, snow and ice will slow the movement of hydrocarbons. The presence of snow may also hide the diesel fuel slick and make it more difficult to follow its progression. Snow is generally a good natural sorbent, as hydrocarbons have a tendency to be soaked up by snow through capillary action.

However, the use of snow as absorbent material is to be limited as much as possible. Snow and frozen ground also prevent hydrocarbons from migrating down into soil or at least slow the migration process. Ice prevents seepage of fuel into the water.

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

Free-product is recovered by using a vacuum, a pump, or sorbent materials. Contaminated snow and ice is scraped up manually or using heavy equipment depending on volumes. The contaminated snow and ice is placed in containers or within lined berms on land. The contaminated water and product will be treated on site utilizing available oily water treatment systems. Additional contaminated snow storage sites will be identified at Milne Port and the Mine Site in preparation for the 2013 Work Plan. Free phase product that is recovered will be utilized as a source of fuel on site if possible or shipped offsite for processing.

6.4 Wildlife Protection Procedures

In response to a spill event, techniques used to prevent wildlife from becoming oiled or contaminated, by preventing animals from entering the contaminated area, will consist of hazing and other deterrents. This will be accomplished using a combination of both audible and visual devices, including but not limited to:

- Pyrotechnics, i.e. shell crackers, screamers, propane cannons for shore based spills.

- Visual scare tactics, i.e.: helicopters, emergency response vessels or other water vessels.
- Broadcast sounds, i.e. Breco Bird Scarer designed to float with an oil spill.
- Exclusion, i.e. netting applied in smaller contaminated areas such as settling or evaporation ponds.

These techniques need to be set in place immediately after a spill occurrence so as to minimize environmental impact.

The size of the spill and location in relation to sensitive wildlife areas must be assessed at the time of the event as to correctly apply the appropriate level of deterrence. Only workers trained in the safe and proper use of certain hazing equipment will be permitted to haze wildlife. Personal Protective Equipment will be worn by all personnel using equipment, as per manufactures instructions, and that the minimum will include the use of eye and ear protection. Other workers in the vicinity of such devices should also use ear protection or remain a safe distance away. Hazing through the use of pyrotechnics should not be used too close to dry vegetation or flammable spill materials due to fire hazard.

Hazing should be equal and continuous in all contaminated areas to prevent wildlife from being hazed into an area where they may be in danger. It is also important to ensure that hazing efforts do not cause already contaminated animals to scatter and techniques are applied as soon as possible to prevent wildlife from contacting spills off the surface of waters (if applicable).

All emergency response vessels shall be equipped with deterrent devices to ensure timely response in case of a spill occurrence off-shore. To prevent habituation, variation of hazing techniques will be used such as changing the location, appearance and types of hazing or using a combination of hazing techniques.

Efforts shall be made to collect alive or dead oiled wildlife. In the event of a spill occurring in or around a water body, shorelines and beaches shall be inspected for contaminated wildlife to be collected. Emergency Response vessels shall be equipped with dip-nets, large plastic collecting bags for dead wildlife, and cardboard boxes or cloth bags for live oiled wildlife. To ensure alive oiled wildlife be dealt with humanely, capture and handling of wildlife shall only be done by trained and permitted individuals. Gloves shall be worn when handling contaminated wildlife (leather gloves for raptors and mammals, latex/rubber gloves for ducks and small shorebirds). Wildlife will be kept individually within cloth bags or ventilated cardboard boxes and label the date and time animal was found, name of finder, location and name of species, if known. Wildlife treatment facilities will then be contacted for advisement on treatment. All contaminated wildlife will be held in a warm quiet place until treatment. The Canadian Wildlife Services (CWS) will be consulted to determine the most humane treatment strategy to be implemented for live oiled wildlife, whether rehabilitation or euthanization.

For wildlife mortalities each carcass shall be bagged and labelled individually. The date and time animal was found, name of finder, location and name of species, if known shall be documented. CWS shall be consulted and approval obtained prior to disposing of any dead

wildlife. Contact information for experts in bird hazing and bird exclusion, oiled bird rehabilitation, and, permits needed to haze, salvage, hold and clean, or euthanize birds, are shown in Table 6-1.

Table 6-1: Emergency Contacts in Case of Spills Affecting Wildlife

Name	Location	Phone Number	Purpose
Canadian Wildlife Services (CWS)	Qimugjuk	1-867-979-7279	Knowing and providing information on the migratory bird resource and species at risk (under CWS jurisdiction) in the area of a spill (this includes damage assessment and restoration planning after the event) Minimizing the damage to birds by deterring oiled birds from becoming oiled Ensuring the humane treatment of captured migratory birds and species at risk by determining the appropriate response and treatment strategies which may include euthanization or cleaning and rehabilitation.
Cobequid Wildlife Rehabilitation Centre	Brookfield, NS	1-902-893-0253	Provide veterinary care and rehabilitation for wildlife
Nunavut Emergency Management	P.O. Box 1000, Station 700 Iqaluit, NU X0A 0H0	1-800-693-1666	Nunavut Emergency Management is responsible for developing the territorial emergency response plans, coordinating general emergency operations at the territorial and regional levels, and supporting community emergency response operations.
International Bird Rescue	International	1-888-447-7143	Wildlife rehabilitation specialists, can manage all aspects of wildlife response

6.5 Disposal of Spilled Material

Plastic ore sacks, steel drums, or other appropriate containers as approved by the Environmental Supervisor are used to contain and transport contaminated soil for treatment. Depending on the nature of the spilled contaminant, the soil may be treated for remediation at Baffinland's land farm at Milne Port (hydrocarbon based spills, sewage spills). Contaminated soil resulting from the spill of hazardous chemicals will be treated as a hazardous waste and shipped to a licensed facility for treatment and disposal (refer to FEIS, Appendix 10D-4: Waste Management Plan for Construction Operations and Closure). Temporary storage of contaminated materials is within lined berms. Used sorbent material is burned in the site incinerators.

7. Potential Spill Analysis

To prepare for emergency spill response, potential spill analysis was conducted on various worst-case scenarios. The exercise serves to identify potential risk areas, as well as to

determine the fate of spilled products and their environmental effects. This section examines spill scenarios as they relate to the 2013 Work Plan.

Several types of materials that will be used in 2013 have been identified as capable of causing environmental, health, and safety concerns should a spill occur while being transported, used, stored and/or handled. These include: fuel, explosives, untreated sewage and effluent, concrete additives, lubricants, oils and oily water. These materials are planned to be utilized daily during the 2013 Work Plan, often in sufficiently large quantities, warranting the evaluation of potential spill scenarios. All other hazardous materials, chemicals or wastes are handled/used/stored in smaller quantities and packaged/transported in small containers that limit the magnitude of the spills that can occur.

7.1 Fuel Spills

Fuel represents the greatest volume of hazardous material located on site in 2013. For locations of the tank farms and temporary fuel depots at each of the Project sites, see Appendix B. For the quantities of fuel currently stored on site and the expected maximum quantities stored at each location during the 2013 Work Plan, see Table 7-1 and Table 7-2.

Table 7-1: Current Fuel Inventory*

Location	Fuel Currently on Site		Total Fuel Inventory
Milne Port	436,370 L	Jet- A	2.26 ML
	1.83 ML	Diesel	
Mine Site	633,008 L	Jet- A	792,139 L
	159,131 L	Diesel	
Steensby Inlet	1,664 Barrels @ 205 L	Jet- A	495,280 L
	752 Barrels @ 205 L	Diesel	

*Note: Currently on-site March 2013.

Table 7-2: Fuel Storage Capacity for 2013 Work Plan*

Location	Peak Number of Tanks and Capacity of Fuel Storage for 2013	Type of fuel	Total Storage Capacity
Milne Port	3 pre-fabricated steel tanks @ 750,000 L ea	Jet- A	52.25 ML
	2 steel tank @ 5 ML ea, 4 steel tanks @ 10 ML ea.	Diesel	
Mine Site	4 pre-fabricated steel tanks @ 500,000 L ea	Diesel	2.0 ML
Steensby Inlet	1,664 Barrels @ 205 L	Jet- A	495,280 L
	752 Barrels @ 205 L	Diesel	

*Note: Actual fuel inventory will be dependent on fuel delivery considerations.

The fuel tank farms are designed to have bermed spill containment with capacity equal to the volume of the largest tank plus 10% of the volume of the remaining tanks or 110% volume of the largest tank, whichever is greatest. In calculating the volume of the containment, the footprint of the smaller tanks is subtracted.

The above basis is consistent with the document "Design Rationale for Fuel Storage and Distribution Facilities" 3rd Edition 2006, published by the Department of Public Works of the Northwest Territories. The lining in the bermed area is an impervious high-density polyethylene (HDPE) membrane. Refuelling stations are equipped with a lined and bermed area to contain minor spills or leaks during refuelling. The liner (e.g., 40 mm hypolon liner or equivalent) is protected by sand bedding. Vehicles and mobile equipment drive onto this bedding for refuelling. All fuel transfer is done by pumps with auto shut off valves (similar to gas station pump handles). In the event that mobile equipment refuelling is completed outside of the lined containment, drip trays will be utilized by experienced/trained operators, with spill kits located in close proximity in case of emergency.

All bulk fuel storage areas are equipped with spill kits for emergency response (see Appendix H for locations) and a current copy of ERP will be maintained that identifies spill kit locations and response plans. The spill kit contains the appropriate type, size and quantity of equipment for the volume/type of product present in the storage location as well as the environment likely to be affected by a spill (i.e., ground, river, lake, and ocean). For a list of spill response supplies, see Appendix C.

For each method of fuel storage and transfer, Standard Operating Procedures (SOP's) related to fuel storage and transfer have been developed. Proper containment and emergency response equipment will be provided to meet or exceed regulatory requirements. The Emergency Response and Spill Contingency Plan governs land-based operations, and the Transport Canada approved Oil Pollution Emergency Plans (OPEP) govern ship to shore fuel transfers for Milne Port and Steensby Port.

7.1.1 Potential Fuel Spill Scenarios

The tank farms located at Milne Port, Steensby Port and the Mine Site are constructed in an impermeable secondary containment structure (lined and bermed containment area). The construction is in compliance with building codes and best practices for tank farm facilities. The low point of the containment area is fitted with a sump and pumping system for capture/disposal of runoff in this secondary containment area. The same pumping system is used to recover large spills, should they occur. The secondary containment will be designed to a capacity to contain the complete volume of the largest tank, as well as 10% of the volume of all the remaining tanks.

Due to the capacities of the secondary containments, fuel spills outside these containment areas are unlikely to occur. Detailed procedures (site wide application) and work instructions (task specific) are in place (see section 6) as well as the Construction Environmental Protection Plan (CEPP) to deal with the cleaning of equipment and machinery entering and exiting the tank farms as well as dealing with contamination resulting from traffic in and out of the secondary containment areas.

7.1.1.1 Scenario 1: Tank Farms Area Spill

Description of Incident	Rupture or spill from 10ML tank into containment area
Potential Causes	Tank or associated equipment failure. This may include failure as a result of human error, mechanical failure, inadequate maintenance, geotechnical issues, sabotage, etc...
Product Spilled	Diesel or Jet Fuel.
Maximum Volume Spilled	10ML
Estimated Time to Spill Entire Volume	1 hour
Immediate Receiving Medium	Lined containment area
Most Probable Direction of Spill Migration	The fuel will flow into the sump of the containment area.
Distance and Direction to Closest Body of Water	N/A
Resources to Protect	Must ensure fuel does not breach/overtop containment
Estimated Emergency Spill Response Time	20 mins
Spill Response Procedures	If the spill is still occurring the hole/breach will be plugged or stopped if possible. The lined containment will be inspected to ensure that it is safely containing the spill; if not it will be reinforced with temporary berms. The spill will be collected via a vacuum truck and deposited in a suitable site – either an intact fuel tank or, if necessary, the oily water treatment facility.

7.1.1.2 Scenario 2: Day Tank/Temporary Storage Area Spill

All stand-alone day storage facilities, whether temporary (construction period) or permanent (mine pit), will be double-walled iso-tanks. In the 2013 Work Plan an estimated twelve 10,000L ISO-tanks will be required and will be located at multiple sites around the project, including: Milne Port, the Mine Site and the Tote Road. The iso-tanks will be contained in a restricted area so as to avoid collision from vehicles and placed such that they should not be damaged as a result of works.

Detailed procedures (site-wide application) and work instructions (task-specific) are in place, along with the Construction Environmental Protection Plan (CEPP) to deal with refuelling operations. The most likely source of spills is during refuelling or refilling of the day tanks with fuel. Only personnel trained in proper refuelling will have access to these tanks. The fuel transfer operation will be halted whenever a leak is detected; all dispensing will be done with auto shut off fuel dispensers, and drip trays will be utilized during all fuel transfers. In light of the robust nature of the Day Tanks and their built in secondary containment, and the use of proper refuelling techniques and drip trays, fuel spills are unlikely to occur. In the event that a spill does occur a spill kit, containing adequate supplies given the volume of the tank it accompanies, will be available in close proximity. Given the volume of these tanks, access to readily available spill cleanup materials and trained personnel, it is anticipated that staff will be able to identify, contain and mitigate any potential spills in an effective and time sensitive manner. The table below details the most severe incident that could occur.

Description of Incident	Puncture or rupture of Iso-tank
Potential Causes	Equipment failure due to faulty manufacturing or collision with mobile equipment.
Product Spilled	Diesel fuel.
Maximum Volume Spilled	10,000L
Estimated Time to Spill Entire Volume	10 mins
Immediate Receiving Medium	Soil or surrounding environment. It is important to note that no iso-tank will be located within 100m of a water body.
Most Probable Direction of Spill Migration	As iso-tanks will be utilized around the project. So the direction of spill migration will depend on the specific location. That said iso tanks will be placed on relatively flat laydown areas, where the potential flow of spills will be more readily managed.
Distance and Direction to Closest Body of Water	Varies
Resources to Protect	Varies
Estimated Emergency Spill Response Time	15mins
Spill Response Procedures	In the event that both walls of an iso-tank is ruptured and a spill occurs the spill response team will be immediately notified. Personnel in the immediate area will act as first responders making every effort to plug the puncture point. Temporary berms, ditches, trenches and sumps will be set up downstream of the spill. The downstream wall of trenches will be lined with plastic material to ensure that exposed soil does not come in contact with the fuel. Absorbent material will be utilized where required. Once the spill has been contained it will be sucked up by a vacuum truck and brought to an appropriate storage/treatment facility. If necessary, contaminated soil will be removed and brought to the landfarm for treatment. New, uncontaminated soil will be laid down in the exposed area.

7.1.1.3 Scenario 3: Tote Road Accident Tanker Truck Spill

Description of Incident	Spill of the contents of a tanker truck or fuel re-supply truck to ground or stream. Spill occurs in an isolated area along the Tote Road between Milne Port and Mary River.
Potential Causes	Human error, vehicle mechanical failure, traffic accident, poor weather or visibility.
Product Spilled	1. Tote Road: Diesel fuel, Jet-A Fuel 2. Ice Road: Diesel fuel
Maximum Volume Spilled	20 000 to 50 000 L (content of a tanker truck) This would require the rupture of the tanker.
Estimated Time to Spill Entire Volume	Spillage can be limited depending on severity of incident/accident 10 minutes to 48 hours – depending on severity of rupture or piping/valving associated with the tanker truck.
Immediate Receiving Medium	Soil, streams, lakes
Most Probable Direction of Spill Migration	Varies with specific location of spill
Distance and Direction to Closest Body of Water	1. Tote Road - Downstream and into Phillips Creek; the road between Mary River and Milne Port follows Phillips Creek, and crosses many streams (that discharge into Phillips Creek) over a distance of approximately 50 km. Phillips Creek eventually discharges into the ocean at Milne Port. 2. Ice Road – depends on location of accident
Resources to Protect	1. Tote Road: Streams, Phillips Creek and the ocean via Milne Inlet. 2. Ice Road: various water ways and lakes along the ice road
Estimated Emergency Spill Response Time	60 minutes after spill is reported to site personnel (assuming worst case scenario where the truck driver is injured and cannot commence spill response procedures).

Spill Response Procedures	<ol style="list-style-type: none"> 1. Contain and recover diesel slick downriver as described in Section 6.2, protect shorelines using sorbent booms. Collect free-product for temporary storage. Clean-up soiled shorelines. If the response crew arrives before the complete spill, seal the leak where feasible, contain and recover oil spill on ground using dykes and trenches and spill berms. If the truck driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in section 6 using the spill kit kept in the fuel trucks. 2. Once the treatment is achieved, the content of the reservoir is normally pumped by a vacuum truck to be discharged elsewhere. Therefore a vacuum truck is available in the area. In case of a spill of non-treated wastewater (sewage), the slick would be pumped using the vacuum truck. The piping would be repaired and the content of the truck would be discharged back in the oily water treatment unit. Impacted soils (if any) would be excavated and placed within the contaminated soil treatment area (landfarm).
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7.1.1.4 Scenario 4: Marine Resupply Spill – Milne Port or Steensby Port

The Milne Inlet Fuel Storage Facility OPEP (currently under revision) - Appendix 10C-2 of the FEIS, and Steensby Port Fuel Storage Facility OPEP - Appendix 10C-3 of the FEIS, present the range of spill scenarios probable for these facilities.

7.2 Explosives transport and storage

For an overview of the anticipated on-hand quantities of explosives during 2013, see Table 7-3. For the location of the explosives storage facilities at Milne Port, and the Mine Site, see the site layout drawings in Appendix B. The Explosives Management Plan (Appendix 10C-4 of the FEIS) deals with explosives management for the 2013 Work Plan.

Large quantities of ammonium nitrate (AN) will transported to and stored at Milne Port , in one tonne tote bags stored within sea containers. In addition, smaller quantities of AN emulsion pre-packaged explosives will be used to begin development of the quarry sites. AN materials will be transported across the sites. The spill of ammonium nitrate prill to the environment during transportation is thus unlikely to occur as the contents of a ruptured tote bag would be contained within the Sea Can container. Prepackaged AN emulsions pose very little danger to the environment given the hydrophobic nature of emulsion explosives.

Table 7-3: Quantities of Explosives Stored Onsite (2013)

Material	Purpose	Total Quantities 2013 (kg)	Storage Type	Total Quantities Stored on Site (at one time) (kg)
Pre-Packaged Explosives	Explosive agent	200,000	Magazines	100,000
Ammonium Nitrate	Polymer	2,200,000	20,000 kg per Seacan, 37,000 kg per magazine	2,200,000

7.2.1 **Potential Spill Scenarios Related to Explosives**

7.2.1.1 **Scenario 1: Spill of Ammonium Nitrate (AN)**

Ammonium nitrate dissociates readily in water to form ammonia, which in its un-ionized form, is toxic to aquatic organisms and fish. Storage on land, away from water sources largely eliminates the risk of ammonia losses to water bodies.

All partially full contaminated or ripped bags of prill, spilled prill and used empty bags are collected and stored in a dedicated contained location for shipment offsite for disposal. Spills within the storage facility are completely contained and will be cleaned up by personnel trained in explosives management. All spills are recorded on a spill report and all tote bags are inspected regularly by the explosives contractor.

Limited AN is expected to be used to produce explosives emulsion however it will be transported to various project areas, therefore the greatest chance an AN spill will occur is during transport. One major opportunity exists for a spill to occur during transport which is as a result of an accident on the Tote Road.

For an AN spill to occur during transportation this would require the explosives transport truck to be in a major collision. In addition to the breakage of individual AN prill tote bag this would also require the facilitation of a significant rupture of the sea can magazine the AN is being transported in. Even this would pose little chance of contamination unless deposited directly into a stream/water body. This will not be an issue during the winter months and if the spill occurs on land the either the driver or response team will be able to quickly and effectively mitigate the spill before any contamination is likely to occur.

Description of Incident	Explosives transport truck rolls over or collides with another vehicle or object. Transport container as well as individual tote bags rupture resulting in a spill.
Potential Causes	Collision, poor driving conditions or visibility, equipment error, operator error.
Product Spilled	Ammonia Nitrate
Maximum Volume Spilled	1 tonne
Estimated Time to Spill Entire Volume	Instantaneous
Immediate Receiving Medium	Depending on the location either on land or in a water body.
Most Probable Direction of Spill Migration	Depending on location
Distance and Direction to Closest Body of Water	Depending on location
Resources to Protect	Nearby water bodies
Estimated Emergency Spill Response Time	15min – 60mins

Spill Response Procedures	<p>a) In the event that a spill occurs on land the emergency response team will be contacted immediately. If the driver is unharmed he will act as the spill response first responder. All spilled prills will be contained, with the use of berms if required. Once the spill has been contained the prills will be cleaned up by a trained crew and transported and stored in a dedicated contained location until they can be shipped off site.</p> <p>b) In the event that a spill occurs in water the emergency response team will be contacted immediately. Booms and other spill control devices will be deployed downstream and undissolved prills will be removed from the water body. Recovered material will be stored in a dedicated containment area before it can be shipped off site.</p>
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Any and all accidental spills of ammonium nitrate from an explosives truck will be cleaned up immediately, reported to the Environmental Supervisor and logged as required by regulations. A copy of a Standard Nunavut Spills Report Form can be seen in Appendix D. Clean up will be done by employees licensed to handle explosives and the contaminated material will be handled as per spills occurring within the storage area.

7.2.1.2 *Scenario 2: Spill of Emulsion*

Emulsion materials are acutely toxic to aquatic life. Release of emulsions to receiving water could have adverse impacts on aquatic life and fish. Therefore, emulsion material is stored in either the form of pre-paged explosives in an explosives magazine or at the emulsion plant where spills can be contained 100% within the confines of the building. Spills in confined areas are cleaned by employees licensed to handle explosives. Clean-up materials will be segregated in an appropriate area; incompatible materials will not be stored together, pursuant to MSDS and WSCC regulations.

When and if a spill occurs, a spill report will be filled by the explosives contractor and Environmental Supervisor. If a spill exceeds reportable quantities, notification will be made under the spill reporting regulations applicable in Nunavut.

7.2.1.3 *Scenario 3: Spill of Pre-packaged Emulsion during Transport*

Given the precautions taken in the design of the storage facilities and the suitability of containers used for storage and transport, major spills are most likely to be caused by traffic accident involving the pre-packaged explosives transport truck. If such an accident occurs, explosive material will be recovered by employees licensed to handle explosives and the contaminated material will be handled as disposed of in a designated area before they can be shipped on site.

Description of Incident	Emulsion transport truck rolls over or collides with another vehicle or object. Transport container as well as pre-packaged explosives.
Potential Causes	Collision, poor driving conditions or visibility, equipment error, operator error.
Product Spilled	AN emulsion
Maximum Volume Spilled	10,000 L
Estimated Time to Spill Entire Volume	Instantaneous
Immediate Receiving Medium	Depending on the location either on land or in a water body.
Most Probable Direction of Spill Migration	Depending on location
Distance and Direction to Closest Body of Water	Depending on location
Resources to Protect	Nearby water bodies
Estimated Emergency Spill Response Time	15min – 60mins
Spill Response Procedures	<p>a) In the event that a spill occurs on land the emergency response team will be contacted immediately. If the driver is unharmed he will act as the spill response first responder. All spilled prills will be contained, with the use of berms if required (though unlikely). Once the spill has been contained the emulsion will be cleaned up by a trained crew and transported and stored in a dedicated contained location until they can be shipped off site.</p> <p>b) In the event that a spill occurs in water the emergency response team will be contacted immediately. Booms and other spill control devices will be deployed downstream and emulsions will be collected and removed from the water body. Recovered material will be stored in a dedicated containment area before it can be shipped off site.</p>

7.2.1.4 Scenario 4: Spill of Emulsion during Blast Hole Loading

Emulsion spills are unlikely to occur during blast hole loading given the nature of emulsion explosives. Pre-packaged explosives are in self contained tubes that are simply dropped into the hole. Emulsion from the emulsion plant will be pumped into blast holes via a hose. Given the hydrophobic nature of emulsion explosives a spillage is unlikely to be absorbed into a waterway and will be able to quickly and easily be mitigated by the trained personnel filling the blast holes.

Description of Incident	Emulsion spilled whilst loading pre-packaged emulsion in blast holes.
Potential Causes	Faulty packaging, operator error.
Product Spilled	AN emulsion
Maximum Volume Spilled	<10kg
Estimated Time to Spill Entire Volume	Instantaneous
Immediate Receiving Medium	land
Most Probable Direction of Spill Migration	No expected to migrate
Distance and Direction to Closest Body of Water	Depending on location
Resources to Protect	Nearby water bodies
Estimated Emergency Spill Response Time	5mins
Spill Response Procedures	In the event that a spill occurs on land the blasting technician will respond. The spilled emulsion will immediately be cleaned up and stored in a dedicated contaminated explosives area until it can be shipped off site.

7.3 Untreated sewage

There will be four camps (the Mine Site, Tote Road, Steensby Port and Milne Port) potentially producing sewage in 2013. The Mine Site and Milne Port will be equipped with a dedicated wastewater treatment facility (WWTF) (see Appendix 10D-3: Fresh Water, Sewage and Wastewater Management Plan) with a Membrane Bio Reactor units (MBR). Sewage from the temporary portable Tote Road Camp will be trucked to either the Mine Site or Milne Port for treatment. Steensby Port is expected to have limited to no activity occurring on site in 2013. If sewage is produced at Steensby Port it will be treated using a latrine system.

At remote areas, such as the mine maintenance/mine office, explosives handling facility, non-serviced railway camps, wastewater will be collected in local holding tanks and transported by tanker truck for treatment at the closest WWTF.

7.3.1 Potential Spills Scenarios Related to Sewage

7.3.1.1 Scenario 1: Sewage Spill at Milne Port

Description of Incident	Spill from the RBC reservoir or MBR tank. A pipe is accidentally dislodged and non treated wastewater escape the reservoir.
Potential Causes	Pipe or mechanical failure, human error.
Product Spilled	Raw sewage
Maximum Volume Spilled	80,000 litres
Estimated Time to Spill Entire Volume	60 minutes
Immediate Receiving Medium	Milne Port
Most Probable Direction of Spill Migration	Milne Port or Steensby Port
Distance and Direction to Closest Body of Water	150 m.
Resources to Protect	Milne Port or Steensby Port
Estimated Emergency Spill Response Time	15 minutes after spill is noticed.
Spill Response Procedures	Report Spill, Contain with berm or sump/ditch. Direct spill to the desired location and suck up spill with a vacuum truck. Put recovered material in a pond or return to the sewage treatment plant. Resurface area with fresh soil.

7.3.1.2 Scenario 2: Mine Site Sewage Spill

Description of Incident	Spill from the RBC reservoir or MBR tank.
Potential Causes	A pipe has accidentally being dislodged and non treated wastewater escapes the reservoir
Product Spilled	Raw sewage
Maximum Volume Spilled	72,000 litres
Estimated Time to Spill Entire Volume	60 minutes
Immediate Receiving Medium	Soil
Most Probable Direction of Spill Migration	Downstream and into a local depression east of the MBR wastewater treatment facility. That local depression dries in the summer and intercepts the maximum spilled volume.
Distance and Direction to Closest Body of Water	200 m.
Resources to Protect	One stream and Camp Lake.
Estimated Emergency Spill Response Time	15 minutes after spill is noticed.
Spill Response Procedures	A vacuum truck is available at the Mine Site. In case of a spill of non-treated wastewater (sewage), the slick would be pumped using the vacuum truck. The piping would be repaired and the content of the truck would be discharged back in the RBC or MBR treatment unit. Impacted soils (if any) would be excavated and disposed of in an incinerator or discharge back in the RBC or MBR.

7.3.1.3 Scenario 3: Sewage Transport Truck Spill

Description of Incident	Spill from the tanker truck transporting raw sewage from one of the temporary camp site to one of the permanent WWTF
Potential Causes	Road accident
Product Spilled	Raw sewage
Maximum Volume Spilled	10 000 litres
Estimated Time to Spill Entire Volume	Depends on severity of accident and damage sustained by the tanker truck
Immediate Receiving Medium	Soil
Distance and Direction to Closest Body of Water	Depends on location of accident
Resources to Protect	Soil and waterways
Estimated Emergency Spill Response Time	Immediate if driver is not injured; up to 60 minutes if ERP Team is required.
Spill Response Procedures	Spillage is contained. Impacted soils (if any) is excavated and disposed of in an incinerator or discharge back in the RBC or MBR.

7.4 Lubricants & oils

Lubricants and machinery oils will be used on site throughout the course of construction and operations. Lubricants and oils have the ability to contaminate waterways and soils if exposed to the environment. That being said the risk of a lubricant or oil spill on site is expected to be minimal. All Lubricants and oils will be handled by trained staff following proper procedures and guidelines. The vast majority of the time lubricants will be stored and transported in small quantities and in the event of a spill appropriate spill response equipment and procedures will be readily available.

7.4.1 Potential Spill Scenarios Related to Lubricants & Oils

7.4.1.1 Scenario 1: Containment puncture during transport

The most likely spill scenario to occur with regards to lubricants and oils is a puncture of an individual storage unit during transport. Lubricants and oils will be stored in 1m by 1 m units within a sea can container. When Lubricants or oils are required a single unit will be removed from the contained via forklift. In the event that the container is punctured by the forklift a maximum spill volume of 1,000 litres could potentially occur. The likelihood of this occurring is minimal as all equipment operators will be trained in proper lubricant and oil transfer procedures, in addition to this in the event that a container is punctured the operator will see the puncture immediately and will be able to take steps to contain the spill and implement mitigation procedures.

Description of Incident	Lubricant or oil container is punctured by a forklift during transport
Potential Causes	Operator error. Equipment failure.
Product Spilled	Lubricant or oil.
Maximum Volume Spilled	1,000 L
Estimated Time to Spill Entire Volume	5 minutes
Immediate Receiving Medium	Land
Most Probable Direction of Spill Migration	Depends on area
Distance and Direction to Closest Body of Water	Depends on area
Resources to Protect	Any nearby water bodies.
Estimated Emergency Spill Response Time	>5 minutes
Spill Response Procedures	If the forklift driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in Section 6 utilizing the spill kit kept in the vicinity. The spill will be contained through the use of temporary berms and ditches until it can be vacuumed up and transported to the oily water treatment plant or an appropriate storage facility. Any contaminated soil will be removed and processed in the contaminated soil treatment area (landfarm)

7.4.1.2 Scenario 2: Spill during Equipment Rollover

It is possible that the equipment carrying a lubricant or oil container could rollover or has a collision causing a spill of the entire 1 m³ container. In the event that this occurs it will be managed the same way as detailed above. The event of a rollover is unlikely given the safe driving procedures, speed limits, road signage and training procedures in place. In addition to this all lubricant and oil containers will be securely fastened inside the vehicle in which they are being transferred making a spill unlikely.

Description of Incident	Spill during equipment rollover
Potential Causes	Operator error. Equipment failure. Poor visibility or adverse weather. Collision.
Product Spilled	Lubricant or oil.
Maximum Volume Spilled	1,000 L
Estimated Time to Spill Entire Volume	instantaneous
Immediate Receiving Medium	Land
Most Probable Direction of Spill Migration	Depends on area
Distance and Direction to Closest Body of Water	Depends on area
Resources to Protect	Any nearby water bodies.
Estimated Emergency Spill Response Time	15mins-60mins
Spill Response Procedures	<p>If the driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in section 6 utilizing the spill kit kept in the vicinity. The spill will be contained through the use of temporary berms and ditches until it can be vacuumed up and transported to the oily water treatment plant or an appropriate storage facility. Any contaminated soil will be removed and processed in the contaminated soil treatment area (landfarm)</p> <p>In the event a spill occurs in a water body the lubricants and oils will be contain and recovered downriver as described in Section 6.2, with shorelines protected using sorbent booms. All free-product will be collected for temporary storage and soiled shorelines cleaned-up. If the forklift driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in Section 6 utilizing the spill kit kept in the vicinity. Once the spill is contained the content of the reservoir will be pumped up by a vacuum truck to be discharged to the oily water treatment plant.</p>

7.4.1.3 Scenario 3: Spills during Transfer

It is possible that a minor spill may occur during the transfer of lubricants or oil to equipment. This will most likely be the result of equipment failure such as the pump or hoses or operator error.

As proper maintenance procedures will be in place to reduce the chance of equipment malfunctions, along with proper training procedures it is unlikely a spill will occur in this event. In addition to this drip tray will be utilized in all oil and lubricant transfers in the field. In the event of a spill it will be managed the same way as detailed in Section 7.4.1.1.

Description of Incident	Spill during transfer
Potential Causes	Operator error. Pump failure. Hose failure.
Product Spilled	Lubricant or oil.
Maximum Volume Spilled	1,000 L
Estimated Time to Spill Entire Volume	5m - 15mins

Immediate Receiving Medium	Land
Most Probable Direction of Spill Migration	Depends on location
Distance and Direction to Closest Body of Water	Depends on location
Resources to Protect	Nearby water bodies.
Estimated Emergency Spill Response Time	5mins-15mins
Spill Response Procedures	<p>If this spill occurs in a building it will be contained as all buildings are fully lined and no contaminants will be able reach the natural environment. The spill will be cleaned up by qualified personnel and disposed of as a hazardous material.</p> <p>If a spill occurs during transfer all transfer activities will be halted immediately and clean up of the spill with the available spill kit will commence. The spill will be contained using berms, ditches, sumps and booms where necessary. The downstream wall of trenches will be lined with plastic material to ensure unexposed soil does not come in contact with the lubricant. Absorbent material will be utilized where required. Once the spill has been contained it will be sucked up by a vacuum truck and brought to an appropriate storage/treatment facility. If necessary contaminated soil will be removed and brought to the landfarm for treatment. New soil will be laid down in the exposed area.</p>

8. Reporting Requirements

Quantities of hazardous substances spilled that require reporting are listed in Schedule B of the Nunavut Spill Contingency and Reporting Regulation. Please refer to Appendix G.

After the initial field emergency response to the spill event, spills are reported to the 24-hour Spill Report Line (see Appendix D for Spill Report Form):

24-Hour Spill Report Line

spills@gov.nt.ca

Tel. (867) 920-8130 or

Fax (867) 920-8127

Failure to report a spill can lead to fines. The Qikiqtani Inuit Association (QIA) Lands Administrator will also be promptly notified at (867) 975-8422 or via e-mail. Similarly, the AANDC Water Resources Officer will be promptly notified of the spill event at (867) 975-4289 or via e-mail. In the event of a spill on the ocean, the incident will be reported to the Canadian Coast Guard (Arctic region) 1-800-265-0237 (24-hour).

It is the responsibility of the Environmental Supervisor on behalf of the Operations Manager to prepare the proper reports and transmit them to regulatory authorities. Table 8-1 presents an additional contact list for spill reporting. The Environmental Supervisor will determine on a spill by spill basis that on the list is to be contacted.

Table 8-1: Contact List for Spill Reporting

Department	Person	E-mail	Telephone
AANDC-Waters (Iqaluit)	David Aberenthy	david.aberenthy@aandc.gc.ca	(867) 975-4555
AANDC-Field Operations	Andrew Keim	andrew.keim@aandc.gc.ca	(867) 975-4289
DFO-Iqaluit	Georgina Williston	georgina.williston@dfo-mpo.gc.ca	(613) 925-2865 Ext. 131
EC-Iqaluit	Curtis Didham	curtis.didham@ec.gc.ca	(867) 975-4644
GN-DOE	Robert Eno	reno@gov.nu.ca	(867) 975-5907
Qikiqtani Inuit Association	Salamonie Shoo	landadmin@qia.ca	(867) 975-8422
Pond Inlet Health Clinic			(867) 899-7500
			(867) 899-8431
Pond Inlet RCMP			(867) 899-1111
Qikiqtani General Hospital (Iqaluit)			(867) 979-7300

The spill event is reported in writing using the standard Spill Report Form (see Appendix D).

The written report includes the following information:

- Date and time of incident.
- Location or map coordinates and direction of spill movement if warranted.
- Party responsible for the spill.
- Type and estimated quantities of spilled contaminant(s).
- Specific immediate cause of incident.
- Status of the spill indicating if spilled materials are still moving or now at steady-state.
- Approximate surface of contaminated area.
- Photographic record of spill event and cleanup efforts.
- Factors affecting spill or recovery such as temperature and wind.
- Status on containment actions indicating whether a) naturally, b) booms, dykes, or other, c) no containment implemented.
- Corrective action taken or proposed, to clean, contain, or dispose spilled material.
- Whether assistance is required and in what form.
- Whether the spill poses a hazard to persons or property (i.e., fire, drinking water).
- Comments and recommendations.
- Name, position, and employer of person reporting the spill; and
- Name, position, department of person to whom the spill is reported.

In addition, QIA requests that Baffinland produce a site map(s) listing the location in UTM coordinates, date, amount, and nature of the substance spilled. The map(s) should be updated annually and will be provided along with annual report requirements. The map(s) will also detail major project components and relevant water-bodies.

In the event of a spill involving the marine carrier delivering bulk fuel, Baffinland will ensure that the subcontractor reports any spill event under its responsibility.

9. References

1. The Guidelines for Preparation of Hazardous Material Spill Contingency Plans describe parameters that should be considered in the development of hazardous material spill emergency plans. Tilden, D.C., and H.E. Westermann, *Guidelines for the Preparation of Hazardous Material Spill Contingency Plans*. Environment Canada, Yellowknife, NWT, 1990
2. The CCME Code of Practice for Used Oil Management defines appropriate environmental options for handling, storage, collection, recycling, transport, reuse and/or disposal of used oils in Canada. CCME (Canadian Council of Ministers of the Environment), *Used Oil Management in Canada: Existing Practices and Alternatives*, prepared by Monenco Consultants Ltd. for the Industrial Programs Branch, Conservation and Protection, Environment Canada, Ottawa, Ont., CCME-TS/WM-TRE007 (1989a).
3. The Field Guide for Oil Spill Response in Arctic Waters developed for the Emergency Prevention, Preparedness and Response Working Group, describes precise response methods and strategies for emergency response operations and provides technical support documentation. Owens, E.D., *Field Guide for Oil Spill Response in Arctic Waters*, Prepared by Owens Coastal Consultants and Counterspill Research Inc. for Emergency Prevention, Preparation and Response Working Group (1998).
4. The Land Transportation Emergency Response Guideline for Petroleum Spills developed by the Canadian Petroleum Products Institute outlines scope, emergency response code of practice, response time guidelines, response equipment, and personnel capability requirements. Canadian Petroleum Products Institute, Land Transportation Emergency Response Guideline for Petroleum Spills (2008)
5. INAC, Nunavut Regional Office, Draft Recommended Best Practices for Storage and Handling of Petroleum and Allied Petroleum Products on Federal Crown Lands in Nunavut, March 2009.
6. Department of Sustainable Development, Environmental Protection Service:
 - Environmental Guidelines for Contaminated Site Remediation, January 2002.
 - A Guide to the Spill Contingency Planning and Reporting Regulations.
 - Environmental Guidelines for Industrial Projects on Commissioner's Lands, January 2002.
 - Environmental Guidelines for Industrial Waste Discharges, January 2002.
 - Environmental Guidelines for Management of Hazardous Waste, January 2002.
 - Illustrated Homeowner's Guide to Heating Oil Tank Inspection, March 2011.
7. Canadian Coast Guard, Central and Arctic Region, 2006. Regional Response Plan. April 2006.

8. Government of Nunavut, Good Building Practices Guideline 2nd edition, December 2005.
9. The Mining Association of Canada Crisis Management Planning Guide – March 2007.
Available at:
www.mining.ca/www/media_lib/TSM_Documents/TSM_Publications/2007/Crisis_Man_03_2007.pdf.
10. Canadian Wildlife Services. National Policy on Oiled Birds and Oiled Species at Risk.
January 2000
11. International Petroleum Industry Environmental Conservation Association. A guide to Oiled Wildlife Response Planning. 2004.

Appendix A

Concordance Table

Project Certificate Terms and Conditions Applicable to Emergency Response

Accidents and Malfunctions

No.	Term and Condition	Comments	Reference
173	The Proponent shall employ full containment booms during all ship-to-shore and other marine-based fuel transfer events.		Please refer to the Appendix C and The Oil Pollution Emergency Plan - Milne Inlet.
174	The Proponent and the Canadian Coast Guard are required to provide spill response equipment and annual training to Nunavut communities along the shipping route to potentially improve response times in the event of a spill.		Please refer to the Oil Pollution Emergency Plan - Milne Inlet.

Appendix A to NIRB Decision Report

No.	Subject	Commitment	Action	Reference
8	Fuel Transport (Overwintering of Fuel Vessel)	As part of standard operation procedures, Baffinland is committed to avoiding ship-to-shore transfer of fuel during freeze-up or break-up periods.	This will be applicable for refuelling of tug boats at Milne Port	Not Applicable for 2013 Works
9	Fuel Transfer	Baffinland is committed to undertaking fuel transfer from vessels to shore under good weather conditions. Once the ore dock is constructed at Steensby, fuel transfer will be carried out at the freight dock.	Not applicable until Steensby Port is constructed.	Please refer to the Oil Pollution Emergency Plan - Milne Inlet.
10	Fuel (Spill / Leak Detection)	Baffinland is committed to installing leak detection instrumentation on the overwintering fuel vessel and to conduct ongoing monitoring in the vicinity of the vessel, in accordance with relevant guidelines and regulations. Baffinland is committed to using best management practices to reduce the possibility of spills.	Not applicable until construction at Steensby Port gets underway	Not Applicable for 2013 Works
11	Spill Contingency Planning	Baffinland is committed to maintaining an up to date Spill Contingency Plan and will distribute copies of the Plan to stakeholders.	The present update relates to construction activities undertaken in the 2013 Work Plan.	Please refer to Section 6 & Section 7 of this plan.
12	Disaster Management Plan	Baffinland is committed to developing and implementing a Security Plan in accordance with regulatory requirements.		Please refer to Section 3.3
26	Marine (Safety Officer)	Baffinland is committed to appointing one of its personnel to act as a Marine Safety Officer during the construction, operation, and closure phases of the Mary River Project.		Please refer to the Oil Pollution Emergency Plan - Milne Inlet.

27	Marine (Shipping Vessel)	Baffinland is committed to meeting with the community of Igloolik once the vessels used to transport ore for the Mary River Project are selected.		Not Applicable for 2013 Works
28	Marine (Fuel Vessel)	Baffinland is committed to visiting Igloolik to provide the community with information on the fuel vessel selected for overwintering at Steensby Inlet.		Not Applicable for 2013 Works
29	Marine (Shipping Route)	Baffinland is committed to ensuring that normal shipping activities will be confined to the Nunavut Settlement Area on the north side of the Hudson Strait where conditions are favorable to shipping and to incorporating the necessary mitigation measures to ensure that shipping does not impact marine wildlife and that community concerns are addressed from an operational standpoint.		Please refer to the Shipping Marine Mammals Management Plan
30	Marine (Shipping Notification)	Baffinland is committed to providing shipping notification on a regular and consistent basis to relevant communities prior to shipping and construction activities for the Mary River Project.		Please refer to the Shipping Marine Mammals Management Plan
31	Marine (Shipping Speed)	Baffinland is committed to ensuring that the vessels used to transport ore from the Mary River Project are of appropriate class and specification, and will operate in a manner that is consistent with applicable regulations and guidelines.		Please refer to the Shipping Marine Mammals Management Plan
34	Marine (Shipping Route)	Baffinland is committed to issuing public notices to affected communities advising them of shipping traffic schedules, and marker locations. Baffinland is also committed to installing reflective markers at a distance of approximately 100 metres from the ship track ice edge with approximately 500 metres between each marker on both sides of the shipping lane during the winter period to ensure that shipping lanes are visible at all times. Baffinland is committed to conducting weekly patrols along these shipping lanes to ensure that markers are in place and remain visible.		Please refer to the Shipping Marine Mammals Management Plan
35	Marine (Shipping Route)	Baffinland is committed to providing affected communities and other stakeholders with details on the type and location of all navigational aids installed along the shipping route.		Please refer to the Shipping Marine Mammals Management Plan
36	Marine (Shipping)	Baffinland is committed to providing		Please refer to the

		real-time data on the location of ships or vessels associated with the Mary River Project to all affected communities.		Shipping Marine Mammals Management Plan
57	Management Plans	Baffinland is committed to updating its management plans to reflect new information, new practices and changes to operating conditions.		Please refer to the ERP
99	Medical Facilities (Design)	Baffinland is committed to working with the Government of Nunavut to provide details on the design of medical facilities for the Mary River Project during the regulatory phase of the project.		Please Refer to Sections 3.8 and Section 4.5.
100	Medical Facilities (Staffing)	Baffinland is committed having an on-site medical facility staffed by a registered nurse or certified paramedic in order to attend to any injury that workers might experience on-site, and is further committed to providing medi-vac services as may be required from the mine site to Iqaluit.		Please Refer to Section 4.5.
101	Mitigation (Compensation to Hunters)	Baffinland is committed to implementing mitigation measures which offset the inconvenience and hardship created for Inuit hunters and travelers that have traditionally used the areas encompassed by the shipping route.		Please Refer to Section 2.6
106	Emergency Response Plans	Baffinland is committed to seeking and utilizing external expertise to assist them with the development of emergency response planning and to provide formal training specific to accidents and emergency response for the Emergency Response Team, which will be stationed at site at all times. This training would include responding to Railway specific emergencies.		Please refer to the Oil Pollution Emergency Plan - Milne Inlet.
107	Spill Training/Spill Exercises	Baffinland is committed to conducting routine training exercises and strategically placing resources and equipment on site for spill response.		Please refer to Section 5.3 and Appendix H
108	Spill Training/Spill Exercises	Baffinland is committed, during operations, to conducting regular and annual spill response exercises and training in known and effective techniques for responding to spills and invite the relevant communities of the North Baffin Region to participate.		Please refer to Section 1.8 & 5.3, and the Oil Pollution Emergency Plan - Milne Inlet.
109	Emergency Response	Baffinland is committed to meeting on a regular basis with the emergency response and preparedness working group to review emergency preparedness.		Please refer to Section 1.8, and the Oil Pollution Emergency Plan - Milne Inlet.
110	Emergency/Spill	Baffinland is committed to ensuring		Please refer to Section

	Response Planning	that adequate resources are allocated to the development and deployment of emergency and spill response capabilities.		1.8 & 5.3, and the Oil Pollution Emergency Plan - Milne Inlet.
111	Marine Regulatory (Spill Prevention Plans)	Baffinland is committed to requiring that all project vessels have Shipboard Oil Pollution Emergency Plans (SOPEPs) in place which meets or exceeds the international standards set out in the Port State Control Memorandum of Understanding, as well as trained personnel on board to respond to spills. Baffinland will be self-sufficient for spill response and will contract the services of an established Response Organization to enable the Company to escalate response capabilities to deal with spills of up to 10,000 tonnes. This Response Organization will have expertise in recovery and cleanup of spills along coast line and involving wildlife.		Please refer to the Shipping Marine Mammals Management Plan
112	Spills (Fuel)	Baffinland is committed to ensuring that all spills are reported in accordance with the relevant spill contingency planning and reporting regulations and guidelines.		Please refer to Section 8.0, and the Oil Pollution Emergency Plan - Milne Inlet.
113	Spills (Fuel)	Baffinland is committed to exploring and implementing measures designed to recover residual fuel from spills under the surface of sea ice.		Please refer to Section 6.3, and the Oil Pollution Emergency Plan - Milne Inlet.