


APPENDIX E.5

2021 MANAGEMENT PLAN  
UPDATES

## APPENDIX E.5.1

### SNOW MANAGEMENT PLAN

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# Baffinland Iron Mines Corporation

## Snow Management Plan

**BAF-PH1-830-P16-0002**


**Rev 5**

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 Date: March 31, 2022  
 Signature: 

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 Title: General Manager  
 Date: March 31, 2022  
 Signature: 

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## DOCUMENT REVISION RECORD

<b>Issue Date MM/DD/YYYY</b>	<b>Revision</b>	<b>Prepared By</b>	<b>Approved By</b>	<b>Issue Purpose</b>
11/17/16	0	JM	SP	Issued for Use
03/09/17	1	KB	LT	Issued for Use
11/02/17	2	BL/DR/BW	BB	Issued for Use
12/21/18	3	AV	FG	Issued for Use
03/26/21	4	AM	FG	Issued for Use
03/31/22	5	CD	FG	Issued for Use

### TRACK CHANGES TABLE

#### Index of Major Changes/Modifications in Revision 5

<b>Item No.</b>	<b>Description of Change</b>	<b>Relevant Section</b>
1	Updated snow stockpile location figures	Figures
2	Added snow management guidelines for quarries	Appendix E
3	Updated roles and responsibilities	Section 3
4	Added freshet preparation mitigation measures	Section 4.3


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# 1 INTRODUCTION

The Snow Management Plan (SMP) outlines the management practices and procedures employed at the Mary River Project (Project) to manage snow accumulation. The practices and procedures were developed to ensure the safety of Project personnel and maintain compliance with Baffinland's environmental permits, licenses and approvals including, but not limited, to the following:

- Project Certificate No. 005, Amendment No. 1 (Project Certificate);
- Type 'A' Water Licence – 2AM-MRY1325, Amend. No. 1 (Type 'A' Water Licence); and,
- Commercial Lease No. Q13C301 (Commercial Lease).

## 1.1 RELATIONSHIP TO OTHER MANAGEMENT PLANS

The management of snow at the Project has the potential to affect site water quality and other environmental components. Therefore, this plan must be viewed in conjunction with the following Management Plans developed for the Project:


- Environmental Protection Plan (EPP) (BAF-PH1-830-P16-0008)
- Surface Water and Aquatic Ecosystem Management Plan (SWAEMP) (BAF-PH1-830-P16-0026)
- Fresh Water Supply, Sewage and Wastewater Management Plan (FWSSWMP) (BAF-PH1-830-P16-0010)
- Aquatic Effects Monitoring Plan (AEMP) (BAF-PH1-830-P16-0039)
- Roads Management Plan (BAF-PH1-830-P16-0023)
- Emergency Response Plan (ERP) (BAF-PH1-840-P16-0002)
- Spill Contingency Plan (SCP) (BAF-PH1-830-P16-0036)
- Waste Management Plan (BAF-PH1-830-P16-0028)
- Hazardous Materials and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011)

# 2 CORPORATE POLICIES

Baffinland's Sustainable Development Policy identifies Baffinland's commitment internally and to the public to operate in a manner that is environmentally responsible, safe, fiscally responsible and respectful of the cultural values and legal rights of Inuit. Baffinland's Health, Safety and Environment Policy is the company's commitment to achieve a safe, healthy and environmentally responsible workplace. The Sustainable Development Policy, and the Health, Safety and Environment Policy are included in Appendix A. All employees and contractors are expected to comply with the contents of these policies.

# 3 ROLES AND RESPONSIBILITIES

Responsibilities for snow management at the Project are as follows:

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### 3.1.1 CHIEF OPERATIONS OFFICER (COO)/GENERAL MANAGER

- Reports to the Chief Executive Officer (CEO).
- Provides oversight for all Project operations and allocating the necessary resources for Project operations including snow management.

### 3.1.2 DEPARTMENT SUPERINTENDENT/MANAGER/PROJECT MANAGER

- Reports to the COO/General Manager.
- Reading and understanding this SMP and implementing it within their department and areas of operation including directing departmental personnel on the appropriate mitigation measures and strategies for managing snow in their Project area.
- Implementing an inspection schedule and conducting routine inspections for areas of operation to ensure compliance with this SMP.
- Promptly directing corrective actions required to address non-conformances or issues of concern identified during inspections.
- Submitting requests to the Environment Department to modify snow management strategies or locations within the department's areas of operation.
- Reporting any visual observations, or reports of non-compliances with this SMP to the Environment Department.

### 3.1.3 DEPARTMENT AND PROJECT CONTRACTOR SUPERVISORS


- Reports to the Department Superintendent/Manager/Project Manager.
- Reading and understanding this SMP and implementing it within their areas of operation including directing departmental and contract personnel on the appropriate mitigation measures and strategies for managing snow in their Project area.
- Conducting routine inspections for areas of operation to ensure compliance with this SMP.
- Promptly directing corrective actions required to address non-conformances or issues of concern identified during inspections.
- Reporting any visual observations, or reports of non-compliances with this SMP or issues identified during inspections to the Department Superintendent/Manager/Project Manager and the corrective action(s) proposed for implementation to address the non-conformances or issue(s).

### 3.1.4 EQUIPMENT OPERATORS

- Reports to Department Supervisor.
- Reading and understanding this SMP and implementing it within their areas of operation.
- Performing snow management operations in accordance with this SMP and the area-specific snow management guidelines outlined in Appendix C to Appendix H.
- Reporting any non-conformances or issues of concern observed to their respective supervisors.

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### 3.1.5 ENVIRONMENT (SUSTAINABLE DEVELOPMENT) DEPARTMENT

- Supporting the management of the Project's snow management by advising operational departments and obtaining the appropriate regulatory approvals for necessary changes and modifications.
- Revising and approving this SMP to reflect modifications to snow management strategies and/or snow stockpile locations.
- Conducting inspections of Project snow management practices and snow stockpile locations and surrounding areas to ensure compliance with this SMP.
- Providing direction to address non-conformances or issues of concern identified during inspections, as necessary.
- Conducting water quality sampling and completing the required water quality monitoring and reporting.
- Ensuring that managers, superintendents, supervisors and their staff are familiar with this SMP and its protection measures.

## 4 SNOW MANAGEMENT PROTOCOL

### 4.1 AREA-SPECIFIC SNOW MANAGEMENT GUIDELINES

Table 4-1 outlines the area-specific snow management guidelines for the Project, which are included as appendices to this SMP. The area-specific snow management guidelines were developed to ensure the safety of Project personnel and compliance with Baffinland's environmental permits, licenses and approvals

**TABLE 4-1 – AREA-SPECIFIC SNOW MANAGEMENT GUIDELINES**

Appendix <sup>1</sup>	Project Area	Responsible Department
C	General Infrastructure (Mine Site/Milne Port)	Site Services
D	Milne Port Ore Stockpile Facility	Shiploading
E	Milne Port and Mine Site Quarry Operations	Road Maintenance
F	Tote Road	Road Maintenance
G	Mine Site Crushing Facility	Crusher Operations
H	Mine Haul Road and Deposit 1	Mine Operations

**Notes:**

<sup>1</sup>Appendix B provides the general inspection form for approved snow stockpile locations at the Project.

In addition to the area-specific guidelines, general snow management practices and environmental mitigation measures implemented at the Project are outlined in Section 4.2.



## 4.2 GENERAL ENVIRONMENTAL MITIGATION MEASURES

The management of snow at the Project has the potential to affect site water quality and other environmental components. Table 4-2 outlines the environmental concerns, proposed mitigation measures, and departments responsible for snow management activities at the Project. Refer to Sections 3.0 and 5.0 of this SMP for additional details on the roles and responsibilities of Project personnel, and the monitoring and reporting requirements for snow management activities at the Project.

**TABLE 4-2 – ENVIRONMENTAL CONCERNS AND MITIGATION MEASURES**


Environmental Concern	Proposed Mitigation Measures	Responsible Department
Release of sediment from snowmelt during freshet into nearby water bodies.	a) Implement sedimentation mitigation measures (i.e. silt fences, rip-rap) informed by water quality monitoring and routine inspections and in accordance with the SWAEMP. b) Maintain a 31 meter setback of stockpile limits from the ordinary High Water Mark of nearby water bodies.	a) Operational Departments and Environment Department b) Operational Departments
Release of debris (i.e. metal, wood, garbage, etc.) and contaminants (i.e. spilled fuel, sewage, etc.) from snow stockpiles as snow melts.	a) Inspect and confirm the absence of contaminants in snow accumulation by equipment operators prior to stockpiling and management activities. b) Segregate and properly dispose of contaminated snow and/or debris from snow stockpiles on an ongoing basis as snow melts throughout the year and debris/contaminants surface. This is to be completed as per the Spill Contingency Plan, Waste Management Plan, or other applicable Project management plans. c) Routinely inspect melting stockpiles.	a) Operational Departments b) Operational Departments c) Operational Departments and Environment Department
Hindrance/blockage of meltwater flow during freshet due to snow stockpiling and management activities.	a) Maintain a 31 meter setback of stockpile limits from nearby water bodies and culverts. b) Apply the area-specific guidelines detailed in appendices C - H.	a) Operational Departments b) Operational Departments

## 4.3 FRESHET PREPARATION MITIGATION MEASURES

Rapid snowmelt during freshet has the potential to negatively impact site water quality and infrastructure. To mitigate the impacts of freshet, high-risk locations require snow removal prior to the onset of freshet

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conditions. High-risk locations include culverts, check dams, laydowns and areas prone to pooling water. Table 4-3 outlines the specific high-risk locations, mitigations measures, and responsible department.

**TABLE 4-3 - HIGH RISK SNOW REMOVAL LOCATIONS**

Location	Mitigation Measure	Responsible Department
Quarry	De-watering	Road Maintenance
High-Risk culverts on the Tote Road	Snow removal/steam application	Site Services/Road Maintenance
Jetty road check dams	Snow removal	Site Services
Air Strip (Weatherhaven Access Road)	Snow removal/dewatering	Site services
Check dams at CV-186/187	Snow removal	Site Services
Laydown 2	Snow removal/dewatering	Site Services
Check dams at Mag Road	Snow removal	Mine Operations
Mine Haul Road culverts	Snow removal/steam application	Mine Operations
Waste Rock Facility (ditching, roads, ring road, WTP pad)	Snow removal	Mine Operations
Crusher Pad Ditches	Snow removal	Crusher
Crusher Pad	Grading pad as per design/dewatering	Crusher
Culvert at the NW corner of the Crusher Pad	Snow removal	Crusher
Shiploading (ditches, roads, reclaim belt areas)	Snow removal	Shiploading
West Beach	Snow removal	Shiploading
Ore pad	Grading pad as per design/dewatering	Shiploading

#### 4.4 SNOW STOCKPILE LOCATIONS


Approved snow stockpile locations for management of snow accumulation for the Project are shown in Figures 1 - 10. The approved snow stockpile locations were selected based on field observations to achieve compliance with the criteria outlined in Table 4-4.

**TABLE 4-4 – SNOW STOCKPILE SITING CRITERIA**

Parameter	Reference
Snow stockpile limits will be within the limits defined in the Commercial Lease and will allow for the maintenance of a 50 metre undisturbed buffer between Project infrastructure/activities and the Commercial Lease limits.	Commercial Lease (Section 2.5)

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Snow stockpile limits will be at least 31 metres away from the ordinary High Water Mark of nearby waterbodies.	Type 'A' Water Licence (Part D, Item 25; Part E, Item 17)
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Relocating approved snow stockpiles and establishing new snow stockpile locations may be required depending on meteorological conditions and the overall performance of approved snow stockpile locations. In the event that new snow stockpiles need to be established or existing snow stockpiles need to be relocated to meet operational requirements, the locations of new or relocated snow stockpiles will be compliant with the criteria presented in Table 4-4. Modified or new snow stockpile locations and modifications to snow management strategies must be approved by the Environment Department prior to implementation.

Best efforts will be made to follow this SMP and to use the approved snow stockpile locations to manage snow accumulation at the Project. However, during extreme winter storm events, Project operations may be required to temporarily deposit snow at locations that do not meet the criteria listed in Table 4-4 to maintain site access for essential and emergency response vehicles, and to ensure the health and safety of Project personnel. Following such weather events, Baffinland will endeavour to transport snow from temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.

Where snow stockpiles are within close proximity to the Commercial Lease limits, markers will be installed in the field to delineate snow stockpile limits.

## 5 MONITORING AND REPORTING

### 5.1 INSPECTIONS


#### 5.1.1 OPERATIONAL INSPECTIONS

Operational departments will conduct routine inspections of their respective areas to ensure snow management in accordance with this SMP. Non-conformances or issues of concern reported or identified during inspections will be addressed promptly under the direction of the Department or Project Supervisor.

#### 5.1.2 ENVIRONMENTAL INSPECTIONS

Snow management practices and snow stockpile locations will be inspected by the Environment Department monthly when there is snow in the snow stockpiles and at an increased weekly frequency during freshet (typically May 15 to June 30); commencing when snowmelt conditions begin.

Inspections and compliance with this SMP will be documented using the Snow Management Inspection Form provided in Appendix B. Non-conformances or issues of concern identified will be forwarded to the appropriate Operational Department or to Projects to be addressed.

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## 5.2 WATER QUALITY MONITORING

The monitoring of snowmelt and surface water runoff at the Mine Site and Milne Port will be monitored via the Surveillance Network Program (SNP) stipulated by the Project's Type 'A' Water Licence, and along the Tote Road via the Tote Road Monitoring Program (TRMP). Additional temporary monitoring locations may be established during freshet to support the SNP and TRMP for areas down gradient of snow stockpile locations. Water quality monitoring stations used for monitoring snowmelt and surface water runoff for snow stockpiles on the Mine Site and Milne Port are presented in Figures 1 - 3. As snow stockpiles are transient in nature, temporary monitoring locations are reassessed regularly and adjusted as necessary to ensure representative monitoring of down gradient receptors.

Frequency of water quality monitoring will be consistent with existing monitoring programs (i.e. SNP, TRMP). Refer to the SWAEMP for additional details on how surface water quality is managed and monitored at Project sites.


## 5.3 WATER QUALITY REPORTING

Monitoring results of the SNP, TRMP and temporary freshet monitoring stations will be reported annually in the QIA & NWB Annual Report for Operations. Results of the SNP will also be reported monthly as required by the Project's Type 'A' Water Licence.

# 6 ADAPTIVE MANAGEMENT STRATEGIES

Baffinland is committed to continuous improvement of its work activities with the aim of reducing risks to the environment and improving operational safety and efficiency. The strategy employed at Baffinland is regular monitoring supported by operational change and adoption of additional mitigation measures if warranted. Examples of adaptive management strategies for snow management activities at the Project include potential relocation of snow stockpile locations, installation of erosion and sediment control measures, and application of steam to culverts to maintain free flowing conditions; based on operational, health and safety, and environmental monitoring results.

As per the requirements of Baffinland's HSE Management Framework, Baffinland will conduct and document management reviews of this SMP on a regular basis. Such reviews will ensure integration of monitoring results for the SMP with other aspects of the Project and implementation of necessary adjustments as required. These reviews also provide a formal mechanism to assess effectiveness of management in achieving Baffinland's objectives and maintaining ongoing compliance with Project permits and authorizations.

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## Figures

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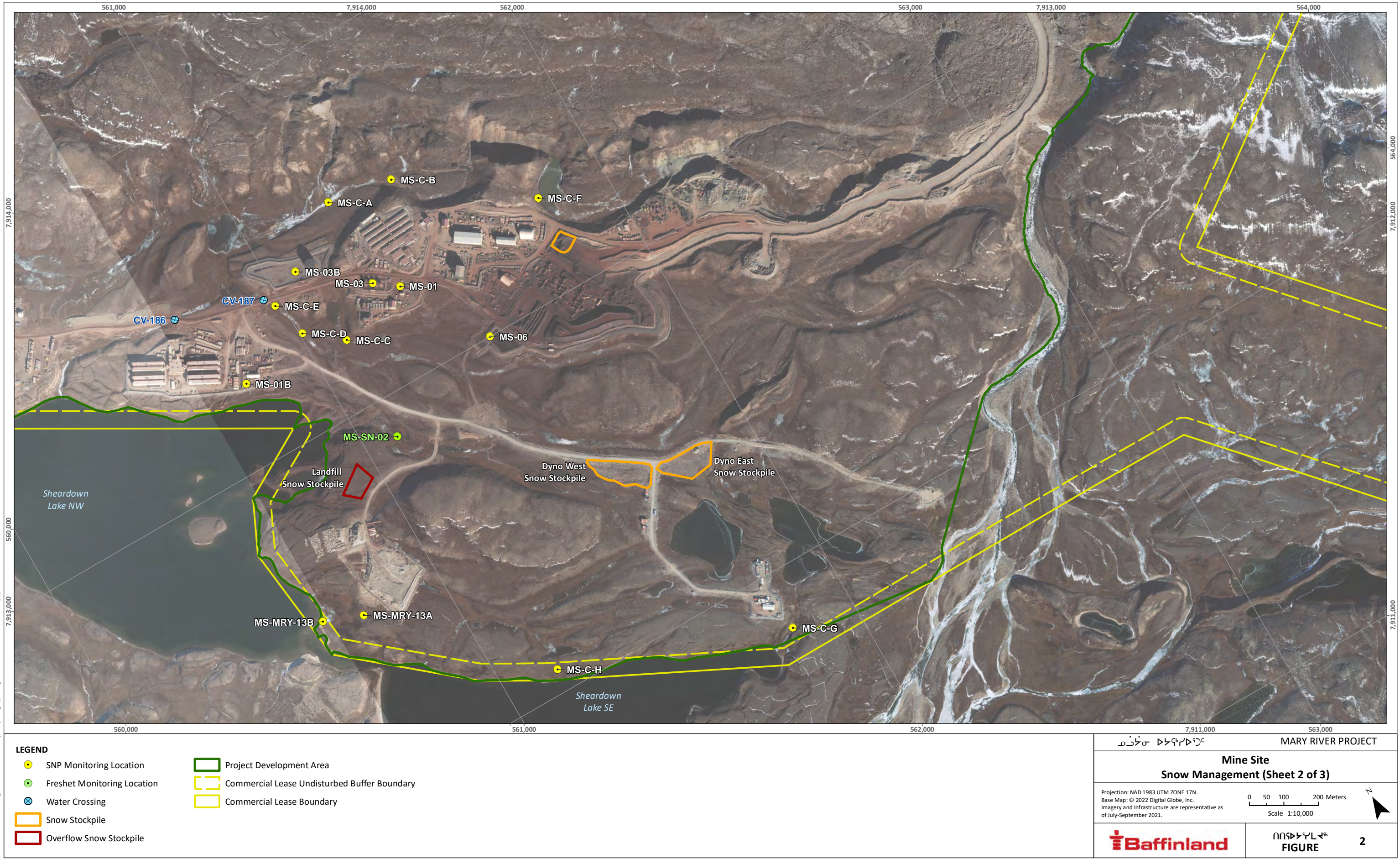
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- LEGEND**
  - SNP Monitoring Location
  - ⊗ Water Crossing
  - ➔ Drainage Direction
  - Do Not Place Snow within 31m of Culverts
  - Snow Stockpile
  - ▭ Project Development Area
  - ▭ Commercial Lease Undisturbed Buffer Boundary
  - ▭ Commercial Lease Boundary

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MARY RIVER PROJECT

**Mine Site**

**Snow Management (Sheet 3 of 3)**

Projection: NAD 1983 UTM ZONE 17N.  
Base Map: © 2022 Digital Globe, Inc.  
Imagery and Infrastructure are representative as of July-September 2021.

0 105 210 420 Meters  
Scale 1:16,659.7

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**FIGURE**

**10**





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LEGEND

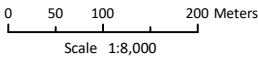
- SNP Monitoring Location
- Water Crossing
- Snow Stockpile
- Foreshore Lease Boundary
- Project Development Area
- Commercial Lease Undisturbed Buffer Boundary
- Commercial Lease Boundary

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MARY RIVER PROJECT

Milne Port  
Current Snow Stockpile Locations

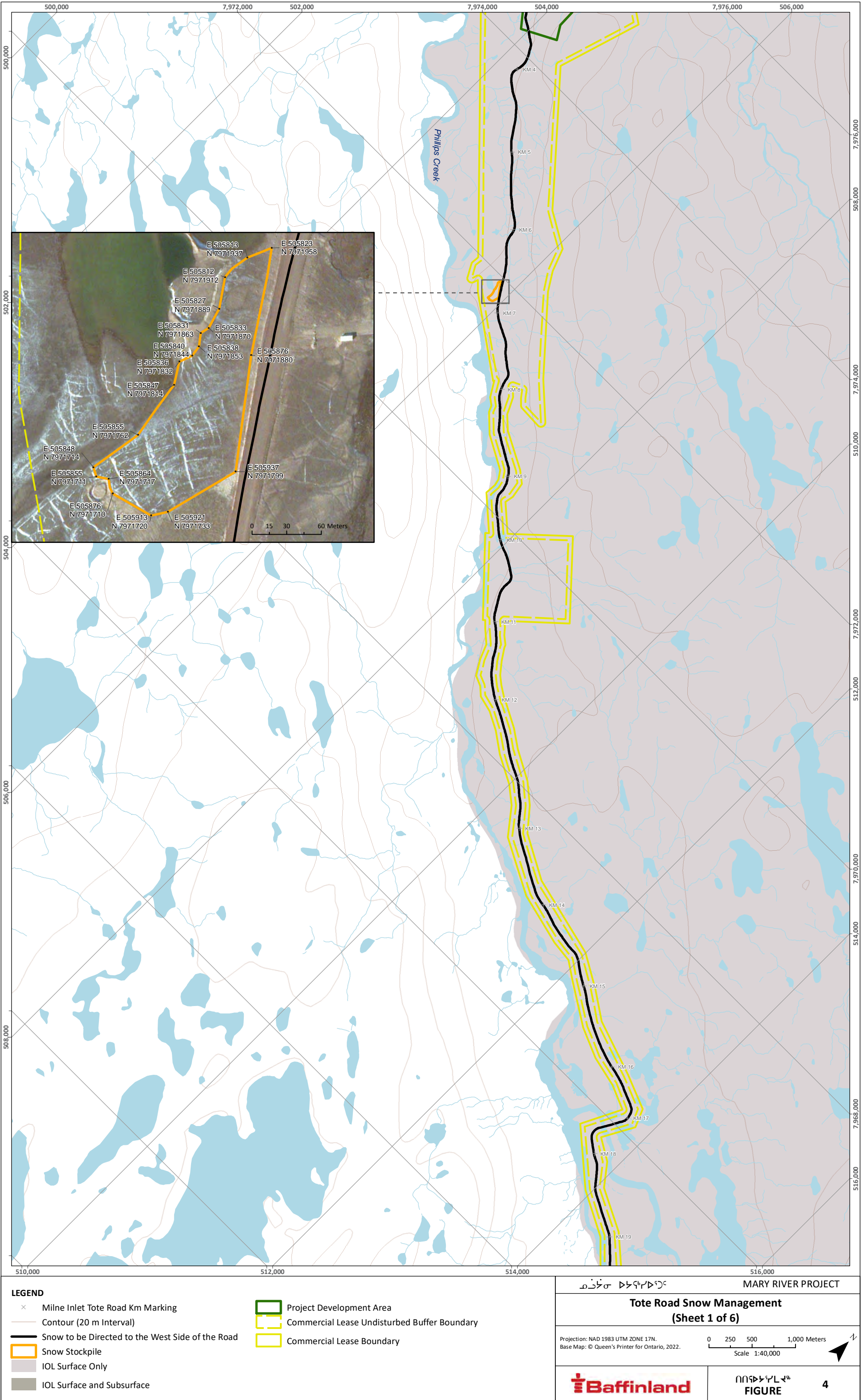
Projection: NAD 1983 UTM ZONE 17N.  
Base Map: © 2022 Digital Globe, Inc.  
Imagery and Infrastructure are representative as of July-September 2021.

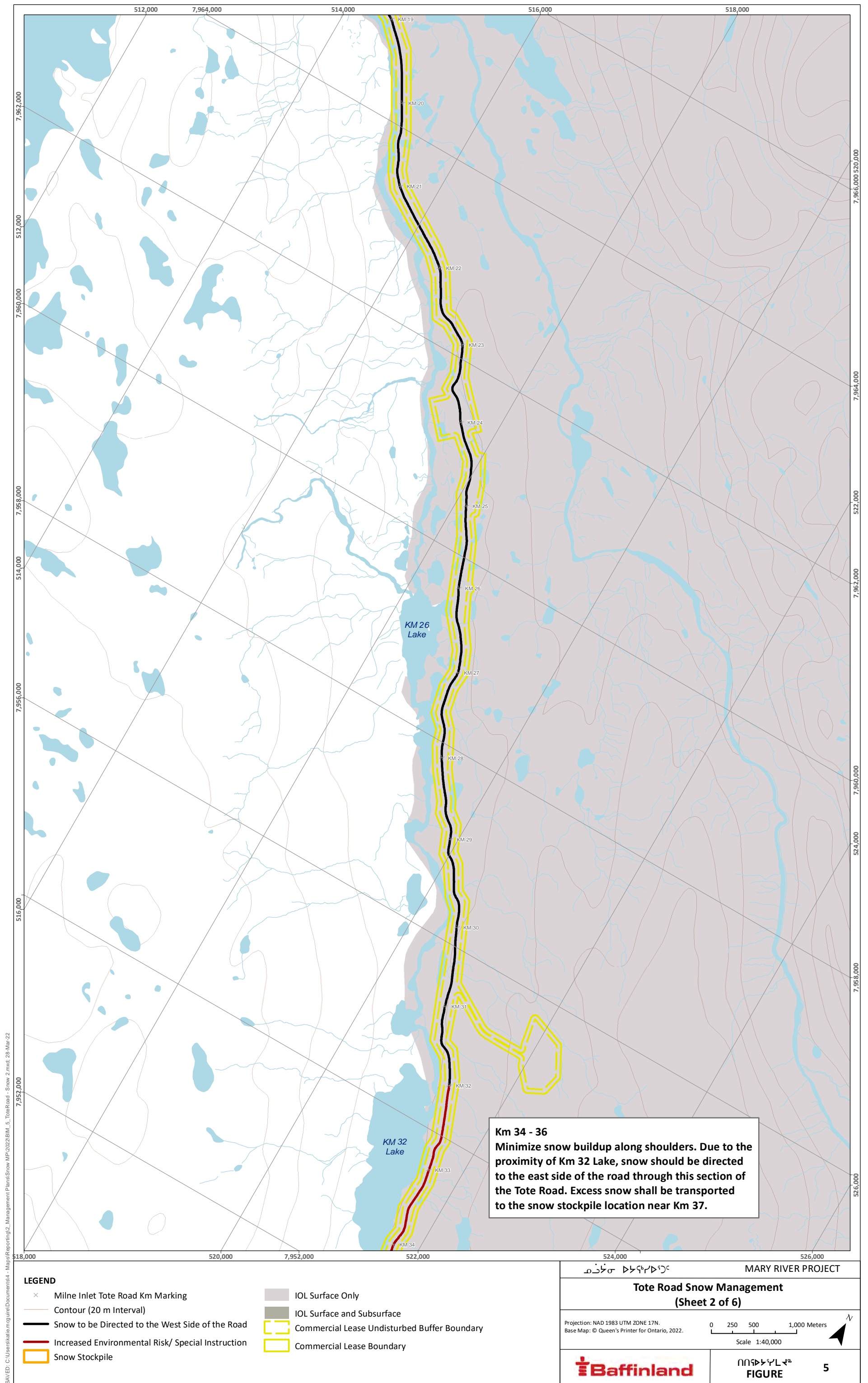


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FIGURE

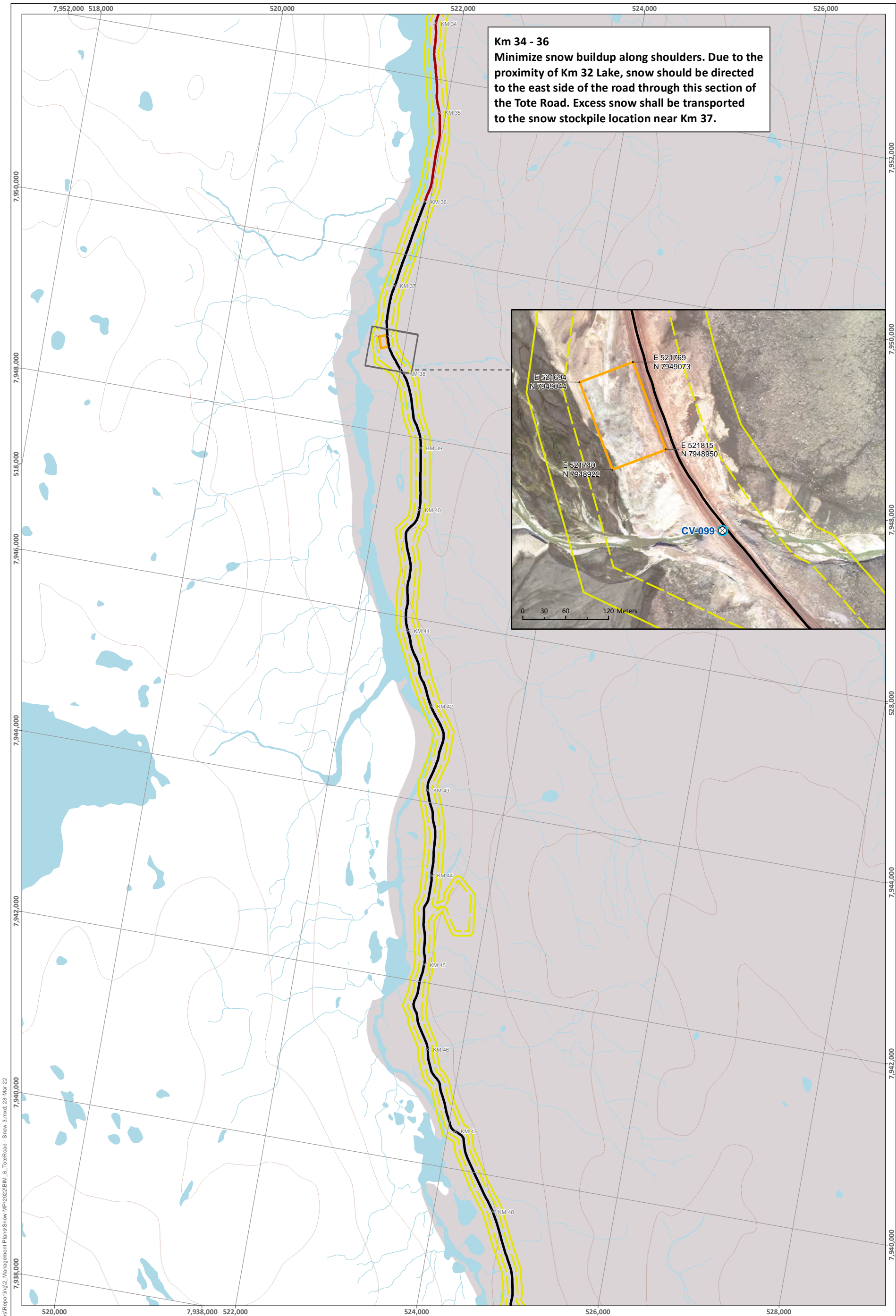


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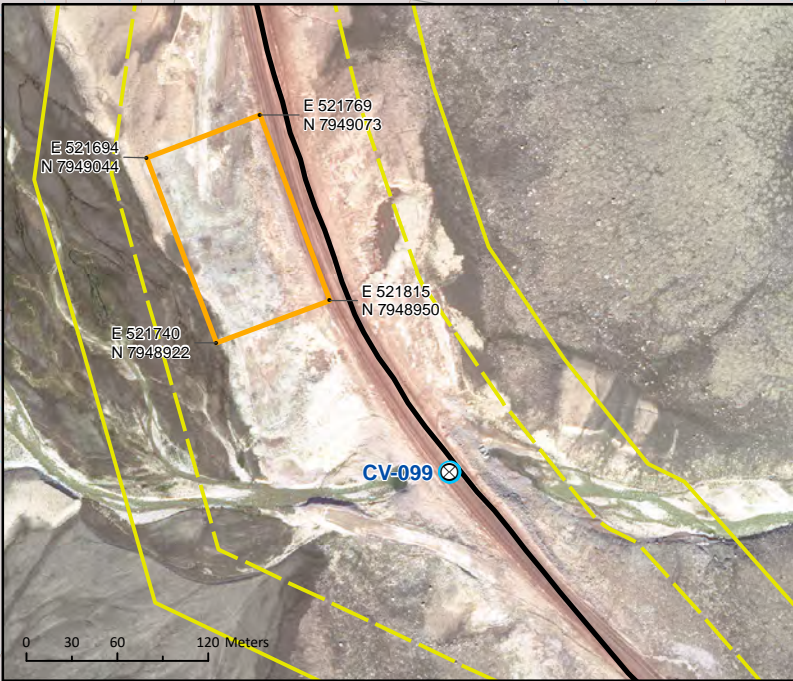








**Km 34 - 36**  
Minimize snow buildup along shoulders. Due to the proximity of Km 32 Lake, snow should be directed to the east side of the road through this section of the Tote Road. Excess snow shall be transported to the snow stockpile location near Km 37.



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- LEGEND**

  - Milne Inlet Tote Road Km Marking
  - Water Crossing Monitored under Tote Road Monitoring Program
  - Contour (20 m Interval)
  - Snow to be Directed to the West Side of the Road
  - Increased Environmental Risk/ Special Instruction
- Snow Stockpile
  - IOL Surface Only
  - IOL Surface and Subsurface
  - Commercial Lease Undisturbed Buffer Boundary
  - Commercial Lease Boundary

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MARY RIVER PROJECT

**Tote Road Snow Management**  
(Sheet 4 of 6)

Projection: NAD 1983 UTM ZONE 17N.  
Base Map: © Queen's Printer for Ontario, 2022.

0 250 500 1,000 Meters  
Scale 1:40,000

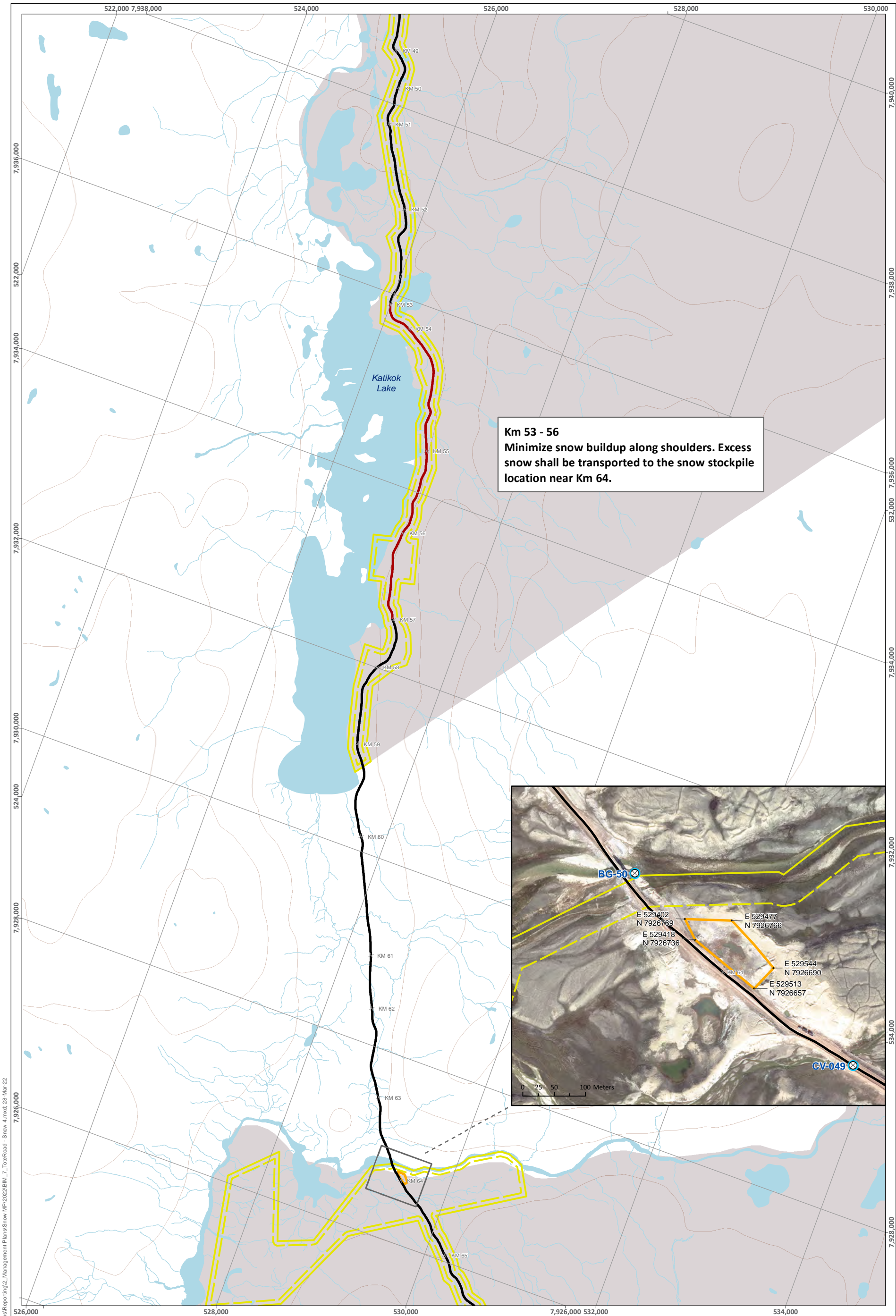
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**Baffinland**

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**FIGURE**

**6**





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LEGEND

- Milne Inlet Tote Road Km Marking
- Water Crossing Monitored under Tote Road Monitoring Program
- Contour (20 m Interval)
- Snow to be Directed to the West Side of the Road
- Increased Environmental Risk/ Special Instruction
- Snow Stockpile
- IOL Surface Only
- IOL Surface and Subsurface
- Commercial Lease Undisturbed Buffer Boundary
- Commercial Lease Boundary

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MARY RIVER PROJECT

Tote Road Snow Management

(Sheet 4 of 6)

Projection: NAD 1983 UTM ZONE 17N.  
Base Map: © Queen's Printer for Ontario, 2022.

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FIGURE

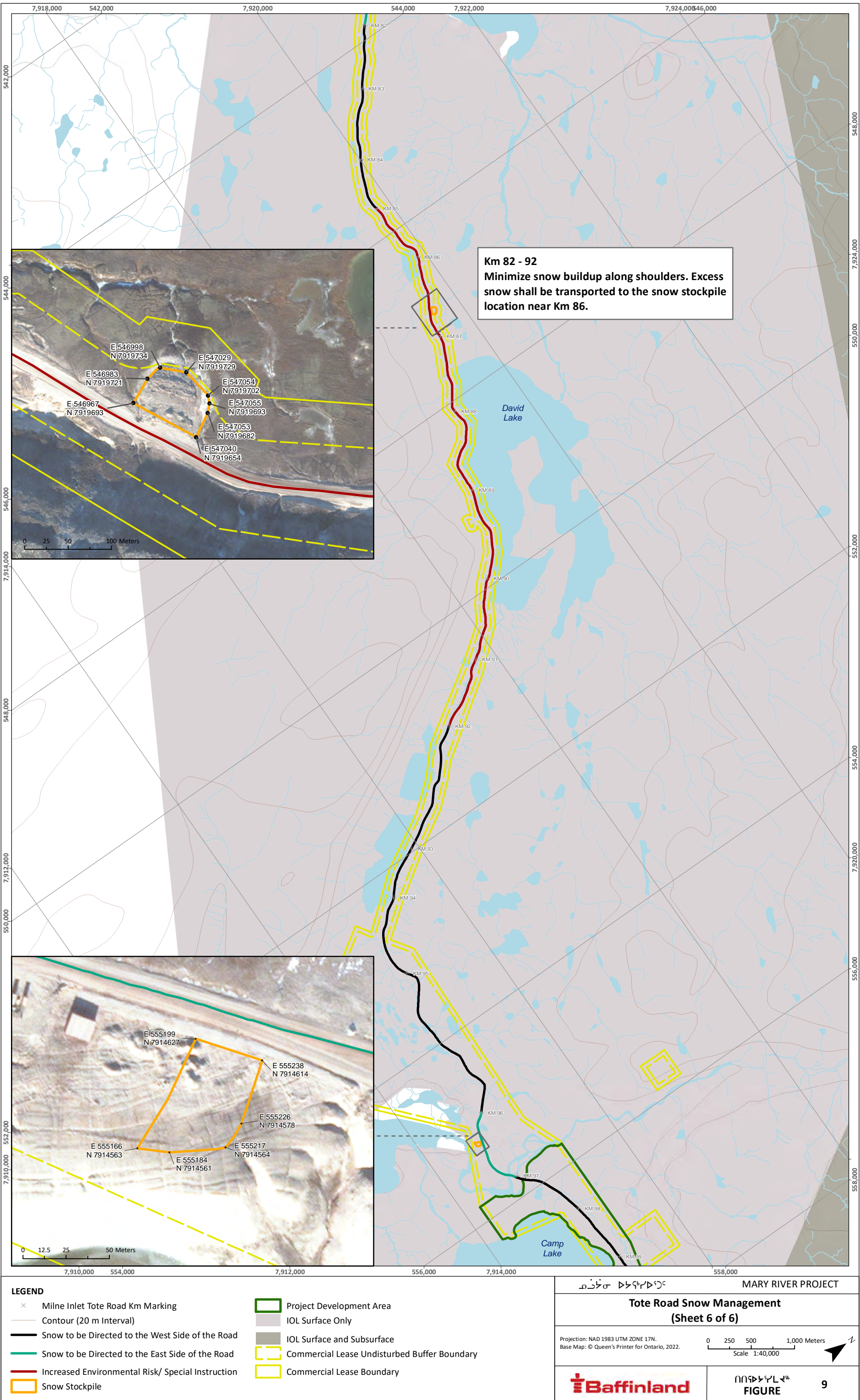
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## Appendix A

# Sustainable Development Policy, and Health, Safety and Environment Policy

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# Sustainable Development Policy



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

Everything we do is underpinned by our responsibility to protect the environment, to operate safely and fiscally responsibly and with utmost respect for the cultural values and legal rights of Inuit. We expect each and every employee, contractor, and visitor to demonstrate courageous leadership in personally committing to this policy through their actions. The four pillars of our corporate responsibility strategy are:

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

## Health and Safety

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

## Environment

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

## Upholding Human Rights of Stakeholders

- We respect human rights, the dignity of others and the diversity in our workforce. Baffinland honours and respects the unique cultural values and traditions of Inuit
- Baffinland does not tolerate discrimination against individuals on the basis of race, colour, gender, religion, political opinion, nationality or social origin, or harassment of individuals freely employed
- Baffinland contributes to the social, cultural and economic development of sustainable communities in the North Baffin Region

# Sustainable Development Policy



- We honour our commitments by being sensitive to local needs and priorities through engagement with local communities, governments, employees and the public. We work in active partnership to create a shared understanding of relevant social, economic and environmental issues, and take their views into consideration when making decisions
- We expect our employees and contractors, as well as community members, to bring human rights concerns to our attention through our external grievance mechanism and internal human resources channels. Baffinland is committed to engaging with our communities of interest on our human rights impacts and to reporting on our performance

## Transparent Governance

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

A handwritten signature in dark ink, appearing to read "Brian Penney".

Brian Penney  
Chief Executive Officer  
March 2016

	Health, Safety and Environment Policy	Issue Date: May 3rd, 2019 Revision: 3	Page 1 of 4
	Company Wide	Document #: BAF-PH1-800-POL-0001	

# Baffinland Iron Mines Corporation

## Health, Safety and Environment Policy

**BAF-PH1-800-POL-0001**

**Rev 3**

**Approved by: Brian Penney**

**Title: Chief Executive Officer**

**Date: May 3rd, 2019**

**Signature:** 

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	Company Wide	Document #: BAF-PH1-800-POL-0001	

## DOCUMENT REVISION RECORD

Issue Date MM/DD/YY	Revision	Prepared By	Approved By	Issue Purpose
05/07/15	0	EM	TP	For Use
03/07/16	1	JS	BP	Minor edits
04/20/18	2	TS	SA/BP	Minor edits
05/03/19	3	TS	BP	Minor edits

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

We implement this Policy through the following commitments:

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

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

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

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

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




Brian Penney  
Chief Executive Officer  
May 2019

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## Appendix B

### Snow Stockpile Inspection Form

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## Snow Management Inspection

Date:

Inspecting Personnel:

Camera ID:

Stockpile Location:


GPS ID:

	Condition	Yes	No	N/A	Item of Concern	Corrective Action
1	Is the stockpile currently in use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If so, what is the current % full:	
2	Are there any vehicles/heavy equipment working in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3	Is the stockpile boundary poorly marked?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	Is the snow being stockpiled outside of the boundary area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	Does the snow contain any contamination? (i.e. coolant, oil, sewage, gravel, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List type and volume of contamination found:	
6	Have the natural drainage patterns of the area been altered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7	Is there any refuse within the stockpiled snow? (i.e. metal, wood, garbage, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8	If refuse is present, was it removed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9	Photos taken?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Photo #:	

Additional Notes:

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	<b>Operations</b>	<b>Document #:</b> BAF-PH1-830-P16-0023	


## Appendix C

### General Site Snow Management Guidelines (Site Services Department)

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## General Site Snow Management Guidelines

To manage snow around general infrastructure at the Mine Site and Milne Port, the following guidelines shall be followed by the Site Services Department to ensure compliance with the SMP:

- To minimize the amount of debris collected and mixed with stockpiled snow, Project personnel shall remove debris from the area prior to snow management activities. This may include measures such as avoiding heavily littered areas until the debris can be sufficiently removed.
- Snow around general infrastructure at the Mine Site and Milne Port shall be stockpiled at the approved snow stockpile locations identified in Figures 1 - 3.
- Where practical, snow should be removed or cleared in the same direction as the prevailing winds of the area and/or to the downhill side. This will minimize the amount of drifting that occurs across laydowns and roads during winter months and reduce the amount of meltwater that will come in contact with Project infrastructure (i.e. roads, culverts, etc.) during freshet.
- Snow should be carried from one side of the road to the other and not split down the middle and pushed to both sides. This will reduce the amount of drifting that occurs across roads and the amount of passes required by equipment to effectively clear snow accumulation.
- When removing snow with graders near culverts, rotate the moldboard to carry the snow past and away from culverts before moving snow to the edge of the road.
- Exercise caution when clearing snow near ditches and berms, making sure not to alter existing infrastructure. Snow should not be plowed into ditches.
- To avoid debris from being released and windblown, Site Services personnel are required to monitor melting snow stockpiles and collect debris as it surfaces throughout the year. Depending on the rate of snowmelt and the amount of debris within the stockpiled snow, collection of debris may be necessary on a daily basis throughout freshet and until the stockpiled snow has completely melted.
- Site Services is responsible for managing the snow stockpile locations at the Mine Site and Milne Port. Site Services will be notified if snow stockpile locations under their management are required to be used by other operational departments or by Projects due to excess snow accumulation in other areas of the Project.
- Site Services must notify and receive approval from the Environment Department prior to using the overflow snow stockpile locations at the Mine Site.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, Site Services will endeavour to transport the snow from the temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.


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**Appendix D**

**Milne Port Ore Stockpile Facility**

**Snow Management Guidelines**

**(Shiploading Department)**

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## Milne Port Ore Stockpile Facility Snow Management Guidelines


To manage snow at the Milne Port Ore Stockpile Facility, the following guidelines will be followed by the Shiploading Department to ensure compliance with the SMP:

- No ore impacted snow shall leave the Ore Stockpile Facility.
- Snow shall be stockpiled at the approved locations identified in Figure 3.
- To minimize the amount of debris collected and mixed with stockpiled snow, Project personnel shall remove debris from the area prior to snow removal. This may include measures such as avoiding heavily littered areas until the debris can be sufficiently removed.
- Following winter storm events, snow may be stockpiled at temporary locations within the Ore Stockpile Facility until the snow can be transported to the approved stockpile locations identified in Figure 3.
- The Shiploading Department will conduct routine monitoring of stockpiled snow to ensure that minimal amounts of ore and debris are being mixed in during snow management activities. Routine inspections of approved snow stockpiles will also be completed monthly (and weekly during freshet) using the Snow Stockpile Inspection Form (Appendix B) by the Environment Department.
- To minimize the amount of ore (lump/fines) mixed in with snow and transported during snow management activities, the following guidelines shall be followed by equipment operators:
  - Maintain a loader bucket/grader blade lift of two (2) inches when clearing snow.
  - Exercise caution when clearing snow around the base of stockpiles, making sure not to remove ore at the toe of ore stockpiles.
  - Exercise caution when removing snow/drifts near the face of ore stockpiles, making sure not to remove ore along the face of ore stockpiles.
  - When possible, select a loader that is best suited for the area where snow removal is required. For example, the use of a 950 loader is more suitable for stockpile faces whereas a 988 loader is better suited for removing snow from the pad floor. This may require equipment preplanning for availability.
- Implementation of the Ore Stockpile Pad Regrading Strategy to prevent the pooling of water on and around the Ore Stockpile Facility pad.
- The Shiploading Department is responsible for managing the snow stockpile locations for the Ore Stockpile Facility. The Shiploading Department will be notified if snow stockpile locations under their management are required to be used by other operational departments or by Projects due to excess snow accumulation in other areas of the Project.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, the Shiploading Department will endeavour to transport the snow from the temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.

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## Appendix E

### Quarry Snow Management Guidelines (Road Maintenance Department)

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## Snow Management Guidelines for Quarries


To manage snow at the Milne Port and Mine Site quarry operations, the following guidelines will be followed by Road Maintenance to ensure compliance with the SMP:

- Snow will not be stockpiled within 31 meters of the ordinary High Water Mark of nearby water bodies (i.e. streams, lakes, and rivers).
- Snow shall be stockpiled at the approved locations identified in Figure 1 and Figure 2 for the Mine Site and in Figure 3 for Milne Port.
- To minimize the amount of debris collected and mixed with stockpiled snow, Project personnel shall remove debris from the area prior to snow removal. This may include measures such as avoiding heavily littered areas until the debris can be sufficiently removed.
- Following winter storm events, snow may be stockpiled at temporary locations within the quarry facilities until the snow can be transported to the approved stockpile locations identified in figures 1 through 3.
- Accumulated snow will be removed from the QMR2 quarry, and other quarry operations as required, prior to freshet to minimize runoff from snowmelt to down gradient water bodies/receptors.
- Road Maintenance will conduct routine monitoring of stockpiled snow to ensure that minimal amounts of aggregate and debris are being mixed in during snow management activities. Routine inspections of approved snow stockpiles will also be completed monthly (and weekly during freshet) using the Snow Stockpile Inspection Form (Appendix B) by the Environment Department.
- Exercise caution when clearing snow near ditches and berms, making sure not to alter existing infrastructure. Snow should not be plowed into ditches.
- To minimize the amount of aggregate collected and transported during snow management activities, the following guidelines shall be followed by equipment operators:
  - Maintain a loader bucket/grader blade lift of two (2) inches when clearing snow.
  - Exercise caution when clearing snow around the base of aggregate stockpiles, making sure not to remove aggregate at the toe of aggregate stockpiles.
  - Exercise caution when removing snow/drifts near the face of quarry material stockpiles, making sure not to remove material along the face of the stockpiles.
  - When possible, select a loader that is best suited for the area where snow removal is required. For example, the use of a 950 loader is more suitable for stockpile faces whereas a 988 loader is better suited for removing snow from the pad floor. This may require equipment preplanning for availability.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, Road Maintenance will endeavour to transport the snow from the temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.

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## Appendix F


# Tote Road Snow Management Guidelines

### (Road Maintenance Department)

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## Tote Road Snow Management Guidelines

To manage snow along the Tote Road, the following guidelines will be followed by Road Maintenance to ensure compliance with the SMP:


- Snow will be managed and stockpiled as outlined in figures 4 - 9.
- Snow will not be stockpiled within 31 meters of the ordinary High Water Mark of nearby water bodies (i.e. streams, lakes, and rivers).
- Where practical, snow should be removed or cleared in the same direction as the prevailing winds of the area and/or to the downhill side. This will minimize the amount of drifting that occurs across Tote Road infrastructure during winter months and reduce the amount of meltwater that contacts Tote Road infrastructure (i.e. roads, culverts) during freshet.
- When clearing snow, snow should be carried from one side of the road to the other and not split down the middle and pushed to both sides. This will reduce the amount of drifting that occurs across Tote Road infrastructure and the amount of equipment passes required to clear accumulated snow.
- When removing snow near culverts using a grader, rotate the moldboard to carry the snow past and away from culverts before moving snow to the edge of the road.
- When pushing snow away from the Tote Road, equipment operators should maintain a low, flat angle and take special care not to disturb the tundra underneath the snow and not deviate from the centre line of the Tote Road by more than 50 metres.
- Road Maintenance is responsible for managing the snow stockpile locations along the Tote Road. Road Maintenance will be notified if snow stockpile locations under their management are required to be used by other operational departments or by Projects due to excess snow accumulation in other areas of the Project.
- When using equipment to position snow that will be managed by trailing snow blowers, berm up snow in a manner that is accessible by snow blowers.
- Minimize snow buildup along shoulders of the Tote Road. For the safety of employees and wildlife, snow banks should not exceed 1 m in height.
- Prior to freshet, culverts and ditches must be cleared of snow to provide free flowing conditions for movement of water. This may require the application of steam to culverts.
- Road Maintenance will conduct routine monitoring of stockpiled snow to ensure minimal amounts of debris are being mixed in during snow management activities. Routine inspections of approved snow stockpiles will also be completed monthly (and weekly during freshet) using the Snow Stockpile Inspection Form (Appendix B) by the Environment Department.
- Road Maintenance will segregate and properly dispose of contaminated snow and/or debris from snow stockpiles on an ongoing basis as snow melts throughout the year and debris/contaminants surface.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, Road Maintenance will endeavour to transport the snow from the temporary locations to the

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approved snow stockpile locations within a period of less than ten (10) days.

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# **Appendix G** **Mine Site Crushing Facility Snow Management Guidelines** **(Crusher Department)**

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## Mine Site Crusher Facility Snow Management Guidelines


To manage snow at the Mine Site Crusher Facility, the following guidelines will be followed by the Crusher Department to ensure compliance with the SMP:

- No ore or dust impacted snow shall leave the Crusher Facility.
- Snow shall not be stockpiled within three (3) metres of the Crusher Facility perimeter ditches.
- To minimize the amount of debris collected and mixed with stockpiled snow, Project personnel shall remove debris from the area prior to snow removal. This may include measures such as avoiding heavily littered areas until the debris can be sufficiently removed.
- The Crusher Department will conduct routine monitoring of stockpiled snow to ensure that minimal amounts of ore and debris are being mixed in during snow management activities. Routine inspections of approved snow stockpiles will also be completed monthly (and weekly during freshet) using the Snow Stockpile Inspection Form (Appendix B) by the Environment Department.
- To minimize the amount of ore (lump/fines) mixed in with snow and transported during snow management activities, the following guidelines shall be followed by equipment operators:
  - Maintain a loader bucket/grader blade lift of two (2) inches when clearing snow.
  - Exercise caution when clearing snow around the base of stockpiles, making sure not to remove ore at the toe of the ore stockpiles with the snow.
  - Exercise caution when removing snow/drifts near the face of ore stockpiles, making sure not to remove ore with the snow.
  - When possible, select a loader that is best suited for the area where snow removal is required. For example, the use of a 950 loader is more suitable for stockpile faces whereas a 988 loader is better suited for removing snow from the pad floor. This may require equipment preplanning for availability.
- The Crusher Department is responsible for managing the snow stockpile locations for the Crusher Facility. The Crusher Department will be notified if snow stockpile locations under their management are required to be used by other operational departments or by Projects due to excess snow accumulation in other areas of the Project.
- Prior to freshet, culverts and ditches must be cleared of snow to provide free flowing conditions for movement of water. This may require the application of steam to culverts.
- Implementation of the Ore Crusher Pad Regrading Strategy to prevent the pooling of water on and around the Crusher Facility pad.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, the Crusher Department will endeavour to transport the snow from the temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.

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## Appendix H


# Mine Haul Road and Deposit No. 1 Snow Management Guidelines

### (Mine Operations Department)

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## Mine Haul Road and Deposit 1 Snow Management Guidelines

To manage snow along the Mine Haul Road (MHR) and Deposit 1, the following guidelines will be followed by Mine Operations to ensure compliance with the SMP:

- Snow will be managed and stockpiled as shown in Figure 10.
- Snow will not be stockpiled within 31 meters of culverts on the MHR.
- Where practical, snow should be removed or cleared in the same direction as the prevailing winds of the area and/or to the downhill side. This will minimize the amount of drifting that occurs across Project infrastructure during winter months and reduce the amount of meltwater that comes in contact with Project infrastructure (i.e. roads and culverts) during freshet.
- When clearing snow, snow should be carried from one side of the road to the other and not split down the middle and pushed to both sides. This will reduce the amount of drifting that occurs across Project infrastructure and the amount of passes required by equipment to effectively clear snow accumulation.
- When removing snow near culverts using a grader, rotate the moldboard to carry the snow past and away from culverts before moving the snow to the edge of the road.
- When pushing snow away from Project infrastructure, equipment operators should maintain a low, flat angle and take special care not to disturb the tundra underneath the snow.
- Mine Operations is responsible for managing the snow stockpile locations along the MHR. Mine Operations will be notified if snow stockpile locations under their management are required to be used by other operational departments or by Projects due to excess snow accumulation in other areas of the Project.
- When using equipment to position snow to be managed by trailing snow blowers, berm up snow in a manner that is accessible by snow blowers.
- Prior to freshet, culverts and ditches must be cleared of snow to provide free flowing conditions for movement of water. This may require the application of steam to culverts.
- If it was necessary to deposit snow at unapproved temporary snow stockpile locations following an extreme winter storm event to maintain site access and ensure health and safety, Mine Operations will endeavour to transport the snow from the temporary locations to the approved snow stockpile locations within a period of less than ten (10) days.